**3GPP TSG-CT WG3 Meeting #134 *C3-242227\_R3***

**Changsha, China, 15th – 19th April, 2024**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.548** | **CR** | **0005** | **rev** | **-** | **Current version:** | **18.0.0** |  |
|  |
| *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:***  | The support of a timestamp indication in notification reports |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | SEALDD |  | ***Date:*** | 2024-03-20 |
|  |  |  |  |  |
| ***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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | The design of notifications in SEALDD layer allows to provide multiple reports in a single notification. This design may be compliment with additional data about when each individual event occurred in order to provide the echanced information about the event. |
|  |  |
| ***Summary of change:*** | This pCR introduce the support of a timestamp in notification report as a Stage 3 enhancement. |
|  |  |
| ***Consequences if not approved:*** | The notifications that may contain several separate event reports are not enhanced to support the possibility to include a per-report/event timestamp. |
|  |  |
| ***Clauses affected:*** | 6.1.6.1, 6.1.6.2.11, 6.4.6.2.6, A.2, A.5 |
|  |  |
|  | **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 addresses provides the backwards compatible feature for the SDD\_Transmission API, SDD\_TransmissionQualityMeasurement API.
 |
| ***()*** |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

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

#### 6.1.6.1 General

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

Table 6.1.6.1-1 specifies the data types defined for the SDD\_Transmission API.

Table 6.1.6.1-1: SDD\_Transmission API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| ConnEstabData | 6.1.6.2.12 | Represents SEALDD connection status establishment data. |  |
| ConnStatusEvent | 6.1.6.3.3 | Represents Connection Status Events. |  |
| ConnInfo | 6.1.6.2.4 | Represents SEALDD Data transmission connection information. |  |
| ConnStatusNotif | 6.1.6.2.10 | Represents a Connection Status Notification. |  |
| ConnStatusReport | 6.1.6.2.11 | Represents a Connection Status Event report. |  |
| ConnStatusSubsc | 6.1.6.2.8 | Represents a Connection Status Subscription. |  |
| ConnStatusSubscPatch | 6.1.6.2.9 | Represents the requested modifications to a Connection Status Subscription. |  |
| QoSInfo | 6.1.6.2.5 | Represents SEALDD related QoS requirements. |  |
| TransReq | 6.1.6.2.2 | Represents the parameters to request the SEALDD enabled regular or URLLC application data transmission service. |  |
| TransResp | 6.1.6.2.3 | Represents a SEALDD enabled regular or URLLC application data transmission service response. |  |
| TransType | 6.1.6.3.4 | Represents the requested transmission type (i.e., Regular transmission or URLLC transmission). |  |
| ValServBdw | 6.1.6.2.6 | Represents VAL Server related bandwidth information. |  |
| ValUsersBdw | 6.1.6.2.7 | Represents VAL users related bandwidth information. |  |

Table 6.1.6.1-2 specifies data types re-used by the SDD\_Transmission API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the SDD\_Transmission API.

Table 6.1.6.1-2: SDD\_Transmission API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AlternativeServiceRequirementsData | 3GPP TS 29.514 [19] | Represents alternative QoS related parameters. |  |
| Bandwidth | 3GPP TS 29.122 [2] | Represents a bandwidth. |  |
| DateTime | 3GPP TS 29.122 [2] | Represents a date and a time. |  |
| DurationSec | 3GPP TS 29.122 [2] | Represents a time duration in seconds. |  |
| Ipv4Addr | 3GPP TS 29.122 [2] | Represents an IPv4 address. |  |
| Ipv6Addr | 3GPP TS 29.122 [2] | Represents an IPv6 address. |  |
| Port | 3GPP TS 29.122 [2] | Represents an IP port. |  |
| SupportedFeatures | 3GPP TS 29.571 [18] | Represents the list of supported feature(s) and used to negotiate the applicability of the optional features. |  |
| Uri | 3GPP TS 29.122 [2] | Represents a URI. |  |
| ValTargetUe | 3GPP TS 29.549 [15] | Represents the identifier of the targeted VAL UE or VAL user. |  |

