# ETSI TS 129 519 V16.8.0 (2021-09)

**TECHNICAL SPECIFICATION**

**5G;
5G System;
Usage of the Unified Data Repository Service for Policy Data,
Application Data and Structured Data for Exposure;
Stage 3
(3GPP TS 29.519 version 16.8.0 Release 16)**

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# Contents

# Foreword

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y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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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

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] Void.

[3] OpenAPI: "OpenAPI 3.0.0 Specification", https://github.com/OAI/OpenAPI-Specification/blob/master/versions/3.0.0.md.

[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".

# 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 |
| SM | Session Management |
| S-NSSAI | Single Network Slice Selection Assistance Information |
| SUPI | Subscription Permanent Identifier |
| UDR | Unified Data Repository |
| UPSI | UE Policy Section Identifier |

# 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
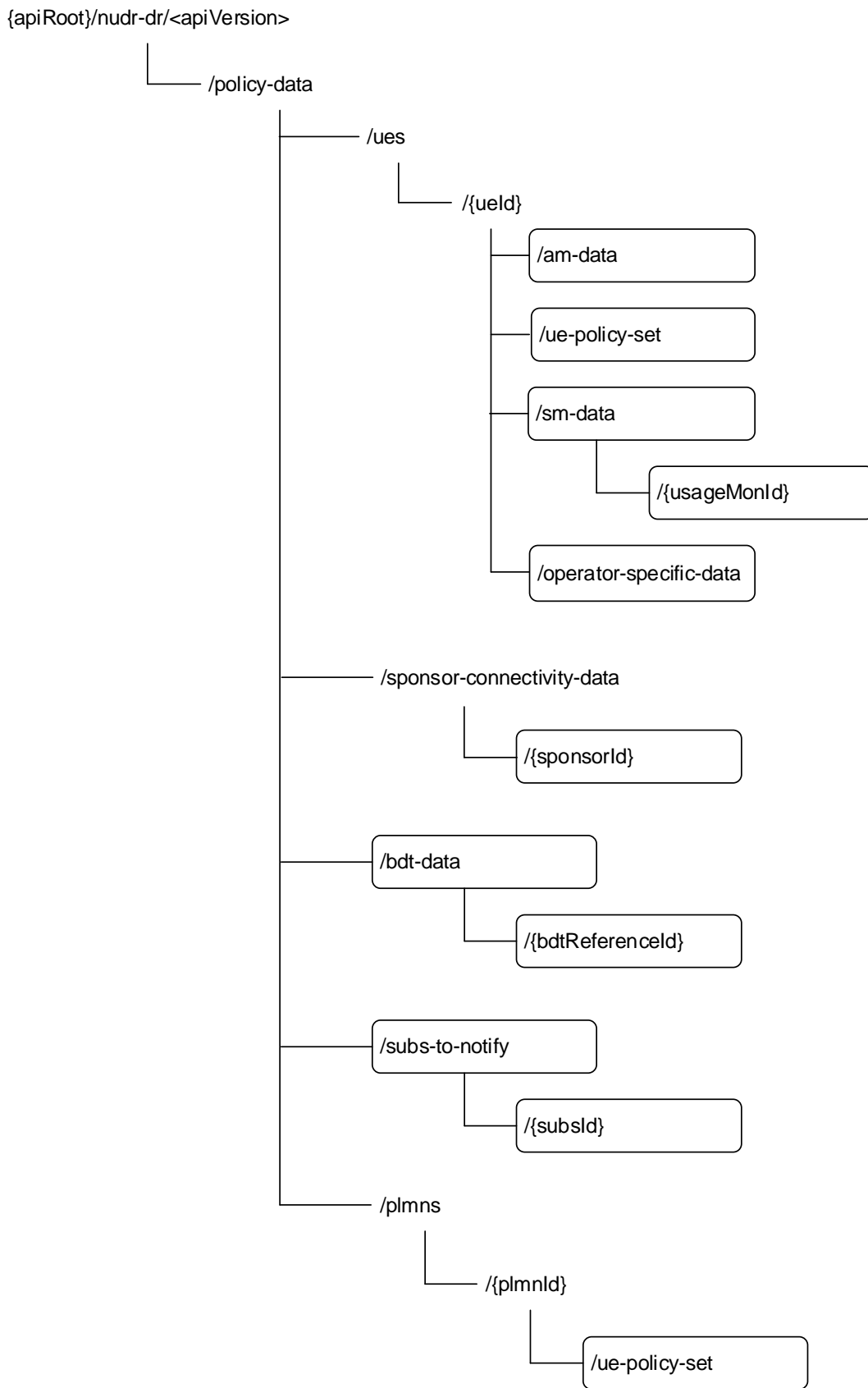


**Figure 5.2.2-1: Resource URI structure of the Nudr_DataRepository API for policy data**

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 |
|---|---|---|---|
| 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 an UE |
| | | PATCH | Modify the operator specific policy data of an UE. |
| | | PUT | Modify the operator specific policy data of an 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. |

