**3GPP TSG CT WG3 Meeting #136 *C3-244509***

**Maastricht, NL, 19 - 23 August, 2024 was C3-244176**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.486** | **CR** | **0131** | **rev** | **1** | **Current version:** | **18.3.0** |  |
|  |
| *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:***  | Updates and corrections to the VAE\_MessageDelivery API |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | NBI19 |  | ***Date:*** | 2024-08-22 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | The following issues have been identified in the definition of the VAE\_MessageDelivery API:* The reception report notification related to the downlink V2X message delivery is specified in the API definition clause, but there is no service operation nor operation description for it. Also, the possibility for the service consumer to indicate whether it requires a reception report or not is defined in stage 2 (cf. the "Reception report required" IE in Table 9.4.2.1-1 and Table 9.4.2.3-1) but missing in stage 3.
* It is currently not possible to update an existing "Individual Message Delivery Subscription" resource. However, the corresponding CRUD operations (PUT/PATCH) should be allowed in order to enable the service consumer to update some important pure stage 3 parameters, e.g., the notification URI. If we continue with the notification URI example, then if PUT/PATCH methods continue to not be supported on this resource, the service consumer would continue to have to delete the subscription and create a new one in case it wants to change the notification URI. This is obviously not optimized from protocol/interface and signalling load point of view.
* Several general clauses still refer to TS 29.500/29.501 even if this TS defines NBI APIs. It is hence necessary to fix this issue.
* The "resourceUri" attribute of the UplinkMessageDeliveryData is missing a necessary provision to specify that it can either contain the full resource URI or only the API specific resource URI part of the resource URI. This is to align with the other similar cases (e.g., TS 29.514) as the most important piece of information provided in this attribute is the identifier of the subscription to which the notirfication is related. The "apiRoot" part is not necessary as it may change, e.g., when an alternative instance of the VAE Server takes over.
* The attribute conveying the supported features is missing for the Downlink Message Delivery resources even if there are features supported since Rel-18.
 |
|  |  |
| ***Summary of change:*** | This CR proposes to:* Address all the above-detailed issues. In particular:
	+ A new service operation and the corresponding service description clause is defined for the reception report notification.
	+ A new boolean attribute to convey whether the reception report is required or not is added, with a default value set to "true" to facilitate backwards compatibility. Also, the service description clauses are updated to better clarify when a reception report needs to be provided by the VAE Server from procedural point of view.
* Apply additional editorial corrections and drafting rules or TS skeleton alignments.
 |
|  |  |
| ***Consequences if not approved:*** | * The definition of the VAE\_MessageDelivery API continues to contain the above-listed issues, not fully optimized / easily usable and not fully aligned with the related stage 2 requirements.
 |
|  |  |
| ***Clauses affected:*** | 5.2.1, 5.2.2.1, 5.2.2.2.1, 5.2.2.2.2, 5.2.2.3.1, 5.2.2.3.2, 5.2.2.4.1, 5.2.2.4.2, 5.2.2.4.3, 5.2.2.5.1, 5.2.2.5.2, 5.2.2.6 (new clause), 6.1, 6.1.1, 6.1.2, 6.1.3, 6.1.3.1, 6.1.3.2.1, 6.1.3.2.2, 6.1.3.2.3.1, 6.1.3.2.4, 6.1.3.3.1, 6.1.3.3.2, 6.1.3.3.3.1, 6.1.3.3.3.1A (new clause), 6.1.3.3.3.1B (new clause), 6.1.3.3.3.2, 6.1.3.3.4, 6.1.3.4.1, 6.1.3.4.2, 6.1.3.4.3.1, 6.1.3.4.4, 6.1.3.5.1, 6.1.3.5.2, 6.1.3.5.3.1, 6.1.3.5.3.2, 6.1.3.5.4, 6.1.4, 6.1.5.1, 6.1.5.2, 6.1.5.3, 6.1.5.4, 6.1.5.5, 6.1.5.6.1, 6.1.5.6.2, 6.1.5.7.1, 6.1.5.7.2, 6.1.6.1, 6.1.6.2.1, 6.1.6.2.2, 6.1.6.2.3, 6.1.6.2.4, 6.1.6.2.5, 6.1.6.3.2, 6.1.6.3.3, 6.1.6.4 (new clause) , 6.1.6.5 (new clause), 6.1.7.1, 6.1.7.2, 6.1.7.3, 6.1.8, 6.1.9, 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 new feature and corrections to the OpenAPI description of the VAE\_MessageDelivery API defined in this specification. |
|  |  |
| ***This CR's revision history:*** |  |

