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Foreword

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1 Scope

The present specification provides the stage 3 definition for the usage of the Unified Data Repository service (Nudr_DataRepository) of 5G System for Policy Data, Application Data and Structured Data for Exposure.

The Unified Data Repository (UDR) provides the Unified Data Repository service. This service provides a repository for policy data, application data and exposure data.

The stage 3 protocol definition for Nudr Service Based Interface which is common for subscription data, policy data, application data and exposure data is specified in 3GPP TS 29.504 [6].

2 References

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[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 7230: "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing".

[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".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

AM	Access and Mobility Management
ATSSS	Access Traffic Steering, Switching, Splitting
BDT	Background Data Transfer
DNAI	DN Access Identifier
DNN	Data Network Name
GPSI	Generic Public Subscription Identifier
JSON	JavaScript Object Notation
MA	Multi Access
NEF	Network Exposure Function
NR	New Radio
NRF	Network Repository Function
PCF	Policy Control Function
PFD	Packet Flow Description
PSA	PDU Session Anchor
SM	Session Management
S-NSSAI	Single Network Slice Selection Assistance Information
SUPI	Subscription Permanent Identifier
UDR	Unified Data Repository
UPSI	UE Policy Section Identifier
URSP	UE Route Selection Policy

4 Overview

The resources, data model and usage defined in the present document are used by the 5GC NFs (e.g. PCF, NEF) to access the policy data, application data or exposure data via the Unified Data Repository services as specified in 3GPP TS 29.504 [6].

5 Usage of Nudr_DataRepository Service API for Policy Data

5.1 Introduction

The following subclauses specify the usage of Nudr_DataRepository service for policy data. The principles specified in 3GPP TS 29.504 [6] are followed unless explicitly specified otherwise in the following subclauses.

5.2 Resources

5.2.1 Overview

This clause specifies the resources for the usage of the Unified Data Repository service for Policy Data.

5.2.2 Resource Structure

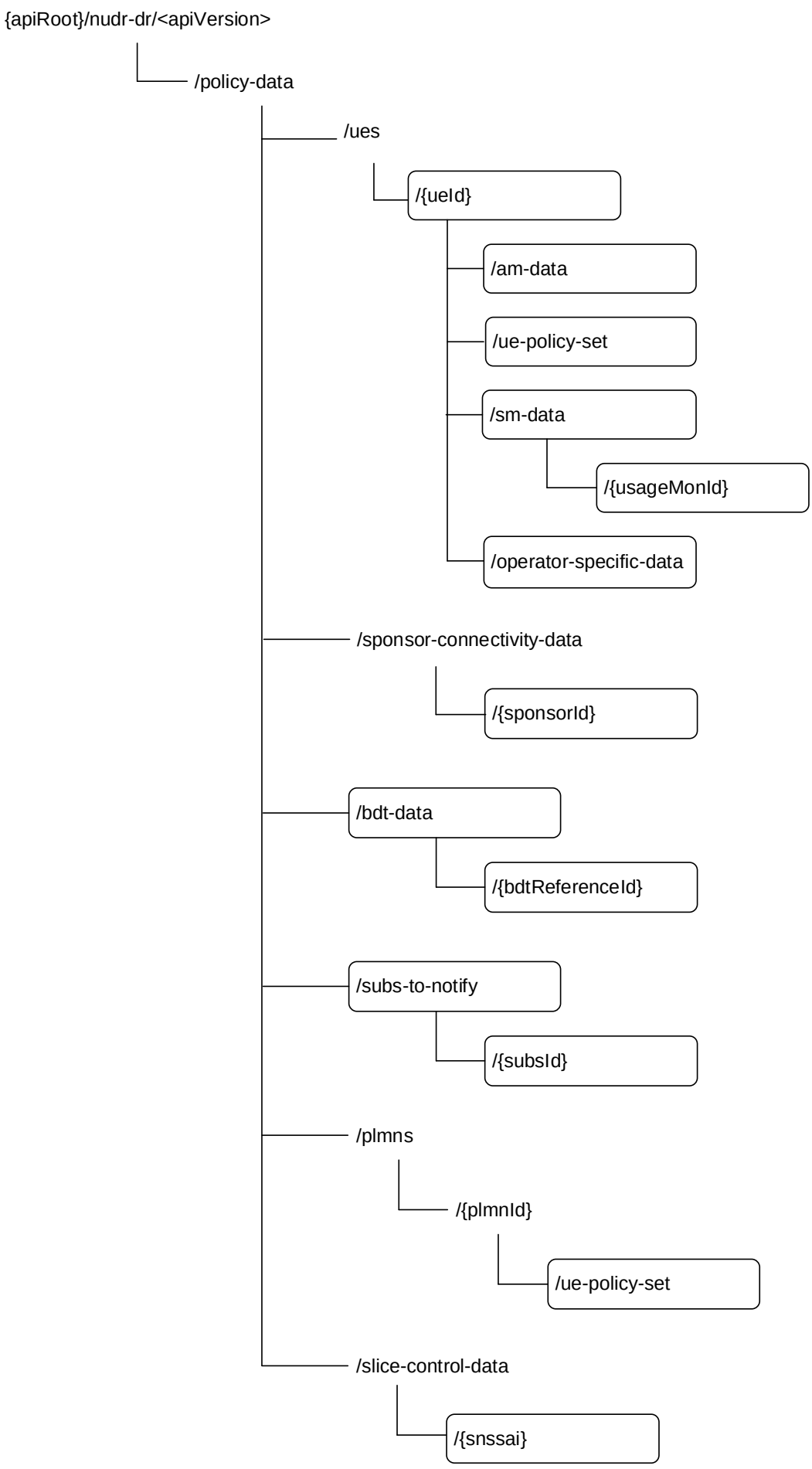
{apiRoot}/nudr-dr/<apiVersion>
/policy-data
/ues
/{ueId}
/am-data
/ue-policy-set
/sm-data
/{usageMonId}
/operator-specific-data
/sponsor-connectivity-data
/{sponsorId}
/bdt-data
/{bdtReferenceId}
/subs-to-notify
/{subsId}
/plmns
/{plmnId}
/ue-policy-set
/slice-control-data
/{snssai}

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	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	POST	Create a subscription to receive notifications of policy data changes.
IndividualPolicyDataSubscription	/policy-data/subs-to-notify/ {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.

5.2.3 Resource: AccessAndMobilityPolicyData

5.2.3.1 Description

The resource represents all UE related mobility and access policies attributes in the UDR for a given "ueId".

5.2.3.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}/am-data**

This resource shall support the resource URI variables defined in table 5.2.3.2-1.

Table 5.2.3.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
ueId	VarUeId	Represents the Subscription Identifier SUPI or GPSI. Data type VarUeId is defined in 3GPP TS 29.571 [7].

5.2.3.3 Resource Standard Methods

5.2.3.3.1 GET

This method shall support the URI query parameters specified in table 5.2.3.3.1-1.

Table 5.2.3.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.3.3.1-2 and the response data structures and response codes specified in table 5.2.3.3.1-3.

Table 5.2.3.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.3.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
AmPolicyData	M	1	200 OK	Upon success, a response body containing access and mobility policies shall be returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.4 Resource: UEPolicySet

5.2.4.1 Description

The resource represents UE policy set for a given "ueId" stored in the UDR of the H-PLMN.

5.2.4.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}/ue-policy-set**

This resource shall support the resource URI variables defined in table 5.2.4.2-1.

Table 5.2.4.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
ueId	VarUeId	Represents the Subscription Identifier SUPI or GPSI. Data type VarUeId is defined in 3GPP TS 29.571 [7].

5.2.4.3 Resource Standard Methods

5.2.4.3.1 PUT

This method shall support the URI query parameters specified in table 5.2.4.3.1-1.

Table 5.2.4.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.4.3.1-2 and the response data structures and response codes specified in table 5.2.4.3.1-3.

Table 5.2.4.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
UePolicySet	M	1	Create or modify the UE policy set resource for a given subscriber.

Table 5.2.4.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
UePolicySet	M	1	201 Created	Successful case. The resource has been successfully created and a response body containing a representation of the created UEPolicySet resource shall be returned.
UePolicySet	M	1	200 OK	Successful case. The resource has been successfully updated and a response body containing UE policies shall be returned.
n/a			204 No Content	Successful case. The resource has been successfully updated and no additional content is to be sent in the response message.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 5.2.4.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}/ue-policy-set

5.2.4.3.2 PATCH

This method shall support the URI query parameters specified in table 5.2.4.3.2-1.

Table 5.2.4.3.2-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.4.3.2-2 and the response data structures and response codes specified in table 5.2.4.3.2-3.

Table 5.2.4.3.2-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
UePolicySetPatch	M	1	Modify the UE policy set resource for a given subscriber.

Table 5.2.4.3.2-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Successful case. The resource has been successfully updated and no additional content is to be sent in the response message.
NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.4.3.3 GET

This method shall support the URI query parameters specified in table 5.2.4.3.3-1.

Table 5.2.4.3.3-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer.

This method shall support the request data structures specified in table 5.2.4.3.3-2 and the response data structures and response codes specified in table 5.2.4.3.3-3.

Table 5.2.4.3.3-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.4.3.3-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
UePolicySet	M	1	200 OK	Upon success, a response body containing the UE policies shall be returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.5 Resource: SessionManagementPolicyData

5.2.5.1 Description

The resource represents all PDU session related subscription attributes in the UDR for a given ueId.

5.2.5.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}/sm-data**

This resource shall support the resource URI variables defined in table 5.2.5.2-1.

Table 5.2.5.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
ueId	VarUeId	Represents the Subscription Identifier SUPI or GPSI. Data type VarUeId is defined in 3GPP TS 29.571 [7].

5.2.5.3 Resource Standard Methods

5.2.5.3.1 GET

This method shall support the URI query parameters specified in table 5.2.5.3.1-1.

Table 5.2.5.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
snssai	Snssai	O	0..1	Identifies a Single Network Slice Selection Assistance Information.
dnn	Dnn	O	0..1	Identifies a Data Network Name.
fields	array(string)	C	1..N	When the NF consumer only retrieves a subset of the resource, the "fields" query parameter shall be included. The "fields" query parameter contains the pointers of the attribute(s) to be retrieved.
supp-feat	SupportedFeatures	O	0..1	Identifies the features supported by the NF service consumer.

When an optional query parameter is not included, the UDR shall return session management policy data per DNN matching the value of the included query parameter(s) for all the possible values of the omitted query parameter. E.g. if "snssai" is not included, and "dnn" is included, UDR shall return the session management policy data per DNN for the DNN identified by "dnn" for all network slices where such DNN is available.

This method shall support the request data structures specified in table 5.2.5.3.1-2 and the response data structures and response codes specified in table 5.2.5.3.1-3.

Table 5.2.5.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.5.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
SmPolicyData	M	1	200 OK	Upon success, a response body containing SmPolicyData shall be returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

NOTE: This release supports that only one PCF can access to the UDR to retrieve the SM Policy Data under one S-NSSAI and DNN association.

5.2.5.3.2 PATCH

This method shall support the URI query parameters specified in table 5.2.5.3.2-1.

Table 5.2.5.3.2-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description

This method shall support the request data structures specified in table 5.2.5.3.2-2 and the response data structures and response codes specified in table 5.2.5.3.2-3.

Table 5.2.5.3.2-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
SmPolicyDataPatch	M	1	When the "SessionManagementPolicyDataPatch" feature is supported, it requests the modification of the session management policy data for a subscriber.

Table 5.2.5.3.2-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Successful case. The resource has been successfully updated and no additional content is to be sent in the response message. (NOTE 2)
SmPolicyData	M	1	200 OK	Upon success, the execution report is returned. (NOTE 2)
NOTE 1: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply. NOTE 2: If all the modification instructions in the PATCH request have been implemented, the UDR shall respond with 204 No Content response; if some of the modification instructions in the PATCH request have been discarded, and the NF service consumer supported the "PatchReport" feature, the UDR shall respond with SmPolicyData.				

5.2.6 Resource: UsageMonitoringInformation

5.2.6.1 Description

The resource represents an individual usage monitoring resource created in the UDR and associated with a ueId and a usageMonId.

5.2.6.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}/sm-data/{usageMonId}**

This resource shall support the resource URI variables defined in table 5.2.6.2-1.

Table 5.2.6.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
ueId	VarUeId	Represents the Subscription Identifier SUPI or GPSI. Data type VarUeId is defined in 3GPP TS 29.571 [7].
usageMonId	limitId	Unique identifier of the individual SM Policy usage monitoring resource. It contains the identity of the corresponding limit as defined in the "limitId" attribute of the UsageMonDataLimit data type (see subclause 5.4.2.6).

5.2.6.3 Resource Standard Methods

5.2.6.3.1 PUT

This method shall support the URI query parameters specified in table 5.2.6.3.1-1.

Table 5.2.6.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.6.3.1-2 and the response data structures and response codes specified in table 5.2.6.3.1-3.

Table 5.2.6.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
UsageMonData	M	1	Create the usage monitoring resource.

Table 5.2.6.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
UsageMonData	M	1	201 Created	Successful case. The resource has been successfully created and a response body is returned containing a representation of the resource.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 5.2.6.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}/sm-data/{usageMonId}

5.2.6.3.2 DELETE

This method shall support the URI query parameters specified in table 5.2.6.3.2-1.

Table 5.2.6.3.2-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.6.3.2-2 and the response data structures and response codes specified in table 5.2.6.3.2-3.

Table 5.2.6.3.2-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.6.3.2-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Successful case. The resource has been successfully deleted.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.6.3.3 GET

This method shall support the URI query parameters specified in table 5.2.6.3.3-1.

Table 5.2.6.3.3-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer.

This method shall support the request data structures specified in table 5.2.6.3.3-2 and the response data structures and response codes specified in table 5.2.6.3.3-3.

Table 5.2.6.3.3-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.6.3.3-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
UsageMonData	M	1	200 OK	Successful case. The usage monitoring data is returned.
n/a			204 No Content	The resource was found but no usage monitoring data is available.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.7 Resource: SponsorConnectivityData

5.2.7.1 Description

The resource represents sponsored data connectivity related information stored in the UDR for a given sponsorId.

5.2.7.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/sponsor-connectivity-data/{sponsorId}**

This resource shall support the resource URI variables defined in table 5.2.7.2-1.

Table 5.2.7.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
sponsorId	string	Represents the sponsor identity.

5.2.7.3 Resource Standard Methods

5.2.7.3.1 GET

This method shall support the URI query parameters specified in table 5.2.7.3.1-1.

Table 5.2.7.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.7.3.1-2 and the response data structures and response codes specified in table 5.2.7.3.1-3.

Table 5.2.7.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.7.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
SponsorConnectivityData	M	1	200 OK	Upon success, a response body containing Sponsor Connectivity Data shall be returned.
n/a			204 No Content	The resource was found but no Sponsor Connectivity Data is available.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.8 Resource: BdtData

5.2.8.1 Description

The resource represents background data transfer data stored in the UDR.

5.2.8.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/bdt-data**

This resource shall support the resource URI variables defined in table 5.2.8.2-1.

Table 5.2.8.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

5.2.8.3 Resource Standard Methods

5.2.8.3.1 GET

This method shall support the URI query parameters specified in table 5.2.8.3.1-1.

Table 5.2.8.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
bdt-ref-ids	array(BdtReferenceId)	O	1..N	If included, this IE shall contain a list of the BDT reference identifiers. Each member of the array is an individual BDT reference identifier.
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer.

This method shall support the request data structures specified in table 5.2.8.3.1-2 and the response data structures and response codes specified in table 5.2.8.3.1-3.

Table 5.2.8.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.8.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(BdtData)	M	0..N	200 OK	Upon success, a response body containing the BDT data shall be returned. Each member of the array is an individual BDT data.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.9 Resource: IndividualBdtData

5.2.9.1 Description

The resource represents individual background data transfer data stored in the UDR for a given "bdtReferenceId".

5.2.9.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/bdt-data/{bdtReferenceId}**

This resource shall support the resource URI variables defined in table 5.2.9.2-1.

Table 5.2.9.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
bdtReferenceId	BdtReferenceId	Represents the transfer policy of background data transfer for provided ASP. Data type BdtReferenceId is defined in 3GPP TS 29.122 [9].

5.2.9.3 Resource Standard Methods

5.2.9.3.1 GET

This method shall support the URI query parameters specified in table 5.2.9.3.1-1.

Table 5.2.9.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer.

This method shall support the request data structures specified in table 5.2.9.3.1-2 and the response data structures and response codes specified in table 5.2.9.3.1-3.

Table 5.2.9.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.9.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
BdtData	M	1	200 OK	Upon success, a response body containing the BDT data shall be returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.9.3.2 PUT

This method shall support the URI query parameters specified in table 5.2.9.3.2-1.

Table 5.2.9.3.2-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.9.3.2-2 and the response data structures and response codes specified in table 5.2.9.3.2-3.

Table 5.2.9.3.2-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
BdtData	M	1	Create the BDT data for a given bdtReferenceId.

Table 5.2.9.3.2-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
BdtData	M	1	201 Created	Successful case. The resource has been successfully created.
ProblemDetails	O	0..1	403 Forbidden	The resource is not allowed to be updated. (NOTE 2)
NOTE 1: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply. NOTE 2: The "cause" attribute within the "ProblemDetails" data structure may be set to "MODIFICATION_NOT_ALLOWED" as defined in table 5.2.7.2-1 of 3GPP TS 29.500 [4].				

Table 5.2.9.3.2-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/policy-data/bdt-data/{bdtReferenceId}

5.2.9.3.3 DELETE

This method shall support the URI query parameters specified in table 5.2.9.3.3-1.

Table 5.2.9.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.9.3.3-2 and the response data structures and response codes specified in table 5.2.9.3.3-3.

Table 5.2.9.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.9.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Successful case. The resource has been successfully deleted.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.9.3.4 PATCH

This method shall support the URI query parameters specified in table 5.2.9.3.4-1.

Table 5.2.9.3.4-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.9.3.4-2 and the response data structures and response codes specified in table 5.2.9.3.4-3.

Table 5.2.9.3.4-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
BdtDataPatch	M	1	Modify the BDT data for a given bdtReferenceId.

Table 5.2.9.3.4-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
BdtData	M	1	200 OK	The resource has been successfully updated and a response body containing BDT data shall be returned.
n/a			204 No Content	Successful case. The resource has been successfully updated and no additional content is to be sent in the response message.
NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.10 Resource: PolicyDataSubscriptions

5.2.10.1 Description

This resource is used to represent subscriptions to notification of policy data modification.

5.2.10.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/subs-to-notify**

This resource shall support the resource URI variables defined in table 5.2.10.2-1.

Table 5.2.10.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

5.2.10.3 Resource Standard Methods

5.2.10.3.1 POST

This method shall support the URI query parameters specified in table 5.2.10.3.1-1.

Table 5.2.10.3.1-1: URI query parameters supported by the POST method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.10.3.1-2 and the response data structures and response codes specified in table 5.2.10.3.1-3.

Table 5.2.10.3.1-2: Data structures supported by the POST Request Body on this resource

Data type	P	Cardinality	Description
PolicyDataSubscription	M	1	Identifies the subscription to notification of policy data modification.

Table 5.2.10.3.1-3: Data structures supported by the POST Response Body on this resource

Data type	P	Cardinality	Response codes	Description
PolicyDataSubscription	M	1	201 Created	Upon success, a response body containing a representation of each Individual subscription resource shall be returned. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the created resource.
NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 5.2.10.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/policy-data/subs-to-notify/{subsId}

5.2.11 Resource: IndividualPolicyDataSubscription

5.2.11.1 Description

This resource is used to represent an individual subscription to notification of policy data modification.

5.2.11.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/subs-to-notify/{subsId}**

This resource shall support the resource URI variables defined in table 5.2.11.2-1.

Table 5.2.11.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
subsId	string	The subsId identifies an individual policy data subscription to notifications. The value is allocated by the UDR during creation of the PolicyDataSubscriptions resource.

5.2.11.3 Resource Standard Methods

5.2.11.3.1 PUT

This method shall support the URI query parameters specified in table 5.2.11.3.1-1.

Table 5.2.11.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.11.3.1-2 and the response data structures and response codes specified in table 5.2.11.3.1-3.

Table 5.2.11.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
PolicyDataSubscription	M	1	Updates the subscription to notification of policy data modification.

Table 5.2.11.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
PolicyDataSubscription	M	1	200 OK	The individual subscription resource was updated successfully.
n/a			204 No Content	The individual subscription resource was updated successfully and no additional content is to be sent in the response message.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.11.3.2 DELETE

This method shall support the URI query parameters specified in table 5.2.11.3.2-1.

Table 5.2.11.3.2-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.11.3.2-2 and the response data structures and response codes specified in table 5.2.11.3.2-3.

Table 5.2.11.3.2-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			The request body shall be empty.

Table 5.2.11.3.2-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon success, an empty response body shall be returned.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.12 Resource: OperatorSpecificData

5.2.12.1 Description

This resource represents the UE's operator specific data.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [5]).

5.2.12.2 Resource Definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}/operator-specific-data**

This resource shall support the resource URI variables defined in table 5.2.12.2-1.

Table 5.2.12.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
ueId	VarUeId	Represents the Subscription Identifier SUPI or GPSI. Data type VarUeId is defined in 3GPP TS 29.571 [7].

5.2.12.3 Resource Standard Methods

5.2.12.3.1 GET

This method is used to retrieve operator specific data from the UDR.

This method shall support the URI query parameters specified in table 5.2.12.3.1-1.

Table 5.2.12.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
fields	array(string)	C	1..N	When the NF consumer only retrieves a subset of the resource, the "fields" query parameter shall be included. The "fields" query parameter contains the pointers of the attribute(s) to be retrieved.
supp-feat	SupportedFeatures	O	0..1	Identifies the features supported by the NF service consumer.

This method shall support the request data structures specified in table 5.2.12.3.1-2 and the response data structures and response codes specified in table 5.2.12.3.1-3.

Table 5.2.12.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.12.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
map(OperatorSpecificDataContainer)	M	0..N	200 OK	Upon success, a response body containing a map shall be returned. The key of the map is an operator specific data element name and the value is the operator specific data of such data element, for the current UE (identified by the {ueId} variable in the resource path). If the resource does not contain any keys, the response consists of an empty JSON object (empty map).
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.12.3.2 PATCH

This method is used to modify operator specific data in the UDR.

This method shall support the URI query parameters specified in table 5.2.12.3.2-1.

Table 5.2.12.3.2-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.12.3.2-2 and the response data structures and response codes specified in table 5.2.12.3.2-3.

Table 5.2.12.3.2-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
array(PatchItem)	M	1..N	Contains the delta data to the operator specific data

Table 5.2.12.3.2-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon successful modification there is no body in the response message.(NOTE 2)
PatchResult	M	1	200 OK	Upon success, the execution report is returned. (NOTE 2)
ProblemDetails	O	0..1	403 Forbidden	The resource is not allowed to be updated. (NOTE 3)

NOTE 1: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.
NOTE 2: If all the modification instructions in the PATCH request have been implemented, the UDR shall respond with 204 No Content response; if some of the modification instructions in the PATCH request have been discarded, and the NF service consumer supported the "PatchReport" feature, the UDR shall respond with PatchResult.
NOTE 3: The "cause" attribute within the "ProblemDetails" data structure may be set to "MODIFICATION_NOT_ALLOWED" as defined in table 5.2.7.2-1 of 3GPP TS 29.500 [4].

5.2.12.3.3 PUT

This method is used to create or modify operator specific data in the UDR.

This method shall support the URI query parameters specified in table 5.2.12.3.3-1.

Table 5.2.12.3.3-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.12.3.3-2 and the response data structures and response codes specified in table 5.2.12.3.3-3.

Table 5.2.12.3.3-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
map(OperatorSpecificDataContainer)	M	1..N	A map containing the new representation of the operator specific data. The key of the map is operator specific data element name and the value is the operator specific data of the UE.

Table 5.2.12.3.3-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
map(OperatorSpecificDataContainer)	M	1	200 OK	Upon successful modification a response body containing a map shall be returned. The key of the map is operator specific data element name and the value is the operator specific data of the UE.
map(OperatorSpecificDataContainer)	M	1	201 Created	If the "OSDResource_Create_Delete" feature is supported and the resource has been successfully created, a response body is returned. The key of the map is operator specific data element name and the value is the operator specific data of the UE.
n/a			204 No Content	The resource has been successfully updated.
ProblemDetails	O	0..1	403 Forbidden	The resource is not allowed to be updated. (NOTE 2)
NOTE 1: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply. NOTE 2: The "cause" attribute within the "ProblemDetails" data structure may be set to "MODIFICATION_NOT_ALLOWED" as defined in table 5.2.7.2-1 of 3GPP TS 29.500 [4].				

Table 5.2.12.3.3-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}/operator-specific-data.

5.2.12.3.4 DELETE

This method shall support the URI query parameters specified in table 5.2.12.3.4-1.

Table 5.2.12.3.4-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.12.3.4-2 and the response data structures and response codes specified in table 5.2.12.3.4-3.

Table 5.2.12.3.4-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.12.3.4-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Successful case, applicable when the "OSDResource_Create_Delete" feature is supported. The resource has been successfully deleted.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.13 Resource: PlmnUePolicySet

5.2.13.1 Description

The resource represents the UE policy set for a given "plmnId" representing an H-PLMN stored in the UDR of a V-PLMN.

5.2.13.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/plmns/{plmnId}/ue-policy-set**

This resource shall support the resource URI variables defined in table 5.2.13.2-1.

Table 5.2.13.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
plmnId	string	Concatenating a Mcc and Mnc as defined in 3GPP TS 29.505 [15].

5.2.13.3 Resource Standard Methods

5.2.13.3.1 GET

This method shall support the URI query parameters specified in table 5.2.13.3.1-1.

Table 5.2.13.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.13.3.1-2 and the response data structures and response codes specified in table 5.2.13.3.1-3.

Table 5.2.13.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.13.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
UePolicySet	M	1	200 OK	Upon success, a response body containing the UE policies shall be returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.14 Resource: PolicyDataForIndividualUe

5.2.14.1 Description

The resource represents all UE related policy data sets in the UDR for a given "ueId".

5.2.14.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/ues/{ueId}**

This resource shall support the resource URI variables defined in table 5.2.14.2-1.

Table 5.2.14.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
ueId	VarUeId	Represents the Subscription Identifier SUPI or GPSI. Data type VarUeId is defined in 3GPP TS 29.571 [7].

5.2.14.3 Resource Standard Methods

5.2.14.3.1 GET

This method shall support the URI query parameters specified in table 5.2.14.3.1-1.

Table 5.2.14.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer, as per clause 6.6 of 3GPP TS 29.500 [4].
data-subset-names	array(PolicyDataSubset)	O	2..N	The policy data subsets (e.g. AM policies, SM policies, etc.) requested by the NF service consumer. If this query parameter is not provided by the NF service consumer, this means that all the available policy data subsets shall be returned.
NOTE: When two or more policy data subsets sets shall be retrieved, it is recommended to use a single GET request with query parameters.				

This method shall support the request data structures specified in table 5.2.14.3.1-2 and the response data structures and response codes specified in table 5.2.14.3.1-3.

Table 5.2.14.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.14.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
PolicyDataForIndividualUE	M	1	200 OK	Upon success, a response body containing the policy data subsets requested by the NF service consumer or all the policy data subsets shall be returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.15 Resource: SlicePolicyControlData

5.2.15.1 Description

The resource represents the network slice specific policy control subscription data stored in the UDR for a given S-NSSAI.

5.2.15.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/policy-data/slice-control-data/{snssai}**

This resource shall support the resource URI variables defined in table 5.2.15.2-1.

Table 5.2.15.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
snssai	Snssai	The S-NSSAI value used in the last segment of the resource URI is encoded as a string as defined in 3GPP TS 29.571 [7], subclause 5.4.4.2.

5.2.15.3 Resource Standard Methods

5.2.15.3.1 GET

This method shall support the URI query parameters specified in table 5.2.15.3.1-1.

Table 5.2.15.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer.

This method shall support the request data structures specified in table 5.2.15.3.1-2 and the response data structures and response codes specified in table 5.2.15.3.1-3.

Table 5.2.15.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.15.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
SlicePolicyData	M	1	200 OK	Upon success, a response body containing network slice specific policy control data shall be returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.2.15.3.2 PATCH

This method shall support the URI query parameters specified in table 5.2.15.3.2-1.

Table 5.2.15.3.2-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description

This method shall support the request data structures specified in table 5.2.15.3.2-2 and the response data structures and response codes specified in table 5.2.15.3.2-3.

Table 5.2.15.3.2-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
SlicePolicyDataPatch	M	1	Modify a network slice specific policy control data resource for a given S-NSSAI.

Table 5.2.15.3.2-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
SlicePolicyData	M	1	200 OK	The resource has been successfully updated and a response body containing network slice specific policy control data shall be returned.
n/a			204 No Content	The resource has been successfully updated and no additional content is to be sent in the response message.
NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.3 Notifications

5.3.1 General

Notifications shall comply with subclause 6.2 of 3GPP TS 29.500 [4] and subclause 4.6.2.3 of 3GPP TS 29.501 [5].

This subclause describes the resources to provide notification to NF service consumers which have subscribed to be notified when policy data is changed.

Table 5.3.1-1: Notifications overview

Notification	Callback URI	HTTP method or custom operation	Description (service operation)
Policy Data Change Notification	{notificationUri}	POST	Used for policy data change notification

5.3.2 Policy Data Change Notification

The POST method shall be used for policy data change notification and the URI shall be provided during the subscription procedure.

Callback URI: **{notificationUri}**

This method shall support the URI query parameters specified in table 5.3.2-1.

Table 5.3.2-1: URI query parameters supported by the POST method

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.3.2-2 and the response data structures and response codes specified in table 5.3.2-3.

Table 5.3.2-2: Data structures supported by the POST Request Body

Data type	P	Cardinality	Description
array(PolicyDataChangeNotification)	M	1..N	Notification of policy data changes.

Table 5.3.2-3: Data structures supported by the POST Response Body

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The reception of the notification is acknowledged.
NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

5.4 Data Model

5.4.1 General

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

Table 5.4.1-1 specifies the data types defined for the Nudr_DataRepository for Policy Data service based interface protocol.

