**3GPP TSG-CT3 Meeting #130C3-234634**

**Xiamen, China, 9 - 13 October, 2023 (Revision of C3-234280)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.520** | **CR** | **0801** | **rev** | **1** | **Current version:** | **18.3.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Pending Notification in Nnwdaf\_DataManagement API | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNA\_Ph3 | | | | |  | ***Date:*** | | | 2023-09-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | TS 23.288 clause 7.4.3 Outputs, Optional added pending data that have not been sent to the consumer yet in Nnwdaf\_DataManagement\_Unsubscribe service operation, clause 7.4.4 added Pending Notification Cause in Nnwdaf\_DataManagement\_Notify service operation. Hence needs to implement them in Nnwdaf\_DataManagement API in this specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding pending data that have not been sent as optional output in Nnwdaf\_DataManagement\_Unsubscribe service operation, adding pending notification cause in Nnwdaf\_DataManagement\_Notify service operation. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Not supporting stage 2 required pending notification in the Nnwdaf\_DataManagement API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.4.2.3.2, 4.4.2.4.2, 5.3.3.3.3.2, 5.3.6.1, 5.3.6.2.3, 5.3.6.3(new), 5.3.8, A.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR introduces a backward compatible feature in the OpenAPI file of Nnwdaf\_DataManagement API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

##### 4.4.2.3.2 Unsubscribe from data notifications

Figure 4.4.2.3.2-1 shows a scenario where the NF service consumer sends a request to the NWDAF to unsubscribe from data notifications.



Figure 4.4.2.3.2-1: NF service consumer unsubscribes from data notifications

The NF service consumer shall invoke the Nnwdaf\_DataManagement\_Unsubscribe service operation to unsubscribe from data notifications. The NF service consumer shall send an HTTP DELETE request with: "{apiRoot}/nnwdaf-datamanagement/<apiVersion>/subscriptions/{subscriptionId}" as Resource URI, where "{subscriptionId}" is the identifier of the existing subscription that is to be deleted.

Upon the reception of an HTTP DELETE request, if the NWDAF successfully processed and accepted the received HTTP DELETE request, the NWDAF shall:

- remove the corresponding subscription;

- respond to the NF service consumer:

- respond with HTTP "204 No Content" status code if the "EnhDataMgmt" feature is not supported or no stored unsent events to be included in the response; or

- respond with HTTP "200 OK" status code if the "EnhDataMgmt" feature is supported and including the stored unsent events in the NnwdafDataManagementNotif data type in the response.

If errors occur when processing the HTTP DELETE request, the NWDAF shall send an HTTP error response as specified in clause 5.3.7.

If the NWDAF determines the received HTTP DELETE request needs to be redirected, the NWDAF shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [6].

\*\*\* 2nd Change \*\*\*

##### 4.4.2.4.2 Notification about subscribed data

Figure 4.2.2.4.2-1 shows a scenario where the NWDAF sends a request to the NF service consumer to notify for event notifications (see also 3GPP TS 23.288 [17]).

NF service consumer

NWDAF

1

.

POST

{

notificURI

}

2

.

204

No Content or 200 OK

Figure 4.4.2.4.2-1: NWDAF notifies the subscribed event

The NWDAF shall invoke the Nnwdaf\_DataManagement\_Notify service operation to notify the subscribed event. The NWDAF shall send an HTTP POST request with "{notificURI}" received in the Nnwdaf\_DataManagement\_Subscribe service operation as Resource URI, as shown in figure 4.4.2.4.2-1, step 1.

The NnwdafDataManagementNotif data structure provided in the request body that shall include:

- the notification correlation identifier within the "notifCorrId" attribute;

- the timestamp of the notification within the "notifTimestamp" attribute;

- one of the following:

- data collected from data sources (e.g. SMF, NEF) in the "dataNotification" attribute;

- summarized data derived from events that occurred based on processing and formatting instructions in the "dataReports" attribute;

- information for fetching the contents of the notification in the "fetchInstruct" attribute.