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

### 5.2.1 Service Description

The VAE\_MessageDelivery service enables a service consumer to communicate with the VAE Server to:

- send, receive or exchange V2X messages with V2X UE(s).

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

#### 5.2.2.1 Introduction

The service operations defined for the VAE\_MessageDelivery service are shown in table 5.2.2.1-1.

Table 5.2.2.1-1: VAE\_MessageDelivery Service Operations

|  |  |  |
| --- | --- | --- |
| Service Operation Name | Description | Initiated by |
| V2X\_MessageDelivery\_Subscribe | This service operation enables a service consumer to request the creation of a Message Delivery Subscription. | e.g., VASS |
| V2X\_MessageDelivery\_Unsubscribe | This service operation enables a service consumer to request the deletion of an existing Message Delivery Subscription. | e.g., VASS |
| Deliver\_DL\_Message | This service operation enables a service consumer to deliver DL V2X message(s). | e.g., VASS |
| Deliver\_UL\_Message | This service operation enables a service consumer to receive UL V2X message(s). | VAE Server |
| VAE\_MessageDelivery\_NotifyReceptionReport | This service operation enables a service consumer to receive the reception report for a downlink message delivery. | VAE Server |

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

##### 5.2.2.2.1 General

The V2X\_MessageDelivery\_Subscribe service operation is used by a service consumer to create a subscription for V2X messages delivery at the VAE Server.

The following procedures are supported by the "V2X\_MessageDelivery\_Subscribe" service operation:

- Message Delivery Subscribe.

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

##### 5.2.2.2.2 Message Delivery Subscribe



Figure 5.2.2.2.2-1: Message delivery subscribe

When the service consumer needs to receive message(s) from V2X UE(s) and/or send messages to V2X UE(s), the service consumer shall send an HTTP POST request, as per step 1of figure 5.2.2.2.2-1, to request to create an "Individual Message Delivery Subscription".

The service consumer shall include MessageDeliverySubscriptionData data structure in the content of the HTTP POST to request a creation of representation of the "Individual Message Delivery Subscription" resource. The "Individual Message Delivery Subscription" resource is created as described below.

When the VAE Server receives the HTTP POST request from the service consumer, the VAE Server shall make an authorization based on the information received from the service consumer. If the authorization is successful, the VAE Server shall create a new "Individual Message Delivery Subscription" resource, addressed by a URI as defined in clause 6.1.3.3.2 and contains a VAE Server created resource identifier. The VAE Server shall respond to the service consumer with an HTTP "201 Created" status code, including an HTTP Location header field containing the URI for the created resource.

If errors occur when processing the HTTP POST request, the VAE Server shall apply error handling procedures as specified in clause 6.1.7.

The service consumer shall use the URI received in the Location header in subsequent requests to the VAE Server targeting the "Individual Message Delivery Subscription" resource.

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

##### 5.2.2.3.1 General

The V2X\_MessageDelivery\_Unsubscribe service operation is used by a service consumer to remove an existing subscription for V2X messages delivery.

The following procedures are supported by the "V2X\_MessageDelivery\_Unsubscribe" service operation:

- Message Delivery Unsubscribe.

