**3GPP TSG-CT3 Meeting #128 *C3-232078***

**Bratislava, Slovakia, 22nd May 2023 - 26th May 2023**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.574** | **CR** | **0069** | **rev** | **-** | **Current version:** | **18.1.0** |  |
|  |
| *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:***  | Sending DCCF Deletion Alerts |
|  |  |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | eNA\_Ph3 |  | ***Date:*** | 2023-05-14 |
|  |  |  |  |  |
| ***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 canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | 23.288 clauses 6.2B.2, 6.2B.3, and 5B.1 (complemented by the respective additions in the service definitions that were agreed in S2-2306087) require that the DCCF uses the Ndccf\_DataManagement\_Notify service to send Deletion Alerts (notifications) to the notification endpoints that were previously subscribed using the Ndccf\_DataManagement\_Subscribe service. These alerts include a storage transaction identifier, which can be used by the NF service consumer to fetch the data before they are deleted. |
|  |  |
| ***Summary of change:*** | Extended Ndccf\_DataManagement\_Notify to be able to send notifications about data or analytics deletion. |
|  |  |
| ***Consequences if not approved:*** | Not fulfilled stage 2 requirements. |
|  |  |
| ***Clauses affected:*** | 4.2.2.4.2, 4.2.2.4.3, 5.1.5.2.3.1, 5.1.5.3.3.1, 5.1.6.1, 5.1.6.2.4, 5.1.6.2.5, 5.1.6.2.16 (new), 5.1.6.2.17 (new), A.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR 23.288 CR 0726  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces a backwards compatible feature in the OpenAPI file of the Ndccf\_DataManagement API. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* First change \* \* \* \*

4.2.2.4.2 Notification about subscribed analytics

Figure 4.2.2.4.2-1 shows a scenario where the DCCF sends a request to the NF Service Consumer to notify it about analytics event(s).

NF service consumer

DCCF

1

.

POST

{

notificationURI

}

2

.

204

No Content or 200 OK

**Figure 4.2.2.4.2-1: DCCF notifies the NF service consumer about a subscribed analytics event**

The DCCF shall invoke the Ndccf\_DataManagement\_Notify service operation to notify about a subscribed analytics event. The DCCF shall send an HTTP POST request with "{notificationURI}" as Resource URI (where "{notificationURI}" has the value of the notification URI received in the NdccfAnalyticsSubscription data structure of the Ndccf\_DataManagement\_Subscribe service operation, see clause 5.1.5 for the definition of this notification URI), as shown in figure 4.2.2.4.2-1, step 1. The NdccfAnalyticsSubscriptionNotification data structure provided in the request body shall include:

- the analytics notification correlation identifier within the "anaNotifCorrId" attribute;

- the time stamp which represents the time when DCCF completes preparation of the requested analytics within the "timeStamp" attribute;

- one of the following:

- information about network data analytics function events that occurred in the "anaNotifications" attribute;

- summarized analytics derived from events based on processing instructions and formatting instructions that occurred in the "anaReports" 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 NdccfAnalyticsSubscriptionNotification data structure provided in the request body may include:

- a termination request provided by the DCCF within the "terminationReq" attribute.

If the NF service consumer successfully processed and accepted the received HTTP POST request, the NF service consumer shall:

- store the notification;

- 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.

If errors occur when processing the HTTP POST request, the NF service consumer shall send an HTTP error response as specified in clause 5.1.7.

If 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 [4].

After the successful processing of the HTTP POST request:

- if the DCCF requests the NF service consumer to retrieve the analytics with the "fetchInstruct" attribute, the NF service consumer may invoke the Ndccf\_DataManagement\_Fetch service operation to retrieve the notified analytics as defined in clause 4.2.2.5.

- if the DCCF 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 [25] clause 4.2.2.5, using the storage transaction identifier received within the "alertStorTransId" attribute of the "delAlert" attribute, in order to retrieve the analytics 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.

\* \* \* \* Next change \* \* \* \*

4.2.2.4.3 Notification about subscribed data event

Figure 4.2.2.4.3-1 shows a scenario where the DCCF sends a request to the NF Service Consumer to notify it about data event(s).

