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Usage of the Unified Data Repository services for Subscription
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(3GPP TS 29.505 version 15.1.0 Release 15)**



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Foreword

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1 Scope

The present document specifies the usage of the Unified Data Repository services for subscription data. It provides the resource definition and data model for subscription data used over the Nudr Service Based Interface. The protocol definition for Nudr Service Based Interface which is specific to subscription data is also specified in the present document.

The stage 3 protocol definition for Nudr Service Based Interface which is common for subscription data, policy data, structure data and application data for exposure is specified in 3GPP TS 29.504 [2].

2 References

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

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- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
 - [2] 3GPP TS 29.504: "5G System; Unified Data Repository Services; Stage 3".
 - [3] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".
 - [4] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".
 - [5] 3GPP TS 23.003: "Numbering, addressing and identification".
 - [6] 3GPP TS 29.503: "Unified Data Management Services".
 - [7] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".
 - [8] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".
-

3 Definitions and abbreviations

3.1 Definitions

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

pointer of attribute: The pointer of the attribute identifies the location of the attribute in the JSON object. The pointer of the attribute is a string with one or more segments, each segment is the name of an attribute within that JSON object, different segments are separated with a "/".

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].

5GC	5G Core
AMF	Access and Mobility Management Function
DNN	Data Network Name

GPSI	Generic Public Subscription Identifier
JSON	Javascript Object Notation
SMF	Session Management Function
SMS	Short Message Service
SMSF	SMS Function
SUPI	Subscription Permanent Identifier
UDM	Unified Data Management
UDR	Unified Data Repository

4 Overview

The resources, data model and usage defined in the present document are used by the 5GC NFs (e.g. UDM) to access the subscription data via the Unified Data Repository services specified in 3GPP TS 29.504 [2].

5 Usage of Nudr_DataRepository Service

5.1 Introduction

The following subclauses specify the usage of Nudr_DataRepository service for subscription data. The principles specified in 3GPP TS 29.504 [2] are followed unless explicitly specified otherwise in the following subclauses.

5.2 Resources

5.2.1 Overview

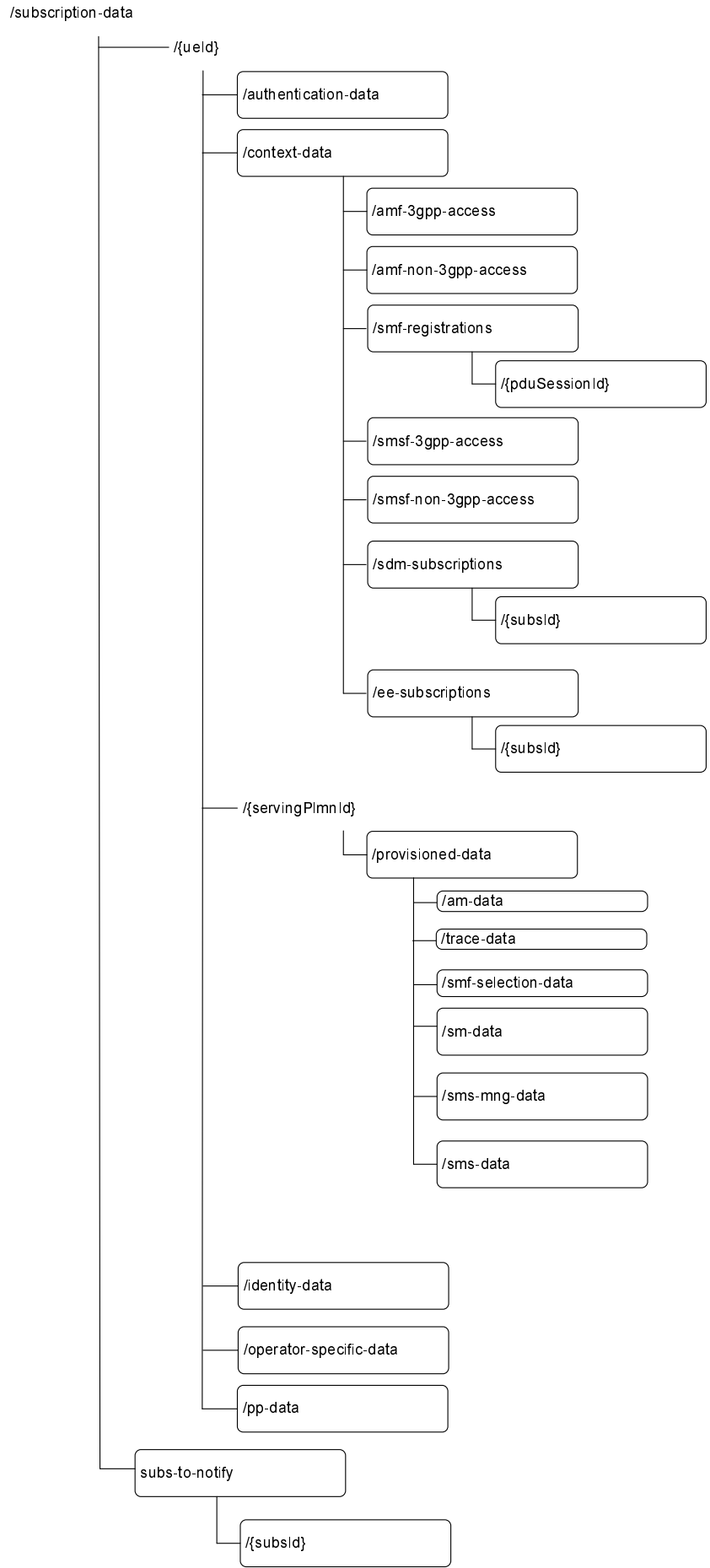


Figure 5.2.1-1: Resource URI sub-level structure for subscription data

Table 5.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 5.2.1-1: Resources and methods overview

Resource name	Resource URI	HTTP method	Description
AuthenticationData	/subscription-data/{ueId}/authentication-data	GET	retrieve a UE's authentication data
		PATCH	update a UE's authentication data
AccessAndMobilitySubscriptionData	/subscription-data/{ueId}/{servingPlmnId}/provisioned-data /am-data	GET	Retrieve the UE's subscribed Access and Mobility Data
SmfSelectionSubscriptionData	/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/smf-selection-subscription-data	GET	Retrieve the UE's subscribed SMF Selection Data
SessionManagementSubscriptionData	/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/sm-data	GET	Retrieve the UE's subscribed SM Subscription Data
Amf3GppAccessRegistration	subscription-data/{ueId}/context-data/amf-3gpp-access	PUT	Create and Update the AMF registration for 3GPP access
		PATCH	Modify the AMF registration for 3GPP access
		GET	Retrieve the AMF registration information for 3GPP access
AmfNon3GppAccessRegistration	subscription-data/{ueId}/ context-data/amf-non-3gpp-access	PUT	Update the AMF registration for non 3GPP access
		PATCH	Modify the AMF registration for non 3GPP access
		GET	Retrieve the AMF registration information for non 3GPP access
SmfRegistrations	subscription-data/{ueId}/context-data/smf-registrations	GET	Retrieve the list of the SMF registrations
IndividualSmfRegistration	subscription-data/{ueId}/context-data /smf-registrations/{pduSessionId}	PUT	Store an individual SMF registration identified by PDU Session Id
		DELETE	Delete an individual SMF registration
		GET	Retrieve individual SMF registration
OperatorSpecificData	/subscription-data/{ueId}/operator-specific-data	GET	retrieve the operator specific subscription data of a UE
		PATCH	modify the operator specific subscription data of a UE
SMSManagementSubscriptionData	/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/sms-mng-data	GET	Retrieve the UE's subscribed SMS management subscription data.
Smsf3GppAccessRegistration	subscription-data/{ueId}/context-data /smsf-3gpp-access	PUT	Create or Update the SMSF registration
		DELETE	Delete the SMSF registration for 3GPP access
		GET	Retrieve the SMSF registration information
SmsfNon3GppAccessRegistration	subscription-data/{ueId}/context-data /smsf-non-3gpp-access	PUT	Create or Update the SMSF registration for non 3GPP access

		DELETE	Delete the SMSF registration for non 3GPP access
		GET	Retrieve the SMSF registration information for non 3GPP access
SdmSubscriptions	/subscription-data/{ueId}/context-data/sdm-subscriptions	GET	Retrieve SDM subscriptions
		POST	Create an individual SDM subscription
IndividualSdmSubscription	/subscription-data/{ueId}/context-data/sdm-subscriptions/{subId}	PUT	Store an individual SDM subscription
		DELETE	Delete an individual SDM subscription
EeSubscriptions	/subscription-data/{ueId}/context-data/ee-subscriptions	GET	Retrieve EE subscriptions
		POST	Create an EE subscription
IndividualEeSubscription	/subscription-data/{ueId}/context-data/ee-subscriptions/{subId}	PUT	Store/update an individual EE subscription
		DELETE	Delete an individual EE subscription
ProvisionedParameterData	/subscription-data/{ueId}/pp-data	PATCH	Update of provisioned parameters.
		GET	Retrieves the UE's provisioned parameters.
SMSSubscriptionData	/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/sms-data	GET	Retrieve the UE's subscribed SMS subscription data.
SubscriptionDataSubscriptions	/subscription-data/subs-to-notify	POST	Create a subscription, i.e. subscribe a node to receive notification for change of data
IndividualSubscriptionDataSubscription	/subscription-data/subs-to-notify/{subId}	DELETE	Delete the subscription identified by {subId}, i.e. unsubscribe a node to receive notification for change of data
TraceData	/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/trace-data	GET	Retrieve the UE's trace configuration data
IdentityData	/subscription-data/{ueId}/identity-data	GET	Retrieve identity data that corresponds to the provided ueId

5.2.2 Resource: AuthenticationData

5.2.2.1 Description

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.2.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/authentication-data

This resource shall support the resource URI variables defined in table 5.2.2.2-1.