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

##### 5.2.2.3.2 Message Delivery Unsubscribe



Figure 5.2.2.3.2-1: Message Delivery Unsubscribe procedure

When the service consumer needs to remove an existing subscription for V2X messages delivery, the service consumer shall send an HTTP DELETE request, as per step 1of figure 5.2.2.3.2-1, to request to delete the corresponding "Individual Message Delivery Subscription" resource.

Upon reception of the HTTP DELETE request, if the VAE Server successfully processed and accepted the received HTTP DELETE request, the VAE Server shall:

- remove the corresponding subscription; and

- send an HTTP "204 No Content" status code.

If errors occur when processing the HTTP POST request, the VAE Server shall send an HTTP error response as specified in clause 6.1.7.

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

##### 5.2.2.4.1 General

The Deliver\_DL\_Message service operation is used to deliver downlink V2X messages to V2X UE(s).

The following procedures are supported by the "Deliver\_DL\_Message" service operation:

- Downlink Message Delivery.

- Termination of Downlink Message Delivery.

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

##### 5.2.2.4.2 Downlink Message Delivery

Figure 5.2.2.4.2-1 depicts a scenario where a service consumer sends a request to the VAE Server to request the creation of a Downlink Message Delivery.



Figure 5.2.2.4.2.1-1: Procedure for Downlink Message Delivery

When the service consumer needs to send a message to V2X UE(s), the service consumer shall send an HTTP POST request, as per step 1of the figure 5.2.2.4.2-1, to request to create a new "Individual Downlink Message Delivery" resource.

The service consumer shall include the DownlinkMessageDeliveryData data structure in the content of the HTTP POST to request a creation of representation of the "Individual Downlink Message Delivery" resource. The "Individual Downlink Message Delivery" resource is created as described below.

When the VAE Server receives the HTTP POST request from the service consumer, the VAE server shall make an authorization based on the information received from the service consumer. If the authorization is successful, the VAE Server shall create a new "Individual Downlink Message Delivery" resource, addressed by a URI as defined in clause 6.1.3.5.2 and contains a VAE Server created resource identifier. The VAE Server shall respond to the service consumer with an HTTP "201 Created" status code, including an HTTP "Location" header field containing the URI for the created resource.

The service consumer shall use the URI received in the HTTP "Location" header in subsequent requests to the VAE Server targeting the "Individual Downlink Message Delivery" resource.

If errors occur when processing the HTTP POST request, the VAE Server shall apply error handling procedures as specified in clause 6.1.7.

After the VAE Server responded to the service consumer, the VAE Server shall invoke the procedure defined in clause 6.5.2.4 or 6.5.2.5 of 3GPP TS 24.486 [28] to send the message to the VAE Client.

When the "enNB" feature is not supported and the VAE Server received the reception report from the VAE Client as defined in clause 6.5.2.2 of 3GPP TS 24.486 [28], the VAE Server shall relay the reception report to the service consumer using the procedure defined in clause 5.2.2.6.

When the "enNB" feature is supported and the VAE Server received the reception report from the VAE Client as defined in clause 6.5.2.2 of 3GPP TS 24.486 [28], the VAE Server shall relay the reception report to the service consumer using the procedure defined in clause 5.2.2.6, unless the "receptionRepReq" attribute was present and set to "false" within the DownlinkMessageDeliveryData data structure provided in the corresponding request body.

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

##### 5.2.2.4.3 Termination of Downlink Message Delivery

Figure 5.2.2.4.3-1 depicts a scenario where a service consumer sends a request to the VAE Server to request the termination of a Downlink Message Delivery.



Figure 5.2.2.4.3-1: Termination of Downlink Message Delivery

When the service consumer needs to terminate downlink message delivery to V2X UE(s), the service consumer shall send an HTTP DELETE request, as per step 1of the figure 5.2.2.4.3-1, to request to delete the corresponding "Individual Downlink Message Delivery" resource.