NWDAF

DCCF

1

.

POST

{

notificationURI

}

2

.

204

No Content or 200 OK

**Figure 4.2.2.4.3-1: DCCF notifies the NF service consumer about a subscribed data event**

The DCCF shall invoke the Ndccf\_DataManagement\_Notify service operation to notify about a subscribed data event. The DCCF shall send an HTTP POST request with "{notificationURI}" as Resource URI (where "{notificationURI}" has the value of the notification URI received in the NdccfDataSubscription data structure of the Ndccf\_DataManagement\_Subscribe service operation, see clause 5.1.5 for the definition of this notification URI), as shown in figure 4.2.2.4.3-1, step 1. The NdccfDataSubscriptionNotification data structure provided in the request body shall include:

- the data notification correlation identifier within the "dataNotifCorrId" attribute;

- the time stamp which represents the time when DCCF completes preparation of the requested data within the "timeStamp" attribute;

- one of the following:

- the data notification within the "dataNotif" attribute;

- summarized data derived from events based on processing instructions and formatting instructions that occurred 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 NdccfDataSubscriptionNotification data structure provided in the request body may include:

- a termination request provided by the DCCF within the "terminationReq" attribute.

If the NF service consumer successfully processed and accepted the received HTTP POST request, the NF service consumer shall:

- store the notification;

- 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.

If errors occur when processing the HTTP POST request, the NF service consumer shall send an HTTP error response as specified in clause 5.1.7.

If the NWDAF determines the received HTTP POST 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 [4].

After the successful processing of the HTTP POST request:

- if the DCCF requests the NF service consumer to retrieve the data with the "fetchInstruct" attribute, the NF service consumer may invoke the Ndccf\_DataManagement\_Fetch service operation to retrieve the notified data as defined in clause 4.2.2.5.

- if the DCCF 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 [25] 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.

\* \* \* \* Next change \* \* \* \*

###### 5.1.5.2.3.1 POST

This method shall support the request data structures specified in table 5.1.5.2.3.1-1 and the response data structures and response codes specified in table 5.1.5.2.3.2-1.

**Table 5.1.5.2.3.1-1: Data structures supported by the POST Request Body**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| NdccfAnalyticsSubscriptionNotification | M | 1 | Provides information about observed analytics events |

**Table 5.1.5.2.3.1-2: Data structures supported by the POST Response Body**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response codes** | **Description** |
| NotifResponse | M | 1 | 200 OK | The receipt of the notification is acknowledged and a response with information about the planned action is provided. |
| n/a |  |  | 204 No Content | The receipt of the Notification is acknowledged. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during the analytics event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative NF consumer (service) instance where the notification should be sent. |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during the analytics event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative NF consumer (service) instance where the notification should be sent. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply. |

**Table 5.1.5.2.3.1-3: Headers supported by the 307 Response Code on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification should be redirected. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected. |

**Table 5.1.5.2.3.1-4: Headers supported by the 308 Response Code on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification should be redirected. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected. |

\* \* \* \* Next change \* \* \* \*

5.1.5.3.3.1 POST

This method shall support the request data structures specified in table 5.1.5.3.3.1-1 and the response data structures and response codes specified in table 5.1.5.3.3.1-2.

**Table 5.1.5.3.3.1-1: Data structures supported by the POST Request Body**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| NdccfDataSubscriptionNotification | M | 1 | Provides Information about observed data collection events. |

**Table 5.1.5.3.3.1-2: Data structures supported by the POST Response Body**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response codes** | **Description** |
| NotifResponse | M | 1 | 200 OK | The receipt of the notification is acknowledged and a response with information about the planned action is provided. |
| n/a |  |  | 204 No Content | The receipt of the notification is acknowledged. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during the data event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative NF consumer (service) instance where the notification should be sent. |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during the data event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative NF consumer (service) instance where the notification should be sent. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply. |

**Table 5.1.5.3.3.1-3: Headers supported by the 307 Response Code on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification should be redirected. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected. |

**Table 5.1.5.3.3.1-4: Headers supported by the 308 Response Code on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification should be redirected. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected. |

\* \* \* \* Next change \* \* \* \*

5.1.6.1 General

This clause specifies the application data model supported by the Ndccf\_DataManagement API.