## 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.<br>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.<br>The resource has been successfully updated and a response body containing UE policies shall be returned. |
| n/a | | | 204 No Content | Successful case.<br>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.<br>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.<br>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.<br>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.<br>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.<br>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.<br>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.

| 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.<br>The resource has been successfully created. |
| ProblemDetails | O | 0..1 | 403 Forbidden | The resource is not allowed to be updated.<br>(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.<br>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.<br>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.<br><br>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 | 1..N | 200 OK | Upon success, 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. |
| 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 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(OperatorSpecificData Container) | 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. |
| 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]. | | | | |

## 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. | | | | |

## 5.3 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. | |
| PolicyDataSubscription | 5.4.2.10 | Identifies a subscription to policy data change notification. | |
| 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 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. | |
| 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 |
| 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.<br>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.<br><br>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.<br>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. Default value is false. |
| 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.<br>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). |
| 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. | |
| 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. | |
| NOTE: In this Release of the specification the "limitId" corresponds to the Monitoring Key. | | | | | |

### 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. If 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: 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. | | | | |

### 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. | |
| 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). | |
| 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. | | | | | |

### 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.<br>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). |
| 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. | |
| 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 "ConditionalSubscriptionwithPartial Notification" 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 |
|---|---|---|---|---|---|
| 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" or "plmnUePolicySet" 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. | |

## 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 can be enabled for a subscriber. The default value is "FALSE". | |
| subscSpendingLimits | boolean | O | 0..1 | Indicates whether the PCF must enforce policies based on subscriber spending limits. The default value is "FALSE". | |
| 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 the offline charging is applicable to the PDU session. The default value is "FALSE". | |
| online | boolean | O | 0..1 | Indicates the online charging is applicable to the PDU session. The default value is "FALSE". | |
| chfInfo | ChargingInformation | O | 0..1 | The address of the Charging Function | |
| 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 | Indicates subscription to the MPS priority service; priority applies to all traffic on the PDU Session. The default value is "FALSE". | |
| mcsPriority | boolean | O | 0..1 | Indicates subscription to the MCS priority service; priority applies to all traffic on the PDU Session. The default value is "FALSE". | |
| imsSignallingPrio | boolean | O | 0..1 | Indicates subscription to the IMS signalling priority service; priority only applies to IMS signalling traffic. The default value is "FALSE". | |
| 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 | EnhancedBackgroundDataTransfer |

| locRoutNotAllowe d | boolean | O | 0..1 | Identifies whether AF influence on traffic routing is allowed or not. Set to "true" if no local routing is allowed; otherwise set to "false". The default value is "false". | |
|---|---|---|---|---|---|

### 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.<br>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. |
| snssaiRouteSelDes cs | array(SnssaiRouteS electionDescriptor) | 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(DnnRouteSelecti onDescriptor) | 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.<br><br>false (default): MA PDU session establishment is not allowed for this DNN. |

### 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(UsageMon Data) | O | 1..N | Contains the remaining allowed usage data associated with the subscriber.<br>The value of the limit identifier is used as the key in the map. | |
| smPolicySnssaiData | map(SmPolicyS nssaiDataPatch ) | 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: In this Release of the specification the "limitId" corresponds to the Monitoring Key. | | | | | |

### 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(SmPolicyDnn DataPatch) | 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(BdtRefere nceIdRm) | O | 1..N | Updated transfer policies of background data transfer. | EnhancedBac kgroundData Transfer |

### 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. | |

### 5.2.4.26 Type UpdatedItem

**Table 5.2.4.26-1: 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. |

## 5.4.3 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.<br>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.<br>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. | 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]. | |

### 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. |

# 5.5 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. The PCF shall include in the HTTP status code a "ProblemDetails" data structure with the "cause" attribute indicating the application error as listed in table 5.5.3-1.