Table 5.2.2.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueld	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)"

5.2.2.3 Resource Standard Methods

5.2.2.3.1 GET

This method shall support the URI query parameters specified in table 5.2.2.3.1-1.

Table 5.2.2.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

This method shall support the request data structures specified in table 5.2.2.3.1-2 and the response data structures and response codes specified in table 5.2.2.3.1-3.

Table 5.2.2.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.2.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
AuthenticationData	M	1	200 OK	Upon success, a response body containing the AuthenticationData shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.2.3.2 PATCH

This method is used to modify the authentication data of UE in the UDR.

This method shall support the URI query parameters specified in table 5.2.2.3.2-1.

Table 5.2.2.3.2-1: 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 5.2.2.3.2-2 and the response data structures and response codes specified in table 5.2.2.3.2-3.

Table 5.2.2.3.2-2: 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 authentication data of a UE

Table 5.2.3.2-3: 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.
ProblemDetails	M	1	403 Forbidden	One or more attributes are not allowed to be modified according to e.g. policy or local configuration. The invalidParams attribute shall contain the JSON pointers of attributes which are not allowed to be modified. The cause attribute shall be set to "MODIFY_NOT_ALLOWED", see 3GPP TS 29.500 [8] table 5.2.7.2-1.

NOTE: In addition common data structures as listed in table 5.5-1 are supported.

5.2.3 Resource: AccessAndMobilitySubscriptionData

5.2.3.1 Description

This resource represents the subscribed AccessAndMobilitySubscriptionData for a SUPI for use in a serving PLMN. It is queried by the AMF via the UDM after registering.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.3.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/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	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")
servingPlmnId	Represents the Serving PLMN ID (<MCC><MNC>) pattern: "[0-9]{5,6}"

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
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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 5.2.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
AccessAndMobilitySubscriptionData	M	1	200 OK	Upon success, a response body containing the Access and Mobility Subscription Data shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.4 Resource: SmfSelectionSubscriptionData

5.2.4.1 Description

This resource represents the subscribed SmfSelectionSubscriptionData for a SUPI. It is queried by the UDM triggered by the AMF after registering.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.4.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/smf-selection-subscription-data

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	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")
servingPlmnId	Represents the Serving PLMN ID (<MCC><MNC>) pattern: "[0-9]{5,6}"

5.2.4.3 Resource Standard Methods

5.2.4.3.1 GET

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 GET method on this resource

Name	Data type	P	Cardinality	Description
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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 GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

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

Data type	P	Cardinality	Response codes	Description
SmfSelectionSubscriptionData	M	1	200 OK	Upon success, a response body containing the SMF Selection Subscription Data for the user shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.5 Resource: SessionManagementSubscriptionData

5.2.5.1 Description

This resource represents the subscribed SessionManagementSubscriptionData for a SUPI. It is queried by the UDM triggered by the SMF during session setup, using one or both of query parameters representing the selected network slice and the DNN.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.5.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/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	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")
servingPlmnId	Represents the Serving PLMN ID (<MCC><MNC>) pattern: "[0-9]{5,6}"

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
singleNssai	Snssai	O	0..1	
dnn	Dnn	O	0..1	
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

If "singleNssai" is not included, and "dnn" is not included, UDR shall return all DNN configurations for all network slice(s).

If "singleNssai" is included, and "dnn" is not included, UDR shall return all DNN configurations for the requested network slice identified by "singleNssai".

If "singleNssai" is not included, and "dnn" is included, UDR shall return all DNN configurations identified by "dnn" for all network slices where such DNN is available.

If "singleNssai" is included, and "dnn" is included, UDR shall return the DNN configuration identified by "dnn", if such DNN is available in the network slice identified by "singleNssai".

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
SessionManagementSubscriptionData	M	1..N	200 OK	Upon success, a response body containing the Session Management Subscription data shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.6 Resource: Amf3GppAccessRegistration

5.2.6.1 Description

This resource is used to represent AMF registrations to be stored in the UDR by the UDM.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.6.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/context-data/amf-3gpp-access

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	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)"

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
Amf3GppAccessRegistration	M	1	The AMF registration for 3GPP access is replaced with the received information.

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
n/a			204 No Content	Upon success, an empty response body shall be returned
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.6.3.2 PATCH

This method is used to modify AMF registration data for 3GPP access in the UDR.

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 PATCH method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.6.3.2-2 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 PATCH Request Body on this resource

Data type	P	Cardinality	Description
array(PatchItem)	M	1..N	Contains the delta data to the AMF registration data for 3GPP access

Table 5.2.6.3.2-3: 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.
ProblemDetails	M	1	403 Forbidden	One or more attributes are not allowed to be modified according to e.g. policy or local configuration. The invalidParams attribute shall contain the JSON pointers of attributes which are not allowed to be modified. The cause attribute shall be set to "MODIFY_NOT_ALLOWED", see 3GPP TS 29.500 [8] table 5.2.7.2-1.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.6.3.3 GET

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

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

Name	Data type	P	Cardinality	Description
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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
Amf3GppAccessRegistration	M	1	200 OK	Upon success, a response body containing the Amf3GppAccessRegistration shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.7 Resource: AmfNon3GppAccessRegistration

5.2.7.1 Description

This resource is used to represent AMF registrations to be stored in the UDR.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.7.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/context-data/amf-non-3gpp-access

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

Table 5.2.72-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")

5.2.7.3 Resource Standard Methods

5.2.7.3.1 PUT

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 PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.7.3.1-2 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 PUT Request Body on this resource

Data type	P	Cardinality	Description
AmfNon3GppAccessRegistration	M	1	The AMF registration for non 3GPP access is replaced with the received information.

Table 5.2.7.3.1-3: Data structures supported by the PUT 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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.7.3.2 PATCH

This method is used to modify AMF registration data for non-3GPP access in the UDR.

This method shall support the URI query parameters specified in table 5.2.7.3.2-1.

Table 5.2.7.3.2-1: 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 5.2.7.3.2-2 and the response data structures and response codes specified in table 5.2.7.3.2-3.

Table 5.2.7.3.2-2: 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 AMF registration data for non-3GPP access

Table 5.2.7.3.2-3: 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.
ProblemDetails	M	1	403 Forbidden	One or more attributes are not allowed to be modified according to e.g. policy or local configuration. The invalidParams attribute shall contain the JSON pointers of attributes which are not allowed to be modified. The cause attribute shall be set to "MODIFY_NOT_ALLOWED", see 3GPP TS 29.500 [8] table 5.2.7.2-1.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.7.3.3 GET

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

Table 5.2.7.3.3-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

This method shall support the request data structures specified in table 5.2.7.3.3-2 and the response data structures and response codes specified in table 5.2.7.3.3-3.

Table 5.2.7.3.3-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
AmfNon3GppAccessRegistration	M	1	The AMF registration for non 3GPP access is replaced with the received information.

Table 5.2.7.3.3-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
AmfNon3GppAccessRegistration	M	1	200 OK	Upon success, a response body containing the Amf3GppAccessRegistration shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.8 Resource: SmfRegistrations

5.2.8.1 Description

This resource is used to represent SMF registrations to be stored in the UDR.

This resource is modelled with the Store resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.8.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/ subscription-data/{ueId}/context-data/smf-registrations

This resource shall support the resource URI variables defined in table 6.2.3.4.2-1.

Table 5.2.8.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See subclause 6.4.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [2] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)"

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
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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
SmfRegList	M	1	200 OK	Upon success, a response body containing the list of SMF registrations of the relevant UE shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.9 Resource: IndividualSmfRegistration

5.2.9.1 Description

This resource is used to represent individual PDU session SMF registrations to be stored in the UDR.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.9.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/{ueId}/context-data/smf-registrations/{pduSessionId}

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	Definition
apiRoot	See subclause 6.4.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [y] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.- msisdn-[0-9]{5,15} extid-.- .+)".
pduSessionId	The pduSessionId identifies an individual SMF registration.

