**3GPP TSG-CT3 Meeting #138 *C3-246191***

**Orlando, United States, 18th Nov 2024 - 22nd Nov 2024**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.575** | **CR** | **0101** | **rev** | **-** | **Current version:** | **19.0.0** |  |
|  |
| *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:***  | Adding LMF as analytics data source |
|  |  |
| ***Source to WG:*** | Nokia |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | AIML\_CN |  | ***Date:*** | 2024-11-11 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | According to S2-2410995, the NWDAF may collect data from the LMF using the Nlmf\_DataExposure service, which is defined in 29.572 (see C4-245353). |
|  |  |
| ***Summary of change:*** | Added Nlmf\_DataExposure to the possible analytics data sources. |
|  |  |
| ***Consequences if not approved:*** | Not fulfilled stage 2 requirement and not possible to retrieve data from LMF for analytics purposes. |
|  |  |
| ***Clauses affected:*** | 2, 3.3, 5.1.6.1, 5.1.6.2.8, 5.1.6.2.9, 5.1.8, A.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS/TR 23.288 CR 1253  |
| ***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 into the OpenAPI file of the Nadrf\_DataManagement API. |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\* First Change \*\*\*

2 References

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

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

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

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

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

[2] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

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

[7] 3GPP TR 21.900: "Technical Specification Group working methods".

[8] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[9] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[10] 3GPP TS 29.510: "5G System; Network Function Repository Services; Stage 3".

[11] IETF RFC 9113: "HTTP/2".

[12] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[13] IETF RFC 9457: "Problem Details for HTTP APIs"

[14] 3GPP TS 23.288: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

[15] 3GPP TS 29.520: "5G System; Network Data Analytics Services; Stage 3".

[16] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

[17] 3GPP TS 29.508: "5G System; Session Management Event Exposure Service; Stage 3".

[18] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".

[19] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".

[20] 3GPP TS 29.517: "5G System; Application Function Event Exposure Services; Stage 3".

[21] 3GPP TS 29.591: "5G System; Network Exposure Function Southbound Services; Stage 3".

[22] 3GPP TS 29.122: "T8 reference point for Northbound APIs".

[23] 3GPP TS 29.574: "5G System; Data Collection Coordination Services; Stage 3".

[24] 3GPP TS 29.576: "5G System; Messaging Framework Adaptor Services; Stage 3".

[25] 3GPP TS 29.536: "5G System; Network Slice Admission Control Services; Stage 3".

[26] 3GPP TS 29.564: "5G System; User Plane Function Services; Stage 3".

[27] 3GPP TS 29.515: "5G System; Gateway Mobile Location Services; Stage 3".

[28] 3GPP TS 29.552: "5G System; Network Data Analytics signalling flows; Stage 3".

[29] 3GPP TS 29.572: "5G System; Location Management Services; Stage 3".

\*\*\* Next Change \*\*\*

3.3 Abbreviations

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

ADRF Analytics Data Repository Function

AF Application Function

AMF Access and Mobility Management Function

DCCF Data Collection Coordination Function

GMLC Gateway Mobile Location Centre

LMF Location Management Function

MFAF Messaging Framework Adaptor Function

NEF Network Exposure Function

NF Network Function

NRF Network Repository Function

NWDAF Network Data Analytics Function

NSACF Network Slice Admission Control Function

SMF Session Management Function

UDM Unified Data Management

UPF User Plane Function

\*\*\* Next Change \*\*\*

5.1.6.1 General

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

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

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Clause defined** | **Description** | **Applicability** |
| DataNotification | 5.1.6.2.9 | Represents a data subscription notification of one of various possible data sources. |  |
| DataSetTag | 5.1.6.2.13 | Contains an identifier and a description of associated data or analytics records. | EnhDataMgmt |
| DataSubscription | 5.1.6.2.8 | Contains information about Data specification. |  |
| NadrfAlertNotification | 5.1.6.2.11 | Contains information about data or analytics that are about to be deleted. | EnhDataMgmt |
| NadrfAlertNotificationResponse | 5.1.6.2.12 | Contains information about the planned action upon receiving an alert. | EnhDataMgmt |
| NadrfDataRetrievalNotification | 5.1.6.2.5 | Represents a notification that corresponds with an Individual ADRF Data Retrieval Subscription resource. |  |
| NadrfDataRetrievalSubscription | 5.1.6.2.4 | Represents an Individual ADRF Data Retrieval Subscription resource. |  |
| NadrfDataStoreRecord | 5.1.6.2.2 | Represents an Individual ADRF Data Store Record resource. |  |
| NadrfDataStoreSubscription | 5.1.6.2.3 | Contains information to be used by the ADRF to create a Data or Analytics subscription. |  |
| NadrfDataStoreSubscriptionRef | 5.1.6.2.6 | Contains a reference to a request for a Data or Analytics subscription. |  |
| NadrfStoredDataSpec | 5.1.6.2.7 | Contains information about Data or Analytics specification. |  |
| StorageHandlingInfo | 5.1.6.2.10 | Contains storage handling information for data or analytics. | EnhDataMgmt |