Table 5.4.1-1: Nudr_DataRepository specific Data Types for Policy Data

Data type	Section defined	Description	Applicability
AmPolicyData	5.4.2.2	Contains the AM policy data for a given subscriber.	
BdtData	5.4.2.9	Contains the background data transfer data.	
BdtDataPatch	5.4.2.27	Contains the modifiable background data transfer data	
BdtPolicyStatus	5.4.3.5	Contains the validation status for a negotiated BDT policy.	
DnnRouteSelectionDescriptor	5.4.2.20	Contains the route selector parameters per DNN.	
UpdatedItem	5.4.2.26	An updated resource fragment, represented by its location in a resource and its data type.	ConditionalSubscriptionwithPartialNotification
LimitIdToMonitoringKey	5.4.2.16	Contains the limit identifier and the corresponding monitoring key for a given S-NSSAI and DNN.	
NotificationItem	5.4.2.25	Contains the list of resource fragments included in the notification triggered by the modification of a given resource fragment.	ConditionalSubscriptionwithPartialNotification
OsId	5.4.3.2	Operating System supported by the UE.	
Periodicity	5.4.3.4	Indicates a type of time period.	
PlmnRouteSelectionDescriptor	5.4.2.18	Contains the route selectors for a serving PLMN.	
PolicyDataChangeNotification	5.4.2.11	Contains changed policy data for which notification was requested.	
PolicyDataForIndividualUe	5.4.2.28	Contains policy data sets for a given subscriber.	
PolicyDataSubscription	5.4.2.10	Identifies a subscription to policy data change notification.	
PolicyDataSubset	5.4.3.6	Indicates a policy data subset (e.g. AM policy data, SM policy data).	
SlicePolicyData	5.4.2.29	Contains network slice specific policy control information for an S-NSSAI.	
SlicePolicyDataPatch	5.4.2.30	Contains modifiable network slice specific policy control information for an S-NSSAI.	
SmPolicyData	5.4.2.5	Contains SM policy data for a subscriber.	
SmPolicyDataPatch	5.4.2.21	Contains modifiable SM policy data for a subscriber.	SessionManagementPolicyDataPatch
SmPolicyDnnData	5.4.2.15	Contains SM policy data for a DNN and S-NSSAI.	
SmPolicyDnnDataPatch	5.4.2.23	Contains modifiable SM policy data for a DNN and S-NSSAI.	SessionManagementPolicyDataPatch
SmPolicySnssaiData	5.4.2.14	Contains SM policy data for an S-NSSAI.	
SmPolicySnssaiDataPatch	5.4.2.22	Contains modifiable SM policy data for an S-NSSAI.	SessionManagementPolicyDataPatch
SnssaiRouteSelectionDescriptor	5.4.2.19	Contains the route selector parameters per SNSSAI.	
SponsorConnectivityData	5.4.2.8	Contains the sponsored data connectivity related information for a sponsor identifier.	
ResourceItem	5.4.2.24	Represents list of fragments of a resource, i.e. a list of subsets of resource data monitored for notification of data changes.	ConditionalSubscriptionwithPartialNotification
ItemPath	5.4.3.2	Represents a fragment of a resource, i.e. a subset of resource data.	ConditionalSubscriptionwithPartialNotification
TimePeriod	5.4.2.12	Contains the periodicity for the defined usage monitoring data limits.	
UePolicySetPatch	5.4.2.17	Contains the UE policy data that can be modified by the PCF.	
UePolicySection	5.4.2.3	Contains the UE policy section.	
UePolicySet	5.4.2.4	Contains the UE policy set for a given subscriber.	
UsageMonLevel	5.4.3.3	Indicates the level of the usage monitoring instance (PDU Session level or per Service)	

UsageMonData	5.4.2.7	Contains remain allowed usage data for a subscriber.	
UsageMonDataLimit	5.4.2.6	Contains usage monitoring control data for a subscriber.	
UsageMonDataScope	5.4.2.13	Contains SNSSAI and DNN combinations to which the UsageMonData instance belongs to.	

Table 5.4.1-2 specifies data types re-used by the Nudr_DataRepository for Policy Data service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nudr_DataRepository for Policy Data service based interface.

Table 5.4.1-2: Nudr_DataRepository re-used Data Types for Policy Data

Data type	Reference	Comments	Applicability
BdtReferenceId	3GPP TS 29.122 [9]	Indicates the background data transfer reference ID for the transfer policy.	
BdtReferenceIdRm	3GPP TS 29.122 [9]	This data type is defined in the same way as the "BdtReferenceId" data type, but with the "nullable: true" property.	EnhancedBackgroundDataTransfer
BitRate	3GPP TS 29.571 [7]	String representing a bit rate that shall be formatted as follows: pattern: "^\d+(\.\d+)?(bps|Kbps|Mbps|Gbps|Tbps)$" Examples: "125 Mbps", "0.125 Gbps", "125000 Kbps".	
Bytes	3GPP TS 29.571 [7]	String with format "byte" as defined in OpenAPI Specification [3], i.e., base64-encoded characters.	
ChargingInformation	3GPP TS 29.512 [12]	The address(es), and if available, the instance ID and the set ID of the Charging Function.	
DateTime	3GPP TS 29.571 [7]	String with format "date-time" as defined in OpenAPI Specification [3].	
Dnn	3GPP TS 29.571 [7]	Data Network Name.	
NetworkAreaInfo	3GPP TS 29.554 [13]	Represents a network area information.	
OperatorSpecificDataContainer	3GPP TS 29.505 [15]	Container for operator specific data	
PatchResult	3GPP TS 29.571 [7]		
PatchItem	3GPP TS 29.571 [7]	Data structure used for JSON patch.	
PduSessionType	3GPP TS 29.571 [7]	PDU Session Type.	
Pei	3GPP TS 29.571 [7]	Personal Equipment Identifier.	
PlmnId	3GPP TS 29.571 [7]	PLMN Identity.	
PresenceInfo	3GPP TS 29.571 [7]	Presence Reporting Area Information.	
ProblemDetails	3GPP TS 29.571 [7]	Used in error responses to provide more detailed information about an error.	
SliceMbr	3GPP TS 29.571 [7]	Contains the slice Maximum Bit Rate including UL and DL.	NSAC
Snssai	3GPP TS 29.571 [7]	Identifies the S-NSSAI.	
SscMode	3GPP TS 29.571 [7]	SSC mode.	
SupportedFeatures	3GPP TS 29.571 [7]	Used to negotiate the applicability of the optional features	
TrafficDescriptor	3GPP TS 29.122 [9]	Identifies the traffic descriptor of the background data.	
TransferPolicy	3GPP TS 29.554 [13]	Represents a transfer policy.	
Uinteger	3GPP TS 29.571 [7]	Unsigned Integer, i.e. only value 0 and integers greater than 0 are allowed.	
Uri	3GPP TS 29.571 [7]	String providing an URI.	
UsageThreshold	3GPP TS 29.122 [9]	Usage Thresholds (a data volume expected to be transferred per UE and/or time duration in seconds).	
VarUeId	3GPP TS 29.571 [7]	String represents the SUPI or GPSI.	

5.4.2 Structured data types

5.4.2.1 Introduction

This subclause defines the structures to be used in resource representations.

5.4.2.2 Type AmPolicyData

Table 5.4.2.2-1: Definition of type AmPolicyData

Attribute name	Data type	P	Cardinality	Description
praInfos	map(PresenceInfo)	O	1..N	Presence reporting area information. Each PresenceInfo element shall include the Presence Reporting Area Identifier within the "praId" attribute and, for a UE-dedicated presence reporting area, may also include the list of elements composing the presence reporting area. A "praId" may indicate a Presence Reporting Area Set. The "praId" attribute within the PresenceInfo data type shall also be the key of the map. The attribute "presenceState" shall not be present.
subscCats	array(string)	O	1..N	List of categories associated with the subscriber

5.4.2.3 Type UePolicySection

Table 5.4.2.3-1: Definition of type UePolicySection

Attribute name	Data type	P	Cardinality	Description
uePolicySectionInfo	Bytes	M	1	Contains the UE Policy Section Information for the given UPSI as specified in subclause D.6.2 of 3GPP TS 24.501 [11].
upsi	string	M	1	Identifier for UE Policy Section. The format is represented in 3GPP TS 24.501 [11] subclause D.6.2.

5.4.2.4 Type UePolicySet

Table 5.4.2.4-1: Definition of type UePolicySet

Attribute name	Data type	P	Cardinality	Description
praInfos	map(PresenceInfo)	O	1..N	Presence reporting area information. Each PresenceInfo element shall include the Presence Reporting Area Identifier within the "praId" attribute and, for a UE-dedicated presence reporting area, may also include the list of elements composing the presence reporting area. A "praId" may indicate a Presence Reporting Area Set. The "praId" attribute within the PresenceInfo data type shall also be the key of the map. The attribute "presenceState" shall not be present.
subscCats	array(string)	O	1..N	List of categories associated with the subscriber
uePolicySections	map(UePolicySection)	O	1..N	Contains the UE Policy Sections. The UPSI (UE Policy Section Identifier) is used as the key in the map.
upsis	array(string)	O	1..N	List of identifiers for the "uePolicySections". The format of the UPSI is represented in 3GPP TS 24.501 [11] subclause D.6.2
allowedRouteSelDescs	map(PlmnRouteSelectionDescriptor)	O	1..N	Contains allowed route selection descriptors per serving PLMN for a UE. The serving PLMN identifier is the key of the map.
andspInd	boolean	O	0..1	Indication of UE supporting ANDSP. True: The UE supports ANDSP; False: The UE does not support ANDSP.
pei	Pei	O	0..1	Personal Equipment Identifier.
osIds	array(OsId)	O	1..N	Identification of the UE Operating System(s).
suppFeat	SupportedFeatures	C	0..1	This IE represents a list of Supported features used as described in subclause 5.6. This attribute shall be provided in the PUT request and in the response of successful resource creation, and in the HTTP GET response if the "supp-feat" attribute query parameter is included in the HTTP GET request. (NOTE).
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: In the HTTP request, it represents the set of features supported by the NF service consumer. In the HTTP response, it represents the set of features supported by both the NF service consumer and the UDR.				

5.4.2.5 Type SmPolicyData

Table 5.4.2.5-1: Definition of type SmPolicyData

Attribute name	Data type	P	Cardinality	Description	Applicability
smPolicySnssaiData	map(SmPolicySnssaiData)	M	1..N	Session Management Policy data per S-NSSAI for all the SNSSAIs of the subscriber. The key of the map is the S-NSSAI. (NOTE 2)	
umDataLimits	map(UsageMonDataLimit)	O	1..N	Contains a list of usage monitoring profiles associated with the subscriber. The limit identifier is used as the key of the map.	
umData	map(UsageMonData)	O	1..N	Contains the remaining allowed usage data associated with the subscriber. The limit identifier is used as the key in the map.	
suppFeat	SupportedFeatures	C	0..1	Indicates the list of negotiated supported features. This parameter 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 Session Management Policy Data.	
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: In this Release of the specification the "limitId" corresponds to the Monitoring Key.
NOTE 2: The S-NSSAI value used as key of the map is encoded as a string as defined in 3GPP TS 29.571[7], subclause 5.4.4.2.

5.4.2.6 Type UsageMonDataLimit

Table 5.4.2.6-1: Definition of type UsageMonDataLimit

Attribute name	Data type	P	Cardinality	Description
limitId	string	M	1	Identifies the limit, i.e. the usage monitoring control instance
scopes	map(UsageMonDataScope)	O	1..N	Identifies the SNSSAI and DNN combinations to which the usage monitoring data limit applies. The S-NSSAI is the key of the map. (NOTE 2) If the "scopes" attribute is omitted, the limit applies to every S-NSSAI and DNN.
umLevel	UsageMonLevel	O	0..1	Indicates the level of the usage monitoring instance (PDU Session level or per Service).
startDate	DateTime	C	0..1	Start date and time when the usage monitoring instance applies. It shall be provided when the resetPeriod attribute is provided.
endDate	DateTime	O	0..1	End date and time when the usage monitoring instance applies.
usageLimit	UsageThreshold	O	0..1	Maximum allowed traffic volume/time usage for a usage monitoring instance. If a resetPeriod is specified, this limit applies to every period separately and not for the entire time between the start and end dates. So for example, if the resetPeriod is daily, the usageLimit is applicable for each day until the end date is specified.
resetPeriod	TimePeriod	O	0..1	Time period to reset the remaining allowed usage for a periodic usage monitoring instance (postpaid subscriptions). This attribute along with the startDate determine the actual absolute time at which usage needs to be reset.

NOTE 1: In this Release of the specification the "limitId" attribute is the Monitoring Key, and the "scopes" attribute shall always be present including one distinct SNSSAI and DNN pair.
NOTE 2: The S-NSSAI value used as key of the map is encoded as a string as defined in 3GPP TS 29.571[7], subclause 5.4.4.2.

5.4.2.7 Type UsageMonData

Table 5.4.2.7-1: Definition of type UsageMonData

Attribute name	Data type	P	Cardinality	Description	Applicability
limitId	string	M	1	Identifies the limit as defined in the "limitId" attribute of the UsageMonDataLimit data type (see subclause 5.4.2.6).	
scopes	map(UsageMonDataScope)	O	1..N	Identifies the SNSSAI and DNN combinations to which the remaining usage monitoring data applies. The S-NSSAI is the key of the map. (NOTE 3)	
umLevel	UsageMonLevel	O	0..1	Indicates the level of the usage monitoring instance (PDU Session level or per Service).	
allowedUsage	UsageThreshold	O	0..1	Remaining allowed traffic volume usage and/or resource time usage.	
resetTime	DateTime	O	0..1	Time to reset the allowed usage back to the usageLimit of the corresponding UsageMonDataLimit. This is computed based on the corresponding startDate, resetPeriod and endDate of the corresponding UsageMonDataLimit. The allowedUsage is only applicable if the resetTime is in the future relative to the current time.	
suppFeat	SupportedFeatures	C	0..1	This IE represents a list of Supported features used as described in subclause 5.6. This attribute shall be provided in the PUT request and in the response of successful resource creation, and in the HTTP GET response if the "supp-feat" attribute query parameter is included in the HTTP GET request. (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: In this Release of the specification the "limitId" attribute is the Monitoring Key, and the "scopes" attribute shall always be present including one distinct SNSSAI and DNN pair.
NOTE 2: In the HTTP request, it represents the set of features supported by the NF service consumer. In the HTTP response, it represents the set of features supported by both the NF service consumer and the UDR.
NOTE 3: The S-NSSAI value used as key of the map is encoded as a string as defined in 3GPP TS 29.571 [7], subclause 5.4.4.2.

5.4.2.8 Type SponsorConnectivityData

Table 5.4.2.8-1: Definition of type SponsorConnectivityData

Attribute name	Data type	P	Cardinality	Description
aspIds	array(string)	M	1..N	Identifies a list of Application Service Provider Identifiers associated with the sponsor identity.

5.4.2.9 Type BdtData

Table 5.4.2.9-1: Definition of type BdtData

Attribute name	Data type	P	Cardinality	Description
aspId	string	M	1	This IE contains an identity of an application service provider.
transPolicy	TransferPolicy	M	1	This IE contains the transfer policy.
bdtRefId	BdtReferenceId	O	0..1	This IE indicates the background data transfer reference ID for the transfer policy.
nwAreaInfo	NetworkAreaInfo	O	0..1	This IE represents a network area information.
numOfUes	Uinteger	O	0..1	This IE contains the number of UEs using the indicated transfer policy. It shall be present when available.
volPerUe	UsageThreshold	O	0..1	This IE contains a data volume expected to be transferred per UE for the indicated transfer policy. It shall be present when available.
dnn	Dnn	O	0..1	This IE identifies a DNN.
snssai	Snssai	O	0..1	This IE identifies a slice.
trafficDes	TrafficDescriptor	O	0..1	Contains the traffic descriptor of the background data.
bdtpStatus	BdtPolicyStatus	O	0..1	Contains the validation status for a negotiated BDT policy. It shall be included when available. Default value is "VALID" if omitted.
suppFeat	SupportedFeatures	C	0..1	This IE represents a list of Supported features used as described in subclause 5.6. This attribute shall be provided in the PUT request and in the response of successful resource creation, and in the HTTP GET response if the "supp-feat" attribute query parameter is included in the HTTP GET request. (NOTE).
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: In the HTTP request, it represents the set of features supported by the NF service consumer. In the HTTP response, it represents the set of features supported by both the NF service consumer and the UDR.				

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 " feature is supported.	ConditionalSubscriptionwithPartialNotification
monitoredResourceUris	array(Uri)	M	1..N	A set of URIs that identify the resources as defined in table 5.2.2-1 for which a modification triggers a notification. (NOTE)	
monResItems	array(ResourceItem)	O	1..N	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.	ConditionalSubscriptionwithPartialNotification
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.	
NOTE: Neither the resource URI of the IndividualPolicyDataSubscription resource nor the resource URI of the PolicyDataSubscriptions resource shall be included in the "monitoredResourceUris" attribute.					

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.	
uePolicySet	UePolicySet	O	0..1	UE Policy Set, if changed and notification was requested.	
plmnUePolicySet	UePolicySet	O	0..1	PLMN UE Policy Set, if changed and notification was requested.	
smPolicyData	SmPolicyData	O	0..1	Session Management Policy Data, if changed and notification was requested.	
usageMonData	UsageMonData	O	0..1	Usage Monitoring Data, if changed and notification was requested.	
sponsorConnectivityData	SponsorConnectivityData	O	0..1	Sponsor data connectivity profile information, if changed and notification was requested.	
bdtData	BdtData	O	0..1	Background Data Transfer Data, if changed and notification was requested.	
opSpecData	OperatorSpecificDataContainer	O	0..1	Operator Specific Data, if changed and notification 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. 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 resources, as defined in table 5.2.2-1, if removed from UDR and notification on resource data change was requested. (NOTE 2)	ResourceRemovalNotificationPolicyData
notifId	string	C	0..1	Notification Correlation ID assigned by the NF service consumer. It shall be included when the "ConditionalSubscriptionwithPartialNotification" feature is supported.	ConditionalSubscriptionwithPartialNotification

reportedFragments	array(NotificationItem)	O	1..N	This attribute contains the resource fragments indicated in the "monResItems" attribute of the PolicyDataSubscription data type.	ConditionalSubscriptionwithPartialNotification
slicePolicyData	SlicePolicyData	O	0..1	Network slice specific policy control data for an S-NSSAI, if changed and notification 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.	
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" 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.					

5.4.2.12 Type TimePeriod

Table 5.4.2.12-1: Definition of type TimePeriod

Attribute name	Data type	P	Cardinality	Description	Applicability
period	Periodicity	M	1	Indicates whether the periodicity is "YEARLY", "MONTHLY", "WEEKLY", "DAILY" or "HOURLY".	
maxNumPeriod	Uinteger	O	0..1	Indicates the maximum number of periods after which the usage monitoring instance does not apply. If omitted, there is no limit in the number of periods.	

5.4.2.13 Type UsageMonDataScope

Table 5.4.2.13-1: Definition of type UsageMonDataScope

Attribute name	Data type	P	Cardinality	Description	Applicability
snssai	Snssai	M	1	Represents the SNSSAI.	
dnn	array(Dnn)	O	1..N	Represents the Dnn. If omitted, the usage monitoring scope applies to all the DNNs.	
NOTE: In this Release of the specification the "dnn" attribute shall always be present with one and only one entry.					

5.4.2.14 Type SmPolicySnssaiData

Table 5.4.2.14-1: Definition of type SmPolicySnssaiData

Attribute name	Data type	P	Cardinality	Description	Applicability
snssai	Snssai	M	1	S-NSSAI associated with the data.	
smPolicyDnnData	map(SmPolicyDnnData)	O	1..N	Session Management Policy data per DNN for all the DNNs of the indicated S-NSSAI. The key of the map is the DNN.	
ueSliceMbr	SliceMbr	O	0..1	Subscribed UE-Slice-MBR for the indicated S-NSSAI.	NSAC

5.4.2.15 Type SmPolicyDnnData

Table 5.4.2.15-1: Definition of type SmPolicyDnnData

Attribute name	Data type	P	Cardinality	Description	Applicability
dnn	Dnn	M	1	DNN associated with the data	
allowedServices	array(string)	O	1..N	List of subscriber's allowed service identifiers	
subscCats	array(string)	O	1..N	List of categories associated with the subscriber	
gbrUl	BitRate	O	0..1	Maximum aggregate UL bitrate that can be provided across all GBR QoS Flows in the DNN	
gbrDl	BitRate	O	0..1	Maximum aggregate DL bitrate that can be provided across all GBR QoS Flows in the DNN	
adcSupport	boolean	O	0..1	Indicates whether application detection and control is enabled for the PDU session. True: Application detection and control is enabled for the PDU session; False: Application detection and control is not enabled for the PDU session. The absence of this attribute means that ADC support is not provisioned for the UE and PDU session.	
subscSpendingLimits	boolean	O	0..1	Indicates whether the PCF must enforce policies based on subscriber spending limits. True: Spending limit control is enabled; False: Spending limit control is not enabled. The absence of this attribute means that spending limit control is not provisioned for the UE and PDU session.	
ipv4Index	IpIndex	O	0..1	Information that identifies which IP pool or external server is used to allocate the IPv4 address.	
ipv6Index	IpIndex	O	0..1	Information that identifies which IP pool or external server is used to allocate the IPv6 address.	
offline	boolean	O	0..1	Indicates whether the offline charging is applicable to the PDU session. True: Offline charging is applicable to the PDU session; False: Offline charging is not applicable to the PDU session. The absence of this attribute means that the charging method is not provisioned for the UE and PDU session.	
online	boolean	O	0..1	Indicates whether the online charging is applicable to the PDU session. True: Online charging is applicable to the PDU session; False: Online charging is not applicable to the PDU session. The absence of this attribute means that the charging method is not provisioned for the UE and PDU session.	
chfInfo	ChargingInformation	O	0..1	The address(es) and, if available, the CHF instance ID and the CHF set ID of the Charging Function. (NOTE)	
refUmdLimitIds	map(LimitIdToMonitoringKey)	O	1..N	A reference to the "UsageMonitoringDataLimit" or "UsageMonitoringData" instances for this DNN and SNSSAI that may also include the related monitoring key(s). The key of the map is the limit identifier.	
mpsPriority	boolean	O	0..1	True: Indicates subscription to the MPS priority service; priority applies to all traffic on the PDU Session. False: MPS priority service is not subscribed. The absence of this attribute means that MPS priority is not provisioned for the UE and PDU session.	

mcsPriority	boolean	O	0..1	True: Indicates subscription to the MCS priority service; priority applies to all traffic on the PDU Session. False: IMS signalling priority service is not subscribed. The absence of this attribute means that IMS signalling priority is not provisioned for the UE and PDU session.	
imsSignallingPrio	boolean	O	0..1	True: Indicates subscription to the IMS signalling priority service; priority only applies to IMS signalling traffic. False: IMS signalling priority service is not subscribed. The absence of this attribute means that IMS signalling priority is not provisioned for the UE and PDU session.	
mpsPriorityLevel	integer	O	0..1	Relative priority level for the multimedia priority services	
mcsPriorityLevel	integer	O	0..1	Relative priority level for the mission critical services	
praInfos	map(PresenceInfo)	O	1..N	Presence reporting area information. Each PresenceInfo element shall include the Presence Reporting Area Identifier within the "praId" attribute and, for a UE-dedicated presence reporting area, may also include the list of elements composing the presence reporting area. A "praId" may indicate a Presence Reporting Area Set. The "praId" attribute within the PresenceInfo data type shall also be the key of the map. The attribute "presenceState" shall not be present.	
bdtRefIds	map(BdtReferenceIdRm)	O	1..N	Identifies transfer policies of background data transfer. Any string value can be used as a key of the map.	EnhancedBackgroundDataTransfer
locRoutNotAllowed	boolean	O	0..1	Identifies whether AF influence on traffic routing is allowed or not. True: if no local routing is allowed; False: local routing is allowed. The absence of this attribute means that AF influence on traffic routing is not provisioned for the UE and PDU session.	
NOTE: When the feature "CHFsetSupport" is supported, the "secondaryChfAddress" may be omitted (see 3GPP TS 29.512 [12], subclause 4.2.2.3.1).					

5.4.2.16 Type LimitIdToMonitoringKey

Table 5.4.2.16-1: Definition of type LimitIdToMonitoringKey

Attribute name	Data type	P	Cardinality	Description	Applicability
limitId	string	M	1	Limit Identifier.	
monKeys	array(string)	O	1..N	Monitoring Keys.	
NOTE: In this Release of the specification there is only one Monitoring Key per Limit Identifier					

5.4.2.17 Type UePolicySetPatch

Table 5.4.2.17-1: Definiton of type UePolicySetPatch

Attribute name	Data type	P	Cardinality	Description
uePolicySections	map(UePolicySection)	O	1..N	Contains the UE Policy Sections. The UPSI (UE Policy Section Identifier) is used as the key in the map.
upsis	array(string)	O	1..N	List of identifiers for the "uePolicySections". The format of the UPSI is represented in 3GPP TS 24.501 [11] subclause D.6.2.
andspInd	boolean	O	0..1	Indication of UE supporting ANDSP.
pei	Pei	O	0..1	Personal Equipment Identifier.
osIds	array(OsId)	O	1..N	Identification of the UE Operating System(s).

5.4.2.18 Type PlmnRouteSelectionDescriptor

Table 5.4.2.18-1: Definition of type PlmnRouteSelectionDescriptor

Attribute name	Data type	P	Cardinality	Description
servingPlmn	PlmnId	M	1	Identity of the serving PLMN.
snssaiRouteSelDescs	array(SnssaiRouteSelectionDescriptor)	O	1..N	Contains the route selection descriptor parameters (DNNs, PDU session types, SSC modes and the ATSSS information) per SNSSAI.

5.4.2.19 Type SnssaiRouteSelectionDescriptor

Table 5.4.2.19-1: Definition of type SnssaiRouteSelectionDescriptor

Attribute name	Data type	P	Cardinality	Description
snssai	Snssai	M	1	SNSSAI.
dnnRouteSelDescs	array(DnnRouteSelectionDescriptor)	O	1..N	Contains the route selection descriptor parameters (PDU session types, SSC modes and the ATSSS information) per DNN.

5.4.2.20 Type DnnRouteSelectionDescriptor

Table 5.4.2.20-1: Definition of type DnnRouteSelectionDescriptor

Attribute name	Data type	P	Cardinality	Description
dnn	Dnn	M	1	DNN.
sscModes	array(SscMode)	O	1..N	Contains the allowed SSC modes for the traffic to this DNN.
pduSessTypes	array(PduSessionType)	O	1..N	Contains the allowed PDU Session types for the traffic to this DNN.
atsssInfo	boolean	O	0..1	Indicates whether MA PDU session establishment is allowed for this DNN. True: MA PDU session establishment is allowed for this DNN. False: MA PDU session establishment is not allowed for this DNN. The absence of this attribute means that the ATSSS information is not provisioned for the UE and PDU session.

5.4.2.21 Type SmPolicyDataPatch

Table 5.4.2.21-1: Definition of type SmPolicyDataPatch

Attribute name	Data type	P	Cardinality	Description	Applicability
umData	map(UsageMonData)	O	1..N	Contains the remaining allowed usage data associated with the subscriber. The value of the limit identifier is used as the key in the map.	
smPolicySnssaiData	map(SmPolicySnssaiDataPatch)	O	1..N	Modifiable Session Management Policy data per S-NSSAI for all the SNSSAIs of the subscriber. The key of the map is the S-NSSAI. (NOTE 2)	
NOTE 1: In this Release of the specification the "limitId" corresponds to the Monitoring Key. NOTE 2: The S-NSSAI value used as key of the map is encoded as a string as defined in 3GPP TS 29.571[7], subclause 5.4.4.2.					

5.4.2.22 Type SmPolicySnssaiDataPatch

Table 5.4.2.22-1: Definition of type SmPolicySnssaiDataPatch

Attribute name	Data type	P	Cardinality	Description	Applicability
snssai	Snssai	M	1	S-NSSAI associated with the data.	
smPolicyDnnData	map(SmPolicyDnnDataPatch)	O	1..N	Modifiable Session Management Policy data per DNN for all the DNNs of the indicated S-NSSAI. The key of the map is the DNN.	

5.4.2.23 Type SmPolicyDnnDataPatch

Table 5.4.2.23-1: Definition of type SmPolicyDnnDataPatch

Attribute name	Data type	P	Cardinality	Description	Applicability
dnn	Dnn	M	1	DNN associated with the data	
bdtRefIds	map(BdtReferenceIdRm)	O	1..N	Updated transfer policies of background data transfer. Any string value can be used as a key of the map.	EnhancedBackgroundDataTransfer

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 URI that identifies the monitored resource as defined in table 5.2.2-1. (NOTE)	
items	array(ItemPath)	M	1..N	Represents fragments of the resource identified by the "monResource" attribute, i.e. a subset of resource data, for which a modification triggers a notification.	
NOTE: 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.					

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.	
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.	

5.4.2.26 Type UpdatedItem

Table 5.4.2.26-1: Definition of type UpdatedItem

Attribute name	Data type	P	Cardinality	Description	Applicability
item	ItemPath	M	1	This IE contains a JSON pointer value (as defined in IETF RFC 6901 [20]) that references a target location within the resource that identifies the resource fragment.	
value	Any type	M	1	This IE indicates the value of the resource fragment located at the target location within the resource specified in the "fragmentPath" attribute. The data type of this attribute shall be the same as the type of the attribute or element located in the path. The null value shall be allowed.	

5.4.2.27 Type BdtDataPatch

Table 5.4.2.27-1: Definition of type BdtDataPatch

Attribute name	Data type	P	Cardinality	Description
bdtpStatus	BdtPolicyStatus	O	0..1	Contains the validation status for a negotiated BDT policy. It shall be included when the BDT policy is re-negotiated.
transPolicy	TransferPolicy	O	0..1	This IE contains the transfer policy.

5.4.2.28 Type PolicyDataForIndividualUe

Table 5.4.2.28-1: Definition of type PolicyDataForIndividualUe

Attribute name	Data type	P	Cardinality	Description	Applicability
uePolicyDataSet	UePolicySet	O	0..1	The IE contains UE policies.	
smPolicyDataSet	SmPolicyData	O	0..1	The IE contains SM policies.	
amPolicyDataSet	AmPolicyData	O	0..1	The IE contains AM policies.	
umData	map(UsageMonData)	C	1..N	The IE contains UM policies. The value of the limit identifier is used as the key of the map. (NOTE)	
operatorSpecificDataSet	map(OperatorSpecificDataContainer)	O	1..N	The IE contains operator specific data. The key of the map is operator specific data element name and the value is the operator specific data of the UE.	
NOTE: The "umData" attribute shall be absent when the smPolicyDataSet attribute is present and includes the "umData" attribute.					

5.4.2.29 Type SlicePolicyData

Table 5.4.2.29-1: Definition of type SlicePolicyData

Attribute name	Data type	P	Cardinality	Description	Applicability
mbrUl	BitRate	O	0..1	Maximum aggregate ULdata rate that can be provided across all GBR and Non-GBR QoS Flows in the S-NSSAI. (NOTE 1)	
mbrDl	BitRate	O	0..1	Maximum aggregate DL data rate that can be provided across all GBR and Non-GBR QoS Flows in the S-NSSAI. (NOTE 1)	
remainMbrUl	BitRate	O	0..1	The remaining maximum aggregate UL data rate that can be provided across all GBR and Non-GBR QoS Flows in the S-NSSAI. (NOTE 2) It is set to the maximum allowed aggregate UL data rate across all GBR and Non-GBR QoS Flows in the S-NSSAI when the system is initially configured based on operator policies.	
remainMbrDl	BitRate	O	0..1	The remaining maximum aggregate DL data rate that can be provided across all GBR and Non-GBR QoS Flows in the S-NSSAI. (NOTE 2) It is set to the maximum allowed aggregate DL data rate across all GBR and Non-GBR QoS Flows in the S-NSSAI when the system is initially configured based on operator policies.	
suppFeat	SupportedFeatures	C	0..1	Indicates the list of negotiated supported features. It shall be provided in the HTTP GET response if the "supp-feat" attribute query parameter is included in the HTTP GET request.	
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: The "mbrUl" and "mbrDl" attributes are only used for limiting data rate per network slice with assistance of the NWDAF. NOTE 2: The "remainMbrUl" and "remainMbrDl" attributes are only used for limiting data rate per network slice with PCF based monitoring.					

5.4.2.30 Type SlicePolicyDataPatch

Table 5.4.2.30-1: Definition of type SlicePolicyDataPatch

Attribute name	Data type	P	Cardinality	Description	Applicability
remainMbrUl	BitRate	O	0..1	The remaining maximum aggregate UL bitrate that can be provided across all GBR and Non-GBR QoS Flows in the S-NSSAI.	
remainMbrDl	BitRate	O	0..1	The remaining maximum aggregate DL bitrate that can be provided across all GBR and Non-GBR QoS Flows in the S-NSSAI.	
NOTE: At least one of the attributes shall be included.					

5.4.3 Simple data types and enumerations

5.4.3.1 Introduction

This subclause defines simple data types and enumerations that can be referenced from data structures defined in the previous subclauses.

5.4.3.2 Simple data types

The simple data types defined in table 5.4.3.2-1 shall be supported.

