**3GPP TSG-CT3 Meeting #135C3-243xxx**

**Hyderabad, IN, 27 - 31 May, 2024 was C3-243383**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.548** | **CR** | **0011** | **rev** | **1** | **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)*.* | | | | | | | | |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | |
| ***Title:*** | Various essential corrections to the SEALDD APIs | | | | | | | | |
|  |  | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | |
|  |  | | | | | | | | |
| ***Work item code:*** | SEALDD | | | | |  | ***Date:*** | | 2024-05-20 |
|  |  | | | |  | |  | |  |
| ***Category:*** | **F** |  | | | | | ***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 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:*** | | | There are various errors (e.g., incorrect service operation name) and documentation enhancements (e.g., terminology alignments, missing clarifications, etc.) that should be applied to the SEALDD APIs. | | | | | | |
|  | | |  | | | | | | |
| ***Summary of change:*** | | | This CR proposes to:   * Address these various errors and documentation enhancements. | | | | | | |
|  | | |  | | | | | | |
| ***Consequences if not approved:*** | | | * These various errors and documentation enhancements are not applied and the quality of the specification is not enhanced. | | | | | | |
|  | |  | | | | | | | |
| ***Clauses affected:*** | | 5.2.2.1, 5.2.2.2.2, 5.2.2.4.2, 5.3.2.2.2, 5.3.2.2.3, 5.3.2.4.2, 5.3.2.6.2, 5.3.2.7.2, 5.4.2.1, 5.4.2.3.1, 5.4.2.3.2, 6.1.1, 6.1.3.2.3.1, 6.1.4.1, 6.1.4.2.2, 6.1.6.1, 6.1.6.2.2, 6.1.6.2.3, 6.1.6.2.4, 6.1.6.2.8, 6.1.6.2.9, 6.1.6.2.10, 6.1.6.2.11, 6.1.6.2.12, 6.1.6.3.3, 6.1.6.3.4, 6.2.4.2.2, 6.2.4.3.2, A.2 | | | | | | | |
|  | |  | | | | | | | |
|  | | **Y** | | **N** |  | | |  | |
| ***Other specs*** | |  | | **X** | Other core specifications | | | TS/TR ... CR ... | |
| ***affected:*** | |  | | **X** | Test specifications | | | TS/TR ... CR ... | |
| ***(show related CRs)*** | |  | | **X** | O&M Specifications | | | TS/TR ... CR ... | |
|  | |  | | | | | | | |
| ***Other comments:*** | | This CR introduces backwards compatible corrections to the OpenAPI description of the SDD\_Transmission API defined in this specification. | | | | | | | |
|  | |  | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | |

\* \* \* \* Start of changes \* \* \* \*

#### 5.2.2.1 Introduction

The service operations defined for the SDD\_Transmission service are shown in table 5.2.2.1-1.

Table 5.2.2.1-1: SDD\_Transmission Service Operations

|  |  |  |
| --- | --- | --- |
| Service Operation Name | Description | Initiated by |
| SDD\_Transmission\_Request | This service operation enables a service consumer to request SEALDD enabled Regular or URLLC application data transmission. | e.g., VAL Server |
| SDD\_Transmission\_ConnStatusSubscribe | This service operation enables a service consumer to request the creation/update/deletion of a subscription to SEALDD connection status event(s) reporting. | e.g., VAL Server |
| SDD\_Transmission\_ConnStatusNotify | This service operation enables a service consumer to receive notifications on SEALDD connection status event(s). | SEALDD Server |

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

##### 5.2.2.2.2 SEALDD Transmission Request

Figure 5.2.2.2.2-1 depicts a scenario where a service consumer sends a request to the SEALDD Server to request SEALDD enabled Regular or URLLC application data transmission (see also clauses 9.2 and 9.3 of 3GPP°TS°23.433°[7]).



Figure 5.2.2.2.2-1: Procedure for SEALDD Transmission Request

1. In order to request SEALDD enabled Regular or URLLC application data transmission, the service consumer shall send an HTTP POST request to the SEALDD Server targeting the URI of the corresponding custom operation (i.e., "RequestTrans"), with the request body including the TransReq data structure. The "{transType}" URI variable path segment shall be set to either:

- "regular", when Regular application data transmission is requested; or

- "urllc", when URLLC application data transmission is requested.