**Table 5.5.3-1: 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.

# 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

{apiRoot}/nudr-dr/<apiVersion>

```
└─────── /application-data
                │
                ├──────── /pfds
                │           │
                │           └──────── /{appId}
                │
                ├──────── /influenceData
                │           │
                │           ├──────── /{influenceId}
                │           │
                │           └──────── /subs-to-notify
                │                       │
                │                       └──────── /{subscriptionId}
                │
                ├──────── /iptvConfigData
                │           │
                │           └──────── /{configurationId}
                │
                ├──────── /bdtPolicyData
                │           │
                │           └──────── /{bdtPolicyId}
                │
                ├──────── /serviceParamData
                │           │
                │           └──────── /{serviceParamId}
                │
                └──────── /subs-to-notify
                            │
                            └──────── /{subsId}
```
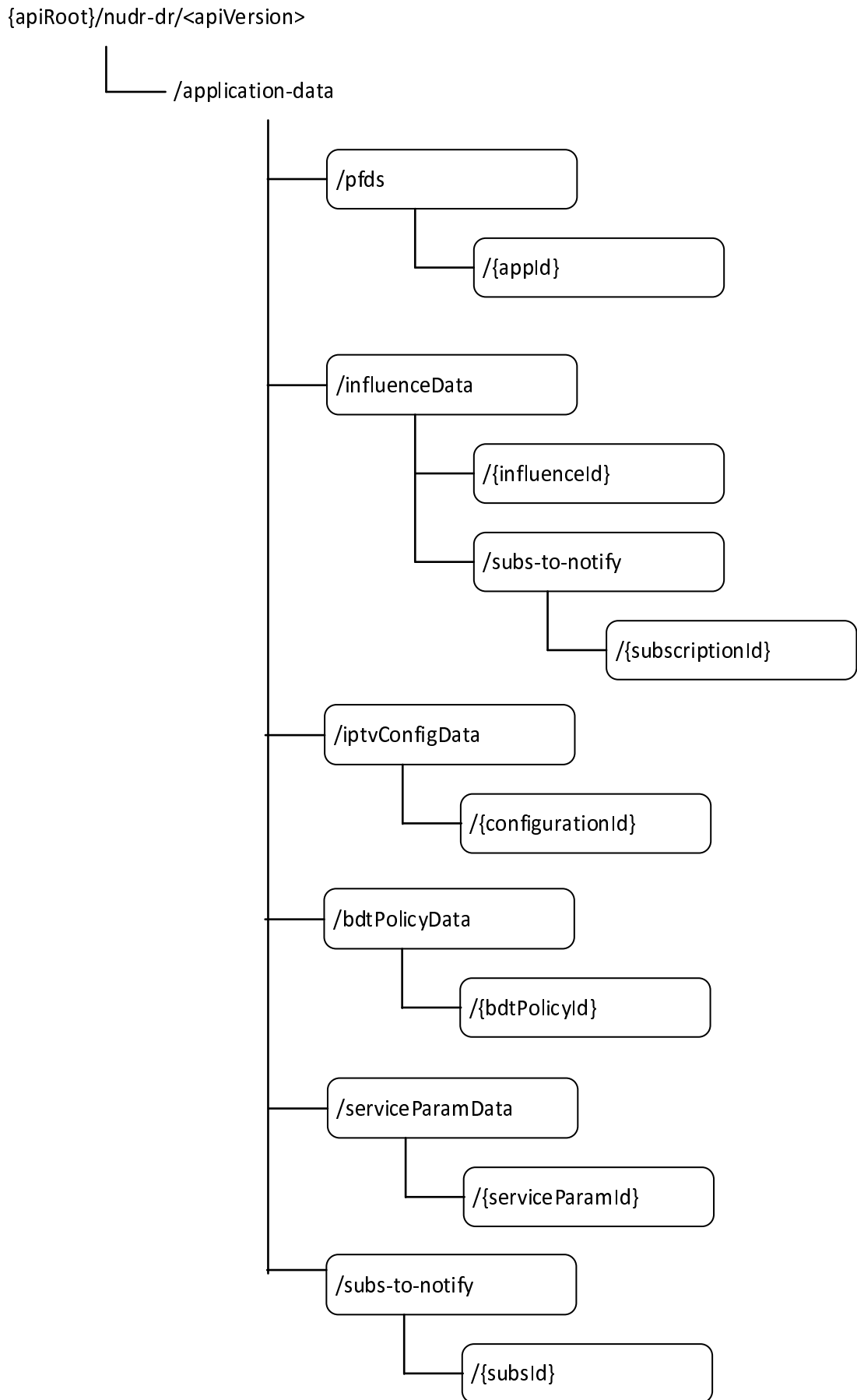
**Figure 6.2.2-1: Resource URI structure of the Nudr_DataRepository API for application data**