Table 5.4.3.2-1: Simple data types

Type Name	Type Definition	Description	Applicability
IpIndex	integer	Information that identifies which IP pool or external server is used to allocate the IP address.	
ItemPath	string	It contains one JSON pointer value (as defined in IETF RFC 6901 [20]) that references a target location within the resource represented in the "monResource" attribute and "notifiedItems" attribute. E.g. "/smPolicySnssaiData/<snssai>" represents the subscription to data changes in the SmPolicyData data document, in particular to the element of the "smPolicySnssaiData" map whose key is identified by the <snssai> value. E.g. 2 "/smPolicySnssaiData/<snssai>/smPolicyDnnData/<dnn>" represents the subscription to data changes in the SmPolicyData data document, in particular to the element of the "smPolicySnssaiData" map whose key is identified by the <snssai> value and, within this one, to the element of the "smPolicyDnnData" map whose key is identified by the <dnn> value. (NOTE)	ConditionalSubscriptionwithPartialNotification
OsId	string	Operating System of the served UE. It contains a Universally Unique IDentifier (UUID) as specified in IETF RFC 4122 [17]. The format of the OS Id is represented in 3GPP TS 24.501 [11].	
NOTE: The S-NSSAI value used as key of the map is encoded as a string as defined in 3GPP TS 29.571[7], subclause 5.4.4.2.			

5.4.3.3 Enumeration: UsageMonLevel

The enumeration represents the usage monitoring level. It shall comply with the provisions defined in table 5.4.3.3-1.

Table 5.4.3.3-1: Enumeration UsageMonLevel

Enumeration value	Description
SESSION_LEVEL	The usage monitoring is applicable for PDU session level.
SERVICE_LEVEL	The usage monitoring is applicable for service level.

5.4.3.4 Enumeration: Periodicity

The enumeration represents the time period. It shall comply with the provisions defined in table 5.4.3.4-1.

Table 5.4.3.4-1: Enumeration Periodicity

Enumeration value	Description
YEARLY	Time period is yearly
MONTHLY	Time period is monthly
WEEKLY	Time period is weekly
DAILY	Time period is daily
HOURLY	Time period is hourly

5.4.3.5 Enumeration: BdtPolicyStatus

The enumeration represents the validation status of the BDT policy. It shall comply with the provisions defined in table 5.4.3.5-1.

Table 5.4.3.5-1: Enumeration BdtPolicyStatus

Enumeration value	Description
INVALID	This value is used to indicate that the BDT policy is invalid while the BDT policy re-negotiation is ongoing because the network performance has degraded.
VALID	This value is used to indicate that the BDT policy is valid.

5.4.3.6 Enumeration: PolicyDataSubset

This enumeration contains the policy data subsets (e.g. AM policy data, SM policy data, etc.). It shall comply with the provisions of table 5.4.3.6-1.

Table 5.4.3.6-1: Enumeration PolicyDataSubset

Enumeration value	Description
AM_POLICY_DATA	AM policy data.
SM_POLICY_DATA	SM policy data.
UE_POLICY_DATA	UE policy data.
UM_DATA	Usage Monitoring data.
OPERATOR_SPECIFIC_DATA	Operator specific data.

5.5 Error handling

5.5.1 General

For the Nudr_DataRepository service API for Policy Data, HTTP error responses shall be supported as specified in subclause 4.8 of 3GPP TS 29.501 [5]. Protocol errors and application errors specified in table 5.2.7.2-1 of 3GPP TS 29.500 [4] shall be supported for an HTTP method if the corresponding HTTP status codes are specified as mandatory for that HTTP method in table 5.2.7.1-1 of 3GPP TS 29.500 [4].

In addition, the requirements in the following subclauses are applicable for the Nudr_DataRepository service API for Policy Data.

5.5.2 Protocol Errors

No specific procedures for the Nudr_DataRepository service API for Policy Data are specified.

5.5.3 Application Errors

The application errors defined for the Nudr_DataRepository service API for Policy Data are listed in table 5.5.3-1.

Table 5.5.3-1: Application errors

Application Error	HTTP status code	Description
NOTE: Including a "ProblemDetails" data structure with the "cause" attribute in the HTTP response is optional unless explicitly mandated by other subclauses in this document.		

The application error handling shall follow 3GPP TS 29.504 [6] subclause 6.1.6 unless explicitly specified in this document.

5.6 Feature negotiation

The optional features in table 6.1.8-1 of 3GPP TS 29.504 [6] are defined for the Nudr_DataRepository API. They shall be negotiated using the extensibility mechanism defined in subclause 6.6 of 3GPP TS 29.500 [4].

6 Usage of Nudr_DataRepository Service API for Application Data

6.1 Introduction

The following subclauses specify the usage of Nudr_DataRepository service for application data. The principles specified in 3GPP TS 29.504 [6] are followed unless explicitly specified otherwise in the following subclauses.

6.2 Resources

6.2.1 Overview

This clause specifies the resources for the usage of the Unified Data Repository service for Application Data.

6.2.2 Resource Structure

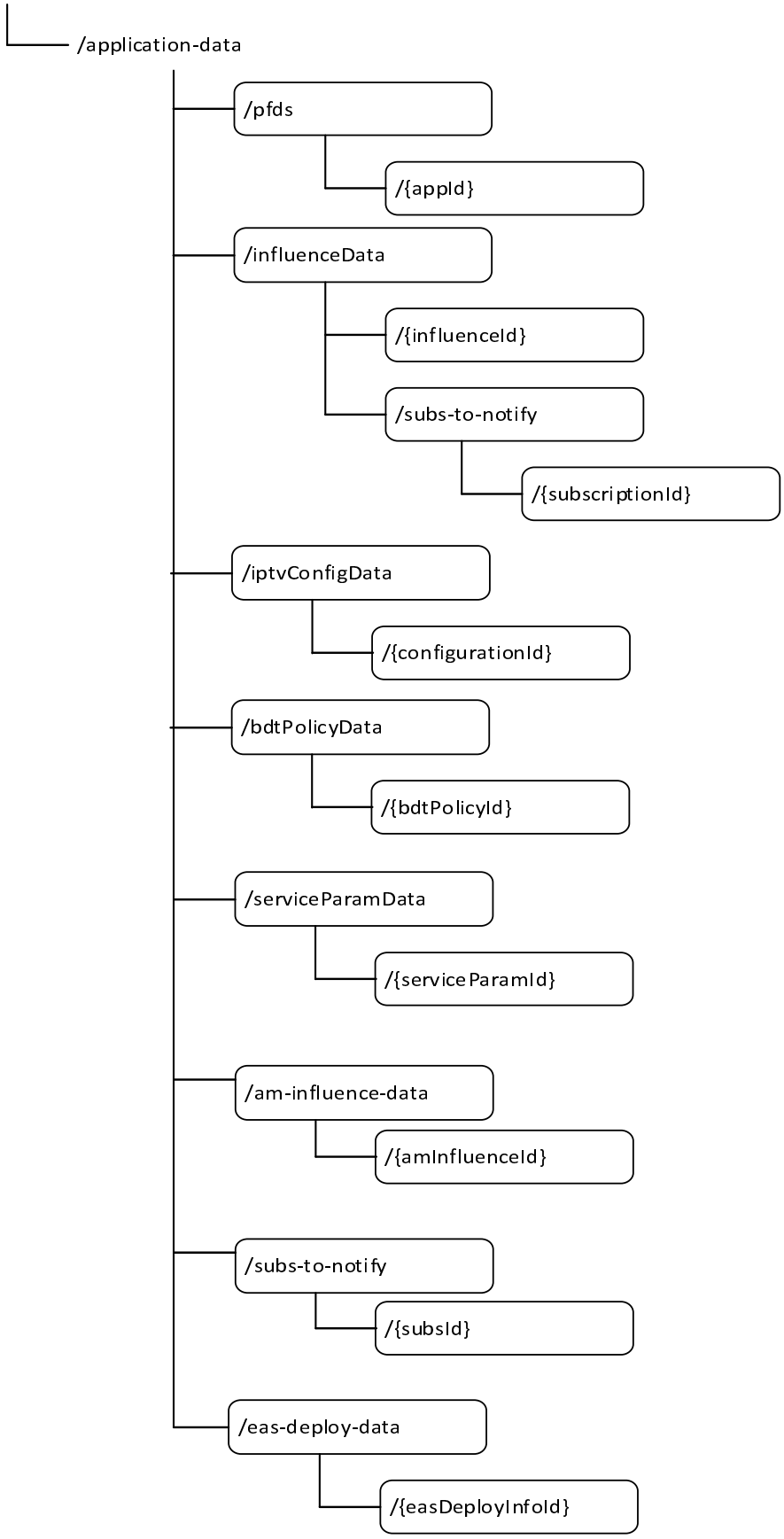
/application-data
/pfds
/{appId}
/influenceData
/{influenceId}
/subs-to-notify
/{subscriptionId}
/iptvConfigData
/{configurationId}
/bdtPolicyData
/{bdtPolicyId}
/serviceParamData
/{serviceParamId}
/am-influence-data
/{amInfluenceId}
/subs-to-notify
/{subsId}
/eas-deploy-data
/{easDeployInfoId}

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	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 Identifiers 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 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.
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.
		POST	Create a new Individual EAS Deployment Information Data resource.
Individual EAS Deployment Information Data	/application-data/eas-deploy-data/{easDeployInfoId}	GET	Read an existing individual EAS Deployment Data identified by {easDeployInfoId}.
		PUT	Update an individual EAS Deployment Data resource identified by {easDeployInfoId}.
		DELETE	Delete an individual EAS Deployment Data resource identified by {easDeployInfoId}.
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.			

6.2.3 Resource: PFD Data

6.2.3.1 Description

The PFD Data resource represents all the PFD Datas to the Nudr_DataRepository Service at a given UDR.

6.2.3.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/pfds**

Table 6.2.3.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.3.3 Resource Standard Methods

6.2.3.3.1 GET

This method shall support the URI query parameters specified in table 6.2.3.3.1-1.

Table 6.2.3.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
appId	array(ApplicationId)	O	1..N	Contains the information of the application identifier(s) for the querying PFD Data resource. If none appId is included in the URI, it applies to all application identifier(s) for the querying PFD Data resource.
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer.

This method shall support the request data structures specified in table 6.2.3.3.1-2 and the response data structures and response codes specified in table 6.2.3.3.1-3.

Table 6.2.3.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.3.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(PfdDataForAppExt)	M	0..N	200 OK	A representation of PFDs for request applications is returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.4 Resource: Individual PFD Data

6.2.4.1 Description

The Individual PFD Data resource represents Individual PFD Datas to the Nudr_DataRepository Service at a given UDR.

6.2.4.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/pfds/{appId}**

This resource shall support the resource URI variables defined in table 6.2.4.2-1.

Table 6.2.4.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
appId	ApplicationId	Indicates the application identifier for the request pfd(s). Data type ApplicationId is defined in 3GPP TS 29.571 [7].

6.2.4.3 Resource Standard Methods

6.2.4.3.1 GET

This method shall support the URI query parameters specified in table 6.2.4.3.1-1.

Table 6.2.4.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer.

This method shall support the request data structures specified in table 6.2.4.3.1-2 and the response data structures and response codes specified in table 6.2.4.3.1-3.

Table 6.2.4.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.4.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
PfdDataForAppExt	M	1	200 OK	A representation of PFDs for the request application identified by the application identifier is returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.4.3.2 DELETE

This method shall support the URI query parameters specified in table 6.2.4.3.2-1.

Table 6.2.4.3.2-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.4.3.2-2 and the response data structures and response codes specified in table 6.2.4.3.2-3.

Table 6.2.4.3.2-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.4.3.2-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No content	Successful case. The Individual PFD Data resource related to the application identifier was deleted.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.4.3.3 PUT

This method shall support the URI query parameters specified in table 6.2.4.3.3-1.

Table 6.2.4.3.3-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.4.3.3-2 and the response data structures and response codes specified in table 6.2.4.3.3-3.

Table 6.2.4.3.3-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
PfdDataForAppExt	M	1	Contains the information for the creation or modification of an individual PFD Data resource.

Table 6.2.4.3.3-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
PfdDataForAppExt	M	1	201 Created	The resource has been successfully created and a response body is returned containing a representation of the resource.
PfdDataForAppExt	M	1	200 OK	The resource has been successfully updated and a response body is returned containing a representation of the resource.
n/a			204 No Content	The resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.4.3.3-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/pfds/{appId}

6.2.5 Resource: Influence Data

6.2.5.1 Description

The Influence Data resource represents a Traffic Influence Data to the Nudr_DataRepository Service at a given UDR.

6.2.5.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/influenceData**

This resource shall support the resource URI variables defined in table 6.2.5.2-1.

Table 6.2.5.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.5.3 Resource Standard Methods

6.2.5.3.1 GET

This method shall support the URI query parameters specified in table 6.2.5.3.1-1.

Table 6.2.5.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
influence-Ids	array(string)	O	1..N	Each element identifies a service.
dnns	array(Dnn)	O	1..N	Each element identifies a DNN.
snssais	array(Snssai)	O	1..N	Each element identifies a slice.
internal-Group-Ids	array(GroupId)	O	1..N	Each element identifies a group of users.
supis	array(Supi)	O	1..N	Each element identifies a user.
supp-feat	SupportedFeatures	O	0..1	Identifies the features supported by the NF service consumer.
NOTE: At least one of the "influence-Ids", "dnns", "snssais", "internal-Groups-Ids" or "supis" attributes shall be provided.				

This method shall support the request data structures specified in table 6.2.5.3.1-2 and the response data structures and response codes specified in table 6.2.5.3.1-3.

Table 6.2.5.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.5.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(TrafficInfluData)	M	0..N	200 OK	The Traffic Influence Data stored in the UDR are returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.6 Resource: Individual Influence Data

6.2.6.1 Description

The Individual Influence Data resource represents an Individual Traffic Influence Data to the Nudr_DataRepository Service at a given UDR.

6.2.6.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/influenceData/{influenceId}**

This resource shall support the resource URI variables defined in table 6.2.6.2-1.

Table 6.2.6.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
influenceId	string	The Identifier of an Individual Influence Data to be updated. To enable the value to be used as part of a URI, the string shall only contain allowed characters according to the "lower-with-hyphen" naming convention defined in subclause 5.1.3 of 3GPP TS 29.501 [5].

6.2.6.3 Resource Standard Methods

6.2.6.3.1 PUT

This method shall support the URI query parameters specified in table 6.2.6.3.1-1.

Table 6.2.6.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.6.3.1-2 and the response data structures and response codes specified in table 6.2.6.3.1-3.

Table 6.2.6.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
TrafficInfluData	M	1	The Traffic Influence Data to be stored in the UDR.

Table 6.2.6.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
TrafficInfluData	M	1	201 Created	The resource has been successfully created and a response body is returned containing a representation of the resource.
TrafficInfluData	M	1	200 OK	The resource has been successfully updated and a response body is returned containing a representation of the resource.
n/a			204 No Content	The resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.6.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/influenceData/{influenceId}

6.2.6.3.2 PATCH

This method shall support the URI query parameters specified in table 6.2.6.3.2-1.

Table 6.2.6.3.2-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.6.3.2-2 and the response data structures and response codes specified in table 6.2.6.3.2-3.

Table 6.2.6.3.2-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
TrafficInfluDataPatch	M	1	The Traffic Influence Data to be updated in the UDR.

Table 6.2.6.3.2-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
TrafficInfluData	M	1	200 OK	The update of an Individual Traffic Influence Data resource is confirmed and a response body containing Traffic Influence Data shall be returned.
n/a			204 No Content	The Individual Traffic Influence Data resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.6.3.3 DELETE

This method shall support the URI query parameters specified in table 6.2.6.3.3-1.

Table 6.2.6.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.6.3.3-2 and the response data structures and response codes specified in table 6.2.6.3.3-3.

Table 6.2.6.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.6.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The Individual Influence Data was deleted successfully.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.7 Resource: Influence Data Subscription

6.2.7.1 Description

The Influence Data Subscription resource represents all Influence Data subscriptions to the Nudr_DataRepository Service at a given UDR.

6.2.7.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/influenceData/subs-to-notify**

This resource shall support the resource URI variables defined in table 6.2.7.2-1.

Table 6.2.7.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.7.3 Resource Standard Methods

6.2.7.3.1 POST

This method shall support the URI query parameters specified in table 6.2.7.3.1-1.

Table 6.2.7.3.1-1: URI query parameters supported by the POST method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.7.3.1-2 and the response data structures and response codes specified in table 6.2.7.3.1-3.

Table 6.2.7.3.1-2: Data structures supported by the POST Request Body on this resource

Data type	P	Cardinality	Description
TrafficInfluSub	M	1	Parameters to register a subscription to Traffic Influence Data.

Table 6.2.7.3.1-3: Data structures supported by the POST Response Body on this resource

Data type	P	Cardinality	Response codes	Description
TrafficInfluSub	M	1	201 Created	The subscription was created successfully.
NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.7.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/influenceData/subs-to-notify/{subscriptionId}

6.2.7.3.2 GET

This method shall support the URI query parameters specified in table 6.2.7.3.2-1.

Table 6.2.7.3.2-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
dnn	Dnn	O	0..1	Identifies a DNN.
snssai	Snssai	O	0..1	Identifies a slice.
internal-Group-Id	GroupId	O	0..1	Identifies a group of users.(NOTE 2)
supi	Supi	O	0..1	Identifies a user.
NOTE 1: At least one of the above attribute shall be provided. NOTE 2: For the Traffic Influence Data applies to any UE, the "internal-Group-Id" sets to "AnyUE".				

This method shall support the request data structures specified in table 6.2.7.3.2-2 and the response data structures and response codes specified in table 6.2.7.3.2-3.

Table 6.2.7.3.2-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.7.3.2-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(TrafficInfluSub)	M	0..N	200 OK	The subscription information as request in the request URI query parameter(s) are returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.8 Resource: Individual Influence Data Subscription

6.2.8.1 Description

The Individual Influence Data Subscription resource represents a single Influence Data subscription to the Nudr_DataRepository Service at a given UDR.

6.2.8.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/influenceData/subs-to-notify/{subscriptionId}**

This resource shall support the resource URI variables defined in table 6.2.8.2-1.

Table 6.2.8.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
subscriptionId	string	Identifies an Individual Influence Data Subscription resource. To enable the value to be used as part of a URI, the string shall only contain allowed characters according to the "lower-with-hyphen" naming convention defined in subclause 5.1.3 of 3GPP TS 29.501 [5].

6.2.8.3 Resource Standard Methods

6.2.8.3.1 GET

This method shall support the URI query parameters specified in table 6.2.8.3.1-1.

Table 6.2.8.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.8.3.1-2 and the response data structures and response codes specified in table 6.2.8.3.1-3.

Table 6.2.8.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.8.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
TrafficInfluSub	M	1	200 OK	The subscription information is returned.

6.2.8.3.2 PUT

This method shall support the URI query parameters specified in table 6.2.8.3.2-1.

Table 6.2.8.3.2-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.8.3.2-2 and the response data structures and response codes specified in table 6.2.8.3.2-3.

Table 6.2.8.3.2-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
TrafficInfluSub	M	1	Modify an existing subscription to Traffic Influence Data.

Table 6.2.8.3.2-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
TrafficInfluSub	M	1	200 OK	The subscription was updated successfully.
n/a			204 No Content	The subscription has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.8.3.3 DELETE

This method shall support the URI query parameters specified in table 6.2.8.3.3-1.

Table 6.2.8.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.8.3.3-2 and the response data structures and response codes specified in table 6.2.8.3.3-3.

Table 6.2.8.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.8.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The subscription was terminated successfully.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.9 Resource: Applied BDT Policy Data

6.2.9.1 Description

The Applied BDT Policy Data resource represents an applied BDT Policy Data to the Nudr_DataRepository Service at a given UDR.

6.2.9.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/bdtPolicyData**

This resource shall support the resource URI variables defined in table 6.2.9.2-1.

Table 6.2.9.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.9.3 Resource Standard Methods

6.2.9.3.1 GET

This method shall support the URI query parameters specified in table 6.2.9.3.1-1.

Table 6.2.9.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
bdt-policy-ids	array(string)	O	1..N	Each element identifies a service.
internal-group-ids	array(GroupId)	O	1..N	Each element identifies a group of users.
supis	array(Supi)	O	1..N	Each element identifies a user.

This method shall support the request data structures specified in table 6.2.9.3.1-2 and the response data structures and response codes specified in table 6.2.9.3.1-3.

Table 6.2.9.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.9.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(BdtPolicyData)	M	0..N	200 OK	The applied BDT Policy Data stored in the UDR are returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.10 Resource: Individual Applied BDT Policy Data

6.2.10.1 Description

The Individual Applied BDT Policy Data resource represents an Individual Applied BDT Policy Data to the Nudr_DataRepository Service at a given UDR.

6.2.10.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/bdtPolicyData/{bdtPolicyId}**

This resource shall support the resource URI variables defined in table 6.2.10.2-1.

Table 6.2.10.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
bdtPolicyId	string	The Identifier of an Individual BDT Policy Data to be updated. To enable the value to be used as part of a URI, the string shall only contain allowed characters according to the "lower-with-hyphen" naming convention defined in subclause 5.1.3 of 3GPP TS 29.501 [5].

6.2.10.3 Resource Standard Methods

6.2.10.3.1 PUT

This method shall support the URI query parameters specified in table 6.2.10.3.1-1.

Table 6.2.10.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.10.3.1-2 and the response data structures and response codes specified in table 6.2.10.3.1-3.

Table 6.2.10.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
BdtPolicyData	M	1	The applied BDT Policy Data to be stored in the UDR.

Table 6.2.10.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
BdtPolicyData	M	1	201 Created	The resource has been successfully created and a response body is returned containing a representation of the resource.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.10.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/bdtPolicyData/{bdtPolicyId}

6.2.10.3.2 PATCH

This method shall support the URI query parameters specified in table 6.2.10.3.2-1.

Table 6.2.10.3.2-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.10.3.2-2 and the response data structures and response codes specified in table 6.2.10.3.2-3.

Table 6.2.10.3.2-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
BdtPolicyDataPatch	M	1	The applied BDT Policy Data to be updated in the UDR.

Table 6.2.10.3.2-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
BdtPolicyData	M	1	200 OK	The update of an applied BDT Policy Data resource is confirmed and a response body containing applied BDT Policy Data shall be returned.
n/a			204 No Content	The update of an applied BDT Policy Data resource is confirmed.
NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.10.3.3 DELETE

This method shall support the URI query parameters specified in table 6.2.10.3.3-1.

Table 6.2.10.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.10.3.3-2 and the response data structures and response codes specified in table 6.2.10.3.3-3.

Table 6.2.10.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.10.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The Individual Applied BDT Policy Data was deleted successfully.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.11 Resource: IPTV Configurations

6.2.11.1 Description

This resource allows the NF service consumer to read all active IPTV Configurations applicable for given configuration identifier(s), DNN(s) and/or S-NSSAI(s), SUPI(s) or Internal Group Identifier(s) stored at the UDR.

6.2.11.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/iptvConfigData**

This resource shall support the resource URI variables defined in table 6.2.11.2-1.

Table 6.2.11.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.11.3 Resource Standard Methods

6.2.11.3.1 GET

This method shall support the URI query parameters specified in table 6.2.11.3.1-1.

Table 6.2.11.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
config-ids	array(string)	O	1..N	Each element identifies a configuration.
dnns	array(Dnn)	O	1..N	Each element identifies a DNN.
snssais	array(Snssai)	O	1..N	Each element identifies a slice.
supis	array(Supi)	O	1..N	Each element identifies a SUPI.
inter-group-ids	array(GroupId)	O	1..N	Each element identifies a group of users.
NOTE: At least one of the above attributes shall be provided.				

This method shall support the request data structures specified in table 6.2.11.3.1-2 and the response data structures and response codes specified in table 6.2.11.3.1-3.

Table 6.2.11.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.11.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(IptvConfigData)	M	0..N	200 OK	The IPTV configuration data stored in the UDR are returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.12 Resource: Individual IPTV Configuration

6.2.12.1 Description

The resource allows the NF sevice consumer to create an Individual IPTV configuration Data, modify or delete an existing Individual IPTV configuration Data.

6.2.12.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/iptvConfigData/{configurationId}**

This resource shall support the resource URI variables defined in table 6.2.12.2-1.

Table 6.2.12.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
configurationId	string	The Identifier of an Individual IPTV Configuration to be updated. To enable the value to be used as part of a URI, the string shall only contain allowed characters according to the "lower-with-hyphen" naming convention defined in subclause 5.1.3 of 3GPP TS 29.501 [5].

6.2.12.3 Resource Standard Methods

6.2.12.3.1 PUT

This method shall support the URI query parameters specified in table 6.2.12.3.1-1.

Table 6.2.12.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.12.3.1-2 and the response data structures and response codes specified in table 6.2.12.3.1-3.

Table 6.2.12.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
IptvConfigData	M	1	The IPTV configuration data to be stored in the UDR.

Table 6.2.12.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
IptvConfigData	M	1	201 Created	The resource has been successfully created and a response body is returned containing a representation of the resource.
IptvConfigData	M	1	200 OK	The resource has been successfully updated and a response body is returned containing a representation of the resource.
n/a			204 No Content	The resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.12.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/iptvConfigData/{configurationId}

6.2.12.3.2 DELETE

This method shall support the URI query parameters specified in table 6.2.12.3.2-1.

Table 6.2.12.3.2-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.12.3.2-2 and the response data structures and response codes specified in table 6.2.12.3.2-3.

Table 6.2.12.3.2-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.12.3.2-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The resource was deleted successfully.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.12.3.3 PATCH

This method shall support the URI query parameters specified in table 6.2.12.3.3-1.

Table 6.2.12.3.3-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.12.3.3-2 and the response data structures and response codes specified in table 6.2.12.3.3-3.

Table 6.2.12.3.3-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
IptvConfigDataPatch	M	1	The IPTV configuration related data to be updated in the UDR.

Table 6.2.12.3.3-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
IptvConfigData	M	1	200 OK	The resource has been successfully updated.
n/a			204 No Content	The resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.13 Resource: ApplicationDataSubscriptions

6.2.13.1 Description

This resource is used to represent subscriptions to notification of application data modification, e.g. PFD data change, IPTV configuration data change, BDT policy data change, but not for Traffic Influence Data.

6.2.13.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/subs-to-notify**

This resource shall support the resource URI variables defined in table 6.2.13.2-1.

Table 6.2.13.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.13.3 Resource Standard Methods

6.2.13.3.1 POST

This method shall support the URI query parameters specified in table 6.2.13.3.1-1.

Table 6.2.13.3.1-1: URI query parameters supported by the POST method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.13.3.1-2 and the response data structures and response codes specified in table 6.2.13.3.1-3.

Table 6.2.13.3.1-2: Data structures supported by the POST Request Body on this resource

Data type	P	Cardinality	Description
ApplicationDataSubs	M	1	Identifies the subscription to notification of application data modification.

Table 6.2.13.3.1-3: Data structures supported by the POST Response Body on this resource

Data type	P	Cardinality	Response codes	Description
ApplicationDataSubs	M	1	201 Created	Upon success, a response body containing a representation of each Individual subscription resource shall be returned. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the created resource.
NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.13.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/subs-to-notify/{subsId}

6.2.13.3.2 GET

This method shall support the URI query parameters specified in table 6.2.13.3.2-1.

Table 6.2.13.3.2-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
data-filter	DataFilter	O	0..1	Indicate the data filter (e.g. dnn) for the query.

This method shall support the request data structures specified in table 6.2.13.3.2-2 and the response data structures and response codes specified in table 6.2.13.3.2-3.

Table 6.2.13.3.2-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.13.3.2-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(ApplicationDataSubs)	M	0..N	200 OK	The subscription information as request in the request URI query parameter(s) are returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.14 Resource: IndividualApplicationDataSubscription

6.2.14.1 Description

This resource is used to represent an individual subscription to notification of application data modification.

6.2.14.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/subs-to-notify/{subsId}**

This resource shall support the resource URI variables defined in table 6.2.14.2-1.

Table 6.2.14.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
subsId	string	The subsId identifies an individual application data subscription to notifications. The value is allocated by the UDR during creation of the ApplicationDataSubscriptions resource.

6.2.14.3 Resource Standard Methods

6.2.14.3.1 PUT

This method shall support the URI query parameters specified in table 6.2.14.3.1-1.

Table 6.2.14.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.14.3.1-2 and the response data structures and response codes specified in table 6.2.14.3.1-3.

Table 6.2.14.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
ApplicationDataSubs	M	1	Updates the subscription to notification of application data modification.

Table 6.2.14.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
ApplicationDataSubs	M	1	200 OK	The individual subscription resource was updated successfully.
n/a			204 No Content	The individual subscription resource was updated successfully and no additional content is to be sent in the response message.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.14.3.2 DELETE

This method shall support the URI query parameters specified in table 6.2.14.3.2-1.

Table 6.2.14.3.2-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.14.3.2-2 and the response data structures and response codes specified in table 6.2.14.3.2-3.

Table 6.2.14.3.2-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			The request body shall be empty.

Table 6.2.14.3.2-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon success, an empty response body shall be returned.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.14.3.3 GET

This method shall support the URI query parameters specified in table 6.2.14.3.3-1.

Table 6.2.14.3.3-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.14.3.3-2 and the response data structures and response codes specified in table 6.2.14.3.3-3.

Table 6.2.14.3.3-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.14.3.3-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
ApplicationDataSubs	M	1	200 OK	The subscription information is returned.

6.2.15 Resource: Service Parameter Data

6.2.15.1 Description

The Service Parameter Data resource represents a Service Parameter Data to the Nudr_DataRepository Service at a given UDR.

6.2.15.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/serviceParamData**

This resource shall support the resource URI variables defined in table 6.2.15.2-1.

Table 6.2.15.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.15.3 Resource Standard Methods

6.2.15.3.1 GET

This method shall support the URI query parameters specified in table 6.2.15.3.1-1.

Table 6.2.15.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
service-param-ids	array(string)	O	1..N	Each element identifies a service.
dnns	array(Dnn)	O	1..N	Each element identifies a DNN.
snssais	array(Snssai)	O	1..N	Each element identifies a slice.
internal-group-ids	array(GroupId)	O	1..N	Each element identifies a group of users.
supis	array(Supi)	O	1..N	Each element identifies a user.
ue-ipv4s	array(Ipv4Addr)	O	1..N	Each element identifies a user.
ue-ipv6s	array(Ipv6Addr)	O	1..N	Each element identifies a user.
ue-macs	array(MacAddr48)	O	1..N	Each element identifies a user.
any-ue	boolean	O	0..1	Indicates whether the request is for any UE. (NOTE 2)
supp-feat	SupportedFeatures	O	0..1	Identifies the features supported by the NF service consumer.
NOTE 1: At least one of the "service-param-ids", "dnns", "snssais", "internal-groups-ids", "supis", "any_ue", "ue-ipv4s", "ue-ipv6s" or "ue-macs" attributes shall be provided. NOTE 2: When the "any-ue" query parameter is present, the value "true" or "false" may be omitted. The absence of the value of the "any-ue" query parameter means value "true".				

NOTE: The "any-ue" query parameter is commonly related to the search of the service parameter data resource(s) that relate to any UE using the service identified by a combination of DNN and S-NSSAI, and thus, it is commonly present together with the "dnns" and "snssais" query parameters. Note that, if the "any-ue" query parameter is present together with the "internal-groups-ids", "supis", "ue-ipv4s", "ue-ipv6s" and/or "ue-macs" query parameters the search will not match any resource, since according to subsclause 6.4.2.15 only one of the the "supi", "anyUeInd", "interGroupId", "ueIpv4", "ueIpv6" or "ueMac" properties are simultaneously present in the resource.

This method shall support the request data structures specified in table 6.2.15.3.1-2 and the response data structures and response codes specified in table 6.2.15.3.1-3.

Table 6.2.15.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.15.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(ServiceParameterData)	M	0..N	200 OK	The Service Parameter Data stored in the UDR are returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.16 Resource: Individual Service Parameter Data

6.2.16.1 Description

The Individual Service Parameter Data resource represents an Individual Service Parameter Data to the Nudr_DataRepository Service at a given UDR.

6.2.16.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/serviceParamData/{serviceParamId}**

This resource shall support the resource URI variables defined in table 6.2.16.2-1.

Table 6.2.16.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
serviceParamId	string	The Identifier of an Individual Service Parameter Data to be updated. To enable the value to be used as part of a URI, the string shall only contain allowed characters according to the "lower-with-hyphen" naming convention defined in subclause 5.1.3 of 3GPP TS 29.501 [5].