5.2.9.3 Resource Standard Methods

5.2.9.3.1 PUT

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

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

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.9.3.1-2 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 PUT Request Body on this resource

Data type	P	Cardinality	Description
SmfRegistration	M	1	The registration that is to be created

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

Data type	P	Cardinality	Response codes	Description
SmfRegistration	M	1	201 Created	Upon success, a response body containing a representation of the created Individual SmfRegistration resource shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.9.3.2 DELETE

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 DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.9.3.2-2 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 DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.9.3.2-3: 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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.9.3.3 GET

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 GET method on this resource

Name	Data type	P	Cardinality	Description
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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 GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

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

Data type	P	Cardinality	Response codes	Description
SmfRegistration	M	1	200 OK	The SMF registration that is to be retrieved
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.10 Resource: OperatorSpecificData

5.2.10.1 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 [7]).

5.2.10.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/operator-specific-data

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	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] subclause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")
NOTE: The content of ueId SUPI or GPSI depends on the service.	

5.2.10.3 Resource Standard Methods

5.2.10.3.1 GET

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

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

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

Name	Data type	P	Cardinality	Description
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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 GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.10.3.1-3: 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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.10.3.2 PATCH

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

This method shall support the URI query parameters specified in table 5.2.10.3.2-1.

Table 5.2.10.3.2-1: 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 5.2.10.3.2-2 and the response data structures and response codes specified in table 5.2.10.3.2-3.

Table 5.2.10.3.2-2: 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 5.2.10.3.2-3: 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.
ProblemDetails	M	1	403 Forbidden	One or more attributes are not allowed to be modified according to e.g. policy or local configuration. The invalidParams attribute shall contain the JSON pointers of attributes which are not allowed to be modified. The cause attribute shall be set to "MODIFY_NOT_ALLOWED", see 3GPP TS 29.500 [8] table 5.2.7.2-1.

NOTE: In addition common data structures as listed in table 5.5-1 are supported.

5.2.11 Resource: Smsf3GppAccessRegistration

5.2.11.1 Description

This resource represents registered SMSF for 3GPP access.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).-

5.2.11.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/context-data/smsf-3gpp-access

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	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)"

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
SmsfRegistration	M	1	The SMSF registration for 3GPP access is created or updated with the received information.

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
n/a			204 No Content	Upon success, an empty response body shall be returned
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.11.3.4 GET

This method shall support the URI query parameters specified in table 5.2.11.3.4-1.

Table 5.2.11.3.4-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

This method shall support the request data structures specified in table 5.2.11.3.4-2 and the response data structures and response codes specified in table 5.2.11.3.4-3.

Table 5.2.11.3.4-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.11.3.4-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
SmsfRegistration	M	1	200 OK	Upon success, a response body containing the SMSF registration for 3GPP access Data shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.12 Resource: SmsfNon3GppAccessRegistration

5.2.12.1 Description

This resource represents registered SMSF for Non 3GPP access.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.12.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/context-data/smsf-non-3gpp-access

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	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)"

5.2.12.3 Resource Standard Methods

5.2.12.3.1 PUT

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 PUT method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.12.3.1-2 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 PUT Request Body on this resource

Data type	P	Cardinality	Description
SmsfRegistration	M	1	The SMSF registration for non 3GPP access is created or updated with the received information.

Table 5.2.12.3.1-3: Data structures supported by the PUT 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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.12.3.2 DELETE

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 DELETE method on this resource

Name	Data type	P	Cardinality	Description
n/a				

This method shall support the request data structures specified in table 5.2.12.3.2-2 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 DELETE Request Body on this resource

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

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

Data type	P	Cardinality	Response codes	Description
n/a			204 No Content	Upon success, an empty response body shall be returned.

NOTE: In addition common data structures as listed in table 5.5-1 are supported.

5.2.12.3.4 GET

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

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

Name	Data type	P	Cardinality	Description
fields	array(string)	C	0..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.
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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

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

Data type	P	Cardinality	Description
n/a			

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

Data type	P	Cardinality	Response codes	Description
SmsfRegistration	M	1	200 OK	Upon success, a response body containing the SMSF registration for non 3GPP access Data shall be returned.

NOTE: In addition common data structures as listed in table 5.5-1 are supported.

5.2.13 Resource: SMSManagementSubscriptionData

5.2.13.1 Description

This resource represents the subscribed SMSManagementSubscriptionData for a SUPI for use in a serving PLMN. It is queried by the SMSF via the UDM after registering.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.13.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/sms-mng-data

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	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")
servingPlmnId	Represents the Serving PLMN ID (<MCC><MNC>) pattern: "[0-9]{5,6}"

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
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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
SmsManagementSubscriptionData	M	1	200 OK	Upon success, a response body containing the SMS Management Subscription Data shall be returned.

NOTE: In addition common data structures as listed in table 5.5-1 are supported.

5.2.14 Resource: ProvisionedParameterData

5.2.14.1 Description

This resource represents the subscribed ProvisionedParameterData for a GPSI. It is triggered by the AF/NEF via the UDM to update provisioned data stored for the subscriber.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.14.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/pp-data

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

Table 5.2.14.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueld	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)"

5.2.14.3 Resource Standard Methods

5.2.14.3.1 GET

This method retrieves the provisioned data of a given UE.

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

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

Name	Data type	P	Cardinality	Description
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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

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

Data type	P	Cardinality	Description
n/a			

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

Data type	P	Cardinality	Response codes	Description
PpData	M	1	200 OK	Upon success, a response body is returned containing the provisioned data of the GPSI.

5.2.14.3.2 PATCH

This method is used to modify the provisioned parameter data in the UDR.

This method shall support the URI query parameters specified in table 5.2.14.3.2-1.

Table 5.2.14.3.2-1: 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 5.2.14.3.2-2 and the response data structures and response codes specified in table 5.2.14.3.2-3.

Table 5.2.14.3.2-2: 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 provisioned parameter data

Table 5.2.14.3.2-3: 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.
ProblemDetails	M	1	403 Forbidden	One or more attributes are not allowed to be modified according to e.g. policy or local configuration. The invalidParams attribute shall contain the JSON pointers of attributes which are not allowed to be modified. The cause attribute shall be set to "MODIFY_NOT_ALLOWED", see 3GPP TS 29.500 [8] table 5.2.7.2-1.

NOTE: In addition common data structures as listed in table 5.5-1 are supported.

5.2.15 Resource: SMSSubscriptionData

5.2.15.1 Description

This resource represents the subscribed SMS Subscription Data for a SUPI for use in a serving PLMN. It is queried by the AMF via the UDM after registering.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.15.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/{serving-plmn-id}/provisioned-data/sms-data

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

Table 5.2.15.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
Ue-id	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")
serving-plmn-id	Represents the Serving PLMN ID (<MCC><MNC>) pattern: "[0-9]{5,6}"

5.2.15.3 Resource Standard Methods

5.2.15.3.1 GET

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

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

Name	Data type	P	Cardinality	Description
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

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

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

Data type	P	Cardinality	Description
n/a			

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

Data type	P	Cardinality	Response codes	Description
SmsSubscription Data	M	1	200 OK	Upon success, a response body containing the SMS Management Subscription Data shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.16 Resource: SdmSubscriptions

5.2.16.1 Description

This resource represents the collection of SDM Subscriptions for a UE.

This resource is modelled with the Store resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.16.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/context-data/sdm-subscriptions

This resource shall support the resource URI variables defined in table 5.2.16.2-1.

Table 5.2.16.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)"

5.2.16.3 Resource Standard Methods

5.2.16.3.1 GET

This method shall support the URI query parameters specified in table 5.2.16.3.1-1.

Table 5.2.16.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

This method shall support the request data structures specified in table 5.2.16.3.1-2 and the response data structures and response codes specified in table 5.2.16.3.1-3.

Table 5.2.16.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.16.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(SdmSubscription)	M	1..N	200 OK	Upon success, a response body containing the individual SDM subscriptions shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.16.3.2 POST

This method shall support the URI query parameters specified in table 5.2.16.3.2-1.

Table 5.2.16.3.2-1: 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 5.2.16.3.1-2 and the response data structures and response codes specified in table 5.2.16.3.1-3.

Table 5.2.16.3.2-2: Data structures supported by the POST Request Body on this resource

Data type	P	Cardinality	Description
SdmSubscription	M	1	Identifies the subscriber data subscription to be stored in the UDR.

Table 5.2.16.3.2-3: Data structures supported by the POST Response Body on this resource

Data type	P	Cardinality	Response codes	Description
SdmSubscription	M	1	201 Created	Upon success, a response body containing a representation of the UeId's Individual subscription resource shall be returned. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the created resource.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.17 Resource: IndividualSdmSubscription

5.2.17.1 Description

This resource represents an individual SDM Subscription for a UE.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.17.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/context-data/sdm-subscriptions/{subsId}

This resource shall support the resource URI variables defined in table 5.2.17.2-1.