2a. Upon success, the SEALDD Server shall respond with an HTTP "200 OK" status code to indicate that the SEALDD enabled Regular or URLLC application data transmission service request is successfully received and processed, with the response body containing SEALDD enabled Regular or URLLC application data transmission related information within the TransResp data structure.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.1.7.

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

##### 5.2.2.4.2 SEALDD Connection Status Notification

Figure 5.2.2.4.2-1 depicts a scenario where the SEALDD Server sends a request to notify a previously subscribed service consumer on SEALDD connection status event(s) (see also clauses 9.2 and 9.3 of 3GPP°TS°23.433°[7]).



Figure 5.2.2.4.2-1: Procedure for SEALDD Connection Status Notification

1. In order to notify a previously subscribed service consumer on SEALDD Connection Status event(s), the SEALDD Server shall send an HTTP POST request message to the service consumer with the request URI set to "{notifUri}", where the "notifUri" variable is set to the value received from the service consumer during the creation/update of the corresponding SEALDD Connection Status Subscription using the procedures defined in clause 5.2.2.3, and the request body including the ConnStatusNotif data structure.

2a. Upon success, the service consumer shall respond to the SEALDD Server with an HTTP "204 No Content" status code.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.1.7.

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

##### 5.3.2.2.2 Data Storage Creation

Figure 5.3.2.2.2-1 depicts a scenario where a service consumer sends a request to the SEALDD Server to request the creation of a SEALDD Data Storage (see also clause 9.5 of 3GPP°TS°23.433°[7]).

 Figure 5.3.2.2.2-1: Procedure for Data Storage Creation

1. In order to create or reserve a new SEALDD Data Storage, the service consumer shall send an HTTP POST request to the SEALDD Server targeting the URI of the "Data Storages" collection resource, with the request body including the DataStorageReq data structure that shall be set to either:

- the DataStorage data structure for a Data Storage Creation request; or

- the ReservReqData data structure for a Data Storage Reservation request.

2a. Upon success, the SEALDD Server shall respond with either:

- an HTTP "201 Created" status code, with the response body containing a representation of the created "Individual Data Storage" resource within the DataStorage data structure, and an HTTP "Location" header field containing the URI of the created resource, for the case of Data Storage Creation; or

- an HTTP "200 OK" status code with the response body containing the ReservRespData data structure including Data Storage reservation related information, for the case of Data Storage Reservation.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.2.7.

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

##### 5.3.2.2.3 Data Management and/or Status Information Notification

Figure 5.3.2.2.3-1 depicts a scenario where the SEALDD Server sends a request to notify a previously subscribed service consumer on SEALDD Data Management and/or Status Information event(s) (see also clause 9.5 of 3GPP°TS°23.433°[7]).



Figure 5.3.2.2.3-1: Data Storage Delivery Notification

1. In order to notify a previously subscribed service consumer on SEALDD Data Management and/or Status Information event(s), the SEALDD Server shall send an HTTP POST request to the service consumer with the request URI set to "{notifUri}", where the "notifUri" variable is set to the value received from the service consumer during the creation/update of the corresponding SEALDD Data Storage using the procedures defined in clauses 5.3.2.2.2 and 5.3.2.3.2, and the request body including the DataMngtNotif data structure.

2a. Upon success, the service consumer shall respond to the SEALDD Server with an HTTP "204 No Content" status code to acknowledge the reception of the notification.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.2.7.

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

##### 5.3.2.4.2 Data Storage(s) Query

Figure 5.3.2.2.2-1 depicts a scenario where a a service consumer sends a request to the SEALDD Server to request the retrieval of one or several existing SEALDD Data Storage(s) (see also clause 9.5 of 3GPP°TS°23.433°[7]).



