**3GPP TSG-CT3 Meeting #130C3-234635**

**Xiamen, China, 9 - 13 October, 2023 (Revision of C3-234281)**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.574** | **CR** | **0078** | **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 Ndccf\_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 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:*** | TS 23.288 clause 8.2.3 Outputs, Optional added pending data that have not been sent to the consumer yet in Ndccf\_DataManagement\_Unsubscribe service operation, clause 8.2.4 added Pending Notification Cause in Ndccf\_DataManagement\_Notify service operation. Hence needs to implement them in Ndccf\_DataManagement API in this specification. |
|  |  |
| ***Summary of change:*** | Adding pending data that have not been sent as optional output in Ndccf\_DataManagement\_Unsubscribe service operation, adding pending notification cause in Ndccf\_DataManagement\_Notify service operation. |
|  |  |
| ***Consequences if not approved:*** | Not supporting stage 2 required pending notification in the Ndccf\_DataManagement API. |
|  |  |
| ***Clauses affected:*** | 4.2.2.3.3, 4.2.2.4.3, 5.1.3.5.3.2, 5.1.6.1, 5.1.6.2.5, 5.1.6.3.7, 5.1.8, A.2 |
|  |  |
|  | **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 Ndccf\_DataManagement API. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

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

##### 4.2.2.3.3 Unsubscribe from data notifications

Figure 4.2.2.3.3-1 shows a scenario where the NF service consumer sends a request to the DCCF to unsubscribe from data notifications.



Figure 4.2.2.3.3-1: NWDAF unsubscribes from data notifications

The NWDAF shall invoke the Ndccf\_DataManagement\_Unsubscribe service operation to unsubscribe to data notifications. The NWDAF shall send an HTTP DELETE request with "{apiRoot}/ndccf-datamanagement/<apiVersion>/data-subscriptions/{subscriptionId}" as Resource URI representing an "Individual DCCF Data Subscription" resource, as shown in figure 4.2.2.3.3-1, step 1, where "{subscriptionId}" is the identifier of the existing data subscription that is to be deleted.

Upon the reception of an HTTP DELETE request with "{apiRoot}/ndccf-datamanagement/<apiVersion>/data-subscriptions /{subscriptionId}" as Resource URI, if the DCCF successfully processed and accepted the received HTTP DELETE request, the DCCF shall:

- remove the corresponding subscription;

- respond to the NWDAF:

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

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

If errors occur when processing the HTTP DELETE request, the DCCF shall send an HTTP error response as specified in clause 5.1.7.

If the DCCF determines the received HTTP DELETE request needs to be redirected, the DCCF shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [4].

\*\*\* 2nd 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;

- a cause for termination in the "termCause" attribute, if the "TerminationCause" feature is supported and the "terminationReq" attribute is set to "true", i.e. DCCF wants to request the termination of this subscription and will send no further notifications for it; and/or

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

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.

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

###### 5.1.3.5.3.2 DELETE

This method shall support the URI query parameters specified in table 5.1.3.5.3.2-1.

Table 5.1.3.5.3.2-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 5.1.3.5.3.2-2 and the response data structures and response codes specified in table 5.1.3.5.3.2-3.

Table 5.1.3.5.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 5.1.3.5.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | The Individual DCCF Data Subscription resource was deleted successfully. |
| NdccfDataSubscriptionNotification | C | 0..1 | 200 OK | Successful case: The Individual NWDAF Data Management Subscription resource matching the subscriptionId was deleted and including the stored unsent data events in the response. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during Individual DCCF Data Subscription deletion.(NOTE 2) |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during Individual DCCF Data Subscription deletion.(NOTE 2) |
| NOTE 1: The mandatory HTTP error status code for the DELETE method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] 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 [4]). |

Table 5.1.3.5.3.2-4: 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 DCCF (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 [4]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target DCCF (service) instance towards which the request is redirected. |

Table 5.1.3.5.3.2-5: 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 DCCF (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 [4]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target DCCF (service) instance towards which the request is redirected. |

\*\*\* 4th 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. |  |
| StorageHandlingInformation | 5.1.6.2.15 | Contains storage handling information for data or analytics. | EnhDataMgmt |
| SummarizationAttribute | 5.1.6.3.3 | Represents attribute in the summarized report. |  |
| TermCause | 5.1.6.3.6 | A cause for which the DCCF will collect no further data for this subscription. | TerminationCause |
| PendingDataNotifCause | 5.1.6.3.7 | Represents the Pending Notification Cause for the stored unsent data events. | PendingNotification |