Table 5.2.17.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")
subsId	Identifier of the subscription (as allocated by the UDM)

5.2.17.3 Resource Standard Methods

5.2.17.3.1 PUT

This method shall support the URI query parameters specified in table 5.2.17.3.1-1.

Table 5.2.17.3.1-1: 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 5.2.17.3.1-2 and the response data structures and response codes specified in table 5.2.17.3.1-3.

Table 5.2.17.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
SdmSubscription	M	1	The individual SDM subscription that is to be stored

Table 5.2.17.3.1-3: Data structures supported by the PUT 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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.17.3.2 DELETE

This method shall support the URI query parameters specified in table 5.2.17.3.2-1.

Table 5.2.17.3.2-1: 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 5.2.17.3.2-2 and the response data structures and response codes specified in table 5.2.17.3.2-3.

Table 5.2.17.3.2-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.17.3.2-3: 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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.18 Resource: EeSubscriptions

5.2.18.1 Description

This resource represents the collection of EEM Subscriptions for a UE.

This resource is modelled with the Store resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.18.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/context-data/ee-subscriptions

This resource shall support the resource URI variables defined in table 5.2.18.2-1.

Table 5.2.18.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)"

5.2.18.3 Resource Standard Methods

5.2.18.3.1 GET

This method shall support the URI query parameters specified in table 5.2.18.3.1-1.

Table 5.2.18.3.1-1: URI query parameters supported by the GET method on this resource

Name	Data type	P	Cardinality	Description
supportedFeatures	SupportedFeatures	O	0..1	see 3GPP TS 29.500 [8] subclause 6.6

This method shall support the request data structures specified in table 5.2.18.3.1-2 and the response data structures and response codes specified in table 5.2.18.3.1-3.

Table 5.2.18.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.18.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
array(EeSubscription)	M	1..N	200 OK	Upon success, a response body containing the individual EE subscriptions shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.18.3.2 POST

This method shall support the URI query parameters specified in table 5.2.18.3.2-1.

Table 5.2.18.3.2-1: 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 5.2.18.3.1-2 and the response data structures and response codes specified in table 5.2.18.3.1-3.

Table 5.2.18.3.2-2: Data structures supported by the POST Request Body on this resource

Data type	P	Cardinality	Description
EeSubscription	M	1	Identifies the subscriber data subscription to be stored in the UDR.

Table 5.2.18.3.2-3: Data structures supported by the POST Response Body on this resource

Data type	P	Cardinality	Response codes	Description
EeSubscription	M	1	201 Created	Upon success, a response body containing a representation of the UeId's Individual subscription resource shall be returned. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the created resource.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.19 Resource: IndividualEeSubscription

5.2.19.1 Description

This resource represents an individual EE Subscription for a UE.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.19.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/context-data/ee-subscriptions/{subsId}

This resource shall support the resource URI variables defined in table 5.2.19.2-1.

Table 5.2.19.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-+ msisdn-[0-9]{5,15} extid-+ .+)")
subsId	Identifier of the subscription (allocated by the UDM)

5.2.19.3 Resource Standard Methods

5.2.19.3.1 PUT

This method shall support the URI query parameters specified in table 5.2.19.3.1-1.

Table 5.2.19.3.1-1: 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 5.2.19.3.1-2 and the response data structures and response codes specified in table 5.2.19.3.1-3.

Table 5.2.19.3.1-2: Data structures supported by the PUT Request Body on this resource

Data type	P	Cardinality	Description
EeSubscription	M	1	The individual SDM subscription that is to be stored

Table 5.2.19.3.1-3: Data structures supported by the PUT 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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.19.3.2 DELETE

This method shall support the URI query parameters specified in table 5.2.19.3.2-1.

Table 5.2.19.3.2-1: 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 5.2.19.3.2-2 and the response data structures and response codes specified in table 5.2.19.3.2-3.

Table 5.2.19.3.2-2: Data structures supported by the DELETE Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.19.3.2-3: 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: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.20 Resource: SubscriptionDataSubscriptions

5.2.20.1 Description

This resource is used to represent explicit subscriber data subscriptions to notifications.

5.2.20.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/subs-to-notify

This resource shall support the resource URI variables defined in table 5.2.20.2-1.

Table 5.2.20.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1

5.2.20.3 Resource Standard Methods

5.2.20.3.1 POST

This method shall support the URI query parameters specified in table 5.2.20.3.1-1.

Table 5.2.20.3.1-1: 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 5.2.20.3.1-2 and the response data structures and response codes specified in table 5.2.20.3.1-3.

Table 5.2.20.3.1-2: Data structures supported by the POST Request Body on this resource

Data type	P	Cardinality	Description
SubscriptionData Subscriptions	M	1	Identifies the subscriber data subscription to be stored in the UDR.

Table 5.2.20.3.1-3: Data structures supported by the POST Response Body on this resource

Data type	P	Cardinality	Response codes	Description
SubscriptionData Subscriptions	M	1	201 Created	Upon success, a response body containing a representation of the UeId's Individual subscription resource shall be returned. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the created resource.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.2.21 Resource: IndividualSubscriptionDataSubscription

5.2.21.1 Description

This resource is used to represent an individual subscriber data subscriptions to notifications.

5.2.21.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/subsc-to-notify/{subsId}

This resource shall support the resource URI variables defined in table 5.2.21.2-1.

Table 5.2.21.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
subsId	The subsId identifies an individual SubscriptionDataSubscriptions to notifications. The value is allocated by the UDR during creation of the SubscriptionDataSubscriptions resource.

5.2.21.3 Resource Standard Methods

5.2.21.3.1 DELETE

This method shall support the URI query parameters specified in table 5.2.21.3.1-1.

Table 5.2.21.3.1-1: 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 5.2.21.3.1-2 and the response data structures and response codes specified in table 5.2.21.3.1-3.

Table 5.2.21.3.1-2: 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 5.2.21.3.1-3: 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: In addition common data structures as listed in table 5.5-1 are supported.

5.2.22 Resource: TraceData

5.2.22.1 Description

This resource represents the trace configuration data for a SUPI for use in a serving PLMN. It is queried by the AMF via the UDM after registering.

This resource is modelled with the Document resource archetype (see subclause C.1 of 3GPP TS 29.501 [7]).

5.2.22.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/trace-data

This resource shall support the resource URI variables defined in table 5.2.22.2-1.

Table 5.2.22.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See 3GPP TS 29.504 [2] subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")
servingPlmnId	Represents the Serving PLMN ID (<MCC><MNC>) pattern: "[0-9]{5,6}"

5.2.22.3 Resource Standard Methods

5.2.3.3.1 GET

This method shall support the URI query parameters specified in table 5.2.22.3.1-1.

Table 5.2.22.3.1-1: 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 5.2.22.3.1-2 and the response data structures and response codes specified in table 5.2.22.3.1-3.

Table 5.2.22.3.1-2: 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
TraceData	M	1	200 OK	Upon success, a response body containing the Trace Configuration Data shall be returned.

NOTE: In addition common data structures as listed in table 5.5-1 are supported.

5.2.23 Resource: IdentityData

5.2.23.1 Description

This resource represents the identity data. It is queried by the UDM by GPSI or SUPI.

5.2.23.2 Resource Definition

Resource URI: {apiRoot}/nudr-dr/v1/subscription-data/{ueId}/identity-data

This resource shall support the resource URI variables defined in table 5.2.23.2-1.

Table 5.2.23.2-1: Resource URI variables for this resource

Name	Definition
apiRoot	See subclause 6.1.1
ueId	Represents the Subscription Identifier SUPI or GPSI (see 3GPP TS 23.501 [4] clause 5.9.2) pattern: "(imsi-[0-9]{5,15} nai-.+ msisdn-[0-9]{5,15} extid-.+ .+)")

5.2.23.3 Resource Standard Methods

5.2.23.3.1 GET

This method shall support the URI query parameters specified in table 5.2.23.3.1-1.

Table 5.2.23.3.1-1: 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 5.2.23.3.1-2 and the response data structures and response codes specified in table 5.2.23.3.1-3.

Table 5.2.23.3.1-2: Data structures supported by the GET Request Body on this resource

Data type	P	Cardinality	Description
n/a			

Table 5.2.23.3.1-3: Data structures supported by the GET Response Body on this resource

Data type	P	Cardinality	Response codes	Description
IdentityData	M	1	200 OK	Upon success, a response body containing the identity data that corresponds to the provided ueld
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

5.3 Notifications

5.3.1 General

This subclause describes the resources to provide Notification to NF service consumers which have explicitly or implicitly subscribed to UDR to be notified when data is changed.

5.3.2 Data Change Notification

The POST method shall be used for Data Change Notifications.