Upon reception of the HTTP DELETE request from the service consumer, the VAE Server shall check if the "Individual Downlink Message Delivery" resource identified by the URI already exists. If the resource exists, the VAE Server shall delete the resource and respond to the service consumer with an HTTP "204 No Content" status code.

When the message delivery duration expires, the VAE Server may remove the associated "Individual Downlink Message Delivery" resource locally (i.e., without waiting for the service consumer to initiate the above procedure).

If errors occur when processing the HTTP DELETE request, the VAE Server shall apply error handling procedures as specified in clause 6.1.7.

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

##### 5.2.2.5.1 General

The Deliver\_UL\_Message service operation is used to deliver an uplink message from a V2X UE to the service consumer.

The following procedures are supported by the "Deliver\_UL\_Message" service operation:

- Deliver Uplink Message.

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

##### 5.2.2.5.2 Deliver Uplink Message

Figure 5.2.2.5.2-1 depicts a scenario where a VAE Server sends a notification to the service consumer to deliver an uplink message from a V2X UE.



Figure 5.2.2.5.2-1: Deliver Uplink Message

If the VAE Server receives from the VAE Client an uplink message from a V2X UE for which the service consumer has subscribed to receive messages or from a V2X UE that belongs to a V2X group for which the service consumer has subscribed to receive messages as defined in clause 6.5.2.1 of 3GPP TS 24.486 [28], the VAE Server shall send an HTTP POST request targeting the "{notifUri}" as previously provided by the service consumer within the corresponding subscription, and the request body including the UplinkMessageDeliveryData data structure.

Upon reception of the HTTP POST request message, if the service consumer successfully processed and accepted the received uplink message, the service consumer shall return an HTTP "204 No Content" status code.

If errors occur when processing the HTTP POST request, the service consumer shall send an HTTP error response as specified in clause 6.1.7.

When the VAE Server receives the response from the service consumer, the VAE Server shall send the response to the VAE Client as defined in clause 6.5.2.4 of 3GPP TS 24.486 [28].

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

#### 5.2.2.6 VAE\_MessageDelivery\_NotifyReceptionReport

##### 5.2.2.6.1 General

This service operation is used by a VAE Server to notify a previously subscribed service consumer on:

- Downlink Message Delivery Reception Report.

The following procedures are supported by the "VAE\_MessageDelivery\_NotifyReceptionReport" service operation:

- Downlink Message Delivery Reception Reporting.

##### 5.2.2.6.2 Downlink Message Delivery Reception Reporting

Figure 5.2.2.6.2-1 depicts a scenario where the VAE Server sends a request to notify a previously subscribed service consumer to receive the reception report for a downlink message delivery (see also clauses 9.4 of 3GPP°TS°23.286°[4]).



Figure 5.2.2.6.2-1: Procedure for Downlink Message Delivery Reception Reporting

1. In order to notify a previously subscribed service consumer on the reception report of a downlink message delivery, the VAE 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 delivery of the corresponding downlink message using the procedures defined in clause 5.2.2.4.2, and the request body including the Result data type.

2a. Upon success, the service consumer shall respond to the VAE 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 \* \* \* \*

## 6.1 VAE\_MessageDelivery API

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

### 6.1.1 Introduction

The VAE\_MessageDelivery service shall use the VAE\_MessageDelivery API.

The API URI of the VAE\_MessageDelivery Service API shall be:

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

The request URIs used in HTTP requests shall have the Resource URI structure defined in clause 5.2.4 of 3GPP TS 29.122 [22], i.e.:

All resource URIs of this API shall have the following root:

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

with the following components:

- The {apiRoot} shall be set as described in clause 5.2.4 of 3GPP TS 29.122 [22].

- The <apiName>shall be "vae-message-delivery".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 5.2.4 of 3GPP TS 29.122 [22].

NOTE: When 3GPP TS 29.122 [22] is referenced for the common protocol and interface aspects for API definition in the clauses under clause 6.1, the VAE Server takes the role of the SCEF and the service consumer takes the role of the SCS/AS.