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

##### 6.1.6.2.11 Type: ConnStatusReport

Table 6.1.6.2.11-1: Definition of type ConnStatusReport

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | ConnStatusEvent | M | 1 | Represents the connection status event. |  |
| valTgtUe | ValTargetUe | M | 1 | Represents the VAL UE or VAL user to which the SEALDD connection status report is related. |  |
| valServiceId | string | M | 1 | Represents the identity of the VAL service to which the SEALDD connection status report is related. |  |
| connEstData | ConnEstabData | C | 0..1 | Represents the SEALDD connection establishment data.This attribute shall be present only if the "event" attribute is set to "ESTABLISHED". |  |
| timestamp | DateTime | O | 0..1 | Contains the timestamp of this connection status report. |  |

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

##### 6.4.6.2.6 Type: TransQualMeasReport

Table 6.4.6.2.6-1: Definition of type TransQualMeasReport

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| measId | array(MeasurementId) | M | 1..N | Contains the reported transmission quality measurement(s). |  |
| valUeIds | array(string) | C | 1..N | Contains the list of the identifier(s) of the VAL UE(s) to which the transmission quality measurement report is related.(NOTE) |  |
| valUserIds | array(string) | C | 1..N | Contains the list of the identifier(s) of the VAL user(s) to which the transmission quality measurement report is related.(NOTE) |  |
| measData | TransQualMeasData | O | 0..1 | Contains the reported transmission quality measurement data. |  |
| timestamp | DateTime | O | 0..1 | Contains the timestamp of this transmission quality measurement(s) report. |  |
| NOTE: These attributes are mutually exclusive. Either one of them shall be present, unless the corresponding subscription is for a single VAL UE/user, in which case they may not be present. |

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

# A.2 SDD\_Transmission API

openapi: 3.0.0

info:

 title: SEALDD Server Data Transmission Service

 version: 1.0.0-alpha.5

 description: |

 SEALDD Server Data Transmission Service.

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externalDocs:

 description: >

 3GPP TS 29.548 V1.1.0; Service Enabler Architecture Layer for Verticals (SEAL);

 SEAL Data Delivery (SEALDD) Server Services; Stage 3.

 url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.548/

servers:

 - url: '{apiRoot}/sdd-trans/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /{transType}/request-trans:

 parameters:

 - name: transType

 in: path

 description: >

 Represents the requested transmission type.

 required: true

 schema:

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

 post:

 summary: Request SEALDD enabled Regular or URLLC Data Transmission.

 operationId: RequestTrans

 tags:

 - Request SEALDD Data Transmission

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The SEALDD enabled Regular or URLLC application data transmission service request

 was successfully received and processed.

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /subscriptions:

 post:

 summary: Request the Creation of a new Connection Status Subscription.

 operationId: CreateConnStatusSubsc

 tags:

 - Connection Status Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Successful case. The requested Connection Status Subscription resource is successfully

 created and a representation of the created "Individual Connection Status Subscription"

 resource is returned in the response body.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the newly created Individual Connection Status Subscription

 resource.

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 callbacks:

 ConnStatusNotif:

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

 post:

 summary: Notify a previously subscribed service consumer on SEALDD connection status event(s).

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 Successful case. The Connection Status Notification is successfully received.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /subscriptions/{subscriptionId}:

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of the Individual Connection Status Subscription resource.

 required: true

 schema:

 type: string

 get:

 summary: Retrieve an existing Individual Connection Status Subscription resource.

 operationId: GetIndConnStatusSubsc

 tags:

 - Individual Connection Status Subscription (Document)

 responses:

 '200':

 description: >

 OK. The requested Individual Connection Status Subscription resource shall be returned.