- For explicit subscriptions (i.e., subscriptions created under the "subs-to-notif" collection resource, the URI shall be as provided during the subscription procedure;
- For implicit subscriptions, the UDR shall use either a locally configured callback URI of the UDM, or the UDR can retrieve from NRF a default notification URI stored by UDM in NRF during the NF registration procedure.

The "callback" section of the OpenAPI specification found in Annex A.2 associated to the POST method of the "subs-to-notif" resource shall be used as the notification request for both explicit and implicit subscriptions.

NOTE: For explicit subscriptions, a stateless UDM/NF provides a URI which identifies a set of UDMs/NFs; a stateful UDM/NF provides a specific URI identifying a node.

Resource URI: {callbackReference}

Support of URI query parameters is 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				

Support of request data structures is specified in table 5.3.2-2 and of response data structures and response codes is 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
DataChangeNotify	M	1	

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	Upon success, an empty response body shall be returned.
NOTE: In addition common data structures as listed in table 5.5-1 are supported.				

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 service based interface protocol.

Table 5.4.1-1: Nudr Subscriber Data specific Data Types

Data type	Section defined	Description
AuthenticationData	5.4.2.2	A UE's authentication data
OperatorSpecificDataContainer	5.4.2.3	Container for operator specific data
SmfRegList	5.4.2.4	The list of all the SMF registrations of a UE
SubscriptionDataSubscriptions	5.4.2.5	A subscription to notifications.
DataChangeNotify	5.4.2.6	Container for data which have changed and notification was requested when changed.
IdentityData	5.4.2.7	Identity data corresponds to the provided ueld

Table 5.4.1-2 specifies data types re-used by the Nudr 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 service based interface.

Table 5.4.1-2: Nudr re-used Data Types

Data type	Reference	Comments
AccessAndMobilitySubscriptionData	3GPP TS 29.503 [6]	Access and Mobility Subscription Data
SmfSelectionSubscriptionData	3GPP TS 29.503 [6]	SMF Selection Subscription Data
SessionManagementSubscriptionData	3GPP TS 29.503 [6]	Session Management Subscription Data
Amf3GppAccessRegistration	3GPP TS 29.503 [6]	
AmfNon3GppAccessRegistration	3GPP TS 29.503 [6]	The complete set of information relevant to the AMF where the UE has registered via non 3GPP access.
SmfRegistration	3GPP TS 29.503 [6]	
SmsfRegistration	3GPP TS 29.503 [6]	
SmsManagementSubscriptionData	3GPP TS 29.503 [6]	
SupportedFeatures	3GPP TS 29.571 [7]	Used to negotiate the applicability of the optional features
ProblemDetails	3GPP TS 29.571 [7]	Detailed information about the status code.
PpData	3GPP TS 29.503 [6]	
SmsSubscriptionData	3GPP TS 29.503 [6]	
PatchItem	3GPP TS 29.571 [7]	Data structure used for JSON patch.
SdmSubscription	3GPP TS 29.503 [6]	
EeSubscription	3GPP TS 29.503 [6]	
Uri	3GPP TS 29.571 [7]	
TraceData	3GPP TS 29.571 [7]	
Dnn	3GPP TS 29.571 [7]	Data Network Name
Snssai	3GPP TS 29.571 [7]	Single NSSAI
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: AuthenticationData

Table 5.4.2.2-1: Definition of type AuthenticationData

Attribute name	Data type	P	Cardinality	Description
authenticationMethod	AuthMethod	M	1	string either "5G_AKA" or "EAP_AKA_PRIME"
permanentKey				
sequenceNumber				
tbc				

5.4.2.3 Type: OperatorSpecificDataContainer

Table 5.4.2.3-1: Definition of type OperatorSpecificDataContainer

Attribute name	Data type	P	Cardinality	Description
dataType	string	M	1	This attribute value must be a string equals to the name of the actual data type of the "Value" attribute.
value	any type	M	1	

5.4.2.4 Type: SmfRegList

Table 5.4.2.4-1: Definition of type SmfRegList

Attribute name	Data type	P	Cardinality	Description
N/A	array(SmfRegistration)	M	1..N	Each member of the array is an individual SMF registration of the UE.

5.4.2.5 Type: SubscriptionDataSubscriptions

Table 5.4.2.5-1: Definition of type SubscriptionDataSubscriptions

Attribute name	Data type	P	Cardinality	Description
callbackReference	Uri	M	1	Identifies the UDM/NF pool or an individual UDM/NF which should be used by the UDR to send notification to UDM/NF.
originalCallbackReference	Uri	O	0..1	URI provided by the NF service consumer to the UDM to receive notifications from the UDR.
userId	string	O	0..1	User identity if subscription to notifications is related to a user.
monitoredResourceUri	array(Uri)	M	1..N	A set of URIs that identify the resources for which a modification of the representation triggers a notification.
supportedFeatures	SupportedFeatures	M	1	Used to negotiate the applicability of the optional features

5.4.2.6 Type: DataChangeNotify

Table 5.4.2.6-1: Definition of type DataChangeNotify

Attribute name	Data type	P	Cardinality	Description
originalCallbackReference	array(Uri)	C	0..N	Original Callback Reference shall be present if a UDM has subscribed to notification due to an request from an NF. If present it is Identifying the NF to which the UDM has to provide the notification of data change.
userId	string	C	0..1	User identity if subscription to notifications is related to a user that may be provided e.g. in case OriginalCallback URI is not included.
accessAndMobilitySubscriptionData	AccessAndMobilitySubscriptionData	O	0..1	Access and Mobility Subscription Data, if changed and notification was requested.
smfSelectionSubscriptionData	SmfSelectionSubscriptionData	O	0..N	SMF Selection Subscription Data, if changed and notification was requested.
sessionManagementSubscriptionData	array(SessionManagementSubscriptionData)	O	0..1	Session Management Subscription Data, if changed and notification was requested.
amf3GppAccessRegistration	Amf3GppAccessRegistration	O	0..1	AMF 3GPP Access Registration, if changed and notification was requested.
amfNon3GppAccessRegistration	AmfNon3GppAccessRegistration	O	0..1	AMF non 3GPP Access Registration, if changed and notification was requested.
operatorSpecificData	OperatorSpecificData	O	0..1	Operator specific data, if changed and notification was requested.
smsManagementSubscriptionData	SmsManagementSubscriptionData	O	0..1	SMS Management Subscription Data, if changed and notification was requested.
smsf3GppAccessRegistration	Smsf3GppAccessRegistration	O	0..1	SMSF 3GPP Access Registration, if changed and notification was requested
smsfNon3GppAccessRegistration	SmsfNon3GppAccessRegistration	O	0..1	SMSF non 3GPP Access Registration, if changed and notification was requested.
eeSubscriptions	EeSubscriptions	O	0..1	EE subscriptions, if changed and notification was requested and the change was not provided by a UDM.
provisionedParameterData	ProvisionedParameterData	O	0..1	Provisioned parameter data, if changed and notification was requested.
smsSubscriptionData	SmsSubscriptionData	O	0..1	SMS subscriptions, if changed and notification was requested.
traceData	TraceData	O	0..1	Trace Configuration Data

5.4.2.7 Type: IdentityData

Table 5.4.2.7-1: Definition of type IdentityData

Attribute name	Data type	P	Cardinality	Description
supiList	array(Supi)	C	0..N	Supi list corresponding to the provided ueld
gpsiList	array(Gpsi)	C	0..N	Gpsi list corresponding to the provided ueld

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

5.4.3.3 Enumeration: AuthMethod

Table 5.4.3.3-1: Enumeration AuthMethod

Enumeration value	Description
"5G_AKA"	5G AKA
"EAP_AKA_PRIME"	EAP AKA'

5.4.4 Binary data

N/A

5.5 Error handling

Table 5.5-1 lists common response body data structures used within the Nudr-dr API

Table 5.5-1: Common Response Body Data Structures

Data type	P	Cardinality	Response codes	Description
ProblemDetails	O	0..1	4xx, 5xx responses	For unsuccessful status codes, the UDR may provide detailed information.

NOTE: In addition common data structures as defined in 3GPP TS 29.500 [8] are supported.

The application layer error handling shall follow 3GPP TS 29.504 [2] subclause 6.1.6 unless explicitly specified in this document.

5.6 Feature negotiation

The optional features in table 6.1.8-1 of 3GPP TS 29.504 [2] 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 [8].

Annex A (normative): OpenAPI specification

A.1 General

This Annex specifies the formal definition of the Nudr_DataRepository service API for Subscription Data. It consists of OpenAPI 3.0.0 specifications, in YAML format.