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 | 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} | 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 | 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} | 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 | GET | Retrieve the  applied BDT policy data. |
| Individual Applied BDT Policy Data | /application-data/bdtPolicyData/{bdtPolicyId} | 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 | 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} | PUT | Create an IndividualIptvConfiguration 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 | 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} | 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}. |
| 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}. |

## 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.

| 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.<br>If none appId is included in the URI, it applies to all application identifier(s) for the querying PFD Data resource. |

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).<br>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 |
|------|-----------|---|-------------|-------------|
| n/a | | | | |

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.<br>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.<br>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 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.<br><br>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. |
| supp-feat | SupportedFeatures | O | 0..1 | Identifies the features supported by the NF service consumer. |
| NOTE: At least one of the "service-param-ids", "dnns", "snssais", "internal-groups-ids", "supis", "ue-ipv4s", "ue-ipv6s" or "ue-macs" attributes shall be provided. | | | | |

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 |
|---|---|---|---|---|
| ServiceParameter Data | M | 1 | 201 Created | The resource has been successfully created and a response body is returned containing a representation of the resource. |
| ServiceParameter Data | 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 |
|---|---|---|---|
| ServiceParameterData Patch | 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 |
|---|---|---|---|---|
| ServiceParameter Data | 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. | | | | |

# 6.3 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 |
|---|---|---|---|
| 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. | |
| 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. | EnhancedInfluData Notification |
| 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 |
|---|---|---|---|
| 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. | |
| DnaiChangeType | 3GPP TS 29.571 [7] | Describes the types of DNAI change. | |
| Dnn | 3GPP TS 29.571 [7] | Identifies a Data Network Name. | |
| EthFlowDescription | 3GPP TS 29.514 [16] | Contains the Ethernet data flow information.(NOTE) | |
| 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 service parameter data provisioned over PC5. | |
| ParameterOverUu | 3GPP TS 29.522 [19] | Contains the service parameter data provisioned over Uu. | |
| PfdChangeNotification | 3GPP TS 29.551 [8] | Describes the PFD change. | |
| PfdDataForApp | 3GPP TS 29.551 [8] | Identifies the PFDs for one application identifier. | |
| RouteToLocation | 3GPP TS 29.571 [7] | Identifies the N6 traffic routing requirement. | |
| ServiceParamterDataPatch | 3GPP TS 29.522 [19] | Contains the service parameter data. | |
| 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 |
| Uri | 3GPP TS 29.571 [7] | Identifies a URI. | |
| 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 |
|---|---|---|---|---|---|
| upPathChgNotifCorreId | string | C | 0..1 | Contains the Notification Correlation Id allocated by the NEF for the UP path change notification. It shall be included when the NEF requests the UP path change notification. | |
| appReloInd | boolean | O | 0..1 | Identifies whether an application can be relocated once a location of the application has been selected. | |
| 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 |
|---|---|---|---|---|---|
| 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 |
| 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 |
|---|---|---|---|---|---|
| upPathChgNotifCorreId | 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. | |
| dnn | Dnn | O | 0..1 | Identifies a DNN. | |
| snssai | Snssai | O | 0..1 | The identification of slice | |
| internalGroupId | GroupId | O | 0..1 | Identifies a group of users. | |
| ethTrafficFilters | array(EthFlowDescription) | O | 1..N | Identifies Ethernet packet filters. | |
| supi | Supi | O | 0..1 | Identifies a user. | |
| 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 |

### 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.<br>This IE may be included in a subscription request. When present, this IE shall represent the time after which the subscription becomes invalid.<br>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. | |
| NOTE 1: At least one of "dnns", "snssais", "internalGroupIds" or "supis" shall be provided.<br>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. | |
| NOTE: This data type also contains all the properties defined for PfdDataForApp data type in 3GPP TS 29.551 [8]. | | | | | |

### 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. | |
| 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. | |
| 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. | |
| 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. |
| dataFilters | array(DataFilter) | O | 1..N | Each element identifies a data filter for subscription to data change.notification.<br>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.<br>This IE may be included in a subscription request. When present, this IE shall represent the time after which the subscription becomes invalid.<br>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.<br>This attribute shall be provided in the POST request and 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) | |
| 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. | |
| NOTE: The "dnns", "snssais", "internalGroupIds" and "supis" attributes are applicable to the BDT Policy Data, IPTV Configuration Data and Service Parameter Data, the "ueIpv4s" "ueIpv6s" and "ueMacs" attributes are applicable to the Service Parameter Data, and the "appIds" attribute is applicable to the PFD Data, Service Parameter Data and IPTV Configuration Data. | | | | | |

### 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 service parameter used over PC5 | |
| paramOverUu | ParameterOverUu | O | 0..1 | Contains the service parameter used over Uu | |
| 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. | |
| 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. | | | | | |

## 6.4.3 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. | |

# 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. The PCF shall include in the HTTP status code a "ProblemDetails" data structure with the "cause" attribute indicating the application error as listed in table 6.5.3-1.