6.2.16.3 Resource Standard Methods

6.2.16.3.1 PUT

This method shall support the URI query parameters specified in table 6.2.16.3.1-1.

Table 6.2.16.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.16.3.1-2 and the response data structures and response codes specified in table 6.2.16.3.1-3.

Table 6.2.16.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
ServiceParameterData	M	1	The Service Parameter Data to be stored in the UDR.

Table 6.2.16.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
ServiceParameterData	M	1	201 Created	The resource has been successfully created and a response body is returned containing a representation of the resource.
ServiceParameterData	M	1	200 OK	The resource has been successfully updated and a response body is returned containing a representation of the resource.
n/a			204 No Content	The resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.16.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/serviceParamData/{serviceParamId}

6.2.16.3.2 PATCH

This method shall support the URI query parameters specified in table 6.2.16.3.2-1.

Table 6.2.16.3.2-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.6.3.2-2 and the response data structures and response codes specified in table 6.2.6.3.2-3.

Table 6.2.16.3.2-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
ServiceParameterDataPatch	M	1	The Service Parameter Data to be updated in the UDR.

Table 6.2.16.3.2-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
ServiceParameterData	M	1	200 OK	The update of an Individual Service Parameter Data resource is confirmed and a response body containing Service Parameter Data shall be returned.
n/a			204 No Content	The Individual Service Parameter Data resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.16.3.3 DELETE

This method shall support the URI query parameters specified in table 6.2.16.3.3-1.

Table 6.2.16.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.16.3.3-2 and the response data structures and response codes specified in table 6.2.16.3.3-3.

Table 6.2.16.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.16.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The Individual Service Parameter Data was deleted successfully.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.17 Resource: AM Influence Data

6.2.17.1 Description

The AM Influence Data resource represents an AM Influence Data to the Nudr_DataRepository Service at a given UDR.

6.2.17.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/am-influence-data**

This resource shall support the resource URI variables defined in table 6.2.17.2-1.

Table 6.2.17.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.17.3 Resource Standard Methods

6.2.17.3.1 GET

This method shall support the URI query parameters specified in table 6.2.17.3.1-1.

Table 6.2.17.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
am-influence-ids	array(string)	O	1..N	Each element identifies a service.
dnns	array(Dnn)	O	1..N	Each element identifies a DNN.
snssais	array(Snssai)	O	1..N	Each element identifies a slice.
internal-group-ids	array(GroupId)	O	1..N	Each element identifies a group of users.
supis	array(Supi)	O	1..N	Each element identifies a user.
any-ue	boolean	O	0..1	Indicates whether the request is for any UE. (NOTE 2)
supp-feat	SupportedFeatures	O	0..1	Identifies the features supported by the NF service consumer.
NOTE 1: At least one of the "am-influence-ids", "dnns", "snssais", "internal-groups-ids" or "supis" attributes shall be provided. NOTE 2: When the "any-ue" query parameter is present, the value "true" or "false" may be omitted. The absence of the value of the "any-ue" query parameter means value "true".				

NOTE: The "any-ue" query parameter is commonly related to the search of the AM influence data resource(s) that relate to any UE using the service(s) identified by a combination of DNN and S-NSSAI, and thus, it is commonly present together with the "dnns" and "snssais" query parameters. Note also that, if the "any-ue" query parameter is present together with the "internal-groups-ids", and/or "supis" query parameters the search will not match any resource, since according to subsclause 6.4.2.16 only one of the the "supi", "anyUeInd" and "interGroupId" properties are simultaneously present in the resource.

This method shall support the request data structures specified in table 6.2.17.3.1-2 and the response data structures and response codes specified in table 6.2.17.3.1-3.

Table 6.2.17.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.17.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(AmInfluData)	M	0..N	200 OK	The AM Influence Data stored in the UDR are returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.18 Resource: Individual AM Influence Data

6.2.18.1 Description

The Individual AM Influence Data resource represents an Individual AM Influence Data to the Nudr_DataRepository Service at a given UDR.

6.2.18.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/am-influence-data/{amInfluenceId}**

This resource shall support the resource URI variables defined in table 6.2.18.2-1.

Table 6.2.18.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
amInfluenceId	string	The identifier of an Individual AM Influence Data to be updated. To enable the value to be used as part of a URI, the string shall only contain allowed characters according to the "lower-with-hyphen" naming convention defined in subclause 5.1.3 of 3GPP TS 29.501 [5].

6.2.18.3 Resource Standard Methods

6.2.18.3.1 PUT

This method shall support the URI query parameters specified in table 6.2.18.3.1-1.

Table 6.2.18.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.18.3.1-2 and the response data structures and response codes specified in table 6.2.18.3.1-3.

Table 6.2.18.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
AmInfluData	M	1	The AM Influence Data to be stored in the UDR.

Table 6.2.18.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
AmInfluData	M	1	201 Created	The resource has been successfully created and a response body is returned containing a representation of the resource.
AmInfluData	M	1	200 OK	The resource has been successfully updated and a response body is returned containing a representation of the resource.
n/a			204 No Content	The resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.18.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/am-influence-data/{amInfluenceId}

6.2.18.3.2 PATCH

This method shall support the URI query parameters specified in table 6.2.18.3.2-1.

Table 6.2.18.3.2-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.18.3.2-2 and the response data structures and response codes specified in table 6.2.18.3.2-3.

Table 6.2.18.3.2-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
AmInfluDataPatch	M	1	The AM Influence Data to be updated in the UDR.

Table 6.2.18.3.2-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
AmInfluData	M	1	200 OK	The update of an Individual AM Influence Data resource is confirmed and a response body containing the AM Influence Data shall be returned.
n/a			204 No Content	The Individual AM Influence Data resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.18.3.3 DELETE

This method shall support the URI query parameters specified in table 6.2.18.3.3-1.

Table 6.2.18.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.18.3.3-2 and the response data structures and response codes specified in table 6.2.18.3.3-3.

Table 6.2.18.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.18.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The Individual AM Influence Data was deleted successfully.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.19 Resource: EAS Deployment Information Data

6.2.19.1 Description

The EAS Deployment Information Data resource represents all EAS Deployment Information Data subscriptions to the Nudr_DataRepository Service at a given UDR.

6.2.19.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/eas-deploy-data**

This resource shall support the resource URI variables defined in table 6.2.19.2-1.

Table 6.2.19.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

6.2.19.3 Resource Standard Methods

6.2.19.3.1 GET

This method shall support the URI query parameters specified in table 6.2.19.3.1-1.

Table 6.2.19.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
dnn	Dnn	C	0..1	Identifies a DNN.
snssai	Snssai	C	0..1	Identifies a slice.
external-group-id	GroupId	C	0..1	Identifies a group of users.
appId	string	C	0..1	Identifies an application.
NOTE: At least one of the above attributes shall be provided.				

This method shall support the request data structures specified in table 6.2.19.3.1-2 and the response data structures and response codes specified in table 6.2.19.3.1-3.

Table 6.2.19.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.19.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(EasDeployInfoData)	M	1..N	200 OK	The subscribed EAS Deployment information as request in the request URI query parameter(s) are returned.
NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.2.20 Resource: Individual EAS Deployment Information Data

6.2.20.1 Description

The Individual EAS Deployment Information Data resource represents a single EAS Deployment Information data subscription to the Nudr_DataRepository Service at a given UDR.

6.2.20.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/application-data/eas-deploy-data/{easDeployInfoId}**

This resource shall support the resource URI variables defined in table 6.2.20.2-1.

Table 6.2.20.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
easDeployInfoId	string	Identifies an Individual EAS Deployment Information Data resource.

6.2.20.3 Resource Standard Methods

6.2.20.3.1 GET

This method shall support the URI query parameters specified in table 6.2.20.3.1-1.

Table 6.2.20.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.20.3.1-2 and the response data structures and response codes specified in table 6.2.20.3.1-3.

Table 6.2.20.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.20.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
EasDeployInfoData	M	1	200 OK	The subscription information is returned.

6.2.20.3.2 PUT

This method shall support the URI query parameters specified in table 6.2.20.3.1-1.

Table 6.2.20.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				n/a

This method shall support the request data structures specified in table 6.2.20.3.1-2 and the response data structures and response codes specified in table 6.2.20.3.1-3.

Table 6.2.20.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
EasDeployInfoData	M	1	The EAS Deployment Information Data to be stored in the UDR.

Table 6.2.20.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
EasDeployInfoData	M	1	201 Created	The resource has been successfully created and a response body is returned containing a representation of the resource.
EasDeployInfoData	M	1	200 OK	The resource has been successfully updated and a response body is returned containing a representation of the resource.
n/a			204 No Content	The resource has been successfully updated.
NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 6.2.20.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/application-data/eas-deploy-data/{easDeployInfoId}

6.2.20.3.3 DELETE

This method shall support the URI query parameters specified in table 6.2.20.3.3-1.

Table 6.2.20.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.2.20.3.3-2 and the response data structures and response codes specified in table 6.2.20.3.3-3.

Table 6.2.20.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 6.2.20.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The subscription was terminated successfully.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.3 Notifications

6.3.1 General

Notifications shall comply with subclause 6.2 of 3GPP TS 29.500 [4] and subclause 4.6.2.3 of 3GPP TS 29.501 [5].

Table 6.3.1-1: Notifications overview

Notification	Callback URI	HTTP method or custom operation	Description (service operation)
Influence Data Update Notification	{notificationUri}	POST	One of notification reference provided by the service consumer during the subscription of the AF Influence Data.
Application Data Change Notification	{notificationUri}	POST	Application Data Change Notification

6.3.2 Void

6.3.3 Influence Data Update Notification

6.3.3.1 Description

The Influence Update Notification is used by the UDR to report one or several observed Influence Data(s) to a NF service consumer that has subscribed to such Notifications.

6.3.3.2 Operation Definition

The POST method shall be used for traffic influence data change notification and the URI shall be provided during the subscription procedure.

Callback URI: **{notificationUri}**

This method shall support the URI query parameters specified in table 6.3.3.2-1.

Table 6.3.3.2-1: URI query parameters supported by the POST method

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.3.3.2-2 and the response data structures and response codes specified in table 6.3.3.2-3.

Table 6.3.3.2-2: Data structures supported by the POST Request Body on this resource

Data type	P	Cardinality	Description
array(TrafficInfluData or TrafficInfluDataNotif)	M	1..N	Provides Information about observed Influence Data. If the EnhancedInfluDataNotification feature is supported, the TrafficInfluDataNotif data type shall be sent.

Table 6.3.3.2-3: Data structures supported by the POST Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The receipt of the Notification is acknowledged.
NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.3.4 Application Data Change Notification

The POST method shall be used for application data change notification and the URI shall be provided during the subscription procedure.

Callback URI: **{notificationUri}**

This method shall support the URI query parameters specified in table 6.3.4-1.

Table 6.3.4-1: URI query parameters supported by the POST method

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 6.3.4-2 and the response data structures and response codes specified in table 6.3.4-3.

Table 6.3.4-2: Data structures supported by the POST Request Body

Data type	P	Cardinality	Description
array(ApplicationDataChangeNotif)	M	1..N	Notification of application data changes.

Table 6.3.4-3: Data structures supported by the POST Response Body

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	The reception of the notification is acknowledged.
NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

6.4 Data Model

6.4.1 General

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

Table 6.4.1-1 specifies the data types defined for the Nudr_DataRepository Service API for Application Data service based interface protocol.

Table 6.4.1-1: Nudr_DataRepository specific Data Types for Application Data

Data type	Section defined	Description	Applicability
AmInfluData	6.4.2.16	Contains AM influence data.	DCAMP
AmInfluDataPatch	6.4.2.17	Contains AM influence data that can be updated.	DCAMP
ApplicationDataSubs	6.4.2.10	Contains application data subscription data.	
ApplicationDataChangeNotif	6.4.2.11	Contains the new or updated application data or removed indication.	
BdtPolicyData	6.4.2.7	Contains applied BDT policy data.	EnhancedBackgroundDataTransfer
BdtPolicyDataPatch	6.4.2.8	Contains modification instructions to be performed on the applied BDT policy data.	EnhancedBackgroundDataTransfer
DataInd	6.4.3.3	Indicates the type of data.	
DataFilter	6.4.2.12	Indicates a data filter.	
IptvConfigData	6.4.2.9	Represents IPTV configuration data information.	
PfdDataForAppExt	6.4.2.6	The PFDs and related data for the application	
ServiceParameterData	6.4.2.15	Contains the service parameter data.	
ServiceParameterDataPatch	6.4.2.15A	Contains the service parameter data that can be updated.	
TrafficInfluData	6.4.2.2	Contains traffic influence data.	
TrafficInfluDataPatch	6.4.2.3	Contains modification instructions to be performed on the traffic influence data.	
TrafficInfluDataNotif	6.4.2.14	Contains traffic influence data for notification.	EnhancedInfluDataNotification
TrafficInfluSub	6.4.2.4	Contains traffic influence subscription data.	

Table 6.4.1-2 specifies data types re-used by the Nudr_DataRepository Service API for Application Data service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nudr_DataRepository Service API for Application Data service based interface.

Table 6.4.1-2: Nudr_DataRepository re-used Data Types for Application Data

Data type	Reference	Comments	Applicability
AmInfluEvent	3GPP TS 29.522 [19]	Identifies the type of AM related events of which the AF requests to be notified.	
ApplicationId	3GPP TS 29.571 [7]	Indicates an application identifier.	
BdtReferenceId	3GPP TS 29.122 [9]	Identifies a selected policy of background data transfer.	EnhancedBackgroundDataTransfer
DateTime	3GPP TS 29.571 [7]	Indicates a date and time.	
DateTimeRm	3GPP TS 29.571 [7]	Indicates a date and time that can be updated.	
DnaiChangeType	3GPP TS 29.571 [7]	Describes the types of DNAI change.	
Dnn	3GPP TS 29.571 [7]	Identifies a Data Network Name.	
DnnSnssaiInformation	3GPP TS 29.522 [19]	Represents a DNN, S-NSSAI combination.	DCAMP
DurationSec	3GPP TS 29.571 [7]	Represents a duration in seconds.	DCAMP
DurationSecRm	3GPP TS 29.571 [7]	Represents a removable duration in seconds.	DCAMP
EasDeployInfoData	3GPP TS 29.591 [23]	Represnts the EAS Deployment Information.	EasDeployment
EthFlowDescription	3GPP TS 29.514 [16]	Contains the Ethernet data flow information.(NOTE)	
Event	3GPP TS 29.522 [19]	Contains the outcome of the UE Policy Delivery related to the invocation of AF provisioned service parameters.	DeliveryOutcome
FlowInfo	3GPP TS 29.122 [9]	Contains the flow information.	
IptvConfigDataPatch	3GPP TS 29.522 [19]	Contains the IPTV configuration data used for PATCH.	
Ipv4Addr	3GPP TS 29.571 [7]	Identifies an IPv4 address.	
Ipv6Addr	3GPP TS 29.571 [7]	Identifies an IPv6 address.	
MacAddr48	3GPP TS 29.571 [7]	MAC Address.	
MulticastAccessControl	3GPP TS 29.522 [19]	Represents the multicast access control information.	
NetworkAreaInfo	3GPP TS 29.554 [13]	Describes a network area information.	
ParameterOverPc5	3GPP TS 29.522 [19]	Contains the V2X service parameters data provisioned over PC5.	
ParameterOverUu	3GPP TS 29.522 [19]	Contains the V2X service parameters data provisioned over Uu.	
ParamForProSeDd	3GPP TS 29.522 [19]	Contains the service parameters for 5G ProSe direct discovery.	ProSe
ParamForProSeDc	3GPP TS 29.522 [19]	Contains the service parameters for 5G ProSe direct communications.	ProSe
ParamForProSeU2NRelUe	3GPP TS 29.522 [19]	Contains the service parameters for 5G ProSe UE-to-network relay UE.	ProSe
ParamForProSeRemUe	3GPP TS 29.522 [19]	Contains the service parameters for 5G ProSe remote UE.	ProSe
PfdChangeNotification	3GPP TS 29.551 [8]	Describes the PFD change.	
PfdContent	3GPP TS 29.551 [8]	Represents the content of a PFD for an application identifier.	
RouteToLocation	3GPP TS 29.571 [7]	Identifies the N6 traffic routing requirement.	
ServiceAreaCoverageInfo	3GPP TS 29.534 [22]	Contains service area coverage information.	DCAMP
Snssai	3GPP TS 29.571 [7]	Identifies a Single Network Slice Selection Assistance Information.	
SubscribedEvent	3GPP TS 29.522 [19]	Identified the type of UP path management events of which the AF requests to be notified.	
Supi	3GPP TS 29.571 [7]	Identifies a SUPI that shall contain either an IMSI or an NAI.	
SupportedFeatures	3GPP TS 29.571 [7]	Used to negotiate the applicability of the optional features.	
TemporalValidity	3GPP TS 29.514 [16]	Indicates the time interval during which the AF request is to be applied.	MultiTemporalCondition
Uinteger	3GPP TS 29.571 [7]	Unsigned Integer, i.e. only value 0 and integers greater than 0 are allowed.	
UintegerRm	3GPP TS 29.571 [7]	This data type is defined in the same way as the "Uinteger" data type, but with the OpenAPI "nullable: true" property.	
Uri	3GPP TS 29.571 [7]	Identifies a URI.	
UriRm	3GPP TS 29.571 [7]	Identifies a removable URI.	DCAMP
UrspRuleRequest	3GPP TS 29.522 [19]	Contains service parameter data used to guide the URSP.	AfGuideURSP

NOTE:	In order to support a set of MAC addresses with a specific range in the traffic filter, feature MacAddressRange as specified in clause 6.1.8 of TS 29.504 [6] shall be supported.

6.4.2 Structured data types

6.4.2.1 Introduction

This subclause defines the structures to be used in resource representations.

6.4.2.2 Type TrafficInfluData

Table 6.4.2.2-1: Definition of type TrafficInfluData

Attribute name	Data type	P	Cardinality	Description	Applicability
upPathChgNotifCorrId	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	O	0..1	Identifies an application. (NOTE 1) (NOTE 3)	
dnn	Dnn	O	0..1	Identifies a DNN	
ethTrafficFilters	array(EthFlowDescription)	O	1..N	Identifies Ethernet packet filters. (NOTE 1) (NOTE 3)	
snssai	Snssai	O	0..1	The identification of slice.	
interGroupId	GroupId	O	0..1	Identifies a group of users. (NOTE 2) (NOTE 3)(NOTE 5)	
supi	Supi	O	0..1	Identifies a user. (NOTE 2) (NOTE 3)	
trafficFilters	array(FlowInfo)	O	1..N	Identifies IP packet filters. (NOTE 1) (NOTE 3)	
trafficRoutes	array(RouteToLocation)	O	1..N	Identifies the N6 traffic routing requirement.	
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.	
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 3.2 of IETF RFC 7230 [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.	EnEDGE
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.	EnEDGE
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.	EnEDGE
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.	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.	

NOTE 1: One of "afAppId", "trafficFilters" or "ethTrafficFilters" shall be included.
NOTE 2: Either "supi" or "interGroupId" 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".

6.4.2.3 Type TrafficInfluDataPatch

Table 6.4.2.3-1: Definition of type TrafficInfluDataPatch

Attribute name	Data type	P	Cardinality	Description	Applicability
upPathChgNotifCorrId	string	O	0..1	Contains the Notification Correlation Id allocated by the NEF for 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.	
ethTrafficFilters	array(EthFlowDescription)	O	1..N	Identifies Ethernet packet filters.	
trafficFilters	array(FlowInfo)	O	1..N	Identifies IP packet filters	
trafficRoutes	array(RouteToLocation)	O	1..N	Identifies the N6 traffic routing requirement.	
traffCorreInd	boolean	O	0..1	Indication of traffic correlation. May only be included when "internalGroupId" 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.	
validStartTime	DateTime	O	0..1	Identifies when the traffic routings start to be applicable.	
validEndTime	DateTime	O	0..1	Identifies when the traffic routings are not applicable.	
tempValidities	array(TemporalValidity)	O	1..N	Indicates the time interval(s) during which the AF request is to be applied.	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	O	0..1	Contains the URI where the NEF receives the UP path change notification.	
headers	array(string)	O	1..N	Headers provisioned by the NEF. E.g. 3gpp-Sbi-Binding header with the binding indication for the URI where the NEF receives UP path change notification. The encoding of the header shall comply with clause 3.2 of IETF RFC 7230 [21]	
afAckInd	boolean	O	0..1	Identifies whether the AF acknowledgement of UP path event notification is expected.	URLLC
addrPreserInd	boolean	O	0..1	Indicates UE IP address should be preserved.	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.	EnEDGE
simConnInd	boolean	O	0..1	Indication of simultaneous connectivity temporarily maintained for the source and target PSA. It is set to "true" if the temporary connectivity should be temporarily maintained; otherwise, it is set to "false".	EnEDGE
simConnTerm	DurationSecRm	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.	EnEDGE

6.4.2.4 Type TrafficInfluSub

Table 6.4.2.4-1: Definition of type TrafficInfluSub

Attribute name	Data type	P	Cardinality	Description	Applicability
dnns	array(Dnn)	O	1..N	Each element identifies a DNN.	
snssais	array(Snssai)	O	1..N	Each element identifies a slice.	
internalGroupIds	array(GroupId)	O	1..N	Each element identifies a group of users.(NOTE 2)	
supis	array(Supi)	O	1..N	Each element identifies the user.	
notificationUri	Uri	M	1	URI provided by the NF service consumer indicating where to receive the subscribed notifications from the UDR.	
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.	
NOTE 1: At least one of "dnns", "snssais", "internalGroupIds" or "supis" shall be provided. NOTE 2: For the Traffic Influence Data applies to any UE, the "internalGroupIds" needs to have an entry set to "AnyUE".					

6.4.2.5 Void

6.4.2.6 Type: PfdDataForAppExt

Table 6.4.2.6-1: Definition of type PfdDataForAppExt

Attribute name	Data type	P	Cardinality	Description	Applicability
suppFeat	SupportedFeatures	O	0..1	Used to negotiate the applicability of the optional features. This attribute shall be provided in the PUT request and in the response of successful resource creation. This attribute shall be provided in the HTTP GET response if the "supp-feat" attribute query parameter is included in the HTTP GET request.	
applicationId	ApplicationId	M	1	Identifier of an application.	
pfds	array(PfdContent)	M	1..N	PFDs for the application identifier.	
cachingTime	DateTime	O	0..1	Caching time for an application identifier.	
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.	

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.	
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: Either "supi" or "interGroupId" shall be included.					

6.4.2.8 Type BdtPolicyDataPatch

Table 6.4.2.8-1: Definition of type BdtPolicyDataPatch

Attribute name	Data type	P	Cardinality	Description	Applicability
bdtRefId	BdtReferenceId	M	1	Identifies a selected policy of background data transfer.	

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.	
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: Either "supi" or "interGroupId" shall be included.					

6.4.2.10 Type ApplicationDataSubs

Table 6.4.2.10-1: Definition of type ApplicationDataSubs

Attribute name	Data type	P	Cardinality	Description	
notificationUri	Uri	M	1	URI provided by the NF service consumer indicating where to receive the subscribed notifications from the UDR.	Applicability
dataFilters	array(DataFilter)	O	1..N	Each element identifies a data filter for subscription to data change.notification. If absent, the subscription applies to all data change notification except traffic influence data.	
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.	
immRep	boolean	O	0..1	This attribute is applicable only if the "dataFilters" attribute of the request includes an element with the "dataInd" attribute set to "AM". If provided and set to "true", it indicates that existing matching entries shall be immediately reported within the "amInfluEntries" attribute in the response.	DCAMP
amInfluEntries	array(AmInfluData)	O	1..N	The AM Influence Data stored in the UDR that match this subscription. It may be included only in the POST response body of a subscription creation or modification, and only if the request included the "immRep" attribute set to true and a "dataFilters" attribute that contained an element with the "dataInd" attribute set to "AM".	DCAMP
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.	

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)	
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.	
NOTE: Only one among those attributes shall be provided in notifying data creation or update.					

6.4.2.12 Type DataFilter

Table 6.4.2.12-1: Definition of type DataFilter

Attribute name	Data type	P	Cardinality	Description	Applicability
dataInd	DataInd	M	1	Indicate the type of data.	
dnns	array(Dnn)	O	1..N	Each element identifies a DNN.	
snssais	array(Snssai)	O	1..N	Each element identifies a slice.	
internalGroupIds	array(GroupId)	O	1..N	Each element identifies a group of users.	
supis	array(Supi)	O	1..N	Each element identifies the user.	
appIds	array(ApplicationId)	O	1..N	Each element identifies an application.	
ueIpv4s	array(Ipv4Addr)	O	1..N	Each element identifies the user.	
ueIpv6s	array(Ipv6Addr)	O	1..N	Each element identifies the user.	
ueMacs	array(MacAddr48)	O	1..N	Each element identifies the user.	
anyUeInd	boolean	O		Indicates whether the request is for any UE.	
NOTE: The "dnns", "snssais", "internalGroupIds" and "supis" attributes are applicable to the BDT Policy Data, IPTV Configuration Data, Service Parameter Data, and AM Influence Data, the "ueIpv4s" "ueIpv6s" and "ueMacs" attributes are applicable to the Service Parameter Data, the "appIds" attribute is applicable to the PFD Data, Service Parameter Data and IPTV Configuration Data, and the "anyUeInd" attribute is applicable to Service Parameter Data and AM Influence Data.					

NOTE: When the "anyUeInd" attribute is related to the subscription to notification of changes of the service parameter data resource(s), and it refers to any UE using the service identified by a combination of DNN and S-NSSAI, the "anyUeInd" attribute is present together with the "dnns" and "snssais" properties. Note also that, if the "anyUeInd" attribute is present together with the "internalGroupIds", "supis", "ueIpv4s", "ueIpv6s" and/or "ueMacs" attributes the subscription will not match any resource, since according to subsclause 6.4.2.15 only one of the the "supi", "anyUeInd", "interGroupId", "ueIpv4", "ueIpv6" or "ueMac" properties are simultaneously present in the resource.
When the "anyUeInd" attribute is related to the subscription to notification of changes of the AM Influence data resource(s), and it refers to any UE using the service(s) identified by the corresponding DNN and S-NSSAI, the "anyUeInd" attribute is present together with the "dnns" and "snssais" properties. Note also that, if the "anyUeInd" attribute is present together with the "internalGroupIds" and/or "supis" attributes the subscription will not match any resource, since according to subsclause 6.4.2.16 only one of the the "supi", "anyUeInd", or "interGroupId" properties are simultaneously present in the resource.

6.4.2.13 Void

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 resUri shall be provided in the TrafficInfluDataNotif data type.	
trafficInfluData	TrafficInfluData	C	0..1	Traffic Influence Data. It shall be present for notifying Individual Influence Data creation or update.	

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 UE. This attribute shall set to "true" if applicable for any UE, otherwise, set to "false". (NOTE1)	
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	
urspGuidance	array(UrspRuleRequest)	O	1..N	Contains the service parameter used to guide the URSP.	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
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 3.2 of IETF RFC 7230 [21]	DeliveryOutcome

suppFeat	SupportedFeatures	C	0..1	Indicates the list of Supported features used as described in subclause 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.	
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: Only one of the "supi", "anyUeInd", "interGroupId", "ueIpv4", "ueIpv6" or "ueMac" attribute shall be provided. NOTE 2: Only the combination of "dnn" and "snssai" or "appId" attribute shall be provided.					

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 UE. If present and set to "true" the data is applicable for any UE. (NOTE 1)	
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 3.2 of IETF RFC 7230 [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. (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.	
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", and "anyUeInd" shall be included.
NOTE 2: At least one of these attributes shall be included.

6.4.2.17 Type AmInfluDataPatch

Table 6.4.2.17-1: Definition of type AmInfluDataPatch

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).	
policyDuration	DurationSecRm	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 3.2 of IETF RFC 7230 [21]	
notifUri	UriRm	C	0..1	Contains the Callback URL to receive notifications.	
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.	
covReq	string	O	0..1	Identifies service area coverage requirements.	

6.4.2.15A Type ServiceParameterDataPatch

Table 6.4.2.15A-1: Definition of type ServiceParameterDataPatch

Attribute name	Data type	P	Cardinality	Description	Applicability
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	
urspInfluence	array(UrspRuleRequest)	O	1..N	Contains the service parameter used to influence the URSP.	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
deliveryEvents	array(Event)	O	1..N	Contains the events related to the outcome of UE policy delivery.	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 IE. The encoding of the header shall comply with clause 3.2 of IETF RFC 7230 [21]	DeliveryOutcome

6.4.3 Simple data types and enumerations

6.4.3.1 Introduction

This subclause defines simple data types and enumerations that can be referenced from data structures defined in the previous subclauses.

6.4.3.2 Simple data types

The simple data types defined in table 6.4.3.2-1 shall be supported.

Table 6.4.3.2-1: Simple data types

Type Name	Type Definition	Description	Applicability

6.4.3.3 Enumeration: DataInd

Table 6.4.3.3-1: Enumeration DataInd

Enumeration value	Description	Applicability
PFD	PFD data change notification	
IPTV	IPTV configuration data change notification	
BDT	BDT data change notification	
SVC_PARAM	Service parameter change notification.	
AM	AM influence data change notification	DCAMP

6.5 Error handling

6.5.1 General

HTTP error handling shall be supported as specified in subclause 5.2.4 of 3GPP TS 29.500 [4].

For the Nudr_DataRepository Service API for Application Data, HTTP error responses shall be supported as specified in subclause 4.8 of 3GPP TS 29.501 [5]. Protocol errors and application errors specified in table 5.2.7.2-1 of 3GPP TS 29.500 [4] shall be supported for an HTTP method if the corresponding HTTP status codes are specified as mandatory for that HTTP method in table 5.2.7.1-1 of 3GPP TS 29.500 [4]. In addition, the requirements in the following subclauses shall apply.

6.5.2 Protocol Errors

In this Release of the specification, there are no additional protocol errors applicable for the Nudr_DataRepository Service API for Application Data.

6.5.3 Application Errors

The application errors defined for the Nudr_DataRepository Service API for Application Data are listed in table 6.5.3-1.

Table 6.5.3-1: Application errors

Application Error	HTTP status code	Description
NOTE: Including a "ProblemDetails" data structure with the "cause" attribute in the HTTP response is optional unless explicitly mandated by other subclauses in this document.		

The application error handling shall follow 3GPP TS 29.504 [6] subclause 6.1.6 unless explicitly specified in this document.

6.6 Feature negotiation

The optional features in table 6.1.8-1 of 3GPP TS 29.504 [6] are defined for the Nudr_DataRepository API. They shall be negotiated using the extensibility mechanism defined in subclause 6.6 of 3GPP TS 29.500 [4].

7 Usage of Nudr_DataRepository Service API for Structured Data for Exposure

7.1 Introduction

The following subclauses specify the usage of Nudr_DataRepository service for exposure data. The principles specified in 3GPP TS 29.504 [6] are followed unless explicitly specified otherwise in the following subclauses.

7.2 Resources

7.2.1 Overview

This clause specifies the resources for the usage of the Unified Data Repository service for Structured Data for Exposure.