- a deletion alert in the "delAlert" attribute, if the "EnhDataMgmt" feature is supported.

The NnwdafDataManagementNotif data structure provided in the request body may include:

- an indication that the NWDAF has requested a termination of the subscription within the "terminationReq" attribute; and/or

- a pending notification cause for the stored unsent data in the "pendNotifCause" attribute if the "EnhDataMgmt" feature is supported.

Upon the reception of an HTTP POST request, if the NF service consumer successfully processed and accepted the received HTTP POST request, the NF Service Consumer shall store the notification and respond with HTTP "204 No Content" status code, or with HTTP "200 OK" status code and the NotifResponse data structure in the response body if the "EnhDataMgmt" feature is supported.

After the successful processing of the HTTP POST request:

- if the NWDAF requests the NF service consumer with the "fetchInstruct" attribute to retrieve the data, the NF service consumer may invoke the Nnwdaf\_DataManagement\_Fetch service operation to retrieve the notified data as defined in clause 4.4.2.5.

- if the NWDAF provided a deletion alert to the NF service consumer, the NF service consumer may invoke the Nadrf\_DataManagement\_RetrievalRequest service operation as defined in 3GPP TS 29.575 [27] clause 4.2.2.5, using the storage transaction identifier received within the "alertStorTransId" attribute of the "delAlert" attribute, in order to retrieve the data that are about to be deleted.

NOTE: The "alertStorTransId" attribute, which is used for retrieving data prior to deletion, does not have to be the same with or related to the storage transaction identifier that is assigned and returned during the storage of the data in the ADRF.

If errors occur when processing the HTTP POST request, the NF service consumer shall send an HTTP error response as specified in clause 5.3.7.

If the NF service consumer determines the received HTTP POST request needs to be redirected, the NF service consumer shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [6].

\*\*\* 3rd Change \*\*\*

###### 5.3.3.3.3.2 DELETE

This method shall support the URI query parameters specified in table 5.3.3.3.3.2-1.

Table 5.3.3.3.3.2-1: 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 5.3.3.3.3.2-2 and the response data structures and response codes specified in table 5.3.3.3.3.2-3.

Table 5.3.3.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  |  |

Table 5.3.3.3.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Successful case: The Individual NWDAF Data Management Subscription resource matching the subscriptionId was deleted. |
| NnwdafDataManagementNotif | C | 0..1 | 200 OK | Successful case: The Individual NWDAF Data Management Subscription resource matching the subscriptionId was deleted and including the stored unsent events in the response. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during Individual NWDAF Data Management Subscription deletion.  (NOTE 2) |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during Individual NWDAF Data Management Subscription deletion.  (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [6] also apply.  NOTE 2: The RedirectResponse data structure may be provided by an SCP (cf. clause 6.10.9.1 of 3GPP TS 29.500 [6]). | | | | |

Table 5.3.3.3.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative NWDAF (service) instance towards which the request is redirected.  For the case where the request is redirected to the same target via a different SCP, refer to clause 6.10.9.1 of 3GPP TS 29.500 [6]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NWDAF (service) instance towards which the request is redirected. |

Table 5.3.3.3.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative NWDAF (service) instance towards which the request is redirected  For the case where the request is redirected to the same target via a different SCP, refer to clause 6.10.9.1 of 3GPP TS 29.500 [6]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NWDAF (service) instance towards which the request is redirected. |

\*\*\* 4th Change \*\*\*

#### 5.3.6.1 General

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

Table 5.3.6.1-1 specifies the data types defined for the Nnwdaf\_DataManagement service based interface protocol.