Figure 5.3.2.4.2-1: Procedure for Data Storage(s) Query

1. In order to request the retrieval of one or several existing SEALDD Data Storage(s), the service consumer shall send an HTTP GET request to the SEALDD Server targeting either:

- the URI of the "Data Storages" collection resource, with query parameters to filter the targeted Data Storage(s), if one or several Data Storage(s) are to be retrieved; or

- the URI of the targeted "Individual Data Storage" resource, if a single Data Storage is to be retrieved.

2a. Upon success, the SEALDD Server shall respond with an HTTP "200 OK" status code with the response body containing either:

- the targeted "Individual Data Storage" resource(s) within one or several instance(s) of the DataStorage data structure, for the case of a response to a request to retrieve one or several Data Storage(s);

- the targeted "Individual Data Storage" resource within the DataStorage data structure, for the case of a response to a request to retrieve a single Data Storage;

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP GET response body, as specified in clause 6.2.7.

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

##### 5.3.2.6.2 SEALDD Data Storage Delivery Connection Establishment Request

Figure 5.3.2.6.2-1 depicts a scenario where a service consumer sends a request to the SEALDD Server to request SEALDD Data Storage Delivery connection establishment (see also clauses 9.5 of 3GPP°TS°23.433°[7]).



Figure 5.3.2.6.2-1: Procedure for SEALDD Data Storage Delivery Connection Establishment Request

1. In order to request SEALDD Data Storage Delivery connection establishment, the service consumer shall send an HTTP POST request to the SEALDD Server targeting the URI of the corresponding custom operation (i.e., "EstablishDelConn"), with the request body including the DelConnEstabReq data structure.

2a. Upon success, the SEALDD Server shall respond with either:

- an HTTP "200 OK" status code to indicate that the SEALDD Data Storage Delivery connection establishment request is successfully received and processed, with the response body containing SEALDD Data Storage Delivery connection establishment related information within the DelConnEstabResp data structure; or

- an HTTP "204 No Content" status code to indicate that the SEALDD Data Storage Delivery connection establishment request is successfully received and processed.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.2.7.

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

##### 5.3.2.7.2 Data Storage Delivery Subscription Creation

Figure 5.3.2.7.2-1 depicts a scenario where a service consumer sends a request to the SEALDD Server to request the creation of a SEALDD Data Storage Delivery Subscription (see also clause 9.5 of 3GPP°TS°23.433°[7]).



Figure 5.3.2.7.2-1: Procedure for Data Storage Delivery Subscription Creation

1. In order to request the creation of a new SEALDD Data Storage Delivery Subscription, the service consumer shall send an HTTP POST request to the SEALDD Server targeting the URI of the "Data Storage Delivery Subscriptions" collection resource, with the request body including the DataDelSubsc data structure.

2a. Upon success, the SEALDD Server shall respond with an HTTP "201 Created" status code, with the response body containing a representation of the created "Individual Data Storage Delivery Subscription" resource within the DataDelSubsc data structure, and an HTTP "Location" header field containing the URI of the created resource.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.2.7.

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

#### 5.4.2.1 Introduction

The service operations defined for the SDD\_DDContext API are shown in the table 5.4.2.1-1.

Table 5.4.2.1-1: SDD\_DDContext Service Operations

|  |  |  |
| --- | --- | --- |
| Service operation name | Description | Initiated by |
| SDD\_DDContext\_Push | This service operation is used by a service consumer to push a DD context to the SEALDD Server. | e.g., SEALDD Server |
| SDD\_DDContext\_Pull | This service operation is used by a service consumer to pull a DD context from the SEALDD Server. | e.g., SEALDD Server |

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

##### 5.4.2.3.1 General

This service operation is used by a service consumer to pull a DD context from the SEALDD Server.

The following procedures are supported by the "SDD\_DDContext\_Pull" service operation:

- DD Context Pull.

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

##### 5.4.2.3.2 DD Context Pull

Figure 5.4.2.3.2-1 depicts a scenario where a service consumer sends a request to the SEALDD Server to pull a DD Context (see also clause 9.6 of 3GPP°TS°23.433°[7]).

 Figure 5.4.2.3.2-1: Procedure for DD Context Pull

1. In order to pull a DD context from the SEALDD Server, the service consumer shall send an HTTP GET request message targeting the URI of the "DD Contexts" collection resource, with query parameters to filter the targeted DD context and its content, if needed.