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

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| AfEventExposureNotif | 3GPP TS 29.517 [20] | Represents notifications on AF event(s) that occurred for an Individual AF Event Subscription resource. |  |
| AfEventExposureSubsc | 3GPP TS 29.517 [20] | Represents AF event subscription. |  |
| AmfEventNotification | 3GPP TS 29.518 [18] | Represents notifications on AMF event(s) that occurred for an Individual AMF Event Subscription resource. |  |
| AmfEventSubscription | 3GPP TS 29.518 [18] | Represents AMF event subscription. |  |
| DurationSec | 3GPP TS 29.571 [16] | Unsigned integer identifying a period of time in units of seconds. | EnhDataMgmt |
| DateTime | 3GPP TS 29.571 [16] | Identifies the time. |  |
| EeSubscription | 3GPP TS 29.503 [19] | Represents UDM event subscription. |  |
| EventNotifyData | 3GPP TS 29.515 [27] | Represents GMLC event notification. | LocEvents |
| FetchInstruction | 3GPP TS 29.576 [24] | The fetch instruction indicates that the data or analytics can be fetched by the consumer. |  |
| FormattingInstruction | 3GPP TS 29.574 [23] | DCCF formatting Instructions. |  |
| InputData | 3GPP TS 29.515 [27] | Represents GMLC event subscription. | LocEvents |
| MonitoringReport | 3GPP TS 29.503 [19] | UDM Monitoring Report. |  |
| NefEventExposureNotif | 3GPP TS 29.591 [21] | Represents notifications on network exposure event(s) that occurred for an Individual Network Exposure Event Subscription resource. |  |
| NefEventExposureSubsc | 3GPP TS 29.591 [21] | Represents NEF event subscription. |  |
| NfInstanceId | 3GPP TS 29.571 [16] | NF instance identifier. |  |
| NfSetId | 3GPP TS 29.571 [16] | NF set identifier. |  |
| NnwdafEventsSubscription | 3GPP TS 29.520 [15] | Represents an NWDAF analytics subscription. |  |
| NnwdafEventsSubscriptionNotification | 3GPP TS 29.520 [15] | Represents an NWDAF analytics subscription notification. |  |
| NotificationData | 3GPP TS 29.510 [10] | Represents an NRF event notification. |  |
| NotificationData | 3GPP TS 29.564 [26] | Represents a UPF event notification. | UpEvents |
| LmfDataExposureNotification | 3GPP TS 29.572 [29] | Represents an LMF data exposure event notification. | LmfEvents |
| NsmfEventExposure | 3GPP TS 29.508 [17] | Represents SMF event subscription. |  |
| NsmfEventExposureNotification | 3GPP TS 29.508 [17] | Represents SMF event notification. |  |
| ProcessingInstruction | 3GPP TS 29.574 [23] | DCCF processing Instructions. |  |
| SACEventReport | 3GPP TS 29.536 [25] | Represents an NSACF event notification. |  |
| SACEventSubscription | 3GPP TS 29.536 [25] | Represents and NSACF event subscription. |  |
| SubscriptionData | 3GPP TS 29.510 [10] | Represents an NRF event subscription. |  |
| LmfDataExposureSubscription | 3GPP TS 29.572 [29] | Represents an LMF data exposure subscription. | LmfEvents |
| SupportedFeatures | 3GPP TS 29.571 [6] | Used to negotiate the applicability of the optional features defined in table 5.1.8-1. |  |
| TimeWindow | 3GPP TS 29.122 [22] | Represents a time window. |  |
| UpfEventSubscription | 3GPP TS 29.564 [26] | Represents a UPF event subscription. | UpEvents |
| Uri | 3GPP TS 29.571 [16] | URI. |  |