7.2.2 Resource Structure

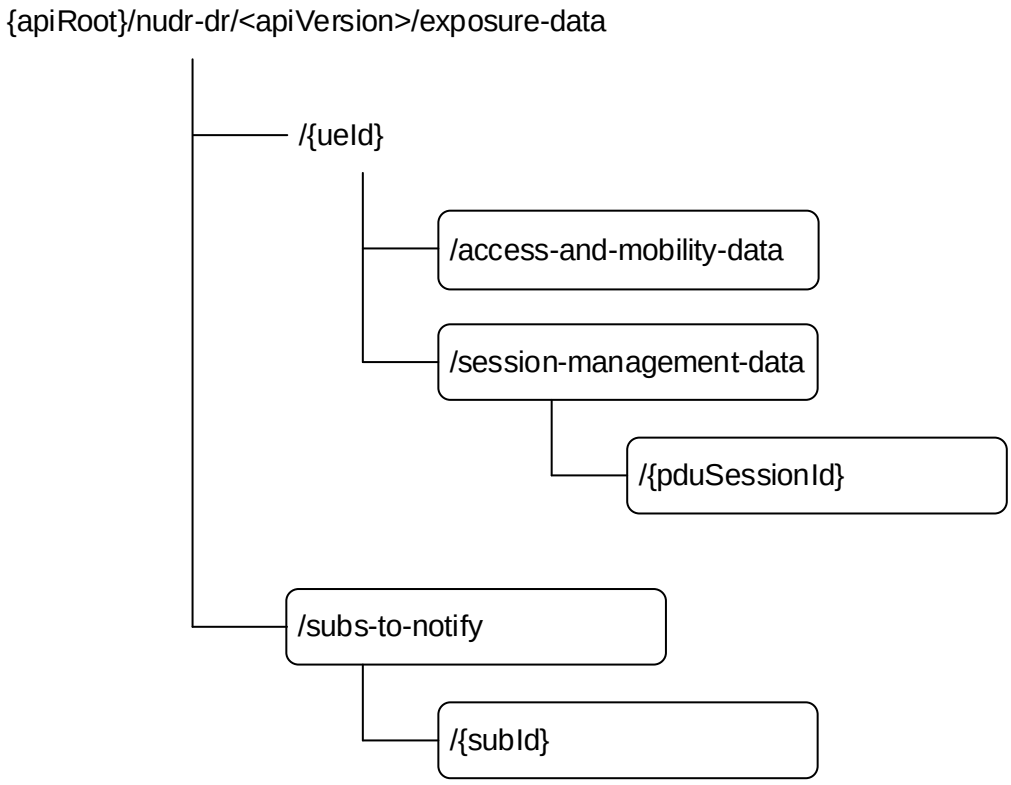

Figure 7.2.2-1: Resource URI structure of the Nudr_DataRepository API for exposure data

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	HTTP method	Description
AccessAndMobility Data	/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
PduSessionManag ementData	/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
ExposureDataSubs criptions	/exposure-data/subs-to-notify	POST	Create a subscription to receive notifications on exposure data changes.
IndividuaExposure DataSubscription	/exposure-data/subs-to-notify/ {subId}	PUT	Modify a subscription to receive notifications on exposure data changes.
		DELETE	Delete a subscription identified by {subId}.

7.2.3 Resource: AccessAndMobilityData

7.2.3.1 Description

This resource represents the exposure data related to access and mobility.

7.2.3.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/exposure-data/{ueId}/access-and-mobility-data**

This resource shall support the resource URI variables defined in table 7.2.3.2-1.

Table 7.2.3.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
ueId	VarUeId	Represents the SUPI or GPSI. Data type VarUeId is defined in 3GPP TS 29.571 [7].

7.2.3.3 Resource Standard Methods

7.2.3.3.1 PUT

This method shall support the URI query parameters specified in table 7.2.3.3.1-1.

Table 7.2.3.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 7.2.3.3.1-2 and the response data structures and response codes specified in table 7.2.3.3.1-3.

Table 7.2.3.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
AccessAndMobilityData	M	1	Access and mobility data for the UE is created or updated.

Table 7.2.3.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
AccessAndMobilityData	M	1	201 Created	Successful case. The resource has been successfully created and a response body containing a representation of the access and mobility data shall be returned.
AccessAndMobilityData	M	1	200 OK	Successful case. The resource has been successfully updated and a response body containing a representation of the access and mobility data shall be returned.
n/a			204 No Content	Successful case. The resource has been successfully updated and no additional content is to be sent in the response message.
NOTE: The HTTP status code for the PUT method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 7.2.3.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/exposure-data/{ueId}/access-and-mobility-data

7.2.3.3.2 GET

This method shall support the URI query parameters specified in table 7.2.3.3.2-1.

Table 7.2.3.3.2-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer. See 3GPP TS 29.500 [4] subclause 6.6.2 and 3GPP TS 29.571 [7].

This method shall support the request data structures specified in table 7.2.3.3.2-2 and the response data structures and response codes specified in table 7.2.3.3.2-3.

Table 7.2.3.3.2-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 7.2.3.3.2-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
AccessAndMobilityData	M	1	200 OK	The response body contains the access and mobility data.
NOTE: The HTTP status code for the GET method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

7.2.3.3.3 DELETE

This method shall support the URI query parameters specified in table 7.2.3.3.3-1.

Table 7.2.3.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 7.2.3.3.3-2 and the response data structures and response codes specified in table 7.2.3.3.3-3.

Table 7.2.3.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 7.2.3.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon success, an empty response body shall be returned.
NOTE: The HTTP status code for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

7.2.3.3.4 PATCH

This method shall support the URI query parameters specified in table 7.2.3.3.4-1.

Table 7.2.3.3.4-1: URI query parameters supported by the PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 7.2.3.3.4-2 and the response data structures and response codes specified in table 7.2.3.3.4-3.

Table 7.2.3.3.4-2: Data structures supported by the PATCH Request Body on this resource

Data type	P	Cardinality	Description
AccessAndMobilityData	M	1	Access and mobility data for the UE.

Table 7.2.3.3.4-3: Data structures supported by the PATCH Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon successful modification there is no body in the response message.
NOTE: The HTTP status code for the PATCH method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

7.2.4 Resource: PduSessionManagementData

7.2.4.1 Description

This resource represents the exposure data related to session and management data for a given subscriber and a given PDU session.

7.2.4.2 Resource definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/exposure-data/{ueId}/session-management-data/{pduSessionId}**

This resource shall support the resource URI variables defined in table 7.2.4.2-1.

Table 7.2.4.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
ueId	VarUeId	Represents the SUPI or GPSI. Data type VarUeId is defined in 3GPP TS 29.571 [7].
pduSessionId	PduSessionId	Identifies an individual PDU session. Data type PduSessionId is defined in 3GPP TS 29.571 [7].

7.2.4.3 Resource Standard Methods

7.2.4.3.1 PUT

This method shall support the URI query parameters specified in table 7.2.4.3.1-1.

Table 7.2.4.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 7.2.4.3.1-2 and the response data structures and response codes specified in table 7.2.4.3.1-3.

Table 7.2.4.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
PduSessionManagementData	M	1	Session management data for a UE and a PDU session is created or updated.

Table 7.2.4.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response Codes	Description
PduSessionManagementData	M	1	201 Created	Successful case. The resource has been successfully created and a response body containing a representation of the session management data shall be returned.
PduSessionManagementData	M	1	200 OK	Successful case. The resource has been successfully updated and a response body containing a representation of the session management data shall be returned.
n/a			204 No Content	Successful case. The resource has been successfully updated and no additional content is to be sent in the response message.
NOTE: The HTTP status code for the PUT method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 7.2.4.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/exposure-data/{ueId}/session-management-data/{pduSessionId}

7.2.4.3.2 GET

This method shall support the URI query parameters specified in table 7.2.4.3.2-1.

Table 7.2.4.3.2-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
ipv4-addr	Ipv4Addr	O	0..1	UE IPv4 address.
ipv6-prefix	Ipv6Prefix	O	0..1	UE IPv6 prefix.
dnn	Dnn	O	0..1	Identifies a DNN.
fields	array(string)	C	1..N	When the NF consumer only retrieves a subset of the resource, the "fields" query parameter shall be included. The "fields" query parameter contains the pointers of the attribute(s) to be retrieved.
supp-feat	SupportedFeatures	O	0..1	The features supported by the NF service consumer. See 3GPP TS 29.500 [4] subclause 6.6.2 and 3GPP TS 29.571 [7].

This method shall support the request data structures specified in table 7.2.4.3.2-2 and the response data structures and response codes specified in table 7.2.4.3.2-3.

Table 7.2.4.3.2-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 7.2.4.3.2-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response Codes	Description
PduSessionManagementData	M	1	200 OK	The response body contains the session management data.
NOTE: The HTTP status code for the GET method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

7.2.4.3.3 DELETE

This method shall support the URI query parameters specified in table 7.2.4.3.3-1.

Table 7.2.4.3.3-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 7.2.4.3.3-2 and the response data structures and response codes specified in table 7.2.4.3.3-3.

Table 7.2.4.3.3-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 7.2.4.3.3-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon success, an empty response body shall be returned.
NOTE: The HTTP status code for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

7.2.5 Resource: ExposureDataSubscriptions

7.2.5.1 Description

This resource is used to represent subscriptions to notifications of exposure data modifications.

7.2.5.2 Resource Definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/exposure-data/subs-to-notify**

This resource shall support the resource URI variables defined in table 7.2.5.2-1.

Table 7.2.5.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.

7.2.5.3 Resource Standard Methods

7.2.5.3.1 POST

This method shall support the URI query parameters specified in table 7.2.5.3.1-1.

Table 7.2.5.3.1-1: URI query parameters supported by the POST method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 7.2.5.3.1-2 and the response data structures and response codes specified in table 7.2.5.3.1-3.

Table 7.2.5.3.1-2: Data structures supported by the POST Request Body on this resource

Data type	P	Cardinality	Description
ExposureDataSubscription	M	1	Identifies an individual subscription to notifications of exposure data modifications.

Table 7.2.5.3.1-3: Data structures supported by the POST Response Body on this resource

Data type	P	Cardinality	Response codes	Description
ExposureDataSubscription	M	1	201 Created	Upon success, a response body containing a representation of the Individual subscription resource shall be returned. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the created resource.
NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Table 7.2.5.3.1-4: Headers supported by the 201 Response Code on this resource

Name	Data type	P	Cardinality	Description
Location	string	M	1	Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudr-dr/<apiVersion>/exposure-data/subs-to-notify/{subId}

7.2.6 Resource: IndividualExposureDataSubscription

7.2.6.1 Description

This resource represents an individual subscription to notifications of exposure data modifications.

7.2.6.2 Resource Definition

Resource URI: **{apiRoot}/nudr-dr/<apiVersion>/exposure-data/subs-to-notify/{subId}**

This resource shall support the resource URI variables defined in table 7.2.6.2-1.

Table 7.2.6.2-1: Resource URI variables for this resource

Name	Data type	Definition
apiRoot	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
apiVersion	string	See 3GPP TS 29.504 [6] subclause 6.1.1.
subId	string	Identifies an individual subscription to notifications. The value is allocated by the UDR during creation of the IndividualExposureDataSubscription resource.

7.2.6.3 Resource Standard Methods

7.2.6.3.1 PUT

This method shall support the URI query parameters specified in table 7.2.6.3.1-1.

Table 7.2.6.3.1-1: URI query parameters supported by the PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 7.2.6.3.1-2 and the response data structures and response codes specified in table 7.2.6.3.1-3.

Table 7.2.6.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
ExposureDataSubscription	M	1	Identifies an individual subscription to notifications of exposure data modifications.

Table 7.2.6.3.1-3: Data structures supported by the PUT Response Body on this resource

Data type	P	Cardinality	Response codes	Description
ExposureData Subscription	M	1	200 OK	The individual subscription resource was updated successfully and a body with the modified subscription to notifications about exposure data is returned.
n/a			204 No Content	The individual subscription resource was successfully modified.
NOTE: The mandatory HTTP error status codes for the PUT method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

7.2.6.3.2 DELETE

This method shall support the URI query parameters specified in table 7.2.6.3.2-1.

Table 7.2.6.3.1-1: URI query parameters supported by the DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 7.2.6.3.2-2 and the response data structures and response codes specified in table 7.2.6.3.2-3.

Table 7.2.6.3.2-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			The request body shall be empty.

Table 7.2.6.3.2-3: Data structures supported by the DELETE Response Body on this resource

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon success, an empty response body shall be returned.
NOTE: The mandatory HTTP error status codes for the DELETE method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

7.3 Data Model

7.3.1 General

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

Table 7.3.1-1 specifies the data types defined for the Nudr_DataRepository for Exposure Data service based interface protocol.

Table 7.3.1-1: Nudr_DataRepository specific Data Types for Exposure Data

Data type	Section defined	Description	Applicability
AccessAndMobilityData	7.3.2.2		
ExposureDataChangeNotification	7.3.2.5	Contains changed exposure data for one UE for which Notification was requested.	
ExposureDataSubscription	7.3.2.4	Subscription to Notifications about Exposure Data.	
PduSessionManagementData	7.3.2.3		
PduSessionStatus	7.3.3.3	Represents the state of the PDU session, i.e. active or released.	

Table 7.3.1-2 specifies data types re-used by the Nudr_DataRepository for Exposure Data service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nudr_DataRepository for Exposure Data service based interface.

Table 7.3.1-2: Nudr_DataRepository re-used Data Types for Exposure Data

Data type	Reference	Comments	Applicability
AccessType	3GPP TS 29.571 [7]	Identifies the access type, i.e. 3GPP access or Non-3GPP access.	
CmInfo	3GPP TS 29.518 [10]	Describes the connectivity management state of a UE.	
DateTime	3GPP TS 29.571 [7]		
Dnai	3GPP TS 29.571 [7]	Identifies a Data network access identifier.	
Dnn	3GPP TS 29.571 [7]	Identifies a Data Network Name.	
Ipv4Addr	3GPP TS 29.571 [7]	The IPv4 Address.	
Ipv6Addr	3GPP TS 29.571 [7]	The Ipv6 Address.	
Ipv6Prefix	3GPP TS 29.571 [7]	The Ipv6 Address Prefix.	
PduSessionId	3GPP TS 29.571 [7]	PDU Session Identifier	
PduSessionType	3GPP TS 29.571 [7]	PDU Session type.	
PlmnId	3GPP TS 29.571 [7]	Identifies a PLMN.	
RatType	3GPP TS 29.571 [7]	Identifies a RAT type.	
RmInfo	3GPP TS 29.518 [10]	Describes the registration management state of a UE.	
RouteToLocation	3GPP TS 29.571 [7]	A traffic route to/from a DNAI.	
TimeZone	3GPP TS 29.571 [7]	Identifies a time zone.	
SmsSupport	3GPP TS 29.518 [10]	Indicates the supported SMS delivery of a UE.	
SupportedFeatures	3GPP TS 29.571 [7]	Used to negotiate the applicability of the optional features.	
UeReachability	3GPP TS 29.518 [10]	Describes the reachability of the UE.	
Uri	3GPP TS 29.571 [7]		
UserLocation	3GPP TS 29.571 [7]	Identifies the user location.	
VarUeId	3GPP TS 29.571 [7]	String represents the SUPI or GPSI.	

7.3.2 Structured data types

7.3.2.1 Introduction

This subclause defines the structures to be used in resource representations.

7.3.2.2 Type AccessAndMobilityData

Table 7.3.2.2-1: Definition of type AccessAndMobilityData

Attribute name	Data type	P	Cardinality	Description	Applicability
location	UserLocation	O	0..1	Current location for the UE, which can be a combination of E-UTRA, NR and non-3GPP access location.	
locationTs	DateTime	O	0..1	Indicates when the location was last updated.	
timeZone	TimeZone	O	0..1	Current time zone for the UE.	
timeZoneTs	DateTime	O	0..1	Indicates when the timeZone was last updated.	
accessType	AccessType	O	0..1	Current access type for the UE (3GPP access or non-3GPP access).	
accessTypeTs	DateTime	O	0..1	Indicates when the accessType was last updated.	
regStates	array(RmInfo)	O	1..N	Describes the registration management state of the UE.	
regStatesTs	DateTime	O	0..1	Indicates when the regStates were last updated.	
connStates	array(CmInfo)	O	1..N	Describes the connectivity management state of the UE.	
connStatesTs	DateTime	O	0..1	Indicates when the connStates were last updated.	
reachabilityStatus	UeReachability	O	0..1	Describes the reachability of the UE.	
reachabilityStatusTs	DateTime	O	0..1	Indicates when the reachabilityStatus was last updated.	
smsOverNasStatus	SmsSupport	O	0..1	Indicates the supported SMS delivery of the UE.	
smsOverNasStatusTs	DateTime	O	0..1	Indicates when thesmsOverNasStatus was last updated.	
roamingStatus	boolean	O	0..1	True: The serving PLMN of the UE is different from the HPLMN of the UE; False: The serving PLMN of the UE is the HPLMN of the UE.	
roamingStatusTs	DateTime	O	0..1	Indicates when the roamingStatus was last updated.	
currentPlmn	PlmnId	O	0..1	The identity of the PLMN serving the UE.	
currentPlmnTs	DateTime	O	0..1	Indicates when the currentPlmn was last updated.	
ratTypes	array(RatType)	O	1..N	RAT type(s)	
ratTypesTs	DateTime	O	0..1	Indicates when the ratTypes was last updated.	
suppFeat	SupportedFeatures	C	0..1	This IE represents a list of Supported features used as described in subclause 7.5. Shall be present in the HTTP PUT request/response; or in the HTTP GET response if the "supp-feat" attribute query parameter is included in the HTTP GET request. (NOTE)	
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: In the HTTP request, it represents the set of features supported by the NF service consumer. In the HTTP response, it represents the set of features supported by both the NF service consumer and the UDR.					

7.3.2.3 Type PduSessionManagementData

Table 7.3.2.3-1: Definition of type PduSessionManagementData

Attribute name	Data type	P	Cardinality	Description	Applicability
pduSessionStatus	PduSessionStatus	O	0..1	Status of the PDU session.	
pduSessionStatusTs	DateTime	O	0..1	Indicates when the pduSessionStatus was last updated.	
dnai	Dnai	O	0..1	DNAI	
dnaiTs	DateTime	O	0..1	Indicates when the dnai was last updated.	
n6TrafficRoutingInfo	array(RouteToLocation)	O	1..N	N6 traffic routing information.	
n6TrafficRoutingInfoTs	DateTime	O	0..1	Indicates when the n6TrafficRoutingInfo was last updated.	
ipv4Addr	Ipv4Addr	O	0..1	UE IPv4 address.	
ipv6Prefix	array(Ipv6Prefix)	O	1..N	UE IPv6 prefix.	
ipv6Addrs	array(Ipv6Addr)	O	1..N	IPv6 addresses.	
pduSessType	PduSessionType	O	0..1	PDU session type.	
ipAddrTs	DateTime	O	0..1	Indicates when the ipv4Addr and Ipv6Prefix were last updated.	
dnn	Dnn	O	0..1	DNN	
pduSessionId	PduSessionId	O	0..1	The identifier of a PduSessionManagement resource. (NOTE 1).	ResourceNotificationExposureDataFix
suppFeat	SupportedFeatures	C	0..1	This IE represents a list of Supported features used as described in subclause 7.5. Shall be present in the HTTP PUT request/response; or in the HTTP GET response if the "supp-feat" attribute query parameter is included in the HTTP GET request. (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: The "pduSessionId" attribute shall be present when the ResourceNotificationExposureDataFix is supported.
NOTE 2: In the HTTP request, it represents the set of features supported by the NF service consumer. In the HTTP response, it represents the set of features supported by both the NF service consumer and the UDR.

7.3.2.4 Type ExposureDataSubscription

Table 7.3.2.4-1: Definition of type ExposureDataSubscription

Attribute name	Data type	P	Cardinality	Description
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 URIs that identify the resources for which a modification triggers a notification.
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.

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	AccessAndMobility Data	O	0..1	Access and Mobility Data for the UE.	
pduSessionManagement Data	array(PduSession ManagementData)	O	1..N	PDU Session Management Data for one or several PDU sessions of the UE.	
delResources	array(Uri)	O	1..N	The resources, as defined in table 7.2.2-1, if removed from UDR and notification on resource data change was requested. It may be present when the ResourceNotificationExposureData Fix is supported (NOTE).	
NOTE: 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.					

7.3.3 Simple data types and enumerations

7.3.3.1 Introduction

This subclause defines simple data types and enumerations that can be referenced from data structures defined in the previous subclauses.

7.3.3.2 Simple data types

The simple data types defined in table 7.3.3.2-1 shall be supported.

Table 7.3.3.2-1: Simple data types

Type Name	Type Definition	Description	Applicability

7.3.3.3 Enumeration: PduSessionStatus

Table 7.3.3.3-1: Enumeration PduSessionStatus

Enumeration value	Description	Applicability
"ACTIVE"	The PDU session is active.	
"RELEASED"	The PDU session is released.	

7.4 Error handling

7.4.1 General

For the Nudr_DataRepository service API for Exposure Data, HTTP error responses shall be supported as specified in subclause 4.8 of 3GPP TS 29.501 [5]. Protocol errors and application errors specified in table 5.2.7.2-1 of 3GPP TS 29.500 [4] shall be supported for an HTTP method if the corresponding HTTP status codes are specified as mandatory for that HTTP method in table 5.2.7.1-1 of 3GPP TS 29.500 [4].

In addition, the requirements in the following subclauses are applicable for the Nudr_DataRepository service API for Exposure Data.

7.4.2 Protocol Errors

No specific procedures for the Nudr_DataRepository service API for Exposure Data are specified.

7.4.3 Application Errors

The application errors defined for the Nudr_DataRepository service API for Exposure Data are listed in table 7.4.3-1.

Table 7.4.3-1: Application errors

Application Error	HTTP status code	Description

The application error handling shall follow 3GPP TS 29.504 [6] clause 6.1.6 unless explicitly specified in this document.

7.5 Feature negotiation

The optional features in table 6.1.8-1 of 3GPP TS 29.504 [6] are defined for the Nudr_DataRepository API. They shall be negotiated using the extensibility mechanism defined in subclause 6.6 of 3GPP TS 29.500 [4].

7.6 Notifications

7.6.1 General

Notifications shall comply with subclause 6.2 of 3GPP TS 29.500 [4] and subclause 4.6.2.3 of 3GPP TS 29.501 [5].

This subclause describes the resources to provide Notification to NF service consumers which have subscribed to be notified when exposure data is changed.

Table 7.6.1-1: Notifications overview

Notification	Callback URI	HTTP method or custom operation	Description (service operation)
Exposure Data Change Notification	{notificationUri}	POST	Exposure Data Change Notification

7.6.2 Exposure Data Change Notification

The POST method shall be used for Data Change Notifications and the URI shall be as provided during the subscription procedure.

Callback URI: {**notificationUri**}

Support of URI query parameters is specified in table 7.6.2-1.

Table 7.6.2-1: URI query parameters supported by the POST method

Name	Data type	P	Cardinality	Description
n/a				

Support of request data structures is specified in table 7.6.2-2 and of response data structures and response codes is specified in table 7.6.2-3.

Table 7.6.2-2: Data structures supported by the POST Request Body

Data type	P	Cardinality	Description
array(ExposureDataChange Notification)	M	1..N	Each element in the array provides the changed exposure data for one user.

Table7.6.2-3: Data structures supported by the POST Response Body

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon success, an empty response body shall be returned.
NOTE: The mandatory HTTP error status codes for the POST method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.				

Annex A (normative): OpenAPI specification

A.1 General

The present Annex contains an OpenAPI [3] specification of HTTP messages and content bodies used by the Nudr_DataRepository service for Policy Data, Application Data and Exposure Data.

This Annex shall take precedence when being discrepant to other parts of the specification with respect to the encoding of information elements and methods.

NOTE: The semantics and procedures, as well as conditions, e.g. for the applicability and allowed combinations of attributes or values, not expressed in the OpenAPI definitions but defined in other parts of the specification also apply.

Informative copies of the OpenAPI specification files contained in this 3GPP Technical Specification are available on a Git-based repository that uses the GitLab software version control system (see clause 5B of the 3GPP TR 21.900 [18] and subclause 5.3.1 of the 3GPP TS 29.501 [5] for further information).