Table 5.1.6.1-1 specifies the data types defined for the Ndccf\_DataManagement service based interface protocol.

**Table 5.1.6.1-1: Ndccf\_DataManagement specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Clause defined** | **Description** | **Applicability** |
| AggregationLevel | 5.1.6.3.4 | Contains an aggregation level for processing instructions (e.g. per UE, per Area of Interest). |  |
| DataCollectionPurpose | 5.1.6.3.5 | Represents the purpose for data collection. |  |
| DccfEvent | 5.1.6.2.13 | Represents the event type exposed by DCCF |  |
| DeletionAlert | 5.1.6.2.16 | Contains information about data or analytics that are about to be deleted. | EnhDataMgmt |
| EventParamReport | 5.1.6.2.10 | Represents a summarized report for one event parameter. |  |
| FormattingInstruction | 5.1.6.2.6 | Contains data or analytics formatting Instructions. |  |
| NdccfAnalyticsSubscription | 5.1.6.2.2 | Represents an Individual DCCF Analytics Subscription resource. |  |
| NdccfAnalyticsSubscriptionNotification | 5.1.6.2.4 | Represents a notification that corresponds with an Individual DCCF Analytics Subscription resource. |  |
| NdccfDataSubscription | 5.1.6.2.3 | Represents an Individual DCCF Data Subscription resource. |  |
| NdccfDataSubscriptionNotification | 5.1.6.2.5 | Represents a notification that corresponds with an Individual DCCF Data Subscription resource. |  |
| NotifResponse | 5.1.6.2.17 | Contains information about the planned action upon receiving a notification. | EnhDataMgmt |
| NotifSummaryReport | 5.1.6.2.9 | Represents summarized notifications based on processing instructions. |  |
| ParameterProcessingInstruction | 5.1.6.2.8 | Contains an event parameter name and the respective event parameter values and sets of attributes to be used in summarized reports. |  |
| ProcessingInstruction | 5.1.6.2.7 | Contains instructions related to the processing (e.g. clubbing) of notifications. |  |
| ReportingOptions | 5.1.6.2.11 | Represents reporting options for notifications that are processed. |  |
| SummarizationAttribute | 5.1.6.3.3 | Represents attribute in the summarized report. |  |

Table 5.1.6.1-2 specifies data types re-used by the Ndccf\_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 Ndccf\_DataManagement service based interface.

**Table 5.1.6.1-2: Ndccf\_DataManagement re-used Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| AfEvent | 3GPP TS 29.517 [21] | Represents an AF Event id |  |
| AmfEventType | 3GPP TS 29.518 [19] | Represents an AMF Event id |  |
| DataSubscription | 3GPP TS 29.575 [25] | Represents a data subscription to one of various possible data sources. |  |
| DataNotification | 3GPP TS 29.575 [25] | Represents a data subscription notification of one of various possible data sources. |  |
| DateTime | 3GPP TS 29.571 [17] | Identifies the time. |  |
| DurationSec | 3GPP TS 29.571 [17] | Time in seconds. |  |
| EventType | 3GPP TS 29.503 [20] | Represents an UDM Event id |  |
| FetchInstruction | 3GPP TS 29.576 [26] | The fetch instruction indicates whether the data or analytics can be fetched by the consumer. |  |
| NefEvent | 3GPP TS 29.591 [22] | Represents a NEF Event id |  |
| NetworkAreaInfo | 3GPP TS 29.554 [28] | Identifies a network area. |  |
| NfInstanceId | 3GPP TS 29.571 [17] | NF instance identifier. |  |
| NfSetId | 3GPP TS 29.571 [17] | NF set identifier. |  |
| NnwdafEventsSubscription | 3GPP TS 29.520 [15] | Represents a NWDAF analytics subscription. |  |
| NnwdafEventsSubscriptionNotification | 3GPP TS 29.520 [15] | Represents a NWDAF analytics subscription notification. |  |
| NumberAverage | 3GPP TS 29.520 [15] | Represents average and variance of a parameter value. |  |
| SACEvent | 3GPP TS 29.536 [27] | Represents a NSAC Event id |  |
| SmfEvent | 3GPP TS 29.508 [18] | Represents a SMF Event id |  |
| Supi | 3GPP TS 29.571 [17] | Contains a SUPI. |  |
| SupportedFeatures | 3GPP TS 29.571 [17] | Used to negotiate the applicability of the optional features defined in table 5.1.8-1. |  |
| TimeWindow | 3GPP TS 29.122 [23] | Represents a time window. |  |
| Uinteger | 3GPP TS 29.571 [17] | Unsigned Integer. |  |
| Uri | 3GPP TS 29.571 [17] | URI. |  |