\*\*\* Next Change \*\*\*

5.1.6.2.8 Type: DataSubscription

**Table 5.1.6.2.8-1: Definition of type DataSubscription**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| amfDataSub | AmfEventSubscription | C | 0..1 | Represents requested AMF Events subscription.(NOTE) |  |
| smfDataSub | NsmfEventExposure | C | 0..1 | Represents requested SMF Events subscription.(NOTE) |  |
| udmDataSub | EeSubscription | C | 0..1 | Represents requested UDM Events subscription.(NOTE) |  |
| nefDataSub | NefEventExposureSubsc | C | 0..1 | Represents requested NEF Events subscription.(NOTE) |  |
| afDataSub | AfEventExposureSubsc | C | 0..1 | Represents requested AF Events subscription.(NOTE) |  |
| nrfDataSub | SubscriptionData | C | 0..1 | Represents requested NRF Events subscription.(NOTE) |  |
| nsacfDataSub | SACEventSubscription | C | 0..1 | Represents requested NSACF Events subscription.(NOTE) |  |
| upfDataSub | UpfEventSubscription | C | 0..1 | Represents requested UPF Events subscription.(NOTE) | UpEvents |
| gmlcDataSub | InputData | C | 0..1 | Represents requested GMLC Events subscription.(NOTE) | LocEvents |
| lmfDataSub | LmfDataExposureSubscription | C | 0..1 | Represents requested LMF Events subscription.(NOTE) | LmfEvents |
| NOTE: Exactly one of these attributes shall be provided. |

\*\*\* Next Change \*\*\*

5.1.6.2.9 Type: DataNotification

**Table 5.1.6.2.9-1: Definition of type DataNotification**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| afEventNotifs | array(AfEventExposureNotif) | C | 1..N | List of notifications on AF event(s). (NOTE 1) |  |
| amfEventNotifs | array(AmfEventNotification) | C | 1..N | List of notifications on AMF event(s). (NOTE 1) |  |
| gmlcEventNotifs | array(EventNotifyData) | C | 1..N | List of notifications on GMLC event(s). (NOTE 1) | LocEvents |
| smfEventNotifs | array(NsmfEventExposureNotification) | C | 1..N | List of notifications on SMF event(s). (NOTE 1) |  |
| udmEventNotifs | array(MonitoringReport) | C | 1..N | List of monitoring reports containing information about UDM event(s). (NOTE 1) |  |
| nefEventNotifs | array(NefEventExposureNotif) | C | 1..N | List of notifications on network exposure event(s). (NOTE 1) |  |
| nrfEventNotifs | array(NotificationData) | C | 1..N | List of notifications on NRF event(s) as defined in 3GPP TS 29.510 [10]. (NOTE 1) |  |
| nsacfEventNotifs | array(SACEventReport) | C | 1..N | List of notifications on NSACF event(s). (NOTE 1) |  |
| upfEventNotifs | array(NotificationData) | C | 1..N | List of notifications on UPF event(s) as defined in 3GPP TS 29.564 [26]. (NOTE 1) | UpEvents |
| lmfEventNotifs | array(LmfDataExposureNotification) | C | 1..N | List of notifications on LMF event(s). (NOTE 1) | LmfEvents |
| timeStamp | DateTime | O | 0..1 | Indicates the timestamp for the event(s). (NOTE 2) |  |
| NOTE 1: Exactly one of these attributes shall be provided.NOTE 2: The "timeStamp" attribute within the DataNotification data type may be provided in the case of NRF events or if any of the "timeStamp" attribute within AfEventNotification contained in the AfEventExposureNotif, or within AmfEventReport contained in the AmfEventNotification, or within EventNotification contained in the NsmfEventExposureNotification, or within MonitoringReport, or within NefEventNotification contained in the NefEventExposureNotif, or within SACEventReportItem contained in the SACEventReport, or, if the UpEvents feature is supported, within the NotificationItem contained in the NotificationData data type, or, if the LocEvents feature is supported, the "timestampOfLocationEstimate" attribute within EventNotifyData, or, if the LmfEvents feature is supported, the "timeStamp" attribute within the LmfDataExposureNotification, is not provided. |