**Table 6.5.3-1: 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.

# 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

{apiRoot}/nudr-dr/<apiVersion>/exposure-data

```
                          ┌───── /{ueId}
                          │         │
                          │         ├───── /access-and-mobility-data
                          │         │
                          │         └───── /session-management-data
                          │                         │
                          │                         └───── /{pduSessionId}
                          │
                          └───── /subs-to-notify
                                      │
                                      └───── /{subId}
```
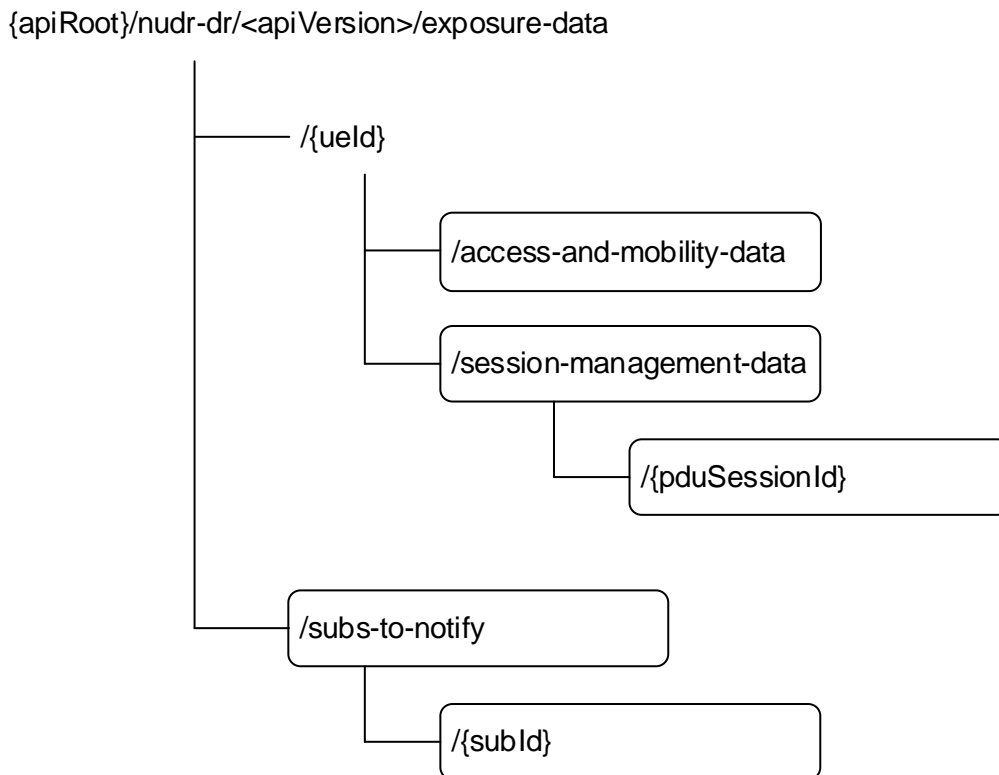
**Figure 7.2.2-1: Resource URI structure of the Nudr_DataRepository API for exposure data**

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.<br>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.<br>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.<br>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.<br>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. |

#### 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.<br>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.<br>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.<br>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 |
|-----------|---|-------------|----------------|-------------|
| PduSessionManagement Data | 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.<br><br>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) | |
| 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) | |
| 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. |

### 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
    © 2021, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).
    All rights reserved.
externalDocs:
  description: 3GPP TS 29.519 V16.8.0; 5G System; Usage of the Unified Data Repository Service for
Policy Data, Application Data and Structured Data for Exposure.
  url: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.519/'

paths:
  /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)
      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)
      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)
      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)
      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)
```