\* \* \* \* Next change \* \* \* \*

5.1.6.2.4 Type NdccfAnalyticsSubscriptionNotification

**Table 5.1.6.2.4-1: Definition of type NdccfAnalyticsSubscriptionNotification**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| anaNotifications | array(NnwdafEventsSubscriptionNotification) | C | 1..N | List of analytics subscription notifications. (NOTE 1, NOTE 3) |  |
| anaReports | array(NotifSummaryReport) | C | 1..N | List of reports with summarized data from multiple analytics notifications that the DCCF has received from NWDAF. (NOTE 1) |  |
| fetchInstruct | FetchInstruction | C | 0..1 | Instructions for the NF service consumer to fetch the notifications itself. (NOTE 1, NOTE 2) |  |
| delAlert | DeletionAlert | C | 0..1 | Information about analytics that is about to be deleted. (NOTE 1, NOTE 2) | EnhDataMgmt |
| anaNotifCorrId | string | M | 1 | Notification correlation identifier. |  |
| terminationReq | boolean | O | 0..1 | If provided and set to "true", it indicates that the subscription is requested to be terminated, i.e. no further notifications related to this subscription will be provided. The default value is "false". |  |
| timeStamp | DateTime | M | 1 | It represents the time when DCCF completed preparation of the requested analytics. (NOTE 3) |  |
| NOTE 1: Exactly one of these attributes shall be provided.NOTE 2: This attribute shall not be included in Ndccf\_DataManagement\_Fetch response body.NOTE 3: If the DCCF has received the notifications from another source without a timestamp, then the DCCF adds itself a timestamp based on the time it received the notification in "timeStampGen" attribute contained in "dataNotification" attribute within the EventNotification data type in the NnwdafEventsSubscriptionNotification data type. |

\* \* \* \* Next change \* \* \* \*

5.1.6.2.5 Type NdccfDataSubscriptionNotification

**Table 5.1.6.2.5-1: Definition of type NdccfDataSubscriptionNotification**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| dataNotif | DataNotification | C | 0..1 | Data subscription notification. (NOTE 1, NOTE 3) |  |
| dataReports | array(NotifSummaryReport) | C | 1..N | List of reports with summarized data from multiple notifications received from data producer. (NOTE 1) |  |
| fetchInstruct | FetchInstruction | C | 0..1 | Instructions for the NF service consumer to fetch the notifications itself. (NOTE 1, NOTE 2) |  |
| delAlert | DeletionAlert | C | 0..1 | Information about data that is about to be deleted. (NOTE 1, NOTE 2) | EnhDataMgmt |
| dataNotifCorrId | string | M | 1 | Notification correlation identifier. |  |
| terminationReq | boolean | O | 0..1 | If provided and set to "true", it indicates that the subscription is requested to be terminated, i.e. no further notifications related to this subscription will be provided. The default value is "false". |  |
| timeStamp | DateTime | M | 1 | It represents the time when DCCF completed preparation of the requested analytics. (NOTE 3) |  |
| NOTE 1: Exactly one of these attributes shall be provided.NOTE 2: This attribute shall not be included in the response body of a Fetch operation.NOTE 3: If the DCCF has received the notifications from another source without a timestamp, then the DCCF adds itself a timestamp based on the time it received the notification in the "timeStamp" attribute within the DataNotification data type. |