\*\*\* Next Change \*\*\*

5.1.8 Feature negotiation

The optional features in table 5.1.8-1 are defined for the Nadrf\_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 | MultiProcessingInstruction | Indicates the support of multiple processing instructions. |
| 2 | UpEvents | Indicates the support of UPF events. |
| 3 | EnhDataMgmt | Indicates the support of enhanced data management mechanisms. |
| 4 | LocEvents | This feature indicates the support of location events from the GMLC. |
| 5 | LmfEvents | This feature indicates the support of LMF data exposure events. |

\*\*\* Next Change \*\*\*

A.2 Nadrf\_DataManagement API

openapi: 3.0.0

info:

 version: 1.1.0

 title: Nadrf\_DataManagement

 description: |

 ADRF Data Management Service.

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externalDocs:

 description: 3GPP TS 29.575 V18.6.0; 5G System; Analytics Data Repository Services; Stage 3.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.575/'

#

servers:

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

 variables:

 apiRoot:

 default: https://example.com

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

#

security:

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - {}

#

paths:

 /data-store-records:

 post:

 summary: Creates a new Individual Data Store Record resource.

 operationId: CreateADRFDataStoreRecord

 tags:

 - ADRF Data Store Records (Collection)

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 description: ADRF data store record to be stored.

 responses:

 '201':

 description: Successful creation of new Individual ADRF Data Store Record resource.

 headers:

 Location:

 description: >

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

 {apiRoot}/nadrf-datamanagement/<apiVersion>/data-store-records/{storeTransId}

 required: true

 schema:

 type: string

 content:

 application/json:

 schema:

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

 '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:

 storageAlertNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: The alert receipt is acknowledged and a planned action is provided.

 content:

 application/json:

 schema:

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

 '204':

 description: The alert receipt 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'

 get:

 summary: Retrieves existing Individual ADRF Data Store Records.

 operationId: GetAdrfDataStoreRecords

 tags:

 - ADRF Data Store Records (Collection)

 security:

 - {}

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - nadrf-datamanagement:storage-read-delete-subs

 parameters:

 - name: store-trans-id

 description: A storage transaction identifier of a data store record in ADRF.

 in: query

 required: false

 schema:

 type: string

 - name: fetch-correlation-ids

 description: Fetch correlation identifiers received as part of fetch instruction.

 in: query

 required: false

 style: form

 explode: false

 schema:

 type: array

 items:

 type: string

 minItems: 1

 - name: data-set-id

 description: The data set identifier.

 in: query

 required: false

 schema:

 type: string

 responses:

 '200':

 description: Data store records are returned.

 content:

 application/json:

 schema:

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

 '204':

 description: No matching ADRF data were found.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '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-store-records/{storeTransId}:

 delete:

 summary: Delete an existing Individual ADRF Data Store Record.

 operationId: DeleteADRFDataStoreRecord

 tags:

 - Individual ADRF Data Store Record (Document)

 security:

 - {}

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - nadrf-datamanagement:storage-read-delete-subs

 parameters:

 - name: storeTransId

 in: path

 description: String identifying a Data Store Record in ADRF.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 No Content. The Individual ADRF Data Store Record resource matching the

 storeTransId 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'

 /data-retrieval-subscriptions:

 post:

 summary: Creates a new Individual ADRF Data Retrieval Subscription resource.

 operationId: CreateADRFDataRetrievalSubscription

 tags:

 - ADRF Data Retrieval Subscriptions (Collection)

 security:

 - {}

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - nadrf-datamanagement:storage-read-delete-subs

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 description: Individual ADRF Data Retrieval Subscription resource to be created.

 responses:

 '201':

 description: Created a new Individual ADRF Data Retrieval Subscription resource.

 headers:

 Location:

 description: >

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

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

 required: true

 schema:

 type: string

 content:

 application/json:

 schema:

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

 '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:

 adrfDataRetrievalNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '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'

 /data-retrieval-subscriptions/{subscriptionId}:

 delete:

 summary: Delete an existing Individual ADRF Data Retrieval Subscription resource.

 operationId: DeleteADRFDataRetrievalSubscription

 tags:

 - Individual ADRF Data Retrieval Subscription (Document)

 security:

 - {}

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - nadrf-datamanagement:storage-read-delete-subs

 parameters:

 - name: subscriptionId

 in: path

 description: >

 String identifying a data retrieval subscription to the Nadrf\_DataManagement

 Service.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 No Content. The Individual ADRF Data Retrieval 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'