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

### 6.1.2 Usage of HTTP

The provisions of clause 5.2.2 and 5.2.8 of 3GPP TS 29.122 [22] shall apply for the VAE\_MessageDelivery API.

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

### 6.1.3 Resources

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

#### 6.1.3.1 Overview

This clause describes the structure for the Resource URIs and the resources and methods used for the service.

Figure 6.1.3.1-1 depicts the resource URIs structure for the VAE\_MessageDelivery API.



Figure 6.1.3.1-1: Resource URI structure of the VAE\_MessageDelivery API

Table 6.1.3.1-1 provides an overview of the resources and applicable HTTP methods.

Table 6.1.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| Message Delivery Subscriptions | /subscriptions | POST | Create a new Message Delivery Subscription. |
| Individual Message Delivery Subscription | /subscriptions/{subscriptionId} | GET | Retrieve an existing "Individual Message Delivery Subscription" resource. |
| PUT | Update an existing "Individual Message Delivery Subscription" resource. |
| PATCH | Modify an existing "Individual Message Delivery Subscription" resource. |
| DELETE | Delete an existing "Individual Message Delivery Subscription" resource. |
| Downlink Message Deliveries | /subscriptions/{subscriptionId}/message-deliveries | POST | Create a new Downlink Message Delivery. |
| Individual Downlink Message Delivery | /subscriptions/{subscriptionId}/message-deliveries/{dlDeliveryId} | GET | Retrieve an existing "Individual Downlink Message Delivery" resource. |
| DELETE | Delete an existing "Individual Downlink Message Delivery" resource. |

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

##### 6.1.3.2.1 Description

This resource represents the collection of the "Individual Message Delivery Subscription" resources managed by the VAE Server.

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

##### 6.1.3.2.2 Resource Definition

Resource URI: **{apiRoot}/vae-message-delivery/<apiVersion>/subscriptions**

This resource shall support the resource URI variables defined in table 6.1.3.2.2-1.

Table 6.1.3.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 6.1.1. |

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

###### 6.1.3.2.3.1 POST

The HTTP POST method allows a service consumer to request the creation of a Message Delivery Subscription at the VAE 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 |
| MessageDeliverySubscriptionData | M | 1 | Represents the parameters to request the creation of a Message Delivery Subscription. |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MessageDeliverySubscriptionData | O | 0..1 | 201 Created | Successful case. The Message Delivery Subscription is successfully created and a representation of the created "Individual Message Delivery Subscription" resource shall be returned.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 [22] 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}/vae-message-delivery/<apiVersion>/subscriptions/{subscriptionId} |

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

##### 6.1.3.2.4 Resource Custom Operations

There are no resource custom operations defined for this resource in this release of the specification.

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

##### 6.1.3.3.1 Description

The "Individual Message Delivery Subscription" resource represents a Message Delivery Subscription managed by the VAE Server.

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

##### 6.1.3.3.2 Resource definition

Resource URI: **{apiRoot}/vae-message-delivery/<apiVersion>/subscriptions/{subscriptionId}**

This resource shall support the resource URI variables defined in table 6.1.3.3.2-1.

Table 6.1.3.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.1.1. |
| subscriptionId | string | Represents the unique identifier of the "Individual Message Delivery Subscription" resource. |

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

###### 6.1.3.3.3.1 GET

The HTTP GET method allows a service consumer to retrieve an existing "Individual Message Delivery Subscription" resource at the VAE Server.

This method shall support the URI query parameters specified in table 6.1.3.3.3.1-1.

Table 6.1.3.3.3.1-1: URI query parameters supported by the GET method on this resource

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

This method shall support the request data structures specified in table 6.1.3.3.3.1-2 and the response data structures and response codes specified in table 6.1.3.3.3.1-3.