A.2 Nudr_DataRepository API for Policy Data

For the purpose of referencing entities in the Open API file defined in this Annex, it shall be assumed that this Open API file is contained in a physical file named "TS29519_Policy_Data.yaml".

```
openapi: 3.0.0
info:
  version: '-'
  title: Unified Data Repository Service API file for policy data
  description: |
    The API version is defined in 3GPP TS 29.504
    © 2022, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).
    All rights reserved.
externalDocs:
  description: >
    3GPP TS 29.519 V17.6.0; 5G System; Usage of the Unified Data Repository Service for Policy Data,
    Application Data and Structured Data for Exposure.
  url: 'https://www.3gpp.org/ftp/Specs/archive/29_series/29.519/'

paths:
  /policy-data/ues/{ueId}:
    parameters:
     - name: ueId
       in: path
       required: true
       schema:
         $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    get:
      summary: Retrieve the policy data for a subscriber
      operationId: ReadPolicyData
      tags:
        - PolicyDataForIndividualUe (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:policy-data
      parameters:
        - name: supp-feat
          in: query
          description: Supported Features
          required: false
          schema:
             $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
        - name: data-subset-names
```

```
        in: query
        style: form
        explode: false
        description: List of policy data subset names
        required: false
        schema:
          type: array
          items:
            $ref: '#/components/schemas/PolicyDataSubset'
          minItems: 2
    responses:
      '200':
        description: Upon success, a response body containing policy data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/PolicyDataForIndividualUe'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

/policy-data/ues/{ueId}/am-data:
  parameters:
   - name: ueId
     in: path
     required: true
     schema:
       $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  get:
    summary: Retrieves the access and mobility policy data for a subscriber
    operationId: ReadAccessAndMobilityPolicyData
    tags:
      - AccessAndMobilityPolicyData (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    responses:
      '200':
        description: >
          Upon success, a response body containing access and mobility policies shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/AmPolicyData'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

/policy-data/ues/{ueId}/ue-policy-set:
  parameters:
   - name: ueId
     in: path
     required: true
     schema:
       $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  get:
    summary: Retrieves the UE policy set data for a subscriber
    operationId: ReadUEPolicySet
    tags:
      - UEPolicySet (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    parameters:
      - name: supp-feat
        in: query
        description: Supported Features
        required: false
        schema:
           $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: Upon success, a response body containing UE policies shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/UePolicySet'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  put:
    summary: Create or modify the UE policy set data for a subscriber
    operationId: CreateOrReplaceUEPolicySet
    tags:
      - UEPolicySet (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/UePolicySet'
    responses:
      '201':
        description: >
          Successful case. The resource has been successfully created and a response body
          containing a representation of the created UEPolicySet resource shall be returned.
```

```
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/UePolicySet'
        headers:
          Location:
            description: 'Contains the URI of the newly created resource'
            required: true
            schema:
              type: string
      '200':
        description: >
          Successful case. The resource has been successfully created and a response body
          containing UE policies shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/UePolicySet'
      '204':
        description: >
          Successful case. The resource has been successfully updated and no additional content
          is to be sent in the response message.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    summary: Modify the UE policy set data for a subscriber
    operationId: UpdateUEPolicySet
    tags:
      - UEPolicySet (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    requestBody:
      required: true
      content:
        application/merge-patch+json:
          schema:
            $ref: '#/components/schemas/UePolicySetPatch'
    responses:
      '204':
        description: >
          Successful case. The resource has been successfully updated and no additional content is
          to be sent in the response message.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

/policy-data/ues/{ueId}/sm-data:
  get:
    summary: Retrieves the session management policy data for a subscriber
    operationId: ReadSessionManagementPolicyData
    tags:
      - SessionManagementPolicyData (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    parameters:
     - name: ueId
       in: path
       required: true
       schema:
         $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
     - name: snssai
       in: query
       required: false
       content:
         application/json:
           schema:
             $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
     - name: dnn
       in: query
       required: false
       schema:
         $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
     - name: fields
       in: query
       description: attributes to be retrieved
       required: false
       schema:
         type: array
         items:
           type: string
         minItems: 1
     - name: supp-feat
       in: query
       description: Supported Features
       required: false
       schema:
         $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: Upon success, a response body containing SmPolicyData shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/SmPolicyData'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    summary: Modify the session management policy data for a subscriber
    operationId: UpdateSessionManagementPolicyData
    tags:
      - SessionManagementPolicyData (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    parameters:
     - name: ueId
       in: path
       required: true
       schema:
         $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    requestBody:
      required: true
      content:
        application/merge-patch+json:
          schema:
            $ref: '#/components/schemas/SmPolicyDataPatch'
    responses:
      '204':
        description: >
          Successful case. The resource has been successfully updated and no
          additional content is to be sent in the response message.
      '200':
        description: Expected response to a valid request
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/SmPolicyData'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

/policy-data/ues/{ueId}/sm-data/{usageMonId}:
  get:
    summary: Retrieve a usage monitoring resource
    operationId: ReadUsageMonitoringInformation
    tags:
      - UsageMonitoringInformation (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
```

```
    parameters:
      - name: ueId
        in: path
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: usageMonId
        in: path
        required: true
        schema:
          type: string
      - name: supp-feat
        in: query
        description: Supported Features
        required: false
        schema:
           $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: Successful case. The usage monitoring data is returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/UsageMonData'
      '204':
        description: The resource was found but no usage monitoring data is available.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  put:
    summary: Create a usage monitoring resource
    operationId: CreateUsageMonitoringResource
    tags:
      - UsageMonitoringInformation (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    parameters:
     - name: ueId
       in: path
       required: true
       schema:
         $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
     - name: usageMonId
       in: path
       required: true
       schema:
         type: string
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/UsageMonData'
    responses:
      '201':
        description: >
```

```
          Successful case. The resource has been successfully created and a response body is
          returned containing a representation of the resource.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/UsageMonData'
        headers:
          Location:
            description: 'Contains the URI of the newly created resource'
            required: true
            schema:
              type: string
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete a usage monitoring resource
    operationId: DeleteUsageMonitoringInformation
    tags:
      - UsageMonitoringInformation (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    parameters:
     - name: ueId
       in: path
       required: true
       schema:
         $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
     - name: usageMonId
       in: path
       required: true
       schema:
         type: string
    responses:
      '204':
        description: Successful case. The resource has been successfully deleted.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
```

```
  /policy-data/sponsor-connectivity-data/{sponsorId}:
    parameters:
     - name: sponsorId
       in: path
       required: true
       schema:
         type: string
    get:
      summary: Retrieves the sponsored connectivity information for a given sponsorId
      operationId: ReadSponsorConnectivityData
      tags:
        - SponsorConnectivityData (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:policy-data
      responses:
        '200':
          description: >
            Upon success, a response body containing Sponsor Connectivity Data shall be returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/SponsorConnectivityData'
        '204':
          description: The resource was found but no Sponsor Connectivity Data is available.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '406':
          $ref: 'TS29571_CommonData.yaml#/components/responses/406'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'

  /policy-data/bdt-data:
    get:
      summary: Retrieves the BDT data collection
      operationId: ReadBdtData
      tags:
        - BdtData (Store)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:policy-data
      parameters:
        - name: bdt-ref-ids
          in: query
          description: List of the BDT reference identifiers.
          required: false
          schema:
            type: array
            items:
              $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceId'
            minItems: 1
          style: form
          explode: false
        - name: supp-feat
          in: query
          description: Supported Features
          required: false
```

```
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: Upon success, a response body containing the BDT data shall be returned.
        content:
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/BdtData'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

/policy-data/bdt-data/{bdtReferenceId}:
  parameters:
   - name: bdtReferenceId
     in: path
     required: true
     schema:
       type: string
  get:
    summary: Retrieves the BDT data information associated with a BDT reference Id
    operationId: ReadIndividualBdtData
    tags:
      - IndividualBdtData (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    parameters:
      - name: supp-feat
        in: query
        description: Supported Features
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: Upon success, a response body containing the BDT data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/BdtData'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  put:
    summary: Creates an BDT data resource associated with an BDT reference Id
    operationId: CreateIndividualBdtData
    tags:
      - IndividualBdtData (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/BdtData'
    responses:
      '201':
        description: Successful case. The resource has been successfully created.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/BdtData'
        headers:
          Location:
            description: 'Contains the URI of the newly created resource'
            required: true
            schema:
              type: string
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    summary: Modifies an BDT data resource associated with an BDT reference Id
    operationId: UpdateIndividualBdtData
    tags:
      - IndividualBdtData (Document)
    requestBody:
      required: true
      content:
        application/merge-patch+json:
          schema:
            $ref: '#/components/schemas/BdtDataPatch'
    responses:
      '200':
        description: Expected response to a valid request
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/BdtData'
      '204':
        description: >
```

```
          Successful case. The resource has been successfully updated and no additional content
          is to be sent in the response message.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Deletes an BDT data resource associated with an BDT reference Id
    operationId: DeleteIndividualBdtData
    tags:
      - IndividualBdtData (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    responses:
      '204':
        description: Successful case. The resource has been successfully deleted.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

/policy-data/subs-to-notify:
  post:
    summary: Create a subscription to receive notification of policy data changes
    operationId: CreateIndividualPolicyDataSubscription
    tags:
      - PolicyDataSubscriptions (Collection)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/PolicyDataSubscription'
    responses:
      '201':
        description: >
```

```
          Upon success, a response body containing a representation of each Individual
          subscription resource shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/PolicyDataSubscription'
        headers:
          Location:
            description: 'Contains the URI of the newly created resource'
            required: true
            schema:
              type: string
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    callbacks:
      policyDataChangeNotification:
        '{$request.body#/notificationUri}':
          post:
            requestBody:
              required: true
              content:
                application/json:
                  schema:
                    type: array
                    items:
                      $ref: '#/components/schemas/PolicyDataChangeNotification'
                    minItems: 1
            responses:
              '204':
                description: No Content, Notification was successful
              '400':
                $ref: 'TS29571_CommonData.yaml#/components/responses/400'
              '401':
                $ref: 'TS29571_CommonData.yaml#/components/responses/401'
              '403':
                $ref: 'TS29571_CommonData.yaml#/components/responses/403'
              '404':
                $ref: 'TS29571_CommonData.yaml#/components/responses/404'
              '411':
                $ref: 'TS29571_CommonData.yaml#/components/responses/411'
              '413':
                $ref: 'TS29571_CommonData.yaml#/components/responses/413'
              '415':
                $ref: 'TS29571_CommonData.yaml#/components/responses/415'
              '429':
                $ref: 'TS29571_CommonData.yaml#/components/responses/429'
              '500':
                $ref: 'TS29571_CommonData.yaml#/components/responses/500'
              '503':
                $ref: 'TS29571_CommonData.yaml#/components/responses/503'
              default:
                $ref: 'TS29571_CommonData.yaml#/components/responses/default'

  /policy-data/subs-to-notify/{subsId}:
    parameters:
     - name: subsId
       in: path
       required: true
```

```
      schema:
        type: string
    put:
      summary: Modify a subscription to receive notification of policy data changes
      operationId: ReplaceIndividualPolicyDataSubscription
      tags:
        - IndividualPolicyDataSubscription (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:policy-data
      requestBody:
        required: true
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/PolicyDataSubscription'
      responses:
        '200':
          description: The individual subscription resource was updated successfully.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/PolicyDataSubscription'
        '204':
          description: >
            The individual subscription resource was updated successfully and no
            additional content is to be sent in the response message.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '411':
          $ref: 'TS29571_CommonData.yaml#/components/responses/411'
        '413':
          $ref: 'TS29571_CommonData.yaml#/components/responses/413'
        '415':
          $ref: 'TS29571_CommonData.yaml#/components/responses/415'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    delete:
      summary: Delete the individual Policy Data subscription
      operationId: DeleteIndividualPolicyDataSubscription
      tags:
        - IndividualPolicyDataSubscription (Document)
      responses:
        '204':
          description: Upon success, an empty response body shall be returned.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
```

```
  /policy-data/ues/{ueId}/operator-specific-data:
    get:
      summary: Retrieve the operator specific policy data of an UE
      operationId: ReadOperatorSpecificData
      tags:
        - OperatorSpecificData (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:policy-data
      parameters:
        - name: ueId
          in: path
          description: UE Id
          required: true
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
        - name: fields
          in: query
          description: attributes to be retrieved
          required: false
          schema:
            type: array
            items:
              type: string
            minItems: 1
        - name: supp-feat
          in: query
          description: Supported Features
          required: false
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      responses:
        '200':
          description: Expected response to a valid request
          content:
            application/json:
              schema:
                type: object
                additionalProperties:
                  $ref:
'TS29505_Subscription_Data.yaml#/components/schemas/OperatorSpecificDataContainer'
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '406':
          $ref: 'TS29571_CommonData.yaml#/components/responses/406'
        '414':
          $ref: 'TS29571_CommonData.yaml#/components/responses/414'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'

    patch:
      summary: Modify the operator specific policy data of a UE
      operationId: UpdateOperatorSpecificData
      tags:
        - OperatorSpecificData (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:policy-data
```

```
      parameters:
        - name: ueId
          in: path
          description: UE Id
          required: true
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      requestBody:
        content:
          application/json-patch+json:
            schema:
              type: array
              items:
                $ref: 'TS29571_CommonData.yaml#/components/schemas/PatchItem'
        required: true
      responses:
        '204':
          description: No content. Response to successful modification.
        '200':
          description: Expected response to a valid request
          content:
            application/json:
              schema:
                $ref: 'TS29571_CommonData.yaml#/components/schemas/PatchResult'
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '411':
          $ref: 'TS29571_CommonData.yaml#/components/responses/411'
        '413':
          $ref: 'TS29571_CommonData.yaml#/components/responses/413'
        '415':
          $ref: 'TS29571_CommonData.yaml#/components/responses/415'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    put:
      summary: Create or modify the operator specific policy data of a UE
      operationId: ReplaceOperatorSpecificData
      tags:
        - OperatorSpecificData (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:policy-data
      parameters:
        - name: ueId
          in: path
          description: UE Id
          required: true
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      requestBody:
        required: true
        content:
          application/json:
            schema:
              type: object
              additionalProperties:
                $ref:
'TS29505_Subscription_Data.yaml#/components/schemas/OperatorSpecificDataContainer'
      responses:
        '200':
          description: OK
          content:
```

```
            application/json:
              schema:
                type: object
                additionalProperties:
                  $ref:
'TS29505_Subscription_Data.yaml#/components/schemas/OperatorSpecificDataContainer'
        '201':
          description: >
            Successful case. When the feature OSDResource_Create_Delete is supported
            and the resource has been successfully created, a response body containing a
            representation of the created OperatorSpecificData resource shall be returned.
          content:
            application/json:
              schema:
                type: object
                additionalProperties:
                  $ref:
'TS29505_Subscription_Data.yaml#/components/schemas/OperatorSpecificDataContainer'
          headers:
            Location:
              description: 'Contains the URI of the newly created resource'
              required: true
              schema:
                type: string
        '204':
          description: The resource has been successfully updated.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '411':
          $ref: 'TS29571_CommonData.yaml#/components/responses/411'
        '413':
          $ref: 'TS29571_CommonData.yaml#/components/responses/413'
        '415':
          $ref: 'TS29571_CommonData.yaml#/components/responses/415'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    delete:
      summary: When the feature OSDResource_Create_Delete is supported, delete OperatorSpecificData
resource
      operationId: DeleteOperatorSpecificData
      tags:
        - OperatorSpecificData (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:policy-data
      parameters:
       - name: ueId
         in: path
         required: true
         schema:
           $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      responses:
        '204':
          description: Successful case. The resource has been successfully deleted.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
```

```
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/policy-data/plmns/{plmnId}/ue-policy-set:
  parameters:
   - name: plmnId
     in: path
     required: true
     schema:
       $ref: 'TS29505_Subscription_Data.yaml#/components/schemas/VarPlmnId'
  get:
    summary: Retrieve the UE policy set data for an H-PLMN
    operationId: ReadPlmnUePolicySet
    tags:
      - PlmnUePolicySet (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    responses:
      '200':
        description: Upon success, a response body containing UE policies shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/UePolicySet'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '412':
        $ref: 'TS29571_CommonData.yaml#/components/responses/412'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/policy-data/slice-control-data/{snssai}:
  parameters:
   - name: snssai
     in: path
     required: true
     schema:
       $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
  get:
    summary: Retrieves a network Slice specific policy control data resource
    operationId: ReadSlicePolicyControlData
    tags:
      - SlicePolicyControlData (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:policy-data
    parameters:
      - name: supp-feat
        in: query
        description: Supported Features
        required: false
```

```
          schema:
             $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      responses:
        '200':
          description: >
            Successful case. The network slice specific policy control data shall be returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/SlicePolicyData'
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '406':
          $ref: 'TS29571_CommonData.yaml#/components/responses/406'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    patch:
      summary: Modify a network Slice specific policy control data resource
      operationId: UpdateSlicePolicyControlData
      tags:
        - SlicePolicyControlData (Document)
      requestBody:
        required: true
        content:
          application/merge-patch+json:
            schema:
              $ref: '#/components/schemas/SlicePolicyDataPatch'
      responses:
        '200':
          description: >
            The resource has been successfully updated and a response body containing network
            slice specific policy control data shall be returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/SlicePolicyData'
        '204':
          description: >
            The resource has been successfully updated and no additional content is
            to be sent in the response message.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '411':
          $ref: 'TS29571_CommonData.yaml#/components/responses/411'
        '413':
          $ref: 'TS29571_CommonData.yaml#/components/responses/413'
        '415':
          $ref: 'TS29571_CommonData.yaml#/components/responses/415'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'

components:
  schemas:
    PolicyDataForIndividualUe:
```

```
      description: Contains policy data for a given subscriber.
      type: object
      properties:
        uePolicyDataSet:
          $ref: '#/components/schemas/UePolicySet'
        smPolicyDataSet:
          $ref: '#/components/schemas/SmPolicyData'
        amPolicyDataSet:
          $ref: '#/components/schemas/AmPolicyData'
        umData:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/UsageMonData'
          minProperties: 1
          description: Contains UM policies. The value of the limit identifier is used as the key of
the map.
        operatorSpecificDataSet:
          type: object
          additionalProperties:
            $ref: 'TS29505_Subscription_Data.yaml#/components/schemas/OperatorSpecificDataContainer'
          minProperties: 1
          description: >
            Contains Operator Specific Data resource data. The key of the map is operator
            specific data element name and the value is the operator specific data of the UE.
    AmPolicyData:
      description: Contains the AM policy data for a given subscriber.
      type: object
      properties:
        praInfos:
          type: object
          additionalProperties:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/PresenceInfo'
          minProperties: 1
          description: >
            Contains Presence reporting area information. The praId attribute within the
            PresenceInfo data type is the key of the map.
        subscCats:
          type: array
          items:
            type: string
          minItems: 1
    UePolicySet:
      description: Contains the UE policy data for a given subscriber.
      type: object
      properties:
        praInfos:
          type: object
          additionalProperties:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/PresenceInfo'
          minProperties: 1
          description: >
            Contains Presence reporting area information. The praId attribute within the
            PresenceInfo data type is the key of the map.
        subscCats:
          type: array
          items:
            type: string
          minItems: 1
        uePolicySections:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/UePolicySection'
          minProperties: 1
          description: >
            Contains the UE Policy Sections. The UE Policy Section Identifier is used as
            the key of the map.
        upsis:
          type: array
          items:
            type: string
          minItems: 1
        allowedRouteSelDescs:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/PlmnRouteSelectionDescriptor'
          minProperties: 1
          description: >
            Contains allowed route selection descriptors per serving PLMN for a UE.
```

```
          The serving PLMN identifier is the key of the map.
      andspInd:
        type: boolean
      pei:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Pei'
      osIds:
        type: array
        items:
          $ref: '#/components/schemas/OsId'
        minItems: 1
      suppFeat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
  UePolicySetPatch:
    description: Contains the UE policy set for a given subscriber.
    type: object
    properties:
      uePolicySections:
        type: object
        additionalProperties:
          $ref: '#/components/schemas/UePolicySection'
        minProperties: 1
        description: >
          Contains the UE Policy Sections. The UE Policy Section Identifier is used
          as the key of the map.
      upsis:
        type: array
        items:
          type: string
        minItems: 1
      andspInd:
        type: boolean
      pei:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Pei'
      osIds:
        type: array
        items:
          $ref: '#/components/schemas/OsId'
        minItems: 1
  UePolicySection:
    description: Contains the UE policy section.
    type: object
    properties:
      uePolicySectionInfo:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Bytes'
      upsi:
        type: string
    required:
      - uePolicySectionInfo
      - upsi
  SmPolicyData:
    description: Contains the SM policy data for a given subscriber.
    type: object
    properties:
      smPolicySnssaiData:
        type: object
        additionalProperties:
          $ref: '#/components/schemas/SmPolicySnssaiData'
        minProperties: 1
        description: >
          Contains Session Management Policy data per S-NSSAI for all the SNSSAIs
          of the subscriber. The key of the map is the S-NSSAI.
      umDataLimits:
        type: object
        additionalProperties:
          $ref: '#/components/schemas/UsageMonDataLimit'
        minProperties: 1
        description: >
          Contains a list of usage monitoring profiles associated with the subscriber.
          The limit identifier is used as the key of the map.
      umData:
        type: object
        additionalProperties:
          $ref: '#/components/schemas/UsageMonData'
```

```
        minProperties: 1
        description: >
          Contains the remaining allowed usage data associated with the subscriber.
           The limit identifier is used as the key of the map.
      suppFeat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
    required:
      - smPolicySnssaiData
  SmPolicySnssaiData:
    description: Contains the SM policy data for a given subscriber and S-NSSAI.
    type: object
    properties:
      snssai:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      smPolicyDnnData:
        type: object
        additionalProperties:
          $ref: '#/components/schemas/SmPolicyDnnData'
        minProperties: 1
        description: >
          Session Management Policy data per DNN for all the DNNs of the indicated S-NSSAI.
          The key of the map is the DNN.
      ueSliceMbr:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SliceMbr'
    required:
      - snssai
  SmPolicyDnnData:
    description: Contains the SM policy data for a given DNN (and S-NSSAI).
    type: object
    properties:
      dnn:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      allowedServices:
        type: array
        items:
          type: string
        minItems: 1
      subscCats:
        type: array
        items:
          type: string
        minItems: 1
      gbrUl:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
      gbrDl:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
      adcSupport:
        type: boolean
      subscSpendingLimits:
        type: boolean
      ipv4Index:
        $ref: '#/components/schemas/IpIndex'
      ipv6Index:
        $ref: '#/components/schemas/IpIndex'
      offline:
        type: boolean
      online:
        type: boolean
      chfInfo:
        $ref: 'TS29512_Npcf_SMPolicyControl.yaml#/components/schemas/ChargingInformation'
      refUmDataLimitIds:
        type: object
        additionalProperties:
          $ref: '#/components/schemas/LimitIdToMonitoringKey'
        minProperties: 1
        description: >
          A reference to the UsageMonitoringDataLimit or UsageMonitoringData instances
          for this DNN and SNSSAI that may also include the related monitoring key(s).
          The key of the map is the limit identifier.
      mpsPriority:
        type: boolean
      mcsPriority:
        type: boolean
```

```
      imsSignallingPrio:
        type: boolean
      mpsPriorityLevel:
        type: integer
      mcsPriorityLevel:
        type: integer
      praInfos:
        type: object
        additionalProperties:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/PresenceInfo'
        minProperties: 1
        description: >
          Contains Presence reporting area information. The praId attribute within the
          PresenceInfo data type is the key of the map.
      bdtRefIds:
        type: object
        additionalProperties:
          $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceIdRm'
        minProperties: 1
        description: >
          Identifies transfer policies of background data transfer. Any string value can
          be used as a key of the map.
        nullable: true
      locRoutNotAllowed:
        type: boolean
    required:
      - dnn
  UsageMonDataLimit:
    description: Contains usage monitoring control data for a subscriber.
    type: object
    properties:
      limitId:
        type: string
      scopes:
        type: object
        additionalProperties:
          $ref: '#/components/schemas/UsageMonDataScope'
        minProperties: 1
        description: >
          Identifies the SNSSAI and DNN combinations to which the usage monitoring data
          limit applies. The S-NSSAI is the key of the map.
      umLevel:
        $ref: '#/components/schemas/UsageMonLevel'
      startDate:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      endDate:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      usageLimit:
        $ref: 'TS29122_CommonData.yaml#/components/schemas/UsageThreshold'
      resetPeriod:
        $ref: '#/components/schemas/TimePeriod'
    required:
      - limitId
  UsageMonData:
    description: Contains remain allowed usage data for a subscriber.
    type: object
    properties:
      limitId:
        type: string
      scopes:
        type: object
        additionalProperties:
          $ref: '#/components/schemas/UsageMonDataScope'
        minProperties: 1
        description: >
          Identifies the SNSSAI and DNN combinations for remain allowed usage data
          for a subscriber. The S-NSSAI is the key of the map.
      umLevel:
        $ref: '#/components/schemas/UsageMonLevel'
      allowedUsage:
        $ref: 'TS29122_CommonData.yaml#/components/schemas/UsageThreshold'
      resetTime:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      suppFeat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
```

```
        type: string
      minItems: 1
  required:
    - limitId
LimitIdToMonitoringKey:
  description: >
    Contains the limit identifier and the corresponding monitoring key for a given
    S-NSSAI and DNN.
  type: object
  properties:
    limitId:
      type: string
    monkey:
      type: array
      items:
        type: string
      minItems: 1
  required:
    - limitId
  nullable: true
UsageMonDataScope:
  description: >
    Contains a SNSSAI and DNN combinations to which the UsageMonData instance belongs to.
  type: object
  properties:
    snssai:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    dnn:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      minItems: 1
  required:
    - snssai
TimePeriod:
  description: Contains the periodicity for the defined usage monitoring data limits.
  type: object
  properties:
    period:
      $ref: '#/components/schemas/Periodicity'
    maxNumPeriod:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Uinteger'
  required:
    - period
SponsorConnectivityData:
  description: >
    Contains the sponsored data connectivity related information for a sponsor identifier.
  type: object
  properties:
    aspIds:
      type: array
      items:
        type: string
  required:
    - aspIds
BdtData:
  description: Contains the background data transfer data.
  type: object
  properties:
    aspId:
      type: string
    transPolicy:
      $ref: 'TS29554_Npcf_BDTPolicyControl.yaml#/components/schemas/TransferPolicy'
    bdtRefId:
      $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceId'
    nwAreaInfo:
      $ref: 'TS29554_Npcf_BDTPolicyControl.yaml#/components/schemas/NetworkAreaInfo'
    numOfUes:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Uinteger'
    volPerUe:
      $ref: 'TS29122_CommonData.yaml#/components/schemas/UsageThreshold'
    dnn:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
    snssai:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    trafficDes:
      $ref: 'TS29122_ResourceManagementOfBdt.yaml#/components/schemas/TrafficDescriptor'
    bdtpStatus:
```

```
        $ref: '#/components/schemas/BdtPolicyStatus'
      suppFeat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
    required:
      - aspId
      - transPolicy
  PolicyDataSubscription:
    description: Identifies a subscription to policy data change notification.
    type: object
    properties:
      notificationUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      notifId:
        type: string
      monitoredResourceUris:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      monResItems:
        type: array
        items:
          $ref: '#/components/schemas/ResourceItem'
        minItems: 1
      expiry:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      supportedFeatures:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
    required:
      - notificationUri
      - monitoredResourceUris
  PolicyDataChangeNotification:
    description: Contains changed policy data for which notification was requested.
    type: object
    properties:
      amPolicyData:
        $ref: '#/components/schemas/AmPolicyData'
      uePolicySet:
        $ref: '#/components/schemas/UePolicySet'
      plmnUePolicySet:
        $ref: '#/components/schemas/UePolicySet'
      smPolicyData:
        $ref: '#/components/schemas/SmPolicyData'
      usageMonData:
        $ref: '#/components/schemas/UsageMonData'
      SponsorConnectivityData:
        $ref: '#/components/schemas/SponsorConnectivityData'
      bdtData:
        $ref: '#/components/schemas/BdtData'
      opSpecData:
        $ref: 'TS29505_Subscription_Data.yaml#/components/schemas/OperatorSpecificDataContainer'
      opSpecDataMap:
        type: object
        additionalProperties:
          $ref: 'TS29505_Subscription_Data.yaml#/components/schemas/OperatorSpecificDataContainer'
        minProperties: 1
        description: >
          Operator Specific Data resource data, if changed and notification was requested.
          The key of the map is operator specific data element name and the value is the
          operator specific data of the UE.
      ueId:
       $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      sponsorId:
        type: string
      bdtRefId:
        $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceId'
      usageMonId:
        type: string
      plmnId:
```

```
        $ref: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
      delResources:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        minItems: 1
      notifId:
        type: string
      reportedFragments:
        type: array
        items:
          $ref: '#/components/schemas/NotificationItem'
        minItems: 1
      slicePolicyData:
        $ref: '#/components/schemas/SlicePolicyData'
      snssai:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
  PlmnRouteSelectionDescriptor:
    description: >
      Contains the route selection descriptors (combinations of SNSSAI, DNNs, PDU session types,
      SSC modes and ATSSS information) allowed by subscription to the UE for a serving PLMN
    type: object
    properties:
      servingPlmn:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
      snssaiRouteSelDescs:
        type: array
        items:
          $ref: '#/components/schemas/SnssaiRouteSelectionDescriptor'
        minItems: 1
    required:
      - servingPlmn
  SnssaiRouteSelectionDescriptor:
    description: >
      Contains the route selector parameters (DNNs, PDU session types, SSC modes and ATSSS
      information) per SNSSAI
    type: object
    properties:
      snssai:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      dnnRouteSelDescs:
        type: array
        items:
          $ref: '#/components/schemas/DnnRouteSelectionDescriptor'
        minItems: 1
    required:
      - snssai
  DnnRouteSelectionDescriptor:
    description: >
      Contains the route selector parameters (PDU session types, SSC modes and ATSSS
      information) per DNN
    type: object
    properties:
      dnn:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      sscModes:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SscMode'
        minItems: 1
      pduSessTypes:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'
        minItems: 1
      atsssInfo:
        description: >
          Indicates whether MA PDU session establishment is allowed for this DNN.
          When set to value true MA PDU session establishment is allowed for this DNN.
        type: boolean
        default: false
    required:
      - dnn
  SmPolicyDataPatch:
    description: Contains the SM policy data for a given subscriber.
    type: object
    properties:
      umData:
```

```
          type: object
          additionalProperties:
            $ref: '#/components/schemas/UsageMonData'
          minProperties: 1
          description: >
            Contains the remaining allowed usage data associated with the subscriber.
            The value of the limit identifier is used as the key of the map.
          nullable: true
        smPolicySnssaiData:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/SmPolicySnssaiDataPatch'
          minProperties: 1
          description: >
            Modifiable Session Management Policy data per S-NSSAI for all the SNSSAIs
            of the subscriber. The key of the map is the S-NSSAI.
    SmPolicySnssaiDataPatch:
      description: Contains the SM policy data for a given subscriber and S-NSSAI.
      type: object
      properties:
        snssai:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
        smPolicyDnnData:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/SmPolicyDnnDataPatch'
          minProperties: 1
          description: >
            Modifiable Session Management Policy data per DNN for all the DNNs of the
            indicated S-NSSAI. The key of the map is the DNN.
      required:
        - snssai
    SmPolicyDnnDataPatch:
      description: Contains the SM policy data for a given DNN (and S-NSSAI).
      type: object
      properties:
        dnn:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
        bdtRefIds:
          type: object
          additionalProperties:
            $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceIdRm'
          minProperties: 1
          description: >
            Contains updated transfer policies of background data transfer.
            Any string value can be used as a key of the map.
          nullable: true
      required:
        - dnn
#
    ResourceItem:
      description: >
        Identifies a subscription to policy data change notification when the change occurs
        in a fragment (subset of resource data) of a given resource.
      type: object
      properties:
        monResourceUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        items:
          type: array
          items:
            $ref: '#/components/schemas/ItemPath'
          minItems: 1
      required:
        - monResourceUri
        - items
#

    NotificationItem:
      description: >
        Identifies a data change notification when the change occurs in a fragment
        (subset of resource data) of a given resource.
      type: object
      properties:
        resourceId:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        notifItems:
          type: array
```

```
          items:
            $ref: '#/components/schemas/UpdatedItem'
          minItems: 1
      required:
        - resourceId
        - notifItems
#
    UpdatedItem:
      description: Identifies a fragment of a resource.
      type: object
      properties:
        item:
          $ref: '#/components/schemas/ItemPath'
        value: {}
      required:
        - item
        - value
#
    BdtDataPatch:
      description: Contains the modified background data transfer data.
      type: object
      properties:
        transPolicy:
          $ref: 'TS29554_Npcf_BDTPolicyControl.yaml#/components/schemas/TransferPolicy'
        bdtpStatus:
          $ref: '#/components/schemas/BdtPolicyStatus'
#
    SlicePolicyData:
      description: Contains the network slice specific policy control information.
      type: object
      properties:
        mbrUl:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
        mbrDl:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
        remainMbrUl:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
        remainMbrDl:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
        suppFeat:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
        resetIds:
          type: array
          items:
            type: string
          minItems: 1

#
    SlicePolicyDataPatch:
      description: Contains the modified network slice specific policy control information.
      type: object
      properties:
        remainMbrUl:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
        remainMbrDl:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
      oneOf:
        - required: [remainMbrUl]
        - required: [remainMbrDl]

# SIMPLE TYPES:

    IpIndex:
      description: >
        Represents information that identifies which IP pool or external server
        is used to allocate the IP address.
      type: integer
    OsId:
      description: Represents the Operating System of the served UE.
      type: string
      format: uuid
    ItemPath:
      description: Identifies a fragment (subset of resource data) of a given resource.
      type: string

# ENUMS:

    UsageMonLevel:
```

```
      description: Represents the usage monitoring level.
      anyOf:
      - type: string
        enum:
          - SESSION_LEVEL
          - SERVICE_LEVEL
      - type: string
    Periodicity:
      description: Represents the time period.
      anyOf:
      - type: string
        enum:
          - YEARLY
          - MONTHLY
          - WEEKLY
          - DAILY
          - HOURLY
      - type: string
    BdtPolicyStatus:
      description: Indicates the validation status of a negotiated BDT policy.
      anyOf:
      - type: string
        enum:
          - INVALID
          - VALID
      - type: string
    PolicyDataSubset:
      anyOf:
        - type: string
          enum:
          - AM_POLICY_DATA
          - SM_POLICY_DATA
          - UE_POLICY_DATA
          - UM_DATA
          - OPERATOR_SPECIFIC_DATA
        - type: string
#
```