Table 5.3.6.1-1: Nnwdaf\_DataManagement specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| NnwdafDataManagementSubsc | 5.3.6.2.2 | Represents an Individual NWDAF Data Management Subscription resource. |  |
| NnwdafDataManagementNotif | 5.3.6.2.3 | Represents a notification that corresponds with an Individual NWDAF Data Management Subscription resource. |  |
| PendingNotificationCause | 5.3.6.3.3 | Represents the Pending Notification Cause for the stored unsent events. | EnhDataMgmt |

Table 5.3.6.1-2 specifies data types re-used by the Nnwdaf\_DataManagement 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 Nnwdaf\_DataManagement service based interface.

Table 5.3.6.1-2: Nnwdaf\_DataManagement re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| DataCollectionPurpose | 3GPP TS 29.574 [26] | Represents the purpose for data collection, e.g. analytics or model training. |  |
| DataNotification | 3GPP TS 29.575 [27] | Represents data subscription notification from data source (e.g. AMF, SMF, UDM, NEF, AF). |  |
| DataSubscription | 3GPP TS 29.575 [27] | Represents data subscription from data source (e.g. AMF, SMF, UDM, NEF, AF). |  |
| DateTime | 3GPP TS 29.571 [8] | Identifies the time. |  |
| DeletionAlert | 3GPP TS 29.574 [26] | Contains information about data that are about to be deleted. | EnhDataMgmt |
| FormattingInstruction | 3GPP TS 29.574 [26] | DCCF formatting Instructions. |  |
| FetchInstruction | 3GPP TS 29.576 [28] | The fetch instruction indicates whether the data can be fetched by the consumer. |  |
| NfInstanceId | 3GPP TS 29.571 [8] | NF instance identifier. |  |
| NfSetId | 3GPP TS 29.571 [8] | NF set identifier. |  |
| NnwdafEventsSubscription | 5.1.6.2.2 | Represents an NWDAF analytics subscription. |  |
| NotifSummaryReport | 3GPP TS 29.574 [26] | Contains a summary report of processed notifications. |  |
| NotifyEndpoint | 3GPP TS 29.574 [26] | The information of notification endpoint. | EnDataCollect |
| NotifResponse | 3GPP TS 29.574 [26] | Contains information about the planned action upon receiving a notification. | EnhDataMgmt |
| ProcessingInstruction | 3GPP TS 29.574 [26] | DCCF processing Instructions. |  |
| StorageHandlingInformation | 3GPP TS 29.574 [26] | Contains storage handling information for data or analytics. | EnhDataMgmt |
| SupportedFeatures | 3GPP TS 29.571 [8] |  |  |
| TimeWindow | 3GPP TS 29.122 [19] | Represents a time window. |  |
| Uri | 3GPP TS 29.571 [8] | URI. |  |

\*\*\* 5th Change \*\*\*

##### 5.3.6.2.3 Type NnwdafDataManagementNotif

able 5.3.6.2.3-1: Definition of type NnwdafDataManagementNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| dataNotification | DataNotification | C | 0..1 | List of data subscription notifications.  (NOTE 1, NOTE 3, NOTE 4) |  |
| dataReports | array(NotifSummaryReport) | C | 1..N | List of reports with summarized data from multiple notifications received from data producer. (NOTE 1) (NOTE 2) |  |
| delAlert | DeletionAlert | C | 0..1 | Information about analytics that is about to be deleted. This attribute may not be present in the response of a Fetch request. (NOTE 1) | EnhDataMgmt |
| notifCorrId | string | M | 1 | Notification correlation identifier. |  |
| terminationReq | string | O | 0..1 | If set to "true", it indicates that the termination of the data management subscription is requested by the NWDAF, i.e. NWDAF will not provide further notifications related to this subscription.  If absent, no termination is requested. |  |
| fetchInstruct | FetchInstruction | C | 0..1 | The fetch instruction indicates whether the data are to be fetched by the Consumer. This attribute may not be present in the response of a Fetch request.  (NOTE 1) |  |
| notifTimestamp | DateTime | M | 1 | It represents time when NWDAF completes preparation of the requested data. |  |
| pendNotifCause | PendingNotificationCause | O | 0..1 | Represents the Pending Notification Cause for the stored unsent data. | EnhDataMgmt |
| NOTE 1: One of these attributes shall be provided.  NOTE 2: For every entry of the array, the "eventId" attribute shall not contain the "nwdafEvent" attribute.  NOTE 3: If the NWDAF has received the notifications from another source without a timestamp, then the NWDAF adds itself a timestamp based on the time it received the notification in timeStamp attribute contained in dataNotification attribute.  NOTE 4: The "upfEventNotifs" attribute within the "dataNotification" attribute is applicable only if the "UpEvents" feature is supported. The "gmlcEventNotifs" attribute within the "dataNotification" attribute is applicable only if the "LocEvents" feature is supported. | | | | | |