2a. Upon success, the SEALDD Server shall respond with an HTTP "200 OK" status code with the response body containing the DdContextResp data structure.

NOTE: The content of the "ddContext" attribute of the DdContextResp data structure in step 2a is determined by the SEALDD Server based on the service consumer's identity.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP GET response body, as specified in clause 6.3.7.

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

### 6.1.1 Introduction

The SDD\_Transmission service shall use the SDD\_Transmission API.

The API URI of the SDD\_Transmission API shall be:

**{apiRoot}/<apiName>/<apiVersion>**

The request URIs used in HTTP requests shall have the Resource URI structure defined in clause 6.5 of 3GPP TS 29.549 [15], i.e.:

**{apiRoot}/<apiName>/<apiVersion>/<apiSpecificSuffixes>**

with the following components:

- The {apiRoot} shall be set as described in clause 6.5 of 3GPP TS 29.549 [15].

- The <apiName>shall be "sdd-trans".

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 6.5 of 3GPP TS 29.549 [15].

NOTE: When 3GPP TS 29.122 [2] is referenced for the common protocol and interface aspects for API definition in the clauses under clause 5, the SEALDD Server takes the role of the SCEF and the service consumer takes the role of the SCS/AS.

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

###### 6.1.3.2.3.1 POST

The HTTP POST method enables a service consumer to request the creation of a new Connection Status Subscription at the SEALDD Server.

This method shall support the URI query parameters specified in table 6.1.3.2.3.1-1.

Table 6.1.3.2.3.1-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 6.1.3.2.3.1-2 and the response data structures and response codes specified in table 6.1.3.2.3.1-3.

Table 6.1.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ConnStatusSubsc | M | 1 | Represents the parameters to request the creation of a Connection Status Subscription. |

Table 6.1.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| ConnStatusSubsc | M | 1 | 201 Created | Successful case. The Connection Status Subscription is successfully created and a representation of the created "Individual Connection Status Subscription" resource shall be returned in the response body.  An HTTP "Location" header that contains the URI of the created resource shall also be included. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.1.3.2.3.1-4: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure:  {apiRoot}/sdd-trans/<apiVersion>/subscriptions/{subscriptionId} |

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

#### 6.1.4.1 Overview

The structure of the custom operation URIs of the SDD\_Transmission API is shown in Figure 6.1.4.1-1.



Figure 6.1.4.1-1: Custom operation URI structure of the SDD\_Transmission API

Table 6.1.4.1-1 provides an overview of the custom operations and applicable HTTP methods defined for the SDD\_Transmission API.

Table 6.1.4.1-1: Custom operations without associated resources

|  |  |  |  |
| --- | --- | --- | --- |
| Custom operation name | Custom operation URI | Mapped HTTP method | Description |
| RequestTrans | /{transType}/request-trans | POST | Enables a service consumer to request SEALDD enabled Regular or URLLC application data transmission. |

The custom operations shall support the URI variables defined in table 6.1.4.1-2.

Table 6.1.4.1-2: URI variables for this custom operation

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.1.1. |
| transType | TransType | Represents the requested transmission type (i.e., "regular" for Regular application data transmission or "urllc" for URLLC application data transmission). |

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

##### 6.1.4.2.2 Operation Definition

This operation shall support the request data structures specified in table 6.1.4.2.2-1 and the response data structures and response codes specified in table 6.1.4.2.2-2.

Table 6.1.4.2.2-1: Data structures supported by the POST Request Body on this custom operation

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| TransReq | M | 1 | Contains the parameters to request SEALDD enabled Regular or URLLC application data transmission. |

Table 6.1.4.2.2-2: Data structures supported by the POST Response Body on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| TransResp | M | 1 | 200 OK | Successful case. The SEALDD enabled Regular or URLLC application data transmission service request is successfully received and processed, and SEALDD enabled Regular or URLLC application data transmission related information shall be returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative target URI located in an alternative SEALDD Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative target URI located in an alternative SEALDD Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2] |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.1.4.2.2-3: Headers supported by the 307 Response Code on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative target URI located in an alternative SEALDD Server. |

Table 6.1.4.2.2-4: Headers supported by the 308 Response Code on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative target URI located in an alternative SEALDD Server. |

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

6.1.5.2.3.1 POST

This method shall support the request data structures specified in table 6.1.5.2.3.1-1 and the response data structures and response codes specified in table 6.1.5.2.3.1-2.