```
      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)
      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)
      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)
      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)
      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)
      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)
      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)
      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)
    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)
        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)
      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)
      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)
      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 an UE
      operationId: UpdateOperatorSpecificData
      tags:
        - OperatorSpecificData (Document)
      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: Modify the operator specific policy data of an UE
      operationId: ReplaceOperatorSpecificData
      tags:
        - OperatorSpecificData (Document)
      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'
        '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'
  /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)
      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'
components:
  schemas:
    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
        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
        subscCats:
          type: array
          items:
            type: string
          minItems: 1
        uePolicySections:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/UePolicySection'
          minProperties: 1
        upsis:
          type: array
          items:
            type: string
          minItems: 1
        allowedRouteSelDescs:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/PlmnRouteSelectionDescriptor'
          minProperties: 1
        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'
    UePolicySetPatch:
      description: Contains the UE policy set for a given subscriber.
      type: object
```

```
      properties:
        uePolicySections:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/UePolicySection'
          minProperties: 1
        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
        umDataLimits:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/UsageMonDataLimit'
          minProperties: 1
        umData:
          type: object
          additionalProperties:
            $ref: '#/components/schemas/UsageMonData'
          minProperties: 1
        suppFeat:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      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
      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
      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
      bdtRefIds:
        type: object
        additionalProperties:
          $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceIdRm'
        minProperties: 1
        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
      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
          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'
        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'
      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'
    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
      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
    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
          nullable: true
        smPolicySnssaiData:
          type: object
          additionalProperties:
```

```
                    $ref: '#/components/schemas/SmPolicySnssaiDataPatch'
                  minProperties: 1
        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
          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
              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'
#

    IpIndex:
      type: integer
    OsId:
      type: string
      format: uuid
    UsageMonLevel:
      anyOf:
      - type: string
        enum:
          - SESSION_LEVEL
          - SERVICE_LEVEL
      - type: string
    Periodicity:
      anyOf:
      - type: string
        enum:
          - YEARLY
          - MONTHLY
          - WEEKLY
          - DAILY
          - HOURLY
      - type: string
#

    ItemPath:
      description: Identifies a fragment (subset of resource data) of a given resource.
      type: string
#
    BdtPolicyStatus:
      description: Indicates the validation status of a negotiated BDT policy.
      anyOf:
      - type: string
        enum:
          - INVALID
          - VALID
      - 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
    © 2021, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).
    All rights reserved.
externalDocs:
  description: 3GPP TS 29.519 V16.8.0; 5G System; Usage of the Unified Data Repository Service for
Policy Data, Application Data and Structured Data for Exposure.
  url: 'http://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)
      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
      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)
      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:
        '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)
      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)
      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)
      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)
      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)
        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)
        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)
      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)
        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)
      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)
      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)
      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)
      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)
      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)
      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)
          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)
        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)
      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
      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)
      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)
      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: 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)
          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)
        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)
      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/subs-to-notify:
    post:
      summary: Create a subscription to receive notification of application data changes
      operationId: CreateIndividualApplicationDataSubscription
      tags:
        - ApplicationDataSubscriptions (Collection)
      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)
        parameters:
          - name: data-filter
            in: query
            description: The data filter for the query.
            required: false
            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)
      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)
      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)
      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'

components:
  schemas:
    TrafficInfluData:
      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'
          description: Identifies a group of users.
        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:
```

*ETSI*

```
              type: boolean
            supportedFeatures:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
            resUri:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        allOf:
          - oneOf:
            - required: [afAppId]
            - required: [trafficFilters]
            - required: [ethTrafficFilters]
          - oneOf:
            - required: [supi]
            - required: [interGroupId]
    TrafficInfluDataPatch:
      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.
        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'
        internalGroupId:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
          description: Identifies a group of users.
        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
          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
    TrafficInfluSub:
      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'
      required:
        - notificationUri
      oneOf:
        - required: [dnns]
        - required: [snssais]
        - required: [internalGroupIds]
        - required: [supis]
    TrafficInfluDataNotif:
      type: object
      properties:
        resUri:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        trafficInfluData:
          $ref: '#/components/schemas/TrafficInfluData'
      required:
        - resUri
    PfdDataForAppExt:
      allOf:
        - $ref: 'TS29551_Nnef_PFDmanagement.yaml#/components/schemas/PfdDataForApp'
        - type: object
          properties:
            suppFeat:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    BdtPolicyData:
      type: object
      properties:
        interGroupId:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
          description: Identifies a group of users.
        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'
      required:
        - bdtRefId
    BdtPolicyDataPatch:
      type: object
      properties:
```