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. |  |
| EventNotifyDataType | 3GPP TS 29.515 [29] | Represents a GMLC Event id | LocEvents |
| EventType | 3GPP TS 29.503 [20] | Represents an UDM Event id |  |
| EventType | 3GPP TS 29.564 [30] | Represents a UPF Event id | UpEvents |
| 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. |  |
| RedirectResponse | 3GPP TS 29.571 [17] | Contains redirection related information. |  |
| 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. |  |

\*\*\* 5th 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, NOTE 4) |  |
| 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. |  |
| pendDataNotifCause | PendingDataNotifCause | O | 0..1 | Represents the Pending Data Notification Cause for the stored unsent data. | PendingNotification |
| reUserConsentPurs | array(DataCollectionPurpose) | O | 1..N | The purposes of data collection for which the user consent is revoked. This attribute may only be provided if subscription is requested to be terminated due to user consent revocation, i.e. the value of "termCause" is "USER\_CONSENT\_REVOKED". | TerminationCause |
| 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". |  |
| termCause | TermCause | O | 0..1 | A cause for which the DCCF will collect no further data for this subscription. Its presence indicates that the DCCF requests the termination of the subscription. This attribute may only be provided if the "terminationReq" attribute is set to "true". | TerminationCause |
| 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 "fetchInstruct" 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.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 \*\*\*

##### 5.1.6.3.7 Enumeration: PendingDataNotifCause

Table 5.3.6.3.3-1: Enumeration PendingDataNotifCause

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

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

### 5.1.8 Feature negotiation

The optional features in table 5.1.8-1 are defined for the Ndccf\_DataManagement API. They shall be negotiated using the extensibility mechanism defined in clause 6.6 of 3GPP TS 29.500 [4].

Table 5.1.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | 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 user consent is not granted. |
| 2 | DataAnaCollect | This feature indicates support for the enhancement of data and analytics collection. |
| 3 | EnhDataMgmt | Indicates the support of enhanced data management mechanisms. |
| 4 | TerminationCause | This feature indicates support for data collection subscription termination requests with termination cause and the purposes of data collection if the user consent is revoked sent by the DCCF to the NF service consumer. |
| 5 | LocEvents | This feature indicates the support of location events. |
| 6 | UpEvents | Indicates the support of UPF events. |
| 7 | PendingNotification | Indicates the support of Pending Notification. |

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

# A.2 Ndccf\_DataManagement API

openapi: 3.0.0

info:

 version: 1.1.0-alpha.4

 title: Ndccf\_DataManagement

 description: |

 DCCF Data Management Service.

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externalDocs:

 description: 3GPP TS 29.574 V18.3.0; 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.

 '200':

 description: >

 The Individual DCCF Data Subscription resource matching the subscriptionId was deleted

 and including the stored unsent data events in the response.

 content:

 application/json:

 schema:

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

 '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".

 storeHandl:

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

 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.

 immReport:

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

#

 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".

 storeHandl:

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

 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.

 immReport:

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

#

 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'

 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.

 delAlert:

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

 termCause:

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

 pendDataNotifCause:

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

 reUserConsentPurs:

 type: array

 items:

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

 minItems: 1

 description: The purposes of data collection for which the user consent is revoked.

 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.

 delAlert:

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

 fetchInstruct:

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

 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]

 - required: [gmlcEvent]

 - required: [upfEvent]

 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'

 gmlcEvent:

 $ref: 'TS29515\_Ngmlc\_Location.yaml#/components/schemas/EventNotifyDataType'

 upfEvent:

 $ref: 'TS29564\_Nupf\_EventExposure.yaml#/components/schemas/EventType'

#

 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'

 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.

#

 StorageHandlingInformation:

 description: Contains storage handling information about data or analytics.

 type: object

 properties:

 lifetime:

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

 delNotifInd:

 type: boolean

 description: Indicates if deletion alerts are requested.

#

 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.

#

 TermCause:

 anyOf:

 - type: string

 enum:

 - USER\_CONSENT\_REVOKED

 - DCCF\_OVERLOAD

 - 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 cause for the subscription termination request by DCCF for data collection.

 Possible values are:

 - USER\_CONSENT\_REVOKED: The user consent has been revoked.

 - DCCF\_OVERLOAD: The DCCF is overloaded.

 - OTHER: Indicates that the termination is due to other reason.

 PendingDataNotifCause:

 anyOf:

 - type: string

 enum:

 - UE\_OUT\_OF\_DCCF\_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\_DCCF\_SERVING\_AREA: The UE moved out of the DCCF serving area.

 - OTHER: Other reason.

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