**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 can be 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

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#

# 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 \* \* \* \*