\* \* \* \* Next change \* \* \* \*

5.1.6.2.16 Type: DeletionAlert

**Table 5.1.6.2.16-1: Definition of type DeletionAlert**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| alertStorTransId | string | M | 1 | Storage transaction identifier that can be used to retrieve the data or analytics that are about to be deleted. |  |

\* \* \* \* Next change \* \* \* \*

5.1.6.2.17 Type: NotifResponse

**Table 5.1.6.2.17-1: Definition of type NotifResponse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| retrievalInd | boolean | M | 1 | If the NF service consumer had received a Data or Analytics Deletion Alert in the notification and determined to retrieve stored data or analytics prior to deletion, it shall be set to "true". Otherwise, it shall be set to "false". |  |

\* \* \* \* Next change \* \* \* \*

A.2 Ndccf\_DataManagement API

openapi: 3.0.0

info:

 version: 1.1.0-alpha.2

 title: Ndccf\_DataManagement

 description: |

 DCCF Data Management Service.

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externalDocs:

 description: 3GPP TS 29.574 V18.1.0; 5G System; Data Collection Coordination Services; Stage 3.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.574/'

#

servers:

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

 variables:

 apiRoot:

 default: https://example.com

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

#

security:

 - oAuth2ClientCredentials:

 - ndccf-datamanagement

 - {}

#

paths:

 /analytics-subscriptions:

 post:

 summary: Creates a new Individual DCCF Analytics Subscription resource.

 operationId: CreateDCCFAnalyticsSubscription

 tags:

 - DCCF Analytics Subscriptions (Collection)

 requestBody:

 description: Contains the information for the creation the resource.

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '201':

 description: Create a new Individual DCCF Analytics Subscription resource.

 headers:

 Location:

 description: >

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

 {apiRoot}/ndccf-datamanagement/<apiVersion>/analytics-subscriptions/{subscriptionId}

 required: true

 schema:

 type: string

 content:

 application/json:

 schema:

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

 '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:

 dccfAnalyticsNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

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

 content:

 application/json:

 schema:

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

 '204':

 description: The receipt of the notification is acknowledged.

 '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: Fetch correlation identifiers.

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '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'

 /analytics-subscriptions/{subscriptionId}:

 delete:

 summary: Deletes an existing Individual DCCF Data Subscription.

 operationId: DeleteDCCFAnalyticsSubscription

 tags:

 - Individual DCCF Analytics Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: >

 String identifying an analytics subscription to the Ndccf\_DataManagement Service.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 No Content. The Individual DCCF Analytics Subscription resource matching the

 subscriptionId was deleted.

 '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'

 put:

 summary: Updates an existing Individual DCCF Analytics Subscription resource.

 operationId: UpdateDCCFAnalyticsSubscription

 tags:

 - Individual DCCF Analytics Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 parameters:

 - name: subscriptionId

 in: path

 description: >

 String identifying an analytics subscription to the Ndccf\_DataManagement Service.

 required: true

 schema:

 type: string

 responses:

 '200':

 description: >

 The Individual DCCF Analytics Subscription resource was modified successfully and a

 representation of that resource is returned.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 The Individual DCCF Analytics Subscription resource was modified successfully.

 '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'

 /data-subscriptions:

 post:

 summary: Creates a new Individual DCCF Data Subscription resource.

 operationId: CreateDCCFDataSubscription

 tags:

 - DCCF Data Subscriptions (Collection)

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '201':

 description: Creates a new Individual DCCF Data Subscription resource.

 headers:

 Location:

 description: >

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

 {apiRoot}/ndccf-datamanagement/<apiVersion>/data-subscriptions/{subscriptionId}

 required: true

 schema:

 type: string

 content:

 application/json:

 schema:

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

 '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:

 dccfDataNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

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

 content:

 application/json:

 schema:

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

 '204':

 description: The receipt of the notification is acknowledged.

