**3GPP TSG CT WG3 Meeting #137 *C3-245069***

**Hefei, CN, 14 - 18 October, 2024**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.548** | **CR** | **0015** | **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:***  | Support SEALDD client connection status monitoring for VAL applications |
|  |  |
| ***Source to WG:*** | Ericsson, Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | SEALDD\_Ph2 |  | ***Date:*** | 2024-09-20 |
|  |  |  |  |  |
| ***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:*** | This CR introduces the support of SEALDD client connection status monitoring for VAL applications including:* Immediate reporting functionality.
* Client Connection status monitoring.

Comment on implementation: it is proposed to re-use the subscriptionID as reportingId for the implementation. |
|  |  |
| ***Summary of change:*** | This CR introduces the traffic specification for the time-synchronized TSC steam in SS\_NetworkResourceAdaptation API. |
|  |  |
| ***Consequences if not approved:*** | The stage 2 requirements are not implemented in stage 3. |
|  |  |
| ***Clauses affected:*** | 6.1.6.1, 6.1.6.2.8, 6.1.6.2.9, 6.1.6.2.11, 6.1.6.3.5 (new), 6.1.8, A.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ... |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | * This CR provides backwards compatible feature for the SDD\_Transmission 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 |
| ClientConnStatus | 6.1.6.3.5 | Represents the connection status of a SEALDD Client. |  |
| ConnEstabData | 6.1.6.2.12 | Represents SEALDD connection status establishment data. |  |
| ConnStatusEvent | 6.1.6.3.3 | Represents a Connection Status Event. |  |
| 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 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 service requirements. |  |
| Bandwidth | 3GPP TS 29.122 [2] | Represents a bandwidth. |  |
| DateTime | 3GPP TS 29.122 [2] | Represents a date and a time. |  |
| DateTimeRo | 3GPP TS 29.122 [2] | Represents a date and a time with the read-only property. |  |
| 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 \* \* \* \*

##### 6.1.6.2.8 Type: ConnStatusSubsc

Table 6.1.6.2.8-1: Definition of type ConnStatusSubsc

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| events | array(ConnStatusEvent) | M | 1..N | Contains the list of the subscribed event(s). |  |
| valServiceId | string | O | 0..1 | Contains the identity of the target VAL service. |  |
| valTgtUe | ValTargetUe | O | 0..1 | Contains the targeted VAL UE or VAL user.When the SEALDD\_2 feature is supported, this attribute shall be present when one of the subscribed events within the "events" attribute is "CLIENT\_CONN\_STATUS". |  |
| valServerConnInfo | ConnInfo | M | 1 | Contains the SEALDD-S data transmission connection information. |  |
| immRep | boolean | O | 0..1 | Contains the immediate reporting indication.- "true" indicates that immediate reporting is requested.- "false" indicates that immediate reporting is not requested.- The default value is "false” when this attribute is omitted. | SEALDD\_2 |
| reports | array(ConnStatusReport) | C | 0..1 | Contains the connection status event report(s).This attribute may be present only in the response to a subscription creation/update request and only if the "immRep" attribute of the corresponding subscription resource representation is present and set to "true". | SEALDD\_2 |
| connStatusPer | DurationSec | O | 0..1 | Represents the periodicity to be used for the SEALDD Client connection status reporting.This attribute may be present only if one of the subscribed events within the "events" attribute is "CLIENT\_CONN\_STATUS". | SEALDD\_2 |
| notifUri | Uri | M | 1 | Contains the URI via which the Connection Status notifications shall be delivered. |  |
| expTime | DateTimeRo | O | 0..1 | Contains the subscription's expiration time.This attribute may be present only in the response to a SEALDD Connection Status Subscription creation/update request. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported features among the ones defined in clause 6.1.8.This attribute shall be present only when the feature negotiation needs to take place. |  |