A.2 Nudr_DataRepository API for Subscription 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 "TS29505_Subscription_Data.yaml".

```

openapi: 3.0.0
info:
  version: '-'
  title: 'Unified Data Repository Service API file for subscription data'
  description: ' The API version is defined in 3GPP TS 29.504'

paths:
  /subscription-data/{ueId}/authentication-data:
    get:
      summary: Retrieves the authentication data of a UE
      operationId: QueryAuthData
      tags:
        - Authentication Data (Document)
      parameters:
        - name: ueId
          in: path
          description: UE id
          required: true
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
        - name: supportedFeatures
          in: query
          description: Supported Features
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
      responses:
        '200':
          description: Expected response to a valid request
          content:
            application/json:
              schema:
                $ref: '#/components/schemas/AuthenticationData'
        default:
          description: Unexpected error
          content:
            application/problem+json:
              schema:
                $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
    patch:
      summary: modify the authentication data of a UE
      operationId: ModifyAuthData
      tags:
        - Authentication Data (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: Expected response to a valid request
    '403':
      description: modification is rejected
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
  default:
    description: Unexpected error
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/am-data:
  get:
    summary: Retrieves the access and mobility subscription data of a UE
    operationId: QueryAmData
    tags:
      - Access And Mobility Subscription Data (Document)
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: servingPlmnId
        in: path
        description: PLMN ID
        required: true
        schema:
          $ref: '#/components/schemas/VarPlmnId'
      - name: fields
        in: query
        description: attributes to be retrieved
        required: false
        schema:
          type: array
          items:
            type: string
        style: form
        explode: false
      - name: supportedFeatures
        in: query
        description: Supported Features
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: Expected response to a valid request
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/AccessAndMobilitySubscriptionData'
      default:
        description: Unexpected error
        content:
          application/problem+json:
            schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/smf-selection-subscription-data:
  get:
    summary: Retrieves the SMF selection subscription data of a UE
    operationId: QuerySmfSelectData
    tags:
      - SMF Selection Subscription Data (Document)
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'

```

```

- name: servingPlmnId
  in: path
  description: PLMN ID
  required: true
  schema:
    $ref: '#/components/schemas/VarPlmnId'
- name: fields
  in: query
  description: attributes to be retrieved
  required: false
  schema:
    type: array
    items:
      type: string
  style: form
  explode: false
- name: supportedFeatures
  in: query
  description: Supported Features
  schema:
    $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
responses:
  '200':
    description: Expected response to a valid request
    content:
      application/json:
        schema:
          $ref: '#/components/schemas/SmfSelectionSubscriptionData'
  default:
    description: Unexpected error
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/sm-data:
get:
  summary: Retrieves the Session Management subscription data of a UE
  operationId: QuerySmData
  tags:
    - Session Management Subscription Data
  parameters:
    - name: ueId
      in: path
      description: UE id
      required: true
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    - name: servingPlmnId
      in: path
      description: PLMN ID
      required: true
      schema:
        $ref: '#/components/schemas/VarPlmnId'
    - name: singleNssai
      in: query
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/VarSnssai'
      description: single NSSAI
      required: false
    - name: dnn
      in: query
      description: DNN
      required: false
      schema:
        $ref: '#/components/schemas/Dnn'
    - name: fields
      in: query
      description: attributes to be retrieved
      required: false
      schema:
        type: array
        items:
          type: string
      style: form
      explode: false

```

```

- name: supportedFeatures
  in: query
  description: Supported Features
  schema:
    $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
responses:
  '200':
    description: Expected response to a valid request
    content:
      application/json:
        schema:
          $ref: '#/components/schemas/SessionManagementSubscriptionData'
  default:
    description: Unexpected error
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

/subscription-data/{ueId}/context-data/amf-3gpp-access:
get:
  summary: Retrieves the AMF context data of a UE using 3gpp access
  operationId: QueryAmfContext3gpp
  tags:
    - AMF 3GPP Access Registration (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
      style: form
      explode: false
    - name: supportedFeatures
      in: query
      description: Supported Features
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  responses:
    '200':
      description: Expected response to a valid request
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/Amf3GppAccessRegistration'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
put:
  summary: To store the AMF context data of a UE using 3gpp access in the UDR
  operationId: CreateAmfContext3gpp
  tags:
    - AMF 3GPP Access Registration (Document)
  parameters:
    - name: ueId
      in: path
      description: UE id
      required: true
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  requestBody:
    content:
      application/json:
        schema:
          $ref: '#/components/schemas/Amf3GppAccessRegistration'
  responses:

```

```

'204':
  description: Upon success, an empty response body shall be returned
default:
  description: Unexpected error
  content:
    application/problem+json:
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
patch:
  summary: To modify the AMF context data of a UE using 3gpp access in the UDR
  operationId: AmfContext3gpp
  tags:
    - AMF 3GPP Access Registration (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: Expected response to a valid request
    '403':
      description: modification is rejected
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
/subscription-data/{ueId}/context-data/amf-non-3gpp-access:
get:
  summary: Retrieves the AMF context data of a UE using non-3gpp access
  operationId: QueryAmfContextNon3gpp
  tags:
    - AMF Non-3GPP Access Registration (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
      style: form
      explode: false
    - name: supportedFeatures
      in: query
      description: Supported Features
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  responses:
    '200':
      description: Expected response to a valid request
      content:
        application/json:
          schema:

```

```

        $ref: '#/components/schemas/AmfNon3GppAccessRegistration'
    default:
        description: Unexpected error
        content:
            application/problem+json:
                schema:
                    $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
put:
    summary: To store the AMF context data of a UE using non-3gpp access in the UDR
    operationId: CreateAmfContextNon3gpp
    tags:
        - AMF Non-3GPP Access Registration (Document)
    parameters:
        - name: ueId
          in: path
          description: UE id
          required: true
          schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    requestBody:
        content:
            application/json:
                schema:
                    $ref: '#/components/schemas/AmfNon3GppAccessRegistration'
    responses:
        '204':
            description: Upon success, an empty response body shall be returned
        default:
            description: Unexpected error
            content:
                application/problem+json:
                    schema:
                        $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
patch:
    summary: To modify the AMF context data of a UE using non 3gpp access in the UDR
    operationId: AmfContextNon3gpp
    tags:
        - AMF Non-3GPP Access Registration (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: Expected response to a valid request
        '403':
            description: modification is rejected
            content:
                application/problem+json:
                    schema:
                        $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
        default:
            description: Unexpected error
            content:
                application/problem+json:
                    schema:
                        $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

/subscription-data/{ueId}/context-data/smf-registrations:
get:
    summary: Retrieves the SMF registration list of a UE
    operationId: QuerySmfRegList
    tags:
        - SMF Registrations (Collection)
    parameters:
        - name: ueId
          in: path

```

```

    description: UE id
    required: true
    schema:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  - name: supportedFeatures
    in: query
    description: Supported Features
    schema:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
responses:
  '200':
    description: Expected response to a valid request
    content:
      application/json:
        schema:
          $ref: '#/components/schemas/SmfRegList'
  default:
    description: Unexpected error
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
/subscription-data/{ueId}/context-data/smf-registrations/{pduSessionId}:
get:
  summary: Retrieves the individual SMF registration of a UE
  operationId: QuerySmfRegistration
  tags:
    - SMF Registration (Document)
  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:
        type: string
    - name: fields
      in: query
      description: attributes to be retrieved
      required: false
      schema:
        type: array
        items:
          type: string
      style: form
      explode: false
    - name: supportedFeatures
      in: query
      description: Supported Features
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  responses:
    '200':
      description: Expected response to a valid request
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/SmfRegistration'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
put:
  summary: To create an individual SMF context data of a UE in the UDR
  operationId: CreateSmfContextNon3gpp
  tags:
    - SMF Registration (Document)
  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:
      type: integer
requestBody:
  content:
    application/json:
      schema:
        $ref: '#/components/schemas/SmfRegistration'
responses:
  '201':
    description: Upon success, a response body containing a representation of the created
Individual SmfRegistration resource shall be returned
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
delete:
  summary: To remove an individual SMF context data of a UE the UDR
  operationId: DeleteSmfContext
  tags:
    - SMF Registration (Document)
  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:
        type: string
  responses:
    '204':
      description: Upon success, an empty response body shall be returned.
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

/subscription-data/{ueId}/operator-specific-data:
get:
  summary: Retrieves the operator specific data of a UE
  operationId: QueryOperSpecData
  tags:
    - Operator-Specific Data Container (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
      style: form
      explode: false
    - name: supportedFeatures
      in: query

```

```

    description: Supported Features
    schema:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  responses:
    '200':
      description: Expected response to a valid request
      content:
        application/json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/OperatorSpecificDataContainer'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
  patch:
    summary: To modify operator specific data of a UE
    operationId: AmfContext3gpp
    tags:
      - Operator-Specific Data Container (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: Expected response to a valid request
      '403':
        description: modification is rejected
        content:
          application/problem+json:
            schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
/subscription-data/{ueId}/context-data/smsf-3gpp-access:
  put:
    summary: Create the SMSF context data of a UE via 3GPP access
    operationId: CreateSmsfContext3gpp
    tags:
      - SMSF 3GPP Registration (Document)
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    requestBody:
      content:
        application/json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/SmsfRegistration'
    responses:
      '204':
        description: Upon success, an empty response body shall be returned
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:

```



```

        $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
delete:
  summary: To remove the SMSF context data of a UE via 3GPP access
  operationId: DeleteSmsfContext3gpp
  tags:
    - SMSF 3GPP Registration (Document)
  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
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
get:
  summary: Retrieves the SMSF context data of a UE using 3gpp access
  operationId: QuerySmsfContext3gpp
  tags:
    - SMSF 3GPP Registration (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
      style: form
      explode: false
    - name: supportedFeatures
      in: query
      description: Supported Features
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  responses:
    '200':
      description: Expected response to a valid request
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/SmsfRegistration'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
/subscription-data/{ueId}/context-data/smsf-non-3gpp-access:
put:
  summary: Create the SMSF context data of a UE via non-3GPP access
  operationId: CreateSmsfContextNon3gpp
  tags:
    - SMSF Non-3GPP Registration (Document)
  parameters:
    - name: ueId
      in: path
      description: UE id
      required: true
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  requestBody:
    content:

```

```

    application/json:
      schema:
        $ref: '#/components/schemas/SmsfRegistration'
  responses:
    '204':
      description: Upon success, an empty response body shall be returned
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
delete:
  summary: To remove the SMSF context data of a UE via non-3GPP access
  operationId: DeleteSmsfContextNon3gpp
  tags:
    - SMSF Non-3GPP Registration (Document)
  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
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
get:
  summary: Retrieves the SMSF context data of a UE using non-3gpp access
  operationId: QuerySmsfContextNon3gpp
  tags:
    - SMSF Non-3GPP Registration (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
        style: form
        explode: false
    - name: supportedFeatures
      in: query
      description: Supported Features
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  responses:
    '200':
      description: Expected response to a valid request
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/SmsfRegistration'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/sms-mng-data:
get:
  summary: Retrieves the SMS management subscription data of a UE
  operationId: QuerySmsMngData

```

```

tags:
- SMS Management Subscription Data (Document)
parameters:
- name: ueId
  in: path
  description: UE id
  required: true
  schema:
    $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
- name: servingPlmnId
  in: path
  description: PLMN ID
  required: true
  schema:
    $ref: '#/components/schemas/VarPlmnId'
- name: supportedFeatures
  in: query
  description: Supported Features
  schema:
    $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
responses:
'200':
  description: Expected response to a valid request
  content:
    application/json:
      schema:
        $ref: '#/components/schemas/SmsManagementSubscriptionData'
default:
  description: Unexpected error
  content:
    application/problem+json:
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/sms-data:
get:
  summary: Retrieves the SMS subscription data of a UE
  operationId: QuerySmsData
  tags:
- SMS Subscription Data (Document)
parameters:
- name: ueId
  in: path
  description: UE id
  required: true
  schema:
    $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
- name: servingPlmnId
  in: path
  description: PLMN ID
  required: true
  schema:
    $ref: '#/components/schemas/VarPlmnId'
- name: supportedFeatures
  in: query
  description: Supported Features
  schema:
    $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
responses:
'200':
  description: Expected response to a valid request
  content:
    application/json:
      schema:
        $ref: '#/components/schemas/SmsSubscriptionData'
default:
  description: Unexpected error
  content:
    application/problem+json:
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

/subscription-data/{ueId}/pp-data:
get:
  summary: Read the profile of a given UE
  operationId: GetppData
  tags:
- Parameter Provision (Document)

```

```

parameters:
  - name: ueId
    in: path
    description: pp data for a UE
    required: true
    schema:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  - name: supportedFeatures
    in: query
    description: Supported Features
    schema:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
responses:
  '200':
    description: Expected response to a valid request
    content:
      application/json:
        schema:
          $ref: '#/components/schemas/PpData'
  '403':
    description: Forbidden
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
  default:
    description: Unexpected error
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
patch:
  summary: modify the provisioned parameter data
  operationId: ModifyPpData
  tags:
    - ProvisionedParameterData (Document)
  requestBody:
  parameters:
    - name: ueId
      in: path
      description: pp data for a UE
      required: true
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  content:
    application/json-patch+json:
      schema:
        type: array
        items:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/PatchItem'
  required: true
responses:
  '204':
    description: Expected response to a valid request
  '403':
    description: modification is rejected
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
  default:
    description: Unexpected error
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
/subscription-data/{ueId}/context-data/ee-subscriptions:
get:
  summary: Retrieves the ee subscriptions of a UE
  operationId: Queryeesubscriptions
  tags:
    - Event Exposure Subscriptions (Collection)
  parameters:
    - name: ueId
      in: path
      description: UE id
      required: true

```

```

    schema:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  - name: supportedFeatures
    in: query
    description: Supported Features
    schema:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
responses:
  '200':
    description: Expected response to a valid request
    content:
      application/json:
        schema:
          type: array
          items:
            $ref: '#/components/schemas/EeSubscription'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
post:
  summary: Create individual EE subscription
  operationId: CreateEeSubscriptions
  tags:
    - Event Exposure Subscriptions (Collection)
  parameters:
    - name: ueId
      in: path
      description: UE ID
      required: true
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
  requestBody:
    content:
      application/json:
        schema:
          $ref: '#/components/schemas/EeSubscription'
    required: true
  responses:
    '201':
      description: Expected response to a valid request
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/EeSubscription'
    default:
      description: Unexpected error
      content:
        application/problem+json:
          schema:
            $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
/subscription-data/{ueId}/context-data/ee-subscriptions/{subsId}:
  put:
    summary: Stores an individual ee subscriptions of a UE
    operationId: UpdateEesubscriptions
    tags:
      - Event Exposure Subscription (Document)
    parameters:
      - name: ueId
        in: path
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: subsId
        in: path
        required: true
        schema:
          type: string
    requestBody:
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/EeSubscription'
    responses:
      '204':

```

```

    description: Upon success, an empty response body shall be returned
  default:
    description: Unexpected error
    content:
      application/problem+json:
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
delete:
  summary: Deletes a eeSubscription
  operationId: RemoveeeSubscriptions
  tags:
    - Event Exposure Subscription (Document)
  parameters:
    - name: ueId
      in: path
      required: true
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    - name: subsId
      in: path
      required: true
      description: Unique ID of the subscription to remove
      schema:
        type: string
  responses:
    '204':
      description: Expected response to a successful subscription removal

/subscription-data/{ueId}/context-data/sdm-subscriptions:
  get:
    summary: Retrieves the sdm subscriptions of a UE
    operationId: Querysdmsubscriptions
    tags:
      - SDM Subscriptions (Collection)
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: supportedFeatures
        in: query
        description: Supported Features
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    responses:
      '200':
        description: Expected response to a valid request
        content:
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/SdmSubscription'
      default:
        description: Unexpected error
        content:
          application/problem+json:
            schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
  post:
    summary: Create individual sdm subscription
    operationId: CreateSdmSubscriptions
    tags:
      - SDM Subscriptions (Collection)
    parameters:
      - name: ueId
        in: path
        description: UE ID
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    requestBody:
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/SdmSubscription'

```

```

    required: true
  responses:
    '201':
      description: Expected response to a valid request
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/SdmSubscription'
      default:
        description: Unexpected error
        content:
          application/problem+json:
            schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
/subscription-data/{ueId}/context-data/sdm-subscriptions/{subsId}:
  put:
    summary: Stores an individual sdm subscriptions of a UE
    operationId: Updatesdmsubscriptions
    tags:
      - SDM Subscription (Document)
    parameters:
      - name: ueId
        in: path
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: subsId
        in: path
        required: true
        schema:
          type: string
    requestBody:
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/SdmSubscription'
    responses:
      '204':
        description: Upon success, an empty response body shall be returned
      default:
        description: Unexpected error
        content:
          application/problem+json:
            schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
  delete:
    summary: Deletes a sdmsubscriptions
    operationId: RemovesdmSubscriptions
    tags:
      - SDM Subscription (Document)
    parameters:
      - name: ueId
        in: path
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: subsId
        in: path
        required: true
        description: Unique ID of the subscription to remove
        schema:
          type: string
    responses:
      '204':
        description: Expected response to a successful subscription removal
/subscription-data/subs-to-notify:
  post:
    summary: Subscription data subscriptions
    operationId: SubscriptionDataSubscriptions
    tags:
      - Subs To Nofify (Collection)
    requestBody:
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/SubscriptionDataSubscriptions'