Table 6.1.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.1.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| MessageDeliverySubscriptionData | M | 1 | 200 OK | Successful case. The requested "Individual Message Delivery Subscription" resource shall be returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| NOTE: The mandatory HTTP error status codes for the HTTP GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. |

Table 6.1.3.3.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

Table 6.1.3.3.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

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

###### 6.1.3.3.3.1A PUT

The HTTP PUT method allows a service consumer to request the update of an existing "Individual Message Delivery Subscription" resource at the VAE Server.

This method shall support the URI query parameters specified in table 6.1.3.3.3.1A-1.

Table 6.1.3.3.3.1A-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 6.1.3.3.3.1A-2 and the response data structures and response codes specified in table 6.1.3.3.3.1A-3.

Table 6.1.3.3.3.1A-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| MessageDeliverySubscriptionData | M | 1 | Represents the updated representation of the "Individual Message Delivery Subscription" resource. |

Table 6.1.3.3.3.1A-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MessageDeliverySubscriptionData | M | 1 | 200 OK | Successful case. The "Individual Message Delivery Subscription" resource is successfully updated and a representation of the updated resource shall be returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The "Individual Message Delivery Subscription" resource is successfully updated and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PUT method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. |

Table 6.1.3.3.3.1A-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

Table 6.1.3.3.3.1A-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

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

###### 6.1.3.3.3.1B PATCH

The HTTP PATCH method allows a service consumer to request the modification of an existing "Individual Message Delivery Subscription" resource at the VAE Server.

This method shall support the URI query parameters specified in table 6.1.3.3.3.1B-1.

Table 6.1.3.3.3.1B-1: URI query parameters supported by the PATCH method on this resource

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

This method shall support the request data structures specified in table 6.1.3.3.3.1B-2 and the response data structures and response codes specified in table 6.1.3.3.3.1B-3.

Table 6.1.3.3.3.1B-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| MsgDelSubscDataPatch | M | 1 | Represents the parameters to request the modification of the "Individual Message Delivery Subscription" resource. |

Table 6.1.3.3.3.1B-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MsgDelSubscDataPatch | M | 1 | 200 OK | Successful case. The "Individual Message Delivery Subscription" resource is successfully modified and a representation of the updated resource shall be returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The "Individual Message Delivery Subscription" resource is successfully modified and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PATCH method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. |

Table 6.1.3.3.3.1B-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

Table 6.1.3.3.3.1B-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

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

###### 6.1.3.3.3.2 DELETE

The HTTP DELETE method allows a service consumer to request the deletion of an existing "Individual Message Delivery Subscription" resource at the VAE Server.

This method shall support the URI query parameters specified in table 6.1.3.3.3.2-1.

Table 6.1.3.3.3.2-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 6.1.3.3.3.2-2 and the response data structures and response codes specified in table 6.1.3.3.3.2-3.

Table 6.1.3.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.1.3.3.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful case. The "Individual Message Delivery Subscription" resource is successfully deleted. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| NOTE: The mandatory HTTP error status codes for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. |

Table 6.1.3.3.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

Table 6.1.3.3.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

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

##### 6.1.3.3.4 Resource Custom Operations

There are no resource custom operations defined for this resource in this release of the specification.

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

##### 6.1.3.4.1 Description

This resource represents the collection of the "Individual Downlink Message Delivery" resources managed by the VAE Server.

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

##### 6.1.3.4.2 Resource Definition

Resource URI: **{apiRoot}/vae-message-delivery/<apiVersion>/subscriptions/{subscriptionId}/message-deliveries**

This resource shall support the resource URI variables defined in table 6.1.3.4.2-1.

Table 6.1.3.4.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.1.1. |
| subscriptionId | string | Represents the unique identifier of the "Individual Message Delivery Subscription" resource. |

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

###### 6.1.3.4.3.1 POST

The HTTP POST method allows a service consumer to request the creation of a Downlink Message Delivery at the VAE Server.

This method shall support the URI query parameters specified in table 6.1.3.4.3.1-1.