 '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: Fetch correlation identifiers.

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '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'

 /data-subscriptions/{subscriptionId}:

 delete:

 summary: Deletes an existing Individual DCCF Data Subscription resource.

 operationId: DeleteDCCFDataSubscription

 tags:

 - Individual DCCF Data Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: String identifying a data subscription to the Ndccf\_DataManagement Service.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 No Content. The Individual DCCF Data Subscription resource matching the subscriptionId

 was deleted.

 '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'

 put:

 summary: Updates an existing Individual DCCF Data Subscription resource.

 operationId: UpdateDCCFDataSubscription

 tags:

 - Individual DCCF Data Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 parameters:

 - name: subscriptionId

 in: path

 description: >

 String identifying a data subscription to the Ndccf\_DataManagement Service.

 required: true

 schema:

 type: string

 responses:

 '200':

 description: >

 The Individual DCCF Data Subscription resource was modified successfully and a

 representation of that resource is returned.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 The Individual DCCF Data Subscription resource was modified successfully.

 '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'

#

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{nrfApiRoot}/oauth2/token'

 scopes:

 ndccf-datamanagement: Access to the ndccf-datamanagement API

#

 schemas:

#

 NdccfAnalyticsSubscription:

 description: Represents an Individual DCCF Analytics Subscription.

 type: object

 required:

 - anaSub

 - anaNotifUri

 - anaNotifCorrId

 properties:

 anaSub:

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

 anaNotifUri:

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

 anaNotifCorrId:

 type: string

 description: Notification correlation identifier.

 notifEndpoints:

 type: array

 items:

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

 minItems: 1

 description: The information of notification endpoints.

 formatInstruct:

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

 procInstructs:

 type: array

 items:

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

 minItems: 1

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

 targetNfId:

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

 targetNfSetId:

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

 adrfId:

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

 ardfSetId:

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

 storeInd:

 type: boolean

 description: >

 The indication for analytics storage. This attribute shall be provided and set to "true"

 if the consumer requests to store the analytics in an ADRF but both the "adrfId" and

 "adrfSetId" attributes are not provided. The default value is "false".

 suppFeat:

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

 timePeriod:

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

 dataCollectPurposes:

 type: array

 items:

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

 minItems: 1

 description: >

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

 required 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.

#

 NdccfDataSubscription:

 description: Represents an Individual DCCF Data Subscription.

 type: object

 required:

 - dataNotifUri

 - dataNotifCorrId

 - dataSub

 properties:

 dataSub:

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

 dataNotifUri:

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

 dataNotifCorrId:

 type: string

 description: Notification correlation identifier.

 notifEndpoints:

 type: array

 items:

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

 minItems: 1

 description: The information of notification endpoints.

 formatInstruct:

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

 procInstructs:

 type: array

 items:

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

 minItems: 1

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

 targetNfId:

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

 targetNfSetId:

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

 adrfId:

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

 ardfSetId:

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

 storeInd:

 type: boolean

 description: >

 The indication for analytics storage. This attribute shall be provided and set to "true"

 if the consumer requests to store the analytics in an ADRF but both the "adrfId" and

 "adrfSetId" attributes are not provided. The default value is "false".

 timePeriod:

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

 suppFeat:

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

 dataCollectPurposes:

 type: array

 items:

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

 minItems: 1

 description: >

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

 is required 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.

#

 NdccfAnalyticsSubscriptionNotification:

 description: Represents a notification for a DCCF analytics subscription.

 type: object

 required:

 - anaNotifCorrId

 - timeStamp

 oneOf:

 - required: [anaNotifications]

 - required: [anaReports]

 - required: [fetchInstruct]

 properties:

 anaNotifCorrId:

 type: string

 description: Notification correlation identifier.

 anaNotifications:

 type: array

 items:

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

 minItems: 1

 description: List of analytics subscription notifications.

 anaReports:

 type: array

 items:

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

 minItems: 1

 description: >

 List of reports with summarized data from multiple analytics notifications that the DCCF

 has received from NWDAF.

 fetchInstruct:

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

 delAlert:

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

 terminationReq:

 type: boolean

 description: >

 If provided and set to true, it indicates the termination of the data management

 subscription that requested by the DCCF, i.e. no further notifications related to this

 subscription will be provided, apart from sending final report (if available).