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 put:

 summary: Request the update of an existing Individual Connection Status Subscription resource.

 operationId: UpdateIndConnStatusSubsc

 tags:

 - Individual Connection Status Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Connection Status Subscription resource is successfully updated and

 a representation of the updated resource shall be returned in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Connection Status Subscription resource is successfully

 updated and no content is returned in the response body.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 patch:

 summary: Request the modification of an existing Individual Connection Status Subscription resource.

 operationId: ModifyIndConnStatusSubsc

 tags:

 - Individual Connection Status Subscription (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Connection Status Subscription resource is successfully modified

 and a representation of the updated resource shall be returned in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Connection Status Subscription resource is successfully

 modified and no content is returned in the response body.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 delete:

 summary: Request the deletion of an existing Individual Connection Status Subscription resource.

 operationId: DeleteIndConnStatusSubsc

 tags:

 - Individual Connection Status Subscription (Document)

 responses:

 '204':

 description: >

 No Content. The Individual Connection Status Subscription resource is successfully

 deleted.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 TransReq:

 description: >

 Represents the parameters to request the SEALDD enabled Regular or URLLC application data

 transmission service.

 type: object

 properties:

 valServiceId:

 type: string

 valTargetId:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 valServerConnInfo:

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

 qosInfo:

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

 valServerBdw:

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

 valUsersBdw:

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

 suppFeat:

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

 required:

 - valServerConnInfo

 TransResp:

 description: >

 Represents a SEALDD enabled Regular or URLLC application data transmission service response.

 type: object

 properties:

 ddServerConnInfo:

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

 suppFeat:

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

 ConnInfo:

 description: >

 Represents SEALDD Data transmission connection information.

 type: object

 properties:

 ipv4Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 ipv6Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 port:

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

 uri:

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

 oneOf:

 - required: [ipv4Addr]

 - required: [ipv6Addr]

 - required: [uri]

 QosInfo:

 description: >

 Represents SEALDD related QoS requirements.

 type: object

 properties:

 qosReference:

 type: string

 altQoSReferences:

 type: array

 items:

 type: string

 minItems: 1

 altQosReqs:

 type: array

 items:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/AlternativeServiceRequirementsData'

 minItems: 1

 anyOf:

 - required: [qosReference]

 - required: [altQoSReferences]

 - required: [altQosReqs]

 - not:

 required: [altQoSReferences, altQosReqs]

 - not:

 required: [qosReference, altQosReqs]

 ValServBdw:

 description: >

 Represents VAL Server related bandwidth information.

 type: object

 properties:

 totalUlBdw:

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

 totalDlBdw:

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

 required:

 - totalUlBdw

 - totalDlBdw

 ValUsersBdw:

 description: >

 Represents VAL users related bandwidth information.

 type: object

 properties:

 minUlBdw:

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

 minDlBdw:

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

 maxUlBdw:

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

 maxDlBdw:

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

 required:

 - minUlBdw

 - minDlBdw

 - maxUlBdw

 - maxDlBdw

 ConnStatusSubsc:

 description: >

 Represents a Connection Status Subscription.

 type: object

 properties:

 events:

 type: array

 items:

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

 minItems: 1

 description: >

 Represents the subscribed event(s).

 valServiceId:

 type: string

 valTgtUe:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 valServerConnInfo:

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

 notifUri:

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

 expTime:

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

 suppFeat:

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

 required:

 - events

 - valServerConnInfo

 - notifUri

 ConnStatusSubscPatch:

 description: >

 Represents the requested modifications to a Connection Status Subscription.

 type: object

 properties:

 events:

 type: array

 items:

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

 minItems: 1

 valServiceId:

 type: string

 valTgtUe:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 valServerConnInfo:

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

 notifUri:

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

 ConnStatusNotif:

 description: >

 Represents a Connection Status Notification.

 type: object

 properties:

 subscriptionId:

 type: string

 reports:

 type: array

 items:

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

 minItems: 1

 required:

 - subscriptionId

 - reports

 ConnStatusReport:

 description: >

 Represents a Connection Status Event report.

 type: object

 properties:

 event:

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

 valTgtUe:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 valServiceId:

 type: string

 connEstData:

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

 timestamp:

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

 required:

 - event

 - valTgtUe

 - valServiceId

 ConnEstabData:

 description: >

 Represents SEALDD connection status establishment data.

 type: object

 properties:

 ddServerConnInfo:

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

 comLifetime:

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

 required:

 - ddServerConnInfo

# SIMPLE DATA TYPES

#

#

# ENUMERATIONS

#

 ConnStatusEvent:

 anyOf:

 - type: string

 enum:

 - ESTABLISHED

 - RELEASED

 - type: string

 description: >

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

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

 description: |

 Represents Connection Status Events.