\*\*\* 6th Change \*\*\*

#### 5.3.6.3 Simple data types and enumerations

##### 5.3.6.3.1 Introduction

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

##### 5.3.6.3.2 Simple data types

The simple data types defined in table 5.3.6.3.2-1 shall be supported.

Table 5.3.6.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
| n/a |  |  |  |

##### 5.3.6.3.3 Enumeration: PendingNotificationCause

Table 5.3.6.3.3-1: Enumeration PendingNotificationCause

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| UE\_OUT\_OF\_NF\_SERVING\_AREA | Represents the UE moved out of the NF serving area. |  |
| OTHER | Represents the other cause. |  |

\*\*\* 7th Change \*\*\*

### 5.3.8 Feature negotiation

The optional features in table 5.3.8-1 are defined for the Nnwdaf\_DataManagement API. They shall be negotiated using the extensibility mechanism defined in clause 6.6 of 3GPP TS 29.500 [6].

Table 5.3.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | MultiProcessingInstruction | Indicates the support of multiple processing instructions. |
| 2 | UserConsent | Indicates the support of detailed handling of user consent, e.g. indications that user consent has been checked and error responses related to the lack of user consent. |
| 3 | DataAnaCollect | This feature indicates support for the enhancement of data and analytics collection. |
| 4 | EnhDataMgmt | Indicates the support of enhanced data management mechanisms, including supporting of pending notification, muting and storage handling. |
| 5 | UpEvents | Indicates the support of UPF events. |
| 6 | LocEvents | Indicates the support of location events. |

\*\*\* 8th Change \*\*\*

# A.4 Nnwdaf\_DataManagement API

openapi: 3.0.0

info:

title: Nnwdaf\_DataManagement

version: 1.1.0-alpha.3

description: |

Nnwdaf\_DataManagement API Service.

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externalDocs:

description: 3GPP TS 29.520 V18.2.0; 5G System; Network Data Analytics Services.

url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.520/'

servers:

- url: '{apiRoot}/nnwdaf-datamanagement/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

security:

- {}

- oAuth2ClientCredentials:

- nnwdaf-datamanagement

paths:

/subscriptions:

post:

summary: subscribe to notifications

operationId: CreateIndividualSubcription

tags:

- Subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'201':

description: Success

content:

application/json:

schema:

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

headers:

Location:

description: >

Contains the URI of the newly created resource, according to the structure

{apiRoot}/nnwdaf-datamanagement/<apiVersion>/subscriptions/{subId}.

required: true

schema:

type: string

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

callbacks:

myNotification:

'{$request.body#/notificURI}':

post:

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'200':

description: The notification is acknowledged and a planned action is provided.

content:

application/json:

schema:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/NotifResponse'

'204':

description: No Content, Notification was succesfull

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

callbacks:

Fetch:

'{request.body#/fetchInstruct/fetchUri}':

post:

requestBody:

required: true

content:

application/json:

schema:

type: array

items:

type: string

minItems: 1

description: Indicate the fetch correlation identifier.

responses:

'200':

description: Expected response to a valid request

content:

application/json:

schema:

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

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29571\_CommonData.yaml#/components/responses/406'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/subscriptions/{subscriptionId}:

put:

summary: Update an existing Individual NWDAF Data Subscription.