 The default value is false.

 timeStamp:

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

#

 NdccfDataSubscriptionNotification:

 description: Represents a notification for a DCCF data subscription.

 type: object

 required:

 - dataNotifCorrId

 - timeStamp

 oneOf:

 - required: [dataNotif]

 - required: [dataReports]

 - required: [fetchInstruct]

 properties:

 dataNotifCorrId:

 type: string

 description: Notification correlation identifier.

 dataNotif:

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

 dataReports:

 type: array

 items:

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

 minItems: 1

 description: >

 List of reports with summarized data from multiple notifications received from data

 producer.

 fetchInstruct:

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

 delAlert:

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

 terminationReq:

 type: boolean

 description: >

 If provided and set to true, it indicates the termination of the data management

 subscription that requested by the DCCF, i.e. no further notifications related to this

 subscription will be provided, apart from sending final report (if available).

 The default value is false.

 timeStamp:

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

#

 FormattingInstruction:

 description: Contains data or analytics formatting instructions.

 type: object

 properties:

 consTrigNotif:

 type: boolean

 description: >

 Indicates that notifications shall be buffered until the NF service consumer requests

 their delivery.

 reportingOptions:

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

#

 ReportingOptions:

 description: Represents reporting options for processed notifications.

 type: object

 oneOf:

 - required: [notifyWindow]

 - required: [notifyPeriod]

 - required: [notifyPeriodInc]

 - required: [depEventSubId]

 properties:

 notifyWindow:

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

 notifyPeriod:

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

 notifyPeriodInc:

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

 depEventSubId:

 type: string

 description: >

 Notifications for the present subscription are sent only upon occurrence of events of the

 subscription with identifier that matches this attribute.

 minClubbedNotif:

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

 maxClubbedNotif:

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

#

 ProcessingInstruction:

 description: Contains instructions related to the processing of notifications.

 type: object

 required:

 - eventId

 - procInterval

 properties:

 eventId:

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

 procInterval:

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

 paramProcInstructs:

 type: array

 items:

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

 minItems: 1

 description: >

 List of event parameter names, and for each event parameter name, respective event

 parameter values and sets of the attributes to be used in the summarized reports.

 NotifyEndpoint:

 description: The information of notification endpoint.

 type: object

 required:

 - notifUri

 properties:

 notifUri:

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

 notifCorrId:

 type: string

 description: Notification correlation identifier.

#

 DccfEvent:

 description: >

 Identifies the (event exposure or analytics) event that the processing instructions

 shall apply to. Contains all event IDs related to DCCF.

 type: object

 oneOf:

 - required: [nwdafEvent]

 - required: [smfEvent]

 - required: [amfEvent]

 - required: [nefEvent]

 - required: [afEvent]

 - required: [sacEvent]

 - required: [nrfEvent]

 - required: [udmEvent]

 properties:

 nwdafEvent:

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

 smfEvent:

 $ref: 'TS29508\_Nsmf\_EventExposure.yaml#/components/schemas/SmfEvent'

 amfEvent:

 $ref: 'TS29518\_Namf\_EventExposure.yaml#/components/schemas/AmfEventType'

 nefEvent:

 $ref: 'TS29591\_Nnef\_EventExposure.yaml#/components/schemas/NefEvent'

 udmEvent:

 $ref: 'TS29503\_Nudm\_EE.yaml#/components/schemas/EventType'

 afEvent:

 $ref: 'TS29517\_Naf\_EventExposure.yaml#/components/schemas/AfEvent'

 sacEvent:

 $ref: 'TS29536\_Nnsacf\_SliceEventExposure.yaml#/components/schemas/SACEvent'

 nrfEvent:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/NotificationEventType'

#

 ParameterProcessingInstruction:

 description: >

 Contains an event parameter name and the respective event parameter values and sets of

 attributes to be used in summarized reports.