 Possible values are:

 - ESTABLISHED: Indicates that the SEALDD connection is established.

 - RELEASED: Indicates that the SEALDD connection is released.

 TransType:

 anyOf:

 - type: string

 enum:

 - regular

 - urllc

 - type: string

 description: >

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

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

 description: |

 Represents the requested transmission type.

 Possible values are:

 - regular: Indicates that the requested transmission type is Regular transmission.

 - urllc: Indicates that the requested transmission type is URLLC transmission.

# Data types describing alternative data types or combinations of data types:

#

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

# A.5 SDD\_TransmissionQualityMeasurement API

openapi: 3.0.0

info:

 title: SEALDD Server Data Transmission Quality Measurement Service

 version: 1.0.0-alpha.6

 description: |

 SEALDD Server Data Transmission Quality Measurement Service.

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externalDocs:

 description: >

 3GPP TS 29.548 V1.1.0; Service Enabler Architecture Layer for Verticals (SEAL);

 SEAL Data Delivery (SEALDD) Server Services; Stage 3.

 url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.548/

servers:

 - url: '{apiRoot}/sdd-tqm/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /subscriptions:

 post:

 summary: Request the creation of a Transmission Quality Measurement Subscription.

 operationId: CreateTransQualMeasSubsc

 tags:

 - Transmission Quality Measurement Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. The Transmission Quality Measurement Subscription is successfully created

 and a representation of the created Individual Transmission Quality Measurement

 Subscription resource shall be returned.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the created Individual Transmission Quality Measurement

 Subscription resource.

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 callbacks:

 TransQualMeasNotif:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The Transmission Quality Measurement notification is successfully

 received and acknowledged.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /subscriptions/{subscriptionId}:

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of the Individual Transmission Quality Measurement Subscription

 resource.

 required: true

 schema:

 type: string

 get:

 summary: Retrieve an existing Individual Transmission Quality Measurement Subscription resource.

 operationId: GetIndTransQualMeasSubsc

 tags:

 - Individual Transmission Quality Measurement Subscription (Document)

 responses:

 '200':

 description: >

 OK. The requested Individual Transmission Quality Measurement Subscription resource

 shall be returned.

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 put:

 summary: Request the update of an existing Individual Transmission Quality Measurement Subscription resource.

 operationId: UpdateIndTransQualMeasSubsc

 tags:

 - Individual Transmission Quality Measurement Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Transmission Quality Measurement Subscription resource is

 successfully updated and a representation of the updated resource shall be returned in

 the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Transmission Quality Measurement Subscription resource is

 successfully updated and no content is returned in the response body.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 patch:

 summary: Request the modification of an existing Individual Transmission Quality Measurement Subscription resource.

 operationId: ModifyIndTransQualMeasSubsc

 tags:

 - Individual Transmission Quality Measurement Subscription (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Transmission Quality Measurement Subscription resource is

 successfully modified and a representation of the updated resource shall be returned in

 the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Transmission Quality Measurement Subscription resource is

 successfully modified and no content is returned in the response body.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 delete:

 summary: Request the deletion of an existing Individual Transmission Quality Measurement Subscription resource.

 operationId: DeleteIndTransQualMeasSubsc

 tags:

 - Individual Transmission Quality Measurement Subscription (Document)

 responses:

 '204':

 description: >

 No Content. The Individual Transmission Quality Measurement Subscription resource is

 successfully deleted.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /reports:

 get:

 summary: Retrieve Historical Transmission Quality Measurement Report(s).