```
            bdtRefId:
              $ref: 'TS29122_CommonData.yaml#/components/schemas/BdtReferenceId'
          required:
           - bdtRefId
      IptvConfigData:
        type: object
        properties:
          supi:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'
          interGroupId:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
            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
          suppFeat:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
          resUri:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
        required:
         - afAppId
         - multiAccCtrls
        oneOf:
         - required: [interGroupId]
         - required: [supi]
      ServiceParameterData:
        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'
            description: Identifies a group of users.
          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'
          suppFeat:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
          resUri:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      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'
          supportedFeatures:
```

```
              $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
          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'
      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
      required:
        - dataInd
    DataInd:
      anyOf:
      - type: string
        enum:
          - PFD
          - IPTV
          - BDT
          - SVC_PARAM
      - 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
```

# 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
    © 2021, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).
    All rights reserved.
externalDocs:
  description: 3GPP TS 29.519 V16.8.0; 5G System; Usage of the Unified Data Repository Service for
Policy Data, Application Data and Structured Data for Exposure.
  url: 'http://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
      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
        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
        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
      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
      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 access and mobility 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 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 session management data for a UE and for an individual PDU session
            operationId: QuerySessionManagementData
            tags:
              - PduSessionManagementData
            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
            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)
      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)
      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)
      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:
      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'
```

```
    PduSessionManagementData:
      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'
    ExposureDataSubscription:
      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'
      required:
        - notificationUri
        - monitoredResourceUris
    ExposureDataChangeNotification:
      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 |

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| 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 |
| 2019-12 | CT#86 | CP-193210 | 0165 | - | B | Feature Negotiation for Influence Data resource | 16.2.0 |
| 2019-12 | CT#86 | CP-193126 | 0166 | - | B | URI correction on resource Individual Applied BDT Policy Data | 16.2.0 |
| 2020-03 | CT#87e | CP-200141 | 0167 | 2 | B | Application data change notification | 16.3.0 |
| 2020-03 | CT#87e | CP-200203 | 0168 | 1 | B | Complete the IPTV configuration | 16.3.0 |
| 2020-03 | CT#87e | CP-200263 | 0169 | 2 | B | Nudr_DataRepository API update for Service Parameter provisioning | 16.3.0 |
| 2020-03 | CT#87e | CP-200218 | 0170 | 1 | B | Indication of traffic correlation | 16.3.0 |
| 2020-03 | CT#87e | CP-200136 | 0171 | 2 | B | Include influenceId into TrafficInfluData for Notification | 16.3.0 |
| 2020-03 | CT#87e | CP-200219 | 0172 | 2 | B | Correct the mapping of ASPid for xBDT | 16.3.0 |
| 2020-03 | CT#87e | CP-200207 | 0173 | 1 | B | Subscription and notification to data changes related to a subset of resource data, Policy Data set | 16.3.0 |
| 2020-03 | CT#87e | CP-200203 | 0174 | - | F | Correct content type in PATCHing IPTV application data | 16.3.0 |
| 2020-03 | CT#87e | CP-200198 | 0175 | - | B | Additional PDU session status data | 16.3.0 |
| 2020-03 | CT#87e | CP-200219 | 0176 | - | F | Correct content type in PATCHing BDT application data | 16.3.0 |