 /request-storage-sub:

 post:

 summary: Triggers the creation of a new ADRF Storage Subscription.

 operationId: CreateADRFStorageSubscription

 tags:

 - ADRF Storage Subscriptions

 security:

 - {}

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - nadrf-datamanagement:storage-read-delete-subs

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '200':

 description: >

 Successful response with reference used to identify the subscription at the ADRF.

 content:

 application/json:

 schema:

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

 '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:

 storageSubAlertNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: The alert receipt is acknowledged and a planned action is provided.

 content:

 application/json:

 schema:

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

 '204':

 description: The alert receipt 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'

 /request-storage-sub-removal:

 post:

 summary: Triggers the removal of ADRF storage subscription.

 operationId: DeleteADRFStorageSubscription

 tags:

 - ADRF Storage Subscriptions

 security:

 - {}

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - nadrf-datamanagement:storage-read-delete-subs

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '204':

 description: >

 No Content. The ADRF Storage Subscription matching the provided reference 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'

 '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'

 /remove-stored-data-analytics:

 post:

 summary: Remove ADRF data based on data or analytics specification.

 operationId: DeleteADRFData

 tags:

 - ADRF Stored Data

 security:

 - {}

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - oAuth2ClientCredentials:

 - nadrf-datamanagement

 - nadrf-datamanagement:storage-read-delete-subs

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '204':

 description: No Content. The ADRF data matching the provided specification is 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'

 '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:

 nadrf-datamanagement: Access to the nadrf-datamanagement API

 nadrf-datamanagement:storage-read-delete-subs: >

 Access to service operations applying to

 Nadrf\_DataManagement\_StorageRequest Nadrf\_DataManagement\_StorageSubscriptionRequest,

 Nadrf\_DataManagement\_StorageSubscriptionRemoval,

 Nadrf\_DataManagement\_RetrievalRequest,

 Nadrf\_DataManagement\_RetrievalSubscribe, Nadrf\_DataManagement\_RetrievalUnsubscribe,

 Nadrf\_DataManagement\_RetrievalNotify, Nadrf\_DataManagement\_Delete service operations

#

 schemas:

#

 NadrfDataStoreRecord:

 description: Represents an Individual ADRF Data Store Record.

 type: object

 oneOf:

 - allOf:

 - required: [anaSub]

 - required: [anaNotifications]

 - allOf:

 - required: [dataSub]

 - required: [dataNotif]

 properties:

 dataNotif:

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

 anaNotifications:

 type: array

 items:

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

 minItems: 1

 description: List of analytics subscription notifications.

 anaSub:

 type: array

 items:

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

 minItems: 1

 description: >

 Represents the subscription information of the corresponding analytics notification.

 dataSub:

 type: array

 items:

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

 minItems: 1

 description: >

 Represents the subscription information of the corresponding data notification.

 storeHandl:

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

 dataSetTag:

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

 dsc:

 type: string

 description: Data synthesis and compression information.

 suppFeat:

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

#

 NadrfDataStoreSubscription:

 description: >

 Contains information to be used by the ADRF to create a Data or Analytics subscription.

 type: object

 allOf:

 - oneOf:

 - required: [anaSub]

 - required: [dataSub]

 - oneOf:

 - required: [targetNfId]

 - required: [targetNfSetId]

 properties:

 anaSub:

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

 dataSetTag:

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

 dataSub:

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

 targetNfId:

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

 targetNfSetId:

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

 formatInstruct:

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

 procInstruct:

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

 multiProcInstructs:

 type: array

 items:

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

 minItems: 1

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

 storeHandl:

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

 suppFeat:

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

#

 NadrfDataRetrievalSubscription:

 description: Represents an Individual ADRF Data Retrieval Subscription.

 type: object

 required:

 - notifCorrId

 - notificationURI

 - timePeriod

 oneOf:

 - required: [anaSub]

 - required: [dataSub]

 - required: [dataSetId]

 properties:

 anaSub:

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

 dataSetId:

 type: string

 description: data set identifier of the data or analytics that are subscribed.

 dataSub:

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

 notificationURI:

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

 timePeriod:

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

 notifCorrId:

 type: string

 description: Notification correlation identifier.