```

```

    required: true
  responses:
    '201':
      description: Expected response to a valid request
      content:
        application/json:
          schema:
            $ref: '#/components/schemas/SubscriptionDataSubscriptions'
      default:
        description: Unexpected error
        content:
          application/problem+json:
            schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
  callbacks:
    onDataChange:
      '{request.body#/callbackReference}':
        post:
          requestBody:
            required: true
            content:
              application/json:
                schema:
                  $ref: '#/components/schemas/DataChangeNotify'
          responses:
            '204':
              description: Expected response to a valid request

/subscription-data/subs-to-notify/{subsId}:
  delete:
    summary: Deletes a subscriptionDataSubscriptions
    operationId: RemovesubscriptionDataSubscriptions
    tags:
      - Subs To Notify (Document)
    parameters:
      - name: subsId
        in: path
        required: true
        description: Unique ID of the subscription to remove
        schema:
          type: string
    responses:
      '204':
        description: Expected response to a successful subscription removal

/subscription-data/{ueId}/{servingPlmnId}/provisioned-data/trace-data:
  get:
    summary: Retrieves the trace configuration data of a UE
    operationId: QueryTraceData
    tags:
      - Trace Data (Document)
    parameters:
      - name: ueId
        in: path
        description: UE id
        required: true
        schema:
          $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
      - name: servingPlmnId
        in: path
        description: PLMN ID
        required: true
        schema:
          $ref: '#/components/schemas/VarPlmnId'
    responses:
      '200':
        description: Expected response to a valid request
        content:
          application/json:
            schema:
              $ref: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
      default:
        $ref: 'TS29571_CommonData.yaml#/components/responses/default'

/subscription-data/{ueId}/identity-data:
  get:
    summary: Retrieve identity data by SUPI or GPSI
    operationId: GetIdentityData
    tags:

```



```

- Query Identity Data by SUPI or GPSI (Document)
parameters:
- name: ueId
  in: path
  description: UE ID
  required: true
  schema:
    $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
responses:
'200':
  description: OK
  content:
    application/json:
      schema:
        $ref: '#/components/schemas/IdentityData'
default:
  description: Unexpected error
  content:
    application/problem+json:
      schema:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
components:
  schemas:
    AuthenticationData:
      required:
        - authenticationMethod
      properties:
        authenticationMethod:
          $ref: '#/components/schemas/AuthMethod'
        permanentKey:
          type: string #place holder
          # data type to be defined in normative text
        sequenceNumber:
          type: integer #place holder
          # data type to be defined in normative text
    VarPlmnId:
      type: string
      pattern: '[0-9]{5,6}'
    AccessAndMobilitySubscriptionData:
      $ref: 'TS29503_Nudm_SDM.yaml#/components/schemas/AccessAndMobilitySubscriptionData'
    SmfSelectionSubscriptionData:
      $ref: 'TS29503_Nudm_SDM.yaml#/components/schemas/SmfSelectionSubscriptionData'
    VarSnssai:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    Dnn:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
    SessionManagementSubscriptionData:
      $ref: 'TS29503_Nudm_SDM.yaml#/components/schemas/SessionManagementSubscriptionData'
    Amf3GppAccessRegistration:
      $ref: 'TS29503_Nudm_UECM.yaml#/components/schemas/Amf3GppAccessRegistration'
    AmfNon3GppAccessRegistration:
      $ref: 'TS29503_Nudm_UECM.yaml#/components/schemas/AmfNon3GppAccessRegistration'
    SmfRegistration:
      $ref: 'TS29503_Nudm_UECM.yaml#/components/schemas/SmfRegistration'
    SmsfRegistration:
      $ref: 'TS29503_Nudm_UECM.yaml#/components/schemas/SmsfRegistration'
    SmsManagementSubscriptionData:
      $ref: 'TS29503_Nudm_SDM.yaml#/components/schemas/SmsManagementSubscriptionData'
    SmsSubscriptionData:
      $ref: 'TS29503_Nudm_SDM.yaml#/components/schemas/SmsSubscriptionData'
    OperatorSpecificDataContainer:
      properties:
        StringTypeElements:
          type: object
          additionalProperties:
            type: string
        IntegerTypeElements:
          type: object
          additionalProperties:
            type: integer
        NumberTypeElements:
          type: object
          additionalProperties:
            type: number
        BooleanTypeElements:
          type: object
          additionalProperties:
            type: boolean

```

```

AuthMethod:
  type: string
  enum:
    - 5G_AKA
    - EAP_AKA_PRIME
PpData:
  $ref: 'TS29503_Nudm_PP.yaml#/components/schemas/PpData'
EeSubscription:
  $ref: 'TS29503_Nudm_EE.yaml#/components/schemas/EeSubscription'
SdmSubscription:
  $ref: 'TS29503_Nudm_SDM.yaml#/components/schemas/SdmSubscription'
SmfRegList:
  type: array
  items:
    $ref: '#/components/schemas/SmfRegistration'
SubscriptionDataSubscriptions:
  type: object
  required:
    - ueId
    - callbackReference
    - originalCallbackReference
    - supportedFeatures
  properties:
    ueId:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    callbackReference:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
    originalCallbackReference:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
    monitoredResourceUri:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
    supportedFeatures:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
DataChangeNotify:
  type: object
  properties:
    originalCallbackReference:
      type: array
      items:
        $ref: 'TS29571_CommonData.yaml#/components/schemas/Uri'
    ueId:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    accessAndMobilitySubscriptionData:
      $ref: '#/components/schemas/AccessAndMobilitySubscriptionData'
    smfSelectionSubscriptionData:
      $ref: '#/components/schemas/SmfSelectionSubscriptionData'
    sessionManagementSubscriptionData:
      type: array
      items:
        $ref: '#/components/schemas/SessionManagementSubscriptionData'
    amf3GppAccessRegistration:
      $ref: '#/components/schemas/Amf3GppAccessRegistration'
    amfNon3GppAccessRegistration:
      $ref: '#/components/schemas/AmfNon3GppAccessRegistration'
    operatorSpecificData:
      $ref: '#/components/schemas/OperatorSpecificDataContainer'
    smsManagementSubscriptionData:
      $ref: '#/components/schemas/SmsManagementSubscriptionData'
    smsf3GppAccessRegistration:
      $ref: '#/components/schemas/SmsfRegistration'
    smsfNon3GppAccessRegistration:
      $ref: '#/components/schemas/SmsfRegistration'
    eeSubscriptions:
      $ref: '#/components/schemas/EeSubscription'
    provisionedParameterData:
      $ref: '#/components/schemas/PpData'
    smsSubscriptionData:
      $ref: '#/components/schemas/SmsSubscriptionData'
    traceData:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
IdentityData:
  type: object
  properties:
    supiList:
      type: array
      items:

```

```
  $ref: 'TS29571_CommonData.yaml#/components/schemas/Supi'  
gpsiList:  
  type: array  
  items:  
    $ref: 'TS29571_CommonData.yaml#/components/schemas/Gpsi'
```

Annex B (informative): Change history

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2018-01	CT4#82					TS skeleton of Usage of the Unified Data Repository service for Subscription Data	0.0.0
2018-01	CT4#82	C4-181397				Version after CT4#82 including agreed pCRs	0.1.0
2018-03	CT4#83	C4-182442				Version after CT4#83 including agreed pCRs	0.2.0
2018-04	CT4#84	C4-183523				Version after CT4#84 including agreed pCRs	0.3.0
2018-05	CT4#85	C4-184638				Version after CT4#85 including agreed pCRs	0.4.0
2018-06	CT#80	CP-181103				Presented for information and approval	1.0.0
2018-06	CT#80					Approved in CT#80.	15.0.0
2018-09	CT#81	CP-182058	0004	-	F	Path Segment Correction	15.1.0
2018-09	CT#81	CP-182058	0005	-	F	URI variables for the Resource OperatorSpecificData	15.1.0
2018-09	CT#81	CP-182058	0008	-	F	Formatting of query parameter	15.1.0
2018-09	CT#81	CP-182212	0009	2	B	PATCH method for ProvisionedParamenterData	15.1.0
2018-09	CT#81	CP-182058	0010	-	F	JSON structure in query and missing data type reference	15.1.0
2018-09	CT#81	CP-182058	0014	-	F	Description of Structured data types	15.1.0
2018-09	CT#81	CP-182058	0016	-	F	Implicit Subscriptions	15.1.0
2018-09	CT#81	CP-182058	0011	1	F	Align security and servers section in openAPI	15.1.0
2018-09	CT#81	CP-182058	0013	1	F	VarUeId used in TS 29.505	15.1.0
2018-09	CT#81	CP-182058	0012	2	F	OpenAPI schema for SubscriptionData	15.1.0
2018-09	CT#81	CP-182058	0018	1	F	Supported Features Negotiation	15.1.0
2018-09	CT#81	CP-182041	0015	1	B	Nudr Id Translation	15.1.0
2018-09	CT#81	CP-182043	0001	2	B	Add support for 5G Trace to Nudr	15.1.0

History

Document history		
V15.0.0	September 2018	Publication
V15.1.0	October 2018	Publication