| 2020-03 | CT#87e | CP-200219 | 0177 | - | F | Removal of the BDT policy from the "bdtRefIds" object | 16.3.0 |
| 2020-06 | CT#88e | CP-201220 | 0179 | 2 | A | internalGroupId in Influence Data | 16.4.0 |
| 2020-06 | CT#88e | CP-201238 | 0180 | 2 | F | Definition of ServiceParameterData in openAPI | 16.4.0 |
| 2020-06 | CT#88e | CP-201246 | 0181 | 3 | F | Data Types for Application Data | 16.4.0 |
| 2020-06 | CT#88e | CP-201228 | 0183 | 1 | F | Correction to IPTV Configuration | 16.4.0 |
| 2020-06 | CT#88e | CP-201253 | 0184 | 1 | F | Correction to BDT Policy | 16.4.0 |

| 2020-06 | CT#88e | CP-201220 | 0185 | 1 | A | Correction to notifications of Operator Specific Data changes | 16.4.0 |
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| 2020-06 | CT#88e | CP-201220 | 0188 | - | A | Correct content type in PATCHing traffic influence application data | 16.4.0 |
| 2020-06 | CT#88e | CP-201233 | 0189 | - | F | Correct DataFilter presence condition | 16.4.0 |
| 2020-06 | CT#88e | CP-201233 | 0190 | - | F | Correct resourceId in required field | 16.4.0 |
| 2020-06 | CT#88e | CP-201233 | 0191 | 1 | B | Support local traffic routing in session subscription | 16.4.0 |
| 2020-06 | CT#88e | CP-201244 | 0192 | 1 | F | Storage of YAML files in ETSI Forge | 16.4.0 |
| 2020-06 | CT#88e | CP-201276 | 0194 | 1 | F | Traffic descriptor for xBDT | 16.4.0 |
| 2020-06 | CT#88e | CP-201256 | 0195 | 1 | F | URI of the Nudr_DataRepository service for Policy, Application and Exposure data | 16.4.0 |
| 2020-06 | CT#88e | CP-201313 | 0197 | - | F | Data type of internalGroupId attribute | 16.4.0 |
| 2020-06 | CT#88e | CP-201228 | 0199 | - | F | Data model correction for IPTV | 16.4.0 |
| 2020-06 | CT#88e | CP-201228 | 0200 | - | F | Remove feature for IPTV data configuration | 16.4.0 |
| 2020-06 | CT#88e | CP-201244 | 0201 | - | F | Optionality of ProblemDetails | 16.4.0 |
| 2020-06 | CT#88e | CP-201233 | 0202 | 2 | F | Corrections on supported features definition | 16.4.0 |
| 2020-06 | CT#88e | CP-201244 | 0203 | - | F | required field in OpenAPI file | 16.4.0 |
| 2020-06 | CT#88e | CP-201244 | 0204 | 1 | F | Supported headers, Resource Data type | 16.4.0 |
| 2020-06 | CT#88e | CP-201255 | 0206 | - | F | Update in TS version in externalDocs field | 16.4.0 |
| 2020-09 | CT#89e | CP-202059 | 0207 | - | F | Include resouceURI in IptvConfigData for change notification association | 16.5.0 |
| 2020-09 | CT#89e | CP-202069 | 0208 | - | F | Include resouceURI in ServiceParameterData for change notification association | 16.5.0 |
| 2020-09 | CT#89e | CP-202209 | 0209 | - | F | Include resouceURI in TrafficInfluData for change notification association | 16.5.0 |
| 2020-09 | CT#89e | CP-202082 | 0210 | - | F | Include resouceURI in BdtPolicyData for change notification association | 16.5.0 |
| 2020-09 | CT#89e | CP-202084 | 0213 | 1 | F | Update of TS version in externalDocs field | 16.5.0 |
| 2020-12 | CT#90e | CP-203139 | 0215 | - | F | TS 29.519 Essential Corrections and alignments | 16.6.0 |
| 2020-12 | CT#90e | CP-203110 | 0217 | 1 | F | Correction to support NEF binding indication | 16.6.0 |
| 2020-12 | CT#90e | CP-203129 | 0219 | 1 | F | Correction to the BDT policy re-negotiation | 16.6.0 |
| 2020-12 | CT#90e | CP-203139 | 0221 | - | F | Storage of YAML files in 3GPP Forge | 16.6.0 |
| 2020-12 | CT#90e | CP-203154 | 0224 | - | F | MA Support indication within UE Context policy control subscription information | 16.6.0 |
| 2020-12 | CT#90e | CP-203139 | 0226 | 1 | F | Callback URI correction | 16.6.0 |
| 2020-12 | CT#90e | CP-203152 | 0228 | - | F | Update of TS version in externalDocs field | 16.6.0 |

| 2021-03 | CT#91e | CP-210198 | 0237 | - | A | UsageMonData: definition of "scopes" attribute | 16.7.0 |
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| 2021-03 | CT#91e | CP-210206 | 0243 | 1 | F | extend bdtpStatus to include VALID | 16.7.0 |
| 2021-03 | CT#91e | CP-210198 | 0246 | - | A | PUT method for Exposure Data modification | 16.7.0 |
| 2021-03 | CT#91e | CP-210239 | 0249 | - | F | Update of TS version in externalDocs field | 16.7.0 |
| 2021-09 | CT#93e | CP-212229 | 0265 | 1 | F | Correction of cardinality for xBDT | 16.8.0 |
| 2021-09 | CT#93e | CP-212190 | 0269 | - | F | Correction of data types of resetPeriod and resetTime in openAPI file | 16.8.0 |
| 2021-09 | CT#93e | CP-212222 | 0274 | - | F | Update of externalDocs field | 16.8.0 |

# History

| Document history | | |
|---|---|---|
| V16.4.0 | August 2020 | Publication |
| V16.5.0 | November 2020 | Publication |
| V16.6.0 | January 2021 | Publication |
| V16.7.0 | April 2021 | Publication |
| V16.8.0 | September 2021 | Publication |