Table 6.1.3.4.3.1-1: 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 6.1.3.4.3.1-2 and the response data structures and response codes specified in table 6.1.3.4.3.1-3.

Table 6.1.3.4.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DownlinkMessageDeliveryData | M | 1 | Represents the parameters to request the creation of a Downlink Message Delivery. |

Table 6.1.3.4.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| DownlinkMessageDeliveryData | O | 0..1 | 201 Created | Successful case. The Downlink Message Delivery is successfully created and a representation of the created "Individual Downlink Message Delivery" resource shall be returned.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 [22] shall also apply. |

Table 6.1.3.4.3.1-4: 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}/vae-message-delivery/<apiVersion>/subscriptions/{subscriptionId}/message-deliveries/{dlDeliveryId} |

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

##### 6.1.3.4.4 Resource Custom Operations

There are no resource custom operations defined for this resource in this release of the specification.

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

##### 6.1.3.5.1 Description

The "Individual Downlink Message Delivery" resource represents a Downlink Message Delivery managed by the VAE Server.

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

##### 6.1.3.5.2 Resource definition

Resource URI: **{apiRoot}/vae-message-delivery/<apiVersion>/subscriptions/{subscriptionId}/message-deliveries/{dlDeliveryId}**

This resource shall support the resource URI variables defined in table 6.1.3.5.2-1.

Table 6.1.3.5.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.1.1. |
| subscriptionId | string | Represents the unique identifier of the "Individual Message Delivery Subscription" resource. |
| dlDeliveryId | string | Represents the unique identifier of the "Individual Downlink Message Delivery" resource. |

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

###### 6.1.3.5.3.1 GET

The HTTP GET method allows a service consumer to retrieve an existing "Individual Downlink Message Delivery" resource at the VAE Server.

This method shall support the URI query parameters specified in table 6.1.3.5.3.1-1.

Table 6.1.3.5.3.1-1: URI query parameters supported by the GET method on this resource

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

This method shall support the request data structures specified in table 5.1.3.5.3.1-2 and the response data structures and response codes specified in table 5.1.3.5.3.1-3.

Table 6.1.3.5.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.1.3.5.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| DownlinkMessageDeliveryData | M | 1 | 200 OK | Successful case. The requested "Individual Downlink Message Delivery" resource shall be returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| NOTE: The mandatory HTTP error status codes for the HTTP GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. |

Table 6.1.3.5.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

Table 6.1.3.5.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

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

###### 6.1.3.5.3.2 DELETE

The HTTP DELETE method allows a service consumer to request the deletion of an existing "Individual Downlink Message Delivery" resource at the VAE Server.

This method shall support the URI query parameters specified in table 6.1.3.5.3.2-1.

Table 6.1.3.5.3.2-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 6.1.3.5.3.2-2 and the response data structures and response codes specified in table 6.1.3.5.3.2-3.

Table 6.1.3.5.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.1.3.5.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful case. The "Individual Downlink Message Delivery" resource is successfully deleted. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative VAE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [22]. |
| NOTE: The mandatory HTTP error status codes for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. |

Table 6.1.3.5.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

Table 6.1.3.5.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative VAE Server. |

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

##### 6.1.3.5.4 Resource Custom Operations

There are no resource custom operations defined for this resource in this release of the specification.

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

### 6.1.4 Custom Operations without associated resources

There are no custom operations without associated resources supported on VAE\_MessageDelivery.

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

#### 6.1.5.1 General

Notifications shall comply to clause 5.2.5 of 3GPP TS 29.122 [22].

Table 6.1.5.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description(service operation) |
| Uplink Message Delivery | {notifUri} | POST | Enables to perform uplink message delivery to the service consumer. |
| Reception Report of Downlink Message Delivery | {notifUri} | POST | Enables to report the result of a downlink message delivery to the service consumer. |

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

#### 6.1.5.2 Void

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

#### 6.1.5.3 Void

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

#### 6.1.5.4 Void

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

#### 6.1.5.5 Void

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

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

##### 6.1.5.6.1 Description

The Uplink Message Delivery notification is used by the VAE Server to deliver an uplink message to the service consumer.