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

##### 6.1.6.2.9 Type: ConnStatusSubscPatch

Table 6.1.6.2.9-1: Definition of type ConnStatusSubscPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| events | array(ConnStatusEvent) | O | 1..N | Contains the updated list of the subscribed event(s). |  |
| valServiceId | string | O | 0..1 | Contains the identity of the VAL service. |  |
| valTgtUe | ValTargetUe | O | 0..1 | Contains the targeted VAL UE or VAL user. |  |
| valServerConnInfo | ConnInfo | O | 0..1 | Contains the updated SEALDD-S data transmission connection information. |  |
| notifUri | Uri | O | 0..1 | Contains the updated URI via which the Connection Status notifications shall be delivered. |  |
| connStatusPer | DurationSec | O | 0..1 | Represents the periodicity to be used for the SEALDD Client connection status reporting.This attribute may be present only if one of the subscribed events within the "events" attribute is "CLIENT\_CONN\_STATUS". | SEALDD\_2 |

\* \* \* 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 | Contains the reported connection status event. |  |
| valTgtUe | ValTargetUe | M | 1 | Contains the VAL UE or VAL user to which the connection status event report is related. |  |
| valServiceId | string | M | 1 | Contains the identity of the VAL service to which the connection status event report is related. |  |
| connEstData | ConnEstabData | C | 0..1 | Contains 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 SEALDD connection status report. |  |
| clientConnStat | ClientConnStatus | C | 0..1 | Contains the connection status of the SEALDD Client.This attribute shall be present only if the subscribed event within the "event" attribute is "CLIENT\_CONN\_STATUS". | SEALDD\_2 |

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

##### 6.1.6.3.3 Enumeration: ConnStatusEvent

The enumeration ConnStatusEvent represents a Connection Status Event. It shall comply with the provisions defined in table 6.1.6.3.3-1.

Table 6.1.6.3.3-1: Enumeration ConnStatusEvent

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| ESTABLISHED | Indicates that the SEALDD connection status event is that the SEALDD connection is established. |  |
| RELEASED | Indicates that the SEALDD connection status event is that the SEALDD connection is released. |  |
| CLIENT\_CONN\_STATUS | Indicates that the SEALDD connection status event is the connection status of the SEALDD Client. | SEALDD\_2 |

\* \* \* \* Next changes \* \* \* \*

##### 6.1.6.3.5 Enumeration: ClientConnStatus

The enumeration ClientConnStatus represents the connection status of a SEALDD client. It shall comply with the provisions defined in table 6.1.6.3.5-1.

Table 6.1.6.3.5-1: Enumeration ClientConnStatus

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| REACHABLE | Indicates that the SEALDD Client connection status is reachable. |  |
| UNREACHABLE | Indicates that the SEALDD Client connection status is unreachable. |  |
| SLEEPING | Indicates that the SEALDD Client connection status is sleeping. |  |

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

### 6.1.8 Feature negotiation

The optional features in table 6.1.8-1 are defined for the SDD\_Transmission API. They shall be negotiated using the extensibility mechanism defined in clause 6.8 of 3GPP TS 29.549 [15].

Table 6.1.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | SEALDD\_2 | Indicates the support of the first set of enhancements to the SEAL Data Delivery Enabler Layer.Within this feature, the following enhancements are covered:- Support of immediate reporting for the SEALDD Connection Status reporting.- Support SEALDD Client connection status reporting. |

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

# A.2 SDD\_Transmission API

openapi: 3.0.0

info:

 title: SEALDD Server Data Transmission Service

 version: 1.0.0

 description: |

 SEALDD Server Data Transmission Service.

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externalDocs:

 description: >

 3GPP TS 29.548 V18.1.0; 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'

 immRep:

 type: boolean

 reports:

 type: array

 items:

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

 minItems: 1

 connStatusPer:

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

 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'

 connStatusPer:

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

 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'

 clientConnStat:

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

 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

 - CLIENT\_CONN\_STATUS

 - 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 status event is that the SEALDD

 connection is established.

 - RELEASED: Indicates that the SEALDD connection status event is that the SEALDD connection

 is released.

 - CLIENT\_CONN\_STATUS: Indicates that the SEALDD connection status event is the

 connection status of the SEALDD Client.

 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.

 ClientConnStatus:

 anyOf:

 - type: string

 enum:

 - REACHABLE

 - UNREACHABLE

 - SLEEPING

 - 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 a SEALDD client connection status.

 Possible values are:

 - REACHABLE: Indicates that the SEALDD Client connection status is reachable.

 - UNREACHABLE: Indicates that the SEALDD Client connection status is unreachable.

 - SLEEPING: Indicates that the SEALDD Client connection status is sleeping.

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

#

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