Table 6.1.5.2.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ConnStatNotif | M | 1 | Represents the SEALDD Connection Status Notification. |

Table 6.1.5.2.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The Connection Status Notification is successfully received. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.1.5.2.3.1-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

Table 6.1.5.2.3.1-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

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

#### 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 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. |  |
| 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 changes \* \* \* \*

##### 6.1.6.2.2 Type: TransReq

Table 6.1.6.2.2-1: Definition of type TransReq

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valServiceId | string | O | 0..1 | Contains the identifier of the target VAL service. |  |
| valTargetId | ValTargetUe | O | 0..1 | Contains the identifier of the target VAL UE or VAL user. |  |
| valServerConnInfo | ConnInfo | M | 1 | Contains the VAL Server's side SEALDD-S Data transmission connection information, i.e., address/port and/or URI via which the VAL Server desires to receive the application traffic from the SEALDD Server. |  |
| qosInfo | QosInfo | O | 0..1 | Contains the requested QoS requirements for the application data transmission. |  |
| valServerBdw | ValServBdw | O | 0..1 | Contains the total UL/DL bandwidth limit of the VAL Server. |  |
| valUsersBdw | ValUsersBdw | O | 0..1 | Contains the UL/DL bandwidth limits for VAL users. |  |
| 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 feature negotiation needs to take place. |  |

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

##### 6.1.6.2.3 Type: TransResp

Table 6.1.6.2.3-1: Definition of type TransResp

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ddServerConnInfo | ConnInfo | C | 0..1 | Contains the SEALDD Server's side SEALDD-S Data transmission connection information, i.e., address/port and/or URI via which the SEALDD Server desires to receive the application traffic from the VAL Server.  This attribute shall be provided, if needed. |  |
| 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 feature negotiation needs to take place. |  |

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

##### 6.1.6.2.4 Type: ConnInfo

Table 6.1.6.2.4-1: Definition of type ConnInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ipv4Addr | Ipv4Addr | C | 0..1 | Contains the IPv4 address.  (NOTE) |  |
| ipv6Addr | Ipv6Addr | C | 0..1 | Contains the IPv6 address.  (NOTE) |  |
| port | Port | O | 0..1 | Contains the port information.  This attribute may be present only when either the "ipv4Addr" attribute or the "ipv6Addr" attribute is present. |  |
| uri | Uri | C | 0..1 | Contains the URI.  (NOTE) |  |
| NOTE: These attributes are mutually exclusive. Either one of them shall be present. | | | | | |

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

##### 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. |  |
| valServerConnInfo | ConnInfo | M | 1 | Contains the SEALDD-S data transmission connection information. |  |
| 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 | Represents 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 changes \* \* \* \*

##### 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. |  |

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

##### 6.1.6.2.10 Type: ConnStatusNotif

Table 6.1.6.2.10-1: Definition of type ConnStatusNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| subscriptionId | string | M | 1 | Contains the identifier of the subscription to which the Connection Status notification is related. |  |
| reports | array(ConnStatusReport) | M | 1..N | Contains the connection status event report(s). |  |

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

##### 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". |  |

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

##### 6.1.6.2.12 Type: ConnEstabData

Table 6.1.6.2.12-1: Definition of type ConnEstabData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ddServerConnInfo | ConnInfo | M | 1 | Contains the SEALDD Server's side SEALDD-S Data transmission connection information, i.e., address/port and/or URI via which the SEALDD Server sends/receives the application traffic. |  |
| comLifetime | DurationSec | O | 0..1 | Contains the SEALDD communication lifetime. |  |

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

##### 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. |  |

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

##### 6.1.6.3.4 Enumeration: TransType

The enumeration TransType represents the requested transmission type. It shall comply with the provisions defined in table 6.1.6.3.4-1.