 consTrigNotif:

 type: boolean

 description: >

 It indicates that notifications shall be buffered (sending only fetch instructions

 to the NF service consumer) until the NF service consumer requests their delivery

 using Nadrf\_DataManagement Service.

 suppFeat:

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

#

 NadrfDataRetrievalNotification:

 description: >

 Represents a notification that corresponds with an Individual ADRF Data

 Retrieval Subscription.

 type: object

 required:

 - notifCorrId

 - timeStamp

 oneOf:

 - required: [anaNotifications]

 - required: [dataNotif]

 - required: [fetchInstruct]

 properties:

 notifCorrId:

 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.

 dataNotif:

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

 fetchInstruct:

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

 terminationReq:

 type: boolean

 description: >

 It indicates the termination of the data management subscription that requested by the

 ADRF.

 dsc:

 type: string

 description: Data synthesis and compression information.

 timeStamp:

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

#

 NadrfDataStoreSubscriptionRef:

 description: Contains a reference to a request for a Data or Analytics subscription.

 type: object

 oneOf:

 - required: [transRefId]

 - required: [dataSetId]

 properties:

 transRefId:

 type: string

 description: Transaction reference identifier.

 dataSetId:

 type: string

 description: data set identifier of data or analytics.

#

 NadrfStoredDataSpec:

 description: Contains information about Data or Analytics specification.

 type: object

 required:

 - timePeriod

 oneOf:

 - required: [dataSpec]

 - required: [anaSpec]

 - required: [dataSetId]

 properties:

 dataSpec:

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

 anaSpec:

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

 timePeriod:

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

 dataSetId:

 type: string

 description: Data set identifier of stored data or analytics records.

#

 DataSubscription:

 description: Contains a data specification.

 type: object

 oneOf:

 - required: [amfDataSub]

 - required: [smfDataSub]

 - required: [udmDataSub]

 - required: [nefDataSub]

 - required: [afDataSub]

 - required: [nrfDataSub]

 - required: [nsacfDataSub]

 - required: [upfDataSub]

 - required: [gmlcDataSub]

 - required: [lmfDataSub]

 properties:

 amfDataSub:

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

 smfDataSub:

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

 udmDataSub:

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

 afDataSub:

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

 nefDataSub:

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

 nrfDataSub:

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

 nsacfDataSub:

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

 upfDataSub:

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

 gmlcDataSub:

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

 lmfDataSub:

 $ref: 'TS29572\_Nlmf\_DataExposure.yaml#/components/schemas/LmfDataExposureSubscription'

#

 DataNotification:

 description: Represents a Data Subscription Notification.

 type: object

 oneOf:

 - required: [amfEventNotifs]

 - required: [smfEventNotifs]

 - required: [udmEventNotifs]

 - required: [nefEventNotifs]

 - required: [afEventNotifs]

 - required: [nrfEventNotifs]

 - required: [nsacfEventNotifs]

 - required: [upfEventNotifs]

 - required: [gmlcEventNotifs]

 - required: [lmfEventNotifs]

 properties:

 amfEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of AMF events.

 smfEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of SMF events.

 udmEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of UDM events.

 nefEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of NEF events.

 afEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of AF events.

 nrfEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of NRF events.

 nsacfEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of NSACF events.

 upfEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of UPF events.

 gmlcEventNotifs:

 type: array

 items:

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

 minItems: 1

 description: List of notifications of GMLC events.

 lmfEventNotifs:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_DataExposure.yaml#/components/schemas/LmfDataExposureNotification'

 minItems: 1

 description: List of notifications of LMF events.

 timeStamp:

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

#

 StorageHandlingInfo:

 description: Contains storage handling information about data or analytics.

 type: object

 properties:

 lifetime:

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

 delNotifUri:

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

 delNotifCorrId:

 type: string

 description: Notification correlation identifier for deletion alerts.

#

 NadrfAlertNotification:

 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.

 delNotifCorrId:

 type: string

 description: Notification correlation identifier.

 required:

 - alertStorTransId

 - delNotifCorrId

#

 NadrfAlertNotificationResponse:

 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 the data

 or analytics that are about to be deleted.

 required:

 - retrievalInd

#

 DataSetTag:

 description: Contains an identifier and a description of associated records.

 type: object

 required:

 - dataSetId

 properties:

 dataSetId:

 type: string

 description: Data set identifier of data or analytics records.

 dataSetDesc:

 type: string

 description: Data set description of data or analytics records.

#

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