A.3 Nudr_DataRepository API for Application Data

For the purpose of referencing entities in the Open API file defined in this Annex, it shall be assumed that this Open API file is contained in a physical file named "TS29519_Application_Data.yaml".

```
openapi: 3.0.0
info:
  version: '-'
  title: Unified Data Repository Service API file for Application Data
  description: |
    The API version is defined in 3GPP TS 29.504
    © 2022, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).
    All rights reserved.
externalDocs:
  description: >
    3GPP TS 29.519 V17.6.0; 5G System; Usage of the Unified Data Repository Service for Policy Data,
    Application Data and Structured Data for Exposure.
  url: 'https://www.3gpp.org/ftp/Specs/archive/29_series/29.519/'

paths:
  /application-data/pfds:
    get:
      summary: Retrieve PFDs for application identifier(s)
      operationId: ReadPFDData
      tags:
        - PFD Data (Store)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      parameters:
        - name: appId
          in: query
          description: >
```

```
          Contains the information of the application identifier(s) for the querying PFD
          Data resource. If none appId is included in the URI, it applies to all application
          identifier(s) for the querying PFD Data resource.
        required: false
        schema:
          type: array
          items:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ApplicationId'
          minItems: 1
      - name: supp-feat
        in: query
        description: Supported Features
        required: false
        schema:
           $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: A representation of PFDs for request applications is returned.
        content:
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/PfdDataForAppExt'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/pfds/{appId}:
    get:
      summary: Retrieve the corresponding PFDs of the specified application identifier
      operationId: ReadIndividualPFDData
      tags:
        - Individual PFD Data (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      parameters:
        - name: appId
          in: path
          description: >
            Indicate the application identifier for the request pfd(s). It shall apply the
            format of Data type ApplicationId.
          required: true
          schema:
            type: string
        - name: supp-feat
          in: query
          description: Supported Features
          required: false
          schema:
             $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      responses:
        '200':
          description: >
            A representation of PFDs for the request application identified by the application
            identifier is returned.
          content:
```

```
          application/json:
            schema:
              $ref: '#/components/schemas/PfdDataForAppExt'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete the corresponding PFDs of the specified application identifier
    operationId: DeleteIndividualPFDData
    tags:
      - Individual PFD Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: appId
        in: path
        description: >
          Indicate the application identifier for the request pfd(s). It shall apply the
          format of Data type ApplicationId.
        required: true
        schema:
          type: string
    responses:
      '204':
        description: >
          Successful case. The Individual PFD Data resource related to the application
          identifier was deleted.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  put:
    summary: Create or update the corresponding PFDs for the specified application identifier
    operationId: CreateOrReplaceIndividualPFDData
    tags:
      - Individual PFD Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
```

```
        application/json:
          schema:
            $ref: '#/components/schemas/PfdDataForAppExt'
    parameters:
      - name: appId
        in: path
        description: >
          Indicate the application identifier for the request pfd(s). It shall apply the format
          of Data type ApplicationId.
        required: true
        schema:
          type: string
    responses:
      '201':
        description: >
          The creation of an Individual PFD Data resource related to the application-identifier
          is confirmed and a representation of that resource is returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/PfdDataForAppExt'
        headers:
          Location:
            description: >
              'Contains the URI of the newly created resource, according to the structure:
              {apiRoot}/nudr-dr/<apiVersion>/application-data/pfds/{appId}'
            required: true
            schema:
              type: string
      '200':
        description: >
          Successful case. The upgrade of an Individual PFD Data resource related to the
          application identifier is confirmed and a representation of that resource is returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/PfdDataForAppExt'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/influenceData:
    get:
      summary: Retrieve Traffic Influence Data
      operationId: ReadInfluenceData
      tags:
        - Influence Data (Store)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      parameters:
        - name: influence-Ids
```

```
      in: query
      description: Each element identifies a service.
      required: false
      schema:
        type: array
        items:
          type: string
        minItems: 1
    - name: dnns
      in: query
      description: Each element identifies a DNN.
      required: false
      schema:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
        minItems: 1
    - name: snssais
      in: query
      description: Each element identifies a slice.
      required: false
      content:
        application/json:
          schema:
            type: array
            items:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
            minItems: 1
    - name: internal-Group-Ids
      in: query
      description: Each element identifies a group of users.
      required: false
      schema:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        minItems: 1
    - name: supis
      in: query
      description: Each element identifies the user.
      required: false
      schema:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
        minItems: 1
    - name: supp-feat
      in: query
      required: false
      description: Supported Features
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  responses:
    '200':
      description: The Traffic Influence Data stored in the UDR are returned.
      content:
        application/json:
          schema:
            type: array
            items:
              $ref: '#/components/schemas/TrafficInfluData'
    '400':
      $ref: 'TS29571_CommonData.yaml#/components/responses/400'
    '401':
      $ref: 'TS29571_CommonData.yaml#/components/responses/401'
    '403':
      $ref: 'TS29571_CommonData.yaml#/components/responses/403'
    '404':
      $ref: 'TS29571_CommonData.yaml#/components/responses/404'
    '406':
      $ref: 'TS29571_CommonData.yaml#/components/responses/406'
    '414':
      $ref: 'TS29571_CommonData.yaml#/components/responses/414'
    '429':
      $ref: 'TS29571_CommonData.yaml#/components/responses/429'
    '500':
      $ref: 'TS29571_CommonData.yaml#/components/responses/500'
    '503':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/application-data/influenceData/{influenceId}:
  put:
    summary: Create or update an individual Influence Data resource
    operationId: CreateOrReplaceIndividualInfluenceData
    tags:
      - Individual Influence Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/TrafficInfluData'
    parameters:
      - name: influenceId
        in: path
        description: >
          The Identifier of an Individual Influence Data to be created or updated.
          It shall apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '201':
        description: >
          The creation of an Individual Traffic Influence Data resource is confirmed
          and a representation of that resource is returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/TrafficInfluData'
        headers:
          Location:
            description: >
              'Contains the URI of the newly created resource, according to the structure:
              {apiRoot}/nudr-dr/<apiVersion>/application-data/influenceData/{influenceId}'
            required: true
            schema:
              type: string
      '200':
        description: >
          The update of an Individual Traffic Influence Data resource is confirmed and a
          response body containing Traffic Influence Data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/TrafficInfluData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
```

```
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    summary: Modify part of the properties of an individual Influence Data resource
    operationId: UpdateIndividualInfluenceData
    tags:
      - Individual Influence Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/merge-patch+json:
          schema:
            $ref: '#/components/schemas/TrafficInfluDataPatch'
    parameters:
      - name: influenceId
        in: path
        description: >
          The Identifier of an Individual Influence Data to be updated. It shall apply
          the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '200':
        description: >
          The update of an Individual Traffic Influence Data resource is confirmed and
          a response body containing Traffic Influence Data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/TrafficInfluData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete an individual Influence Data resource
    operationId: DeleteIndividualInfluenceData
    tags:
      - Individual Influence Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: influenceId
```

```
        in: path
        description: >
          The Identifier of an Individual Influence Data to be updated. It shall apply
          the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '204':
        description: The Individual Influence Data was deleted successfully.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/application-data/influenceData/subs-to-notify:
  post:
    summary: Create a new Individual Influence Data Subscription resource
    operationId: CreateIndividualInfluenceDataSubscription
    tags:
      - Influence Data Subscriptions (Collection)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/TrafficInfluSub'
    responses:
      '201':
        description: The subscription was created successfully.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/TrafficInfluSub'
        headers:
          Location:
            description: 'Contains the URI of the newly created resource'
            required: true
            schema:
              type: string
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
```

```
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    callbacks:
      trafficInfluenceDataChangeNotification:
        '{$request.body#/notificationUri}':
          post:
            requestBody:
              required: true
              content:
                application/json:
                  schema:
                    type: array
                    items:
                      oneOf:
                        - $ref: '#/components/schemas/TrafficInfluData'
                        - $ref: '#/components/schemas/TrafficInfluDataNotif'
                    minItems: 1
            responses:
              '204':
                description: No Content, Notification was successful
              '400':
                $ref: 'TS29571_CommonData.yaml#/components/responses/400'
              '403':
                $ref: 'TS29122_CommonData.yaml#/components/responses/403'
              '404':
                $ref: 'TS29122_CommonData.yaml#/components/responses/404'
              '411':
                $ref: 'TS29571_CommonData.yaml#/components/responses/411'
              '413':
                $ref: 'TS29571_CommonData.yaml#/components/responses/413'
              '415':
                $ref: 'TS29571_CommonData.yaml#/components/responses/415'
              '429':
                $ref: 'TS29571_CommonData.yaml#/components/responses/429'
              '500':
                $ref: 'TS29571_CommonData.yaml#/components/responses/500'
              '503':
                $ref: 'TS29571_CommonData.yaml#/components/responses/503'
              default:
                $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  get:
    summary: Read Influence Data Subscriptions
    operationId: ReadInfluenceDataSubscriptions
    tags:
      - Influence Data Subscriptions (Collection)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: dnn
        in: query
        description: Identifies a DNN.
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      - name: snssai
        in: query
        description: Identifies a slice.
        required: false
        content:
          application/json:
            schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      - name: internal-Group-Id
        in: query
        description: Identifies a group of users.
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
      - name: supi
        in: query
        description: Identifies a user.
        required: false
        schema:
```

```
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
      responses:
        '200':
          description: >
            The subscription information as request in the request URI query parameter(s)
            are returned.
          content:
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/TrafficInfluSub'
                minItems: 0
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '406':
          $ref: 'TS29571_CommonData.yaml#/components/responses/406'
        '414':
          $ref: 'TS29571_CommonData.yaml#/components/responses/414'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/influenceData/subs-to-notify/{subscriptionId}:
    get:
      summary: Get an existing individual Influence Data Subscription resource
      operationId: ReadIndividualInfluenceDataSubscription
      tags:
        - Individual Influence Data Subscription (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      parameters:
        - name: subscriptionId
          in: path
          description: >
            String identifying a subscription to the Individual Influence Data Subscription
          required: true
          schema:
            type: string
      responses:
        '200':
          description: The subscription information is returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/TrafficInfluSub'
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '406':
          $ref: 'TS29571_CommonData.yaml#/components/responses/406'
        '414':
          $ref: 'TS29571_CommonData.yaml#/components/responses/414'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  put:
    summary: Modify an existing individual Influence Data Subscription resource
    operationId: ReplaceIndividualInfluenceDataSubscription
    tags:
      - Individual Influence Data Subscription (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/TrafficInfluSub'
    parameters:
      - name: subscriptionId
        in: path
        description: >
          String identifying a subscription to the Individual Influence Data Subscription
        required: true
        schema:
          type: string
    responses:
      '200':
        description: The subscription was updated successfully.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/TrafficInfluSub'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete an individual Influence Data Subscription resource
    operationId: DeleteIndividualInfluenceDataSubscription
    tags:
      - Individual Influence Data Subscription (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: subscriptionId
        in: path
        description: >
          String identifying a subscription to the Individual Influence Data Subscription
        required: true
```

```
        schema:
          type: string
    responses:
      '204':
        description: The subscription was terminated successfully.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/application-data/bdtPolicyData:
  get:
    summary: Retrieve applied BDT Policy Data
    operationId: ReadBdtPolicyData
    tags:
      - BdtPolicy Data (Store)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: bdt-policy-ids
        in: query
        description: Each element identifies a service.
        required: false
        schema:
          type: array
          items:
            type: string
          minItems: 1
      - name: internal-group-ids
        in: query
        description: Each element identifies a group of users.
        required: false
        schema:
          type: array
          items:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
          minItems: 1
      - name: supis
        in: query
        description: Each element identifies the user.
        required: false
        schema:
          type: array
          items:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
          minItems: 1
    responses:
      '200':
        description: The applied BDT policy Data stored in the UDR are returned.
        content:
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/BdtPolicyData'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/application-data/bdtPolicyData/{bdtPolicyId}:
  put:
    summary: Create an individual applied BDT Policy Data resource
    operationId: CreateIndividualAppliedBdtPolicyData
    tags:
      - Individual Applied BDT Policy Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/BdtPolicyData'
    parameters:
      - name: bdtPolicyId
        in: path
        description: >
          The Identifier of an Individual Applied BDT Policy Data to be created or updated.
          It shall apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '201':
        description: >
          The creation of an Individual Applied BDT Policy Data resource is confirmed and a
          representation of that resource is returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/BdtPolicyData'
        headers:
          Location:
            description: >
              Contains the URI of the newly created resource, according to the structure:
              {apiRoot}/nudr-dr/<apiVersion>/application-data/bdtPolicyData/{bdtPolicyId}
            required: true
            schema:
              type: string
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
```

```
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    summary: Modify part of the properties of an individual Applied BDT Policy Data resource
    operationId: UpdateIndividualAppliedBdtPolicyData
    tags:
      - Individual Applied BDT Policy Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/merge-patch+json:
          schema:
            $ref: '#/components/schemas/BdtPolicyDataPatch'
    parameters:
      - name: bdtPolicyId
        in: path
        description: >
          The Identifier of an Individual Applied BDT Policy Data to be updated. It shall
          apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '200':
        description: >
          The update of an Individual Applied BDT Policy Data resource is confirmed and
          a response body containing Applied BDT Policy Data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/BdtPolicyData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete an individual Applied BDT Policy Data resource
    operationId: DeleteIndividualAppliedBdtPolicyData
    tags:
      - Individual Applied BDT Policy Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: bdtPolicyId
```

```
        in: path
        description: >
          The Identifier of an Individual Applied BDT Policy Data to be updated.
          It shall apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '204':
        description: The Individual Applied BDT Policy Data was deleted successfully.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

  /application-data/iptvConfigData:
    get:
      summary: Retrieve IPTV configuration Data
      operationId: ReadIPTVCongifurationData
      tags:
        - IPTV Configuration Data (Store)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      parameters:
        - name: config-ids
          in: query
          description: Each element identifies a configuration.
          required: false
          schema:
            type: array
            items:
              type: string
            minItems: 1
        - name: dnns
          in: query
          description: Each element identifies a DNN.
          required: false
          schema:
            type: array
            items:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
            minItems: 1
        - name: snssais
          in: query
          description: Each element identifies a slice.
          required: false
          content:
            application/json:
              schema:
                type: array
                items:
                  $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
                minItems: 1
        - name: supis
          in: query
          description: Each element identifies the user.
          required: false
          schema:
            type: array
            items:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
```

```
          minItems: 1
        - name: inter-group-ids
          in: query
          description: Each element identifies a group of users.
          required: false
          schema:
            type: array
            items:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
            minItems: 1
      responses:
        '200':
          description: The IPTV configuration data stored in the UDR are returned.
          content:
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/IptvConfigData'
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '406':
          $ref: 'TS29571_CommonData.yaml#/components/responses/406'
        '414':
          $ref: 'TS29571_CommonData.yaml#/components/responses/414'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/iptvConfigData/{configurationId}:
    put:
      summary: Create or update an individual IPTV configuration resource
      operationId: CreateOrReplaceIndividualIPTVConfigurationData
      tags:
        - Individual IPTV Configuration Data (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      requestBody:
        required: true
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/IptvConfigData'
      parameters:
        - name: configurationId
          in: path
          description: >
            The Identifier of an Individual IPTV Configuration Data to be created or updated.
            It shall apply the format of Data type string.
          required: true
          schema:
            type: string
      responses:
        '201':
          description: >
            The creation of an Individual IPTV Configuration Data resource is confirmed and a
            representation of that resource is returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/IptvConfigData'
          headers:
            Location:
```

```
            description: 'Contains the URI of the newly created resource'
            required: true
            schema:
              type: string
      '200':
        description: The update of an Individual IPTV configuration resource.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/IptvConfigData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    summary: Partial update an individual IPTV configuration resource
    operationId: PartialReplaceIndividualIPTVConfigurationData
    tags:
      - Individual IPTV Configuration Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/merge-patch+json:
          schema:
            $ref: 'TS29522_IPTVConfiguration.yaml#/components/schemas/IptvConfigDataPatch'
    parameters:
      - name: configurationId
        in: path
        description: >
          The Identifier of an Individual IPTV Configuration Data to be updated.
          It shall apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '200':
        description: The update of an Individual IPTV configuration resource.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/IptvConfigData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
```

```
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete an individual IPTV configuration resource
    operationId: DeleteIndividualIPTVConfigurationData
    tags:
      - Individual IPTV Configuration Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: configurationId
        in: path
        description: >
          The Identifier of an Individual IPTV Configuration to be updated. It shall
          apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '204':
        description: The resource was deleted successfully.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/application-data/serviceParamData:
  get:
    summary: Retrieve Service Parameter Data
    operationId: ReadServiceParameterData
    tags:
      - Service Parameter Data (Store)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: service-param-ids
        in: query
        description: Each element identifies a service.
        required: false
        schema:
          type: array
```

```
      items:
        type: string
      minItems: 1
  - name: dnns
    in: query
    description: Each element identifies a DNN.
    required: false
    schema:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      minItems: 1
  - name: snssais
    in: query
    description: Each element identifies a slice.
    required: false
    content:
      application/json:
        schema:
          type: array
          items:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
          minItems: 1
  - name: internal-group-ids
    in: query
    description: Each element identifies a group of users.
    required: false
    schema:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
      minItems: 1
  - name: supis
    in: query
    description: Each element identifies the user.
    required: false
    schema:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
      minItems: 1
  - name: ue-ipv4s
    in: query
    description: Each element identifies the user.
    required: false
    schema:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      minItems: 1
  - name: ue-ipv6s
    in: query
    description: Each element identifies the user.
    required: false
    schema:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
      minItems: 1
  - name: ue-macs
    in: query
    description: Each element identifies the user.
    required: false
    schema:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/MacAddr48'
      minItems: 1
  - name: any-ue
    in: query
    description: Indicates whether the request is for any UE.
    required: false
    schema:
      type: boolean
    allowEmptyValue: true
  - name: supp-feat
    in: query
    description: Supported Features
```

```
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      responses:
        '200':
          description: The Service Parameter Data stored in the UDR are returned.
          content:
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/ServiceParameterData'
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '406':
          $ref: 'TS29571_CommonData.yaml#/components/responses/406'
        '414':
          $ref: 'TS29571_CommonData.yaml#/components/responses/414'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/serviceParamData/{serviceParamId}:
    put:
      summary: Create or update an individual Service Parameter Data resource
      operationId: CreateOrReplaceServiceParameterData
      tags:
        - Individual Service Parameter Data (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      requestBody:
        required: true
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/ServiceParameterData'
      parameters:
        - name: serviceParamId
          in: path
          description: >
            The Identifier of an Individual Service Parameter Data to be created or updated.
            It shall apply the format of Data type string.
          required: true
          schema:
            type: string
      responses:
        '201':
          description: >
            The creation of an Individual Service Parameter Data resource is confirmed
            and a representation of that resource is returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/ServiceParameterData'
          headers:
            Location:
              description: >
                'Contains the URI of the newly created resource, according to the structure:
                {apiRoot}/nudr-dr/<apiVersion>/application-data/serviceParamData/{serviceParamId}'
              required: true
              schema:
                type: string
        '200':
```

```
        description: >
          The update of an Individual Service Parameter Data resource is confirmed and
          a response body containing Service Parameter Data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/ServiceParameterData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    summary: Modify part of the properties of an individual Service Parameter Data resource
    operationId: UpdateIndividualServiceParameterData
    tags:
      - Individual Service Parameter Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/merge-patch+json:
          schema:
            $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ServiceParameterDataPatch'
    parameters:
      - name: serviceParamId
        in: path
        description: >
          The Identifier of an Individual Service Parameter Data to be updated.
          It shall apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '200':
        description: >
          The update of an Individual Service Parameter Data resource is confirmed
          and a response body containing Service Parameter Data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/ServiceParameterData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete an individual Service Parameter Data resource
    operationId: DeleteIndividualServiceParameterData
    tags:
      - Individual Service Parameter Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: serviceParamId
        in: path
        description: >
          The Identifier of an Individual Service Parameter Data to be updated.
          It shall apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '204':
        description: The Individual Service Parameter Data was deleted successfully.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/application-data/am-influence-data:
  get:
    summary: Retrieve AM Influence Data
    operationId: ReadAmInfluenceData
    tags:
      - AM Influence Data (Store)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: am-influence-ids
        in: query
        description: Each element identifies a service.
        required: false
        schema:
          type: array
          items:
            type: string
          minItems: 1
```

```
    - name: dnns
      in: query
      description: Each element identifies a DNN.
      required: false
      schema:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
        minItems: 1
    - name: snssais
      in: query
      description: Each element identifies a slice.
      required: false
      content:
        application/json:
          schema:
            type: array
            items:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
            minItems: 1
    - name: internal-group-ids
      in: query
      description: Each element identifies a group of users.
      required: false
      schema:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        minItems: 1
    - name: supis
      in: query
      description: Each element identifies the user.
      required: false
      schema:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
        minItems: 1
    - name: any-ue
      in: query
      description: Indicates whether the request is for any UE.
      required: false
      schema:
        type: boolean
      allowEmptyValue: true
    - name: supp-feat
      in: query
      required: false
      description: Supported Features
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  responses:
    '200':
      description: The AM Influence Data stored in the UDR are returned.
      content:
        application/json:
          schema:
            type: array
            items:
              $ref: '#/components/schemas/AmInfluData'
    '400':
      $ref: 'TS29571_CommonData.yaml#/components/responses/400'
    '401':
      $ref: 'TS29571_CommonData.yaml#/components/responses/401'
    '403':
      $ref: 'TS29571_CommonData.yaml#/components/responses/403'
    '404':
      $ref: 'TS29571_CommonData.yaml#/components/responses/404'
    '406':
      $ref: 'TS29571_CommonData.yaml#/components/responses/406'
    '414':
      $ref: 'TS29571_CommonData.yaml#/components/responses/414'
    '429':
      $ref: 'TS29571_CommonData.yaml#/components/responses/429'
    '500':
      $ref: 'TS29571_CommonData.yaml#/components/responses/500'
    '503':
      $ref: 'TS29571_CommonData.yaml#/components/responses/503'
```

```
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/am-influence-data/{amInfluenceId}:
    put:
      summary: Create or update an individual AM Influence Data resource
      operationId: CreateOrReplaceIndividualAmInfluenceData
      tags:
        - Individual AM Influence Data (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      requestBody:
        required: true
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/AmInfluData'
      parameters:
        - name: amInfluenceId
          in: path
          description: >
            The Identifier of an Individual AM Influence Data to be created or updated.
            It shall apply the format of Data type string.
          required: true
          schema:
            type: string
      responses:
        '201':
          description: >
            The creation of an Individual AM Influence Data resource is confirmed and
            a representation of that resource is returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/AmInfluData'
          headers:
            Location:
              description: >
                'Contains the URI of the newly created resource, according to the structure:
                {apiRoot}/nudr-dr/<apiVersion>/application-data/am-influence-data/{amInfluenceId}'
              required: true
              schema:
                type: string
        '200':
          description: >
            The update of an Individual AM Influence Data resource is confirmed and a response
            body containing AM Influence Data shall be returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/AmInfluData'
        '204':
          description: No content
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '411':
          $ref: 'TS29571_CommonData.yaml#/components/responses/411'
        '413':
          $ref: 'TS29571_CommonData.yaml#/components/responses/413'
        '414':
          $ref: 'TS29571_CommonData.yaml#/components/responses/414'
        '415':
          $ref: 'TS29571_CommonData.yaml#/components/responses/415'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    summary: Modify part of the properties of an individual AM Influence Data resource
    operationId: UpdateIndividualAmInfluenceData
    tags:
      - Individual AM Influence Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/merge-patch+json:
          schema:
            $ref: '#/components/schemas/AmInfluDataPatch'
    parameters:
      - name: amInfluenceId
        in: path
        description: >
          The Identifier of an Individual AM Influence Data to be updated. It shall
          apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '200':
        description: >
          The update of an Individual AM Influence Data resource is confirmed and a
          response body containing AM Influence Data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/AmInfluData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete an individual AM Influence Data resource
    operationId: DeleteIndividualAmInfluenceData
    tags:
      - Individual AM Influence Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: amInfluenceId
        in: path
```

```
        description: >
          The Identifier of an Individual AM Influence Data to be updated. It shall
          apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '204':
        description: The Individual AM Influence Data was deleted successfully.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/subs-to-notify:
    post:
      summary: Create a subscription to receive notification of application data changes
      operationId: CreateIndividualApplicationDataSubscription
      tags:
        - ApplicationDataSubscriptions (Collection)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
      requestBody:
        required: true
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/ApplicationDataSubs'
      responses:
        '201':
          description: >
            Upon success, a response body containing a representation of each
            Individual subscription resource shall be returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/ApplicationDataSubs'
          headers:
            Location:
              description: 'Contains the URI of the newly created resource'
              required: true
              schema:
                type: string
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '411':
          $ref: 'TS29571_CommonData.yaml#/components/responses/411'
        '413':
          $ref: 'TS29571_CommonData.yaml#/components/responses/413'
        '415':
          $ref: 'TS29571_CommonData.yaml#/components/responses/415'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    callbacks:
      applicationDataChangeNotif:
        '{$request.body#/notificationUri}':
          post:
            requestBody:
              required: true
              content:
                application/json:
                  schema:
                    type: array
                    items:
                      $ref: '#/components/schemas/ApplicationDataChangeNotif'
                    minItems: 1
            responses:
              '204':
                description: No Content, Notification was successful
              '400':
                $ref: 'TS29571_CommonData.yaml#/components/responses/400'
              '401':
                $ref: 'TS29571_CommonData.yaml#/components/responses/401'
              '403':
                $ref: 'TS29571_CommonData.yaml#/components/responses/403'
              '404':
                $ref: 'TS29571_CommonData.yaml#/components/responses/404'
              '411':
                $ref: 'TS29571_CommonData.yaml#/components/responses/411'
              '413':
                $ref: 'TS29571_CommonData.yaml#/components/responses/413'
              '415':
                $ref: 'TS29571_CommonData.yaml#/components/responses/415'
              '429':
                $ref: 'TS29571_CommonData.yaml#/components/responses/429'
              '500':
                $ref: 'TS29571_CommonData.yaml#/components/responses/500'
              '503':
                $ref: 'TS29571_CommonData.yaml#/components/responses/503'
              default:
                $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  get:
    summary: Read Application Data change Subscriptions
    operationId: ReadApplicationDataChangeSubscriptions
    tags:
      - ApplicationDataSubscriptions (Collection)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: data-filter
        in: query
        description: The data filter for the query.
        required: false
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/DataFilter'
    responses:
      '200':
        description: >
          The subscription information as request in the request URI query parameter(s)
          are returned.
        content:
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/ApplicationDataSubs'
              minItems: 0
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
```

```
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

/application-data/subs-to-notify/{subsId}:
  parameters:
   - name: subsId
     in: path
     required: true
     schema:
       type: string
  put:
    summary: Modify a subscription to receive notification of application data changes
    operationId: ReplaceIndividualApplicationDataSubscription
    tags:
      - IndividualApplicationDataSubscription (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/ApplicationDataSubs'
    responses:
      '200':
        description: The individual subscription resource was updated successfully.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/ApplicationDataSubs'
      '204':
        description: >
          The individual subscription resource was updated successfully and no
          additional content is to be sent in the response message.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete the individual Application Data subscription
    operationId: DeleteIndividualApplicationDataSubscription
```

```
    tags:
      - IndividualApplicationDataSubscription (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    responses:
      '204':
        description: Upon success, an empty response body shall be returned.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  get:
    summary: Get an existing individual Application Data Subscription resource
    operationId: ReadIndividualApplicationDataSubscription
    tags:
      - IndividualApplicationDataSubscription (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: subsId
        in: path
        description: >
          String identifying a subscription to the Individual Application Data Subscription
        required: true
        schema:
          type: string
    responses:
      '200':
        description: The subscription information is returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/ApplicationDataSubs'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/eas-deploy-data:
    get:
      summary: Retrieve EAS Deployment Information Data
```

```
    operationId: ReadEasDeployData
    tags:
      - EAS Deployment Data (Store)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
    parameters:
      - name: dnn
        in: query
        description: Identifies a DNN.
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      - name: snssai
        in: query
        description: Identifies an S-NSSAI.
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      - name: external-group-id
        in: query
        description: Identifies an external user group.
        required: false
        schema:
          $ref: 'TS29503_Nudm_SDM.yaml#/components/schemas/ExtGroupId'
      - name: appId
        in: query
        description: Identifies an application.
        required: false
        schema:
          type: string
    responses:
      '200':
        description: The EAS Deployment Data stored in the UDR are returned.
        content:
          application/json:
            schema:
              type: array
              items:
                $ref: 'TS29591_Nnef_EASDeployment.yaml#/components/schemas/EasDeployInfoData'
              minItems: 1
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /application-data/eas-deploy-data/{easDeployInfoId}:
    put:
      summary: Create or update an individual EAS Deployment Data resource
      operationId: CreateOrReplaceIndividualEasDeployData
      tags:
        - Individual EAS Deployment Data (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:application-data
```

```
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: 'TS29591_Nnef_EASDeployment.yaml#/components/schemas/EasDeployInfoData'
    parameters:
      - name: easDeployInfoId
        in: path
        description: >
          The Identifier of an Individual EAS Deployment Data to be created or updated.
          It shall apply the format of Data type string.
        required: true
        schema:
          type: string
    responses:
      '201':
        description: >
          The creation of an Individual EAS Deployment Data resource is confirmed and a
          representation of that resource is returned.
        content:
          application/json:
            schema:
              $ref: 'TS29591_Nnef_EASDeployment.yaml#/components/schemas/EasDeployInfoData'
        headers:
          Location:
            description: >
              Contains the URI of the newly created resource, according to the structure:
              {apiRoot}/nudr-dr/<apiVersion>/application-data/eas-deploy-data/{easDeployInfoId}
            required: true
            schema:
              type: string
      '200':
        description: >
          The update of an Individual EAS Deployment Data resource is confirmed and a response
          body containing EAS Deployment Data shall be returned.
        content:
          application/json:
            schema:
              $ref: 'TS29591_Nnef_EASDeployment.yaml#/components/schemas/EasDeployInfoData'
      '204':
        description: No content
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Delete an individual EAS Deployment Data resource
    operationId: DeleteIndividualEasDeployData
    tags:
      - Individual EasDeployment Data (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:application-data
```

```
      parameters:
        - name: easDeployInfoId
          in: path
          description: >
            The Identifier of an Individual EAS Deployment Data to be updated. It shall apply the
            format of Data type string.
          required: true
          schema:
            type: string
      responses:
        '204':
          description: The Individual Influence Data was deleted successfully.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'

components:
  schemas:
    TrafficInfluData:
      description: Represents the Traffic Influence Data.
      type: object
      properties:
        upPathChgNotifCorreId:
          type: string
          description: >
            Contains the Notification Correlation Id allocated by the NEF for the UP
            path change notification.
        appReloInd:
          type: boolean
          description: >
            Identifies whether an application can be relocated once a location of the
            application has been selected.
        afAppId:
          type: string
          description: Identifies an application.
        dnn:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
        ethTrafficFilters:
          type: array
          items:
            $ref: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'
          minItems: 1
          description: >
            Identifies Ethernet packet filters. Either "trafficFilters" or
            "ethTrafficFilters" shall be included if applicable.
        snssai:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
        interGroupId:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        supi:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
        trafficFilters:
          type: array
          items:
            $ref: 'TS29122_CommonData.yaml#/components/schemas/FlowInfo'
          minItems: 1
          description: >
            Identifies IP packet filters. Either "trafficFilters" or "ethTrafficFilters"
            shall be included if applicable.
        trafficRoutes:
          type: array
          items:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/RouteToLocation'
          minItems: 1
          description: Identifies the N6 traffic routing requirement.
```

```
        traffCorreInd:
          type: boolean
        validStartTime:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        validEndTime:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        tempValidities:
          type: array
          items:
            $ref: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/TemporalValidity'
          minItems: 1
          description: Identifies the temporal validities for the N6 traffic routing requirement.
        nwAreaInfo:
          $ref: 'TS29554_Npcf_BDTPolicyControl.yaml#/components/schemas/NetworkAreaInfo'
        upPathChgNotifUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        headers:
          type: array
          items:
            type: string
          minItems: 1
        subscribedEvents:
          type: array
          items:
            $ref: 'TS29522_TrafficInfluence.yaml#/components/schemas/SubscribedEvent'
          minItems: 1
        dnaiChgType:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DnaiChangeType'
        afAckInd:
          type: boolean
        addrPreserInd:
          type: boolean
        maxAllowedUpLat:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uinteger'
        simConnInd:
          type: boolean
          description: >
            Indicates whether simultaneous connectivity should be temporarily
            maintained for the source and target PSA.
        simConnTerm:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
        supportedFeatures:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
        resUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        resetIds:
          type: array
          items:
            type: string
          minItems: 1
      allOf:
        - oneOf:
          - required: [afAppId]
          - required: [trafficFilters]
          - required: [ethTrafficFilters]
        - oneOf:
          - required: [supi]
          - required: [interGroupId]
    TrafficInfluDataPatch:
      description: Represents the Traffic Influence Data to be updated in the UDR.
      type: object
      properties:
        upPathChgNotifCorreId:
          type: string
          description: >
            Contains the Notification Correlation Id allocated by the NEF for the
            UP path change notification.
        appReloInd:
          type: boolean
          description: Identifies whether an application can be relocated once a location of the
application has been selected.
        ethTrafficFilters:
          type: array
          items:
            $ref: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'
          minItems: 1
          description: >
            Identifies Ethernet packet filters. Either "trafficFilters" or "ethTrafficFilters"
```

```
          shall be included if applicable.
      trafficFilters:
        type: array
        items:
          $ref: 'TS29122_CommonData.yaml#/components/schemas/FlowInfo'
        minItems: 1
        description: >
          Identifies IP packet filters. Either "trafficFilters" or "ethTrafficFilters"
          shall be included if applicable.
      trafficRoutes:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/RouteToLocation'
        minItems: 1
        description: Identifies the N6 traffic routing requirement.
      traffCorreInd:
        type: boolean
      validStartTime:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      validEndTime:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      tempValidities:
        type: array
        items:
          $ref: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/TemporalValidity'
        minItems: 1
        nullable: true
        description: Identifies the temporal validities for the N6 traffic routing requirement.
      nwAreaInfo:
        $ref: 'TS29554_Npcf_BDTPolicyControl.yaml#/components/schemas/NetworkAreaInfo'
      upPathChgNotifUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      headers:
        type: array
        items:
          type: string
        minItems: 1
      afAckInd:
        type: boolean
      addrPreserInd:
        type: boolean
      maxAllowedUpLat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/UintegerRm'
      simConnInd:
        type: boolean
        description: >
          Indicates whether simultaneous connectivity should be temporarily maintained
          for the source and target PSA.
      simConnTerm:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DurationSecRm'
  TrafficInfluSub:
    description: Represents traffic influence subscription data.
    type: object
    properties:
      dnns:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
        minItems: 1
        description: Each element identifies a DNN.
      snssais:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
        minItems: 1
        description: Each element identifies a slice.
      internalGroupIds:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        minItems: 1
        description: Each element identifies a group of users.
      supis:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
        minItems: 1
        description: Each element identifies the user.
```

```
      notificationUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      expiry:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      supportedFeatures:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
    required:
      - notificationUri
    oneOf:
      - required: [dnns]
      - required: [snssais]
      - required: [internalGroupIds]
      - required: [supis]
  TrafficInfluDataNotif:
    description: Represents traffic influence data for notification.
    type: object
    properties:
      resUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      trafficInfluData:
        $ref: '#/components/schemas/TrafficInfluData'
    required:
      - resUri
  PfdDataForAppExt:
    description: Represents the PFDs and related data for the application.
    type: object
    properties:
      applicationId:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/ApplicationId'
      pfds:
        type: array
        items:
          $ref: 'TS29551_Nnef_PFDmanagement.yaml#/components/schemas/PfdContent'
        minItems: 1
      cachingTime:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      suppFeat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
    required:
      - applicationId
      - pfds
  BdtPolicyData:
    description: Represents applied BDT policy data.
    type: object
    properties:
      interGroupId:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
      supi:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
      bdtRefId:
        $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceId'
      dnn:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      snssai:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      resUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
    required:
     - bdtRefId
  BdtPolicyDataPatch:
    description: >
      Represents modification instructions to be performed on the applied BDT policy data.
    type: object
```

```
    properties:
      bdtRefId:
        $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceId'
    required:
     - bdtRefId
  IptvConfigData:
    description: Represents IPTV configuration data information.
    type: object
    properties:
      supi:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
      interGroupId:
        description: Identifies a group of users.
      dnn:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      snssai:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      afAppId:
        type: string
      multiAccCtrls:
        type: object
        additionalProperties:
          $ref: 'TS29522_IPTVConfiguration.yaml#/components/schemas/MulticastAccessControl'
        minProperties: 1
        description: >
          Identifies a list of multicast address access control information. Any string
          value can be used as a key of the map.
      suppFeat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
    required:
      - afAppId
      - multiAccCtrls
    oneOf:
      - required: [interGroupId]
      - required: [supi]
  ServiceParameterData:
    description: Represents the service parameter data.
    type: object
    properties:
      appId:
        type: string
        description: Identifies an application.
      dnn:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      snssai:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      interGroupId:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
      supi:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
      ueIpv4:
        $ref: 'TS29122_CommonData.yaml#/components/schemas/Ipv4Addr'
      ueIpv6:
        $ref: 'TS29122_CommonData.yaml#/components/schemas/Ipv6Addr'
      ueMac:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/MacAddr48'
      anyUeInd:
        type: boolean
      paramOverPc5:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParameterOverPc5'
      paramOverUu:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParameterOverUu'
      paramForProSeDd:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParamForProSeDd'
      paramForProSeDc:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParamForProSeDc'
      paramForProSeU2NRelUe:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParamForProSeU2NRelUe'
      paramForProSeRemUe:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParamForProSeRemUe'
      urspGuidance:
```

```
        type: array
        items:
          $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/UrspRuleRequest'
        minItems: 1
        description: Contains the service parameter used to guide the URSP.
      deliveryEvents:
        type: array
        items:
         $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/Event'
        minItems: 1
        description: Contains the outcome of the UE Policy Delivery.
      policDelivNotifCorreId:
        type: string
        description: >
          Contains the Notification Correlation Id allocated by the NEF for the notification
          of UE Policy delivery outcome.
      policDelivNotifUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      suppFeat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      headers:
        type: array
        items:
          type: string
        minItems: 1
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
  ServiceParameterDataPatch:
    description: Represents the service parameter data that can be updated.
    type: object
    properties:
      paramOverPc5:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParameterOverPc5'
      paramOverUu:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParameterOverUu'
      paramForProSeDd:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParamForProSeDd'
      paramForProSeDc:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParamForProSeDc'
      paramForProSeU2NRelUe:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParamForProSeU2NRelUe'
      paramForProSeRemUe:
        $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/ParamForProSeRemUe'
      urspInfluence:
        type: array
        items:
          $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/UrspRuleRequest'
        minItems: 1
        description: Contains the service parameter used to influence the URSP.
      deliveryEvents:
        type: array
        items:
         $ref: 'TS29522_ServiceParameter.yaml#/components/schemas/Event'
        minItems: 1
        description: Contains the outcome of the UE Policy Delivery.
      policDelivNotifUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
  AmInfluData:
    description: Represents the AM Influence Data.
    type: object
    properties:
      appIds:
        type: array
        items:
          type: string
        minItems: 1
        description: Identifies one or more applications.
      dnnSnssaiInfos:
        type: array
        items:
          $ref: 'TS29522_AMInfluence.yaml#/components/schemas/DnnSnssaiInformation'
        minItems: 1
        description: Identifies one or more DNN, S-NSSAI combinations.
```

```
        interGroupId:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        supi:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
        anyUeInd:
          type: boolean
          description: Indicates whether the data is applicable for any UE.
        policyDuration:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
        evSubs:
          type: array
          items:
            $ref: 'TS29522_AMInfluence.yaml#/components/schemas/AmInfluEvent'
          minItems: 1
          description: List of AM related events for which a subscription is required.
        notifUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        notifCorrId:
          type: string
          description: Notification correlation identifier.
        headers:
          type: array
          description: Contains the headers provisioned by the NEF.
          items:
            type: string
          minItems: 1
        thruReq:
          type: boolean
          description: Indicates whether high throughput is desired for the indicated UE traffic.
        covReq:
          type: array
          items:
            $ref:
'TS29534_Npcf_AMPolicyAuthorization.yaml#/components/schemas/ServiceAreaCoverageInfo'
          minItems: 1
          description: Indicates the service area coverage requirement.
        supportedFeatures:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
        resUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        resetIds:
          type: array
          items:
            type: string
          minItems: 1
      allOf:
        - anyOf:
          - required: [thruReq]
          - required: [covReq]
        - oneOf:
          - required: [supi]
          - required: [interGroupId]
          - required: [anyUeInd]
    AmInfluDataPatch:
      description: Represents the AM Influence Data that can be updated.
      type: object
      properties:
        appIds:
          type: array
          items:
            type: string
          minItems: 1
          description: Identifies one or more applications.
          nullable: true
        dnnSnssaiInfos:
          type: array
          items:
            $ref: 'TS29522_AMInfluence.yaml#/components/schemas/DnnSnssaiInformation'
          minItems: 1
          description: Identifies one or more DNN, S-NSSAI combinations.
          nullable: true
        evSubs:
          type: array
          items:
            $ref: 'TS29522_AMInfluence.yaml#/components/schemas/AmInfluEvent'
          minItems: 1
          description: List of AM related events for which a subscription is required.
          nullable: true
```

```
        headers:
          type: array
          description: Contains the headers provisioned by the NEF.
          items:
            type: string
          minItems: 1
        thruReq:
          type: boolean
          description: Indicates whether high throughput is desired for the indicated UE traffic.
          nullable: true
        notifUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/UriRm'
        notifCorrId:
          type: string
          description: Notification correlation identifier.
          nullable: true
        covReq:
          type: array
          items:
            $ref:
'TS29534_Npcf_AMPolicyAuthorization.yaml#/components/schemas/ServiceAreaCoverageInfo'
          minItems: 1
          description: Indicates the service area coverage requirement.
          nullable: true
    ApplicationDataSubs:
      description: Identifies a subscription to application data change notification.
      type: object
      properties:
        notificationUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        dataFilters:
          type: array
          items:
            $ref: '#/components/schemas/DataFilter'
          minItems: 1
        expiry:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        immRep:
          type: boolean
          description: Immediate reporting indication.
        amInfluEntries:
          type: array
          items:
            $ref: '#/components/schemas/AmInfluData'
          minItems: 1
          description: The AM Influence Data entries stored in the UDR that match a subscription.
        supportedFeatures:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
        resetIds:
          type: array
          items:
            type: string
          minItems: 1
      required:
        - notificationUri
    ApplicationDataChangeNotif:
      description: Contains changed application data for which notification was requested.
      type: object
      properties:
        iptvConfigData:
          $ref: '#/components/schemas/IptvConfigData'
        pfdData:
          $ref: 'TS29551_Nnef_PFDmanagement.yaml#/components/schemas/PfdChangeNotification'
        bdtPolicyData:
          $ref: '#/components/schemas/BdtPolicyData'
        resUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        serParamData:
          $ref: '#/components/schemas/ServiceParameterData'
        amInfluData:
          $ref: '#/components/schemas/AmInfluData'
      required:
        - resUri
    DataFilter:
      description: Identifies a data filter.
      type: object
      properties:
        dataInd:
```

```
        $ref: '#/components/schemas/DataInd'
      dnns:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
        minItems: 1
      snssais:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
        minItems: 1
      internalGroupIds:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        minItems: 1
      supis:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
        minItems: 1
      appIds:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ApplicationId'
        minItems: 1
      ueIpv4s:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
        minItems: 1
      ueIpv6s:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
        minItems: 1
      ueMacs:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/MacAddr48'
        minItems: 1
      anyUeInd:
        type: boolean
        description: Indicates the request is for any UE.
    required:
      - dataInd
  DataInd:
    anyOf:
    - type: string
      enum:
        - PFD
        - IPTV
        - BDT
        - SVC_PARAM
        - AM
    - type: string
      description: >
        This string provides forward-compatibility with future
        extensions to the enumeration but is not used to encode
        content defined in the present version of this API.
    description: |
      Possible values are
      - PFD
      - IPTV
      - BDT
      - SVC_PARAM
      - AM
```