Table 6.1.6.3.4-1: Enumeration TransType

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| regular | Indicates that the requested transmission type is Regular transmission. |  |
| urllc | Indicates that the requested transmission type is URLLC transmission. |  |
| NOTE: The enumeration values defined in this table shall use the "lower-with-hyphen" naming convention, as defined in clause 5.2.4.1 of 3GPP TS 29.122 [2], because they are used as values of a URI path segment variable (see Table 6.1.4.1-2). Therefore, they shall not follow the "UPPER\_WITH\_UNDERSCORE" convention for enumerations defined in clause 5.2.9.10 of 3GPP TS 29.122 [2]. | | |

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

##### 6.2.4.2.2 Operation Definition

This operation shall support the request data structures specified in table 6.2.4.2.2-1 and the response data structures and response codes specified in table 6.2.4.2.2-2.

Table 6.2.4.2.2-1: Data structures supported by the POST Request Body on this custom operation

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DataDelReq | M | 1 | Contains the parameters to request SEALDD Data Storage delivery. |

Table 6.2.4.2.2-2: Data structures supported by the POST Response Body on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Successful case. The SEALDD Data Storage delivery request is successfully received and processed. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative target URI located in an alternative SEALDD Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative target URI located in an alternative SEALDD Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2] |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.2.4.2.2-3: Headers supported by the 307 Response Code on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative target URI located in an alternative SEALDD Server. |

Table 6.2.4.2.2-4: Headers supported by the 308 Response Code on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative target URI located in an alternative SEALDD Server. |

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

##### 6.2.4.3.2 Operation Definition

This operation shall support the request data structures specified in table 6.2.4.3.2-1 and the response data structures and response codes specified in table 6.2.4.3.2-2.

Table 6.2.4.3.2-1: Data structures supported by the POST Request Body on this custom operation

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DelConnEstabReq | M | 1 | Contains the parameters to request SEALDD Data Storage delivery connection establishment. |

Table 6.2.4.3.2-2: Data structures supported by the POST Response Body on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| DelConnEstabResp | M | 1 | 200 OK | Successful case. The SEALDD Data Storage delivery connection establishment request is successfully received and processed, and SEALDD Data Storage delivery connection establishment related information shall be returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The SEALDD Data Storage delivery connection establishment request is successfully received and processed. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative target URI located in an alternative SEALDD Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative target URI located in an alternative SEALDD Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2] |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.2.4.3.2-3: Headers supported by the 307 Response Code on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative target URI located in an alternative SEALDD Server. |

Table 6.2.4.3.2-4: Headers supported by the 308 Response Code on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative target URI located in an alternative SEALDD Server. |

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

6.2.5.2.3.1 POST

This method shall support the request data structures specified in table 6.2.5.2.3.1-1 and the response data structures and response codes specified in table 6.2.5.2.3.1-2.

Table 6.2.5.2.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DataMngtNotif | M | 1 | Represents the Data Management and/or Status Information Notification. |

Table 6.2.5.2.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The Data Management and/or Status Information Notification is successfully received. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.2.5.2.3.1-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

Table 6.2.5.2.3.1-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

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

6.2.5.3.3.1 POST

This method shall support the request data structures specified in table 6.2.5.3.3.1-1 and the response data structures and response codes specified in table 6.2.5.3.3.1-2.

Table 6.2.5.3.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DataDelNotif | M | 1 | Represents the Data Storage Delivery Notification. |

Table 6.2.5.3.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The Data Storage Delivery Notification is successfully received. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.2.5.3.3.1-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

Table 6.2.5.3.3.1-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

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

# A.2 SDD\_Transmission API

openapi: 3.0.0

info:

title: SEALDD Server Data Transmission Service

version: 1.0.0-alpha.7

description: |

SEALDD Server Data Transmission Service.

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externalDocs:

description: >

3GPP TS 29.548 V18.0.0; 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'

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 status event is that the SEALDD

connection is established.

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

#

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