operationId: UpdateNWDAFDataSubscription

tags:

- Individual NWDAF Data Management Subscription (Document)

requestBody:

required: true

content:

application/json:

schema:

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

parameters:

- name: subscriptionId

in: path

description: Event Subscription ID

required: true

schema:

type: string

responses:

'200':

description: OK. Resource was succesfully modified and representation is returned

content:

application/json:

schema:

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

'204':

description: No Content. Resource was succesfully modified

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

delete:

summary: unsubscribe from notifications

operationId: DeleteNWDAFDataSubscription

tags:

- Individual NWDAF Data Management Subscription (Document)

parameters:

- name: subscriptionId

in: path

description: Event Subscription ID

required: true

schema:

type: string

responses:

'204':

description: No Content. Resource was succesfully deleted

'200':

description: >

Resource was succesfully deleted and including the stored unsent events in the response.

content:

application/json:

schema:

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

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

nnwdaf-datamanagement: Access to the Nnwdaf\_DataManagement API

schemas:

NnwdafDataManagementSubsc:

description: Represents an Individual NWDAF Data Management Subscription resource.

type: object

properties:

adrfId:

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

adrfSetId:

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

anaSub:

$ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/NnwdafEventsSubscription'

dataCollectPurposes:

type: array

items:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/DataCollectionPurpose'

minItems: 1

description: >

The purposes of data collection. This attribute may only be provided if user consent

is reqiured depending on local policy and regulations and the consumer has

not checked user consent.

checkedConsentInd:

type: boolean

description: Indication that the NF service consumer has already checked the user consent.

dataSub:

$ref: 'TS29575\_Nadrf\_DataManagement.yaml#/components/schemas/DataSubscription'

formatInstruct:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/FormattingInstruction'

notifCorrId:

type: string

description: Notification correlation identifier.

notificURI:

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

notifEndpoints:

type: array

items:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/NotifyEndpoint'

minItems: 1

description: The information of notification endpoints.

procInstruct:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/ProcessingInstruction'

multiProcInstructs:

type: array

items:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/ProcessingInstruction'

minItems: 1

description: Processing instructions to be used for sending event notifications.

suppFeat:

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

targetNfId:

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

targetNfSetId:

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

timePeriod:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/TimeWindow'

immReport:

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

storeHandl:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/StorageHandlingInformation'

required:

- notifCorrId

- notificURI

oneOf:

- required: [anaSub]

- required: [dataSub]

NnwdafDataManagementNotif:

description: Represents an Individual Notification.

type: object

properties:

dataNotification:

$ref: 'TS29575\_Nadrf\_DataManagement.yaml#/components/schemas/DataNotification'

dataReports:

type: array

items:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/NotifSummaryReport'

minItems: 1

description: List of summary reports of processed notifications.

delAlert:

$ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/DeletionAlert'

notifCorrId:

type: string

description: Notification correlation identifier.

terminationReq:

type: string

description: >

It indicates that the termination of the data management subscription

is requested by the NWDAF.

fetchInstruct:

$ref: 'TS29576\_Nmfaf\_3caDataManagement.yaml#/components/schemas/FetchInstruction'

notifTimestamp:

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

pendNotifCause:

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

required:

- notifCorrId

- notifTimestamp

oneOf:

- required: [dataNotification]

- required: [dataReports]

- required: [fetchInstruct]

#

# ENUMERATIONS DATA TYPES

#

PendingNotificationCause:

anyOf:

- type: string

enum:

- UE\_OUT\_OF\_NF\_SERVING\_AREA

- OTHER

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration but

is not used to encode content defined in the present version of this API.

description: |

Represents the Pending Notification Cause for the stored unsent data.

Possible values are:

- UE\_OUT\_OF\_NF\_SERVING\_AREA: The UE moved out of the NF serving area.

- OTHER: Other cause.

\*\*\* End of Changes \*\*\*