A.4 Nudr_DataRepository API for Exposure Data

For the purpose of referencing entities defined in the Open API file defined in this Annex, it shall be assumed that this Open API file is contained in a physical file termed "TS29519_Exposure_Data.yaml".

```
openapi: 3.0.0
```

```
info:
  version: '-'
  title: Unified Data Repository Service API file for structured data for exposure
  description: |
    The API version is defined in 3GPP TS 29.504
    © 2022, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).
    All rights reserved.
externalDocs:
  description: >
    3GPP TS 29.519 V17.6.0; 5G System; Usage of the Unified Data Repository Service for Policy Data,
    Application Data and Structured Data for Exposure.
  url: 'https://www.3gpp.org/ftp/Specs/archive/29_series/29.519/'

paths:
  /exposure-data/{ueId}/access-and-mobility-data:
    put:
      summary: Creates and updates the access and mobility exposure data for a UE
      operationId: CreateOrReplaceAccessAndMobilityData
      tags:
        - AccessAndMobilityData
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:exposure-data
      parameters:
        - name: ueId
          in: path
          description: UE id
          required: true
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      requestBody:
        required: true
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/AccessAndMobilityData'
      responses:
        '201':
          description: >
            Successful case. The resource has been successfully created and a response
            body containing a representation of the access and mobility data shall be returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/AccessAndMobilityData'
          headers:
            Location:
              description: 'Contains the URI of the newly created resource'
              required: true
              schema:
                type: string
        '200':
          description: >
            Successful case. The resource has been successfully updated and a response
            body containing a representation of the access and mobility data shall be returned.
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/AccessAndMobilityData'
        '204':
          description: Successful case. The resource has been successfully updated and no additional
content is to be sent in the response message.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '411':
          $ref: 'TS29571_CommonData.yaml#/components/responses/411'
        '413':
          $ref: 'TS29571_CommonData.yaml#/components/responses/413'
```

```
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  get:
    summary: Retrieves the access and mobility exposure data for a UE
    operationId: QueryAccessAndMobilityData
    tags:
      - AccessAndMobilityData
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:exposure-data
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: supp-feat
        in: query
        description: Supported Features
        required: false
        schema:
           $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: The response body contains the access and mobility data
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/AccessAndMobilityData'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Deletes the access and mobility exposure data for a UE
    operationId: DeleteAccessAndMobilityData
    tags:
      - AccessAndMobilityData
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:exposure-data
    parameters:
      - name: ueId
        in: path
        description: UE id
```

```
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      responses:
        '204':
          description: Upon success, an empty response body shall be returned
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    patch:
      summary: Updates the access and mobility exposure data for a UE
      operationId: UpdateAccessAndMobilityData
      tags:
        - AccessAndMobilityData
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:exposure-data
      parameters:
        - name: ueId
          in: path
          description: UE id
          required: true
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      requestBody:
        required: true
        content:
          application/merge-patch+json:
            schema:
              $ref: '#/components/schemas/AccessAndMobilityData'
      responses:
        '204':
          description: >
            Successful case. The resource has been successfully updated and no additional
            content is to be sent in the response message.
        '400':
          $ref: 'TS29571_CommonData.yaml#/components/responses/400'
        '401':
          $ref: 'TS29571_CommonData.yaml#/components/responses/401'
        '403':
          $ref: 'TS29571_CommonData.yaml#/components/responses/403'
        '404':
          $ref: 'TS29571_CommonData.yaml#/components/responses/404'
        '411':
          $ref: 'TS29571_CommonData.yaml#/components/responses/411'
        '413':
          $ref: 'TS29571_CommonData.yaml#/components/responses/413'
        '415':
          $ref: 'TS29571_CommonData.yaml#/components/responses/415'
        '429':
          $ref: 'TS29571_CommonData.yaml#/components/responses/429'
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /exposure-data/{ueId}/session-management-data/{pduSessionId}:
    put:
      summary: Creates and updates the session management data for a UE and for an individual PDU
session
```

```
    operationId: CreateOrReplaceSessionManagementData
    tags:
      - PduSessionManagementData
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:exposure-data
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: pduSessionId
        in: path
        description: PDU session id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/PduSessionId'
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/PduSessionManagementData'
    responses:
      '201':
        description: >
          Successful case. The resource has been successfully created and a response
          body containing a representation of the session management data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/PduSessionManagementData'
        headers:
          Location:
            description: 'Contains the URI of the newly created resource'
            required: true
            schema:
              type: string
      '200':
        description: >
          Successful case. The resource has been successfully updated and a response body
          containing a representation of the session management data shall be returned.
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/PduSessionManagementData'
      '204':
        description: >
          Successful case. The resource has been successfully updated and no additional
          content is to be sent in the response message.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
```

```
  get:
    summary: Retrieves the session management data for a UE and for an individual PDU session
    operationId: QuerySessionManagementData
    tags:
      - PduSessionManagementData
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:exposure-data
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: pduSessionId
        in: path
        description: PDU session id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/PduSessionId'
      - name: ipv4-addr
        in: query
        description: IPv4 Address of the UE
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      - name: ipv6-prefix
        in: query
        description: IPv6 Address Prefix of the UE
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
      - name: dnn
        in: query
        description: DNN of the UE
        required: false
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      - name: fields
        in: query
        description: attributes to be retrieved
        required: false
        schema:
          type: array
          items:
            type: string
          minItems: 1
      - name: supp-feat
        in: query
        description: Supported Features
        required: false
        schema:
           $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: The response body contains the session management data
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/PduSessionManagementData'
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '406':
        $ref: 'TS29571_CommonData.yaml#/components/responses/406'
      '414':
        $ref: 'TS29571_CommonData.yaml#/components/responses/414'
      '429':
```

```
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Deletes the session management data for a UE and for an individual PDU session
    operationId: DeleteSessionManagementData
    tags:
      - PduSessionManagementData
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:exposure-data
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: pduSessionId
        in: path
        description: PDU session id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/PduSessionId'
    responses:
      '204':
        description: Upon success, an empty response body shall be returned
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
/exposure-data/subs-to-notify:
  post:
    summary: Create a subscription to receive notification of exposure data changes
    operationId: CreateIndividualExposureDataSubscription
    tags:
      - ExposureDataSubscriptions (Collection)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:exposure-data
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/ExposureDataSubscription'
    responses:
      '201':
        description: Created
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/ExposureDataSubscription'
        headers:
```

```
          Location:
            description: 'Contains the URI of the newly created resource'
            required: true
            schema:
              type: string
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
    callbacks:
      exposureDataChangeNotification:
        '{$request.body#/notificationUri}':
          post:
            requestBody:
              required: true
              content:
                application/json:
                  schema:
                    type: array
                    items:
                      $ref: '#/components/schemas/ExposureDataChangeNotification'
                    minItems: 1
            responses:
              '204':
                description: No Content, Notification was successful
              '400':
                $ref: 'TS29571_CommonData.yaml#/components/responses/400'
              '401':
                $ref: 'TS29571_CommonData.yaml#/components/responses/401'
              '403':
                $ref: 'TS29571_CommonData.yaml#/components/responses/403'
              '404':
                $ref: 'TS29571_CommonData.yaml#/components/responses/404'
              '411':
                $ref: 'TS29571_CommonData.yaml#/components/responses/411'
              '413':
                $ref: 'TS29571_CommonData.yaml#/components/responses/413'
              '415':
                $ref: 'TS29571_CommonData.yaml#/components/responses/415'
              '429':
                $ref: 'TS29571_CommonData.yaml#/components/responses/429'
              '500':
                $ref: 'TS29571_CommonData.yaml#/components/responses/500'
              '503':
                $ref: 'TS29571_CommonData.yaml#/components/responses/503'
              default:
                $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  /exposure-data/subs-to-notify/{subId}:
    put:
      summary: updates a subscription to receive notifications of exposure data changes
      operationId: ReplaceIndividualExposureDataSubscription
      tags:
        - IndividualExposureDataSubscription (Document)
      security:
        - {}
        - oAuth2ClientCredentials:
          - nudr-dr
        - oAuth2ClientCredentials:
          - nudr-dr
          - nudr-dr:exposure-data
```

```
    parameters:
      - name: subId
        in: path
        description: Subscription id
        required: true
        schema:
          type: string
    requestBody:
      required: true
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/ExposureDataSubscription'
    responses:
      '200':
        description: >
          Resource was successfully modified and a body with the modified subscription
          to notifications about exposure data is returned..
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/ExposureDataSubscription'
      '204':
        description: The individual subscription resource was successfully modified.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        $ref: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        $ref: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        $ref: 'TS29571_CommonData.yaml#/components/responses/415'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        $ref: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        $ref: 'TS29571_CommonData.yaml#/components/responses/503'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    summary: Deletes the individual Exposure Data subscription
    operationId: DeleteIndividualExposureDataSubscription
    tags:
      - IndividualExposureDataSubscription (Document)
    security:
      - {}
      - oAuth2ClientCredentials:
        - nudr-dr
      - oAuth2ClientCredentials:
        - nudr-dr
        - nudr-dr:exposure-data
    parameters:
      - name: subId
        in: path
        description: Subscription id
        required: true
        schema:
          type: string
    responses:
      '204':
        description: Resource was successfully deleted.
      '400':
        $ref: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        $ref: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        $ref: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        $ref: 'TS29571_CommonData.yaml#/components/responses/404'
      '429':
        $ref: 'TS29571_CommonData.yaml#/components/responses/429'
```

```
        '500':
          $ref: 'TS29571_CommonData.yaml#/components/responses/500'
        '503':
          $ref: 'TS29571_CommonData.yaml#/components/responses/503'
        default:
          $ref: 'TS29571_CommonData.yaml#/components/responses/default'
components:
  schemas:
    AccessAndMobilityData:
      description: Represents Access and Mobility data for a UE.
      type: object
      properties:
        location:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'
        locationTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        timeZone:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/TimeZone'
        timeZoneTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        accessType:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
        regStates:
          type: array
          items:
            $ref: 'TS29518_Namf_EventExposure.yaml#/components/schemas/RmInfo'
        regStatesTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        connStates:
          type: array
          items:
            $ref: 'TS29518_Namf_EventExposure.yaml#/components/schemas/CmInfo'
        connStatesTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        reachabilityStatus:
          $ref: 'TS29518_Namf_EventExposure.yaml#/components/schemas/UeReachability'
        reachabilityStatusTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        smsOverNasStatus:
          $ref: 'TS29518_Namf_Communication.yaml#/components/schemas/SmsSupport'
        smsOverNasStatusTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        roamingStatus:
          type: boolean
          description: >
            True  The serving PLMN of the UE is different from the HPLMN of the UE; False
            The serving PLMN of the UE is the HPLMN of the UE.
        roamingStatusTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        currentPlmn:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
        currentPlmnTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        ratType:
          type: array
          items:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/RatType'
        ratTypesTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        suppFeat:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
        resetIds:
          type: array
          items:
            type: string
          minItems: 1
    PduSessionManagementData:
      description: Represents Session management data for a UE and a PDU session.
      type: object
      properties:
        pduSessionStatus:
          $ref: '#/components/schemas/PduSessionStatus'
        pduSessionStatusTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        dnai:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnai'
        dnaiTs:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
```

```
      n6TrafficRoutingInfo:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/RouteToLocation'
      n6TrafficRoutingInfoTs:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      ipv4Addr:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      ipv6Prefix:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
        minItems: 1
        description: UE IPv6 prefix.
      ipv6Addrs:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
        minItems: 1
      pduSessType:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'
      ipAddrTs:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      dnn:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      pduSessionId:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/PduSessionId'
      suppFeat:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
  ExposureDataSubscription:
    description: Represents a Subscription to Notifications about Exposure Data.
    type: object
    properties:
      notificationUri:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      monitoredResourceUris:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        minItems: 1
      expiry:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      supportedFeatures:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      resetIds:
        type: array
        items:
          type: string
        minItems: 1
    required:
      - notificationUri
      - monitoredResourceUris
  ExposureDataChangeNotification:
    description: Represents changed exposure data for one UE for which Notification was requested.
    type: object
    properties:
      ueId:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      accessAndMobilityData:
        $ref: '#/components/schemas/AccessAndMobilityData'
      pduSessionManagementData:
        type: array
        items:
          $ref: '#/components/schemas/PduSessionManagementData'
        minItems: 1
      delResources:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        minItems: 1
  PduSessionStatus:
    anyOf:
    - type: string
```

```
        enum:
          - "ACTIVE"
          - "RELEASED"
      - type: string
        description: >
          This string provides forward-compatibility with future
          extensions to the enumeration but is not used to encode
          content defined in the present version of this API.
    description: >
      Possible values are
      - "ACTIVE"
      - "RELEASED"
```

Annex B (informative): Change history

Change history							
Date	Meeting #	TSG Doc.	CR	Rev	Cat	Subject/Comment	New
2018-01	CT3#94					TS skeleton of Usage of the Unified Data Repository service for Policy Data and Structured Data for exposure	0.0.0
2018-01	CT3#94					Inclusion of C3-180352, C3-180326, C3-180327	0.1.0
2018-03	CT3#95					Inclusion of C3-181145, C3-181288, C3-181289, C3-181313	0.2.0
2018-04	CT3#96					Inclusion of C3-182402, C3-182476, C3-182456, C3-182404, C3-182457, C3-182458	0.3.0
2018-05	CT3#97					Inclusion of C3-183872, C3-183705, C3-183704, C3-183873, C3-183732, C3-183706 C3-183874, C3-183709, C3-183876, C3-183263, C3-183877, C3-183712, C3-183715 and editorial changes by Rapporteur	0.4.0
2018-06	CT#80	CP-181033				TS sent to plenary for approval	1.0.0
2018-06	CT#80	CP-181033				TS approved by plenary	15.0.0
2018-09	CT#81	CP-182015	0006		F	Scope and Overview	15.1.0
2018-09	CT#81	CP-182015	0007		F	Introduction subclauses 5.1, 6.1 and 7.1	15.1.0
2018-09	CT#81	CP-182015	0008		F	Resource overview subclauses 5.2.1, 6.2.1 and 7.2.1	15.1.0
2018-09	CT#81	CP-182015	0009	3	F	Nudr reused data types	15.1.0
2018-09	CT#81	CP-182015	0010	6	B	AM policy data resource definition	15.1.0
2018-09	CT#81	CP-182015	0011	8	B	SM policy data resource definition	15.1.0
2018-09	CT#81	CP-182015	0012	3	B	Sponsored data connectivity profiles	15.1.0
2018-09	CT#81	CP-182015	0014	5	B	Background Data Transfer data	15.1.0
2018-09	CT#81	CP-182015	0015	4	B	Policy data change subcription	15.1.0
2018-09	CT#81	CP-182015	0016	5	B	Data change notification	15.1.0
2018-09	CT#81	CP-182015	0017	2	F	Error handling subcaluses	15.1.0
2018-09	CT#81	CP-182015	0018	1	F	Feature negotiation	15.1.0
2018-09	CT#81	CP-182015	0019	1	F	Resource PFD Datas and Data types definition	15.1.0
2018-09	CT#81	CP-182015	0020	1	F	OpenAPI schema for Policy Data	15.1.0
2018-09	CT#81	CP-182015	0021	3	F	Stage 2 Allignments for Structured Data for Exposure	15.1.0
2018-09	CT#81	CP-182015	0022	4	B	Subscription for Structured Data for Exposure	15.1.0
2018-09	CT#81	CP-182015	0023	3	F	Get query parameters for structured data for exposure	15.1.0
2018-09	CT#81	CP-182015	0024	5	F	HTTP error responses for structured data for exposure	15.1.0
2018-09	CT#81	CP-182015	0025	1	F	Description of Structured data types	15.1.0
2018-09	CT#81	CP-182032	0026	3	B	Resource Structure for policy data	15.1.0
2018-09	CT#81	CP-182015	0027		F	n6 Traffic Routing Information encoding	15.1.0
2018-09	CT#81	CP-182015	0028	1	F	Removal of ExternalDocs section in OpenApi file for Exposure Data	15.1.0
2018-09	CT#81	CP-182015	0029	1	F	VarUeId used in TS 29.519	15.1.0
2018-09	CT#81	CP-182015	0034	1	F	OpenAPI schema for PolicyData	15.1.0
2018-09	CT#81	CP-182015	0035	3	F	External information stored in UDR for Application Data	15.1.0
2018-09	CT#81	CP-182015	0036		F	Clean up the Editor Note in applicatoin data	15.1.0
2018-09	CT#81	CP-182015	0037	4	F	Correction the data type of application data	15.1.0
2018-09	CT#81	CP-182015	0038	3	B	Introduce the operator policy data	15.1.0
2018-09	CT#81	CP-182015	0039	2	B	OpenAPI of Application data	15.1.0
2018-09	CT#81	CP-182015	0040	1	F	Update of resource structure of application data 29.519	15.1.0
2018-09	CT#81	CP-182015	0041	1	F	Ethernet packet filter for traffic influence data of applicatoin data 29.519	15.1.0
2018-12	CP#82	CP-183205	0042	1	F	DNAI reused data	15.2.0
2018-12	CP#82	CP-183205	0043	1	F	ExternalDocs field	15.2.0
2018-12	CP#82	CP-183205	0044		F	PduSessionStatus	15.2.0
2018-12	CP#82	CP-183205	0045	1	F	Query parameters correction on application data	15.2.0
2018-12	CP#82	CP-183205	0046	1	F	PUT operation for Individual Influence Data Subscription	15.2.0
2018-12	CP#82	CP-183205	0047	3	F	Background Data Transfer Data	15.2.0
2018-12	CP#82	CP-183205	0048	1	F	Cardinality for array and map	15.2.0
2018-12	CP#82	CP-183205	0049	1	F	Resource URI for ExposureData	15.2.0
2018-12	CP#82	CP-183205	0050		F	UeId definition	15.2.0
2018-12	CP#82	CP-183205	0052	1	F	Error status codes for HTTP responses	15.2.0
2018-12	CP#82	CP-183205	0053		F	Service name	15.2.0
2018-12	CP#82	CP-183205	0054	1	F	Reference to the yaml file of Npcf_BDTPolicyControl API	15.2.0
2018-12	CP#82	CP-183205	0055		F	Missed GET method on UEPolicySetResource	15.2.0

2018-12	CP#82	CP-183205	0055	2	F	Missed GET method on UEPolicySetResource	15.2.0
2018-12	CP#82	CP-183205	0056	4	F	Corrections on AM Policy and UE Policy data	15.2.0
2018-12	CP#82	CP-183205	0057	6	F	Corrections on SM Policy Data	15.2.0
2018-12	CP#82	CP-183205	0058	1	F	Correct TrafficRoute data type	15.2.0
2018-12	CP#82	CP-183205	0060	4	F	Correct subscription for application data	15.2.0
2018-12	CP#82	CP-183205	0062	3	F	Correction to the AF Influence on traffic steering control	15.2.0
2018-12	CP#82	CP-183205	0063	3	F	PLMN ID as key for UE data sets	15.2.0
2018-12	CP#82	CP-183205	0066	1	F	Supported features	15.2.0
2018-12	CP#82	CP-183205	0067	1	F	Add AF application ID for traffic influence	15.2.0
2018-12	CP#82	CP-183205	0068		F	Correct referenced file in openAPI for application data	15.2.0
2018-12	CP#82	CP-183205	0069		F	Correct referenced file in openAPI for exposure data	15.2.0
2018-12	CP#82	CP-183205	0070	1	F	Use correct naming convention	15.2.0
2018-12	CP#82	CP-183205	0071	1	F	Correct subscription for Application Data	15.2.0
2018-12	CP#82	CP-183205	0072	1	F	Status code update for Application Data	15.2.0
2018-12	CP#82	CP-183205	0073	1	F	Correction on UsageThreshold	15.2.0
2018-12	CP#82	CP-183205	0075	2	F	Status code update for Exposure Data	15.2.0
2018-12	CP#82	CP-183205	0076	2	F	Status code update for Policy Data	15.2.0
2018-12	CP#82	CP-183205	0077	2	F	Incorrect response code of PUT method for individual PFD Data creation	15.2.0
2018-12	CP#82	CP-183205	0078	1	F	corrections on individual Influence Data	15.2.0
2018-12	CP#82	CP-183205	0079	2	F	Adding timestamp for allowed usage storage	15.2.0
2018-12	CP#82	CP-183205	0080		F	Missing 201 response body for /policy-data/subs-to-notify	15.2.0
2018-12	CP#82	CP-183205	0081	1	F	Location header	15.2.0
2018-12	CP#82	CP-183205	0083	4	F	Corrections on Usage Monitoring information	15.2.0
2018-12	CP#82	CP-183205	0087		F	Correction on PduSessionManagementData	15.2.0
2019-03	CP#83	CP-190115	0090	1	F	Correction on ChargingInformation data type reference in the OpenAPI file	15.3.0
2019-03	CP#83	CP-190115	0091	1	F	Formatting of structured data types in query parameters	15.3.0
2019-03	CP#83	CP-190115	0092	1	F	Correcting resource definitions	15.3.0
2019-03	CP#83	CP-190115	0093		F	References to data types	15.3.0
2019-03	CP#83	CP-190115	0095	2	F	Correction on Policy Data change notification	15.3.0
2019-03	CP#83	CP-190115	0096	1	F	Correction on BDT data	15.3.0
2019-03	CP#83	CP-190115	0098	1	F	Support of allowed Route Selection data	15.3.0
2019-03	CP#83	CP-190115	0099	1	F	Support of PEI, OSid and ANDSP support indication in UE Policy Set	15.3.0
2019-03	CP#83	CP-190115	0100		F	Support of PRA information	15.3.0
2019-06	CP#84	CP-191077	0101		F	Correction of OpenAPI file and main body misalignments for Notification messages	15.4.0
2019-06	CP#84	CP-191077	0102	2	F	Corrections in PolicyDataSubscription and PolicyDataChangeNotification types	15.4.0
2019-06	CP#84	CP-191077	0106	1	F	Precedence of OpenAPI file	15.4.0
2019-06	CP#84	CP-191077	0113		F	Correcting the name of URI to receive notifications	15.4.0
2019-06	CP#84	CP-191077	0103	4	F	"201 Created" response without body and other HTTP response errors	15.4.0
2019-06	CP#84	CP-191077	0116	1	F	Expiry time in subscription data types	15.4.0
2019-06	CP#84	CP-191184	0117	3	F	Notification of resource deletion	15.4.0
2019-06	CP#84	CP-191208	0118	3	F	Copyright Note in YAML file	15.4.0
2019-06	CP#84	CP-191077	0119	1	F	Missed Traffic Influence information	15.4.0
2019-06	CP#84	CP-191183	0120	4	F	Notification of resource deletion for Application and Exposure data sets	15.4.0
2019-06	CP#84	CP-191089	0105	2	B	PFD extension for domain name protocol	16.0.0
2019-06	CP#84	CP-191071	0109	3	B	AF acknowledgement to be expected	16.0.0
2019-06	CP#84	CP-191071	0110	2	B	UE IP address preservation indication	16.0.0
2019-06	CP#84	CP-191100	0114	1	B	NEF stored exposure data	16.0.0
2019-09	CT#85	CP-192169	0125	2	F	UDR Application Errors	16.1.0
2019-09	CT#85	CP-192145	0127	2	A	Missed any UE traffic influence data	16.1.0
2019-09	CT#85	CP-192169	0128	1	B	Multiple temporal validity conditions for AF traffic influence	16.1.0
2019-09	CT#85	CP-192244	0130	2	A	Remove PFD change notification	16.1.0
2019-09	CT#85	CP-192156	0131	1	B	Support a set of MAC addresses in traffic filter	16.1.0
2019-09	CT#85	CP-192196	0138	4	B	Application Data update to support xBDT	16.1.0
2019-09	CT#85	CP-192152	0140	3	B	Subscription and Notification of IPTV configuration data change	16.1.0
2019-09	CT#85	CP-192152	0141	2	B	Resource structure of Nudr API for Application Data	16.1.0
2019-09	CT#85	CP-192152	0142	2	B	Storage of IPTV configuration data	16.1.0
2019-09	CT#85	CP-192156	0143	2	F	Subscription/unsubscription for PFDs update notifications and related callback correction	16.1.0
2019-10	CT#85	-	-	-	-	Addition of missing yaml files	16.1.1

2019-12	CT#86	CP-193223	0144	2	B	Retrieval of BDT policy data for a set of BDT reference identifiers	16.2.0
2019-12	CT#86	CP-193181	0145	1	F	Open issue for AddrPreservation feature	16.2.0
2019-12	CT#86	CP-193223	0149	3	B	Support of BDT reference Id within Session Management data	16.2.0
2019-12	CT#86	CP-193191	0151	3	B	Partial update of IPTVConfiguration API	16.2.0
2019-12	CT#86	CP-193210	0152	2	B	Patch Report to Nudr_DataRepository API for Policy data	16.2.0
2019-12	CT#86	CP-193223	0153		F	Reference correction to BdtReferenceId	16.2.0
2019-12	CT#86	CP-193212	0155	1	F	Update of TS version_Rel-16	16.2.0
2019-12	CT#86	CP-193197	0156	2	B	MCS Priority Indication	16.2.0
2019-12	CT#86	CP-193187	0158	-	A	Definition of BdtData in OpenAPI	16.2.0
2019-12	CT#86	CP-193197	0159	-	F	Usage of BdtReferenceId data type	16.2.0
2019-12	CT#86	CP-193223	0161	1	B	include S-NSSAI and DNN in Application Data for xBDT	16.2.0
2019-12	CT#86	CP-193223	0162		F	remove 204 response on PUT request for AppliedBDTPolicyData	16.2.0
2019-12	CT#86	CP-193210	0164		B	Feature Negotiation for OperatorSpecificData resource	16.2.0
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