 operationId: GetHistTransQualMeasReports

 tags:

 - Historical Transmission Quality Measurement Reports (Collection)

 parameters:

 - name: app-traffic-ids

 in: query

 required: true

 schema:

 type: array

 items:

 type: string

 minItems: 1

 - name: val-group-id

 in: query

 required: false

 schema:

 type: string

 - name: val-ue-ids-list

 in: query

 required: false

 schema:

 type: array

 items:

 type: string

 minItems: 1

 - name: all-val-ues

 in: query

 required: false

 schema:

 type: boolean

 default: false

 description: >

 Indicates that the request is related to all VAL UE(s) of the application traffic

 identified by the application traffic identifier(s) provided within the

 appTrafficIds attribute.

 true indicates that the request is related to all VAL UE(s).

 false" indicates that the request is not related to all VAL UE(s).

 The default value when this query parameter is omitted is false.

 - name: supp-feat

 in: query

 required: false

 schema:

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

 responses:

 '200':

 description: >

 OK. The requested Historical Transmission Quality Measurement Report(s) shall be

 returned.

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 TransQualMeasSubsc:

 description: >

 Represents a Transmission Quality Measurement Subscription.

 type: object

 properties:

 appTrafficIds:

 type: array

 items:

 type: string

 minItems: 1

 valGroupId:

 type: string

 valUeIdsList:

 type: array

 items:

 type: string

 minItems: 1

 valUserIdsList:

 type: array

 items:

 type: string

 minItems: 1

 allValUesInd:

 type: boolean

 default: false

 measConds:

 type: array

 items:

 $ref: 'TS29549\_SS\_Events.yaml#/components/schemas/ValidityConditions'

 minItems: 1

 reqs:

 type: object

 additionalProperties:

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

 minProperties: 1

 nullable: true

 description: >

 Represents the transmission quality measurement reporting requirements of the

 subscription.

 The key of the map shall be any unique string encoded value.

 subsExpTime:

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

 notifUri:

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

 suppFeat:

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

 required:

 - appTrafficIds

 - reqs

 - notifUri

 oneOf:

 - required: [valGroupId]

 - required: [valUeIdsList]

 - required: [valUserIdsList]

 - required: [allValUesInd]

 TransQualMeasReq:

 description: >

 Represents Transmission Quality Measurement requirements.

 type: object

 properties:

 measId:

 type: array

 items:

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

 minItems: 1

 repType:

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

 repPeriodicity:

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

 repGranularity:

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

 measWindow:

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

 measExpTime:

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

 repCriteriaSets:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains one or several set(s) of transmission quality measurement reporting

 criteria.

 The key of the map shall be any unique string encoded value.

 Only the criteria related to the subscribed measurement(s) within the measId attribute

 shall be present within this attribute.

 required:

 - measId

 TransQualMeasSubscPatch:

 description: >

 Represents the requested modifications to a Transmission Quality Measurement Subscription.

 type: object

 properties:

 measConds:

 type: array

 items:

 $ref: 'TS29549\_SS\_Events.yaml#/components/schemas/ValidityConditions'

 minItems: 1

 reqs:

 type: object

 additionalProperties:

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

 minProperties: 1

 nullable: true

 description: >

 Represents the transmission quality measurement reporting requirements of the

 subscription.

 The key of the map shall be any unique string encoded value and shall be set to the same

 value as the one provided during the creation of the transmission quality measurement

 subscription.

 notifUri:

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

 TransQualMeasNotif:

 description: >

 Represents a Transmission Quality Measurement Notification.

 type: object

 properties:

 subscriptionId:

 type: string

 reports:

 type: array

 items:

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

 minItems: 1

 required:

 - subscriptionId

 - reports

 TransQualMeasReport:

 description: >

 Represents a Transmission Quality Measurement report.

 type: object

 properties:

 measId:

 type: array

 items:

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

 minItems: 1

 valUeIds:

 type: array

 items:

 type: string

 minItems: 1

 valUserIds:

 type: array

 items:

 type: string

 minItems: 1

 measData:

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

 timestamp:

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

 required:

 - measId

 not:

 required: [valUeIds, valUserIds]

 TransQualMeasCriteria:

 description: >

 Represents the Transmission Quality Measurement reporting criteria.

 type: object

 properties:

 minLatency:

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

 avgLatency:

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

 maxLatency:

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

 minBitRate:

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

 avgBitRate:

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

 maxBitRate:

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

 minPackLossRate:

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

 avgPackLossRate:

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

 maxPackLossRate:

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

 minJitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 avgJitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 maxJitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 oneOf:

 - required: [minLatency]

 - required: [avgLatency]

 - required: [maxLatency]

 - required: [minBitRate]

 - required: [avgBitRate]

 - required: [maxBitRate]

 - required: [minPackLossRate]

 - required: [avgPackLossRate]

 - required: [maxPackLossRate]

 - required: [minJitter]

 - required: [avgJitter]

 - required: [maxJitter]

 TransQualMeasData:

 description: >

 Represents the Transmission Quality Measurement data.

 type: object

 properties:

 minLatency:

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

 maxLatency:

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

 avgLatency:

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

 stdDevLatency:

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

 kPercLatency:

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

 kValLatency:

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

 minBitRate:

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

 maxBitRate:

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

 avgBitRate:

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

 stdDevBitRate:

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

 kPercBitRate:

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

 kValBitRate:

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

 minPackLossRate:

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

 maxPackLossRate:

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

 avgPackLossRate:

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

 stdDevPackLossRate:

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

 kPercPackLossRate:

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

 kValPackLossRate:

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

 minJitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 maxJitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 avgJitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 stdDevJitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 kPercJitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 kValJitter:

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

 measPeriod:

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

 timestamp:

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

 anyOf:

 - required: [minLatency]

 - required: [maxLatency]

 - required: [avgLatency]

 - required: [minBitRate]

 - required: [maxBitRate]

 - required: [avgBitRate]

 - required: [minPackLossRate]

 - required: [maxPackLossRate]

 - required: [avgPackLossRate]

 - required: [minJitter]

 - required: [maxJitter]

 - required: [avgJitter]

 HistTransQualMeasReports:

 description: >

 Represents Historical Transmission Quality Measurement Report(s).

 type: object

 properties:

 reports:

 type: array

 items:

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

 minItems: 0

 suppFeat:

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

 required:

 - reports

 TransQualMeasCriteriaSet:

 description: >

 Represents a set of transmission quality measurement reporting criteria.

 type: object

 properties:

 criteria:

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

 direction:

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

 required:

 - criteria

 - direction

# SIMPLE DATA TYPES

#

#

# ENUMERATIONS

#

 MeasurementId:

 anyOf:

 - type: string

 enum:

 - LATENCY

 - BITRATE

 - PACKET\_LOSS\_RATE

 - JITTER

 - type: string

 description: >

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

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

 description: |

 Represents the transmission quality measurement type.

 Possible values are:

 - LATENCY: Indicates that the requested/reported measurement is the latency.

 - BITRATE: Indicates that the requested/reported measurement is the bit rate.

 - PACKET\_LOSS\_RATE: Indicates that the requested/reported measurement is the packet loss

 rate.

 - JITTER: Indicates that the requested/reported measurement is the jitter.

 RepGranularity:

 anyOf:

 - type: string

 enum:

 - INDIVIDUAL\_VAL\_UE

 - VAL\_GROUP

 - ALL\_VAL\_UES

 - type: string

 description: >

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

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

 description: |

 Represents the reporting granularity.

 Possible values are:

 - INDIVIDUAL\_VAL\_UE: Indicates that the granularity is individual VAL UE/user.

 - VAL\_GROUP: Indicates that the granularity is VAL Group.

 - ALL\_VAL\_UES: Indicates that the granularity is all VAL UE/user(s).

# Data types describing alternative data types or combinations of data types:

#

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