 type: object

 required:

 - name

 - values

 - sumAttrs

 properties:

 name:

 type: string

 description: >

 A JSON pointer value that references an attribute within the notification object to which

 the processing instruction is applied.

 values:

 type: array

 items: {}

 minItems: 1

 description: A list of values for the attribute identified by the name attribute.

 sumAttrs:

 type: array

 items:

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

 minItems: 1

 description: Attributes requested to be used in the summarized reports.

 aggrLevel:

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

 supis:

 type: array

 items:

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

 minItems: 1

 description: Indicates the UEs for which processed reports are requested.

 temporalAggrLevel:

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

 anonymizeRule:

 type: string

 description: The anonymization rule.

 areas:

 type: array

 items:

 $ref: 'TS29554\_Npcf\_BDTPolicyControl.yaml#/components/schemas/NetworkAreaInfo'

 minItems: 1

 description: Indicates the Areas of Interest for which processed reports are requested.

#

 NotifSummaryReport:

 description: Represents summarized notifications based on processing instructions.

 type: object

 required:

 - eventId

 - procInterval

 - eventReports

 properties:

 eventId:

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

 procInterval:

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

 eventReports:

 type: array

 items:

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

 minItems: 1

 description: List of event parameter reports.

#

 EventParamReport:

 description: Represents a summarized report for one event parameter.

 type: object

 required:

 - name

 - values

 properties:

 name:

 type: string

 description: The name of the reported parameter.

 values:

 type: array

 items: {}

 minItems: 1

 description: The list of values of the reported parameter.

 supi:

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

 area:

 $ref: 'TS29554\_Npcf\_BDTPolicyControl.yaml#/components/schemas/NetworkAreaInfo'

 spacing:

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

 duration:

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

 avgAndVar:

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

 mostFreqVal: {}

 leastFreqVal: {}

 count:

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

 minValue:

 type: string

 description: The minimum value of the parameter.

 maxValue:

 type: string

 description: The maximum value of the parameter.

#

 DeletionAlert:

 description: Contains information about data or analytics that are about to be deleted.

 type: object

 properties:

 alertStorTransId:

 type: string

 description: >

 Storage transaction identifier that can be used to retrieve data or analytics.

 required:

 - alertStorTransId

#

 NotifResponse:

 description: >

 Contains information about planned actions related to data or analytics

 that are about to be deleted.

 type: object

 properties:

 retrievalInd:

 type: boolean

 description: >

 Indicates if the NF service consumer has determined to retrieve data

 or analytics that are about to be deleted.

 required:

 - retrievalInd

#

 SummarizationAttribute:

 anyOf:

 - type: string

 enum:

 - SPACING

 - DURATION

 - OCCURRENCES

 - AVG\_VAR

 - FREQ\_VAL

 - MIN\_MAX

 - 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 attribute in the summarized report.

 Possible values are:

 - SPACING: Average and variance of the time interval separating two consecutive occurrences

 of the same event and parameter value, or periodicity for periodic reporting.

 - DURATION: Average and variance of the time for which the parameter value applies.

 - OCCURRENCES: Number of countable occurrences for the parameter.

 - AVG\_VAR: Average and variance of the parameter.

 - FREQ\_VAL: Most and least frequent values.

 - MIN\_MAX: Maximum and minimum parameter values.

#

 AggregationLevel:

 anyOf:

 - type: string

 enum:

 - UE

 - AOI

 - 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 aggregation level for processing instructions.

 Possible values are:

 - UE: Indicates that the summarized reports shall be provided per UE.

 - AOI: Indicates that the summarized reports shall be provided per Area of Interest.

#

 DataCollectionPurpose:

 anyOf:

 - type: string

 enum:

 - ANALYTICS\_GENERATION

 - MODEL\_TRAINING

 - 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 purpose for data collection.

 Possible values are:

 - ANALYTICS\_GENERATION: The data is collected for generating the analytics.

 - MODEL\_TRAINING: The data is collected for ML model training.

\* \* \* \* End of changes \* \* \* \*