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

##### 6.1.5.6.2 Operation Definition

This operation shall support the request data structures specified in table 6.1.5.6.2-1 and the response data structure and response codes specified in table 6.1.5.6.2-2.

Table 6.1.5.6.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| UplinkMessageDeliveryData | M | 1 | Contains the uplink message data. |

Table 6.1.5.6.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The Uplink Message Delivery notification is successfully received and acknowledged, and no content is returned in the response body. |
| 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 [22]. |
| 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 [22]. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. |

Table 6.1.5.6.2-3: 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 6.1.5.6.2-4: 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 \* \* \* \*

##### 6.1.5.7.1 Description

The Reception Report of Downlink Message Delivery notification is used by the VAE Server to report the result of the downlink message delivery to the service consumer.

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

##### 6.1.5.7.2 Operation Definition

This operation shall support the request data structures specified in table 6.1.5.7.2-1 and the response data structure and response codes specified in table 6.1.5.7.2-2.

Table 6.1.5.7.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| Result | M | 1 | Contains the result of downlink message delivery. |

Table 6.1.5.7.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The Reception Report of Downlink Message Delivery notification is successfully received and acknowledged, and no content is returned in the response body. |
| 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 [22]. |
| 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 [22] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. |

Table 6.1.5.7.2-3: 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 6.1.5.7.2-4: 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 VAE\_MessageDelivery API.

Table 6.1.6.1-1: VAE\_MessageDelivery specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| AppServerId | 6.1.6.3.2 | Represents the identifier of the service consumer. |  |
| DownlinkMessageDeliveryData | 6.1.6.2.2 | Represents the Downlink V2X Message Delivery data. |  |
| GeoId | 6.1.6.3.2 | Represents the geographical area identifier. |  |
| MessageDeliverySubscriptionData | 6.1.6.2.3 | Represents the V2X Message Delivery Subscription data. |  |
| MsgDelSubscDataPatch | 6.1.6.2.5 | Represents the requested modifications to a V2X Message Delivery Subscription. |  |
| Result | 6.1.6.3.3 | Represents the result of message delivery. |  |
| UplinkMessageDeliveryData | 6.1.6.2.4 | Represents the Uplink V2X Message Delivery data. |  |
| V2xGroupId | 6.1.6.3.2 | Represents the V2X group ID. |  |
| V2xServiceID | 6.1.6.3.2 | Represents the V2X service ID. |  |
| V2xUeId | 6.1.6.3.2 | Represents the V2X UE ID. |  |
| V2xMessagePayload | 6.1.6.3.2 | Represents V2X message payload data. |  |

Table 6.1.6.1-2 specifies data types re-used by the VAE\_MessageDelivery service-based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the VAE\_MessageDelivery service based interface.

Table 6.1.6.1-2: VAE\_MessageDelivery re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| Bytes | 3GPP TS 29.571 [11] | Represents a string with format "byte" as defined in OpenAPI Specification [6], i.e, base64-encoded characters. |  |
| DateTime | 3GPP TS 29.571 [11] | Represents a date and a time. |  |
| SupportedFeatures | 3GPP TS 29.571 [11] | Represents the list of supported features. |  |
| TestNotification | 3GPP TS 29.122 [22] | Represents a notification that can be sent to test whether a chosen notification mechanism works. | Notification\_test\_event |
| Uri | 3GPP TS 29.571 [11] | Represents a URI. |  |
| WebsockNotifConfig | 3GPP TS 29.122 [22] | Represents configuration information to be used for the delivery of notifications over Websockets. | Notification\_websocket |

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

##### 6.1.6.2.1 Introduction

This clause defines the structures to be used in resource representations.

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

##### 6.1.6.2.2 Type: DownlinkMessageDeliveryData

Table 6.1.6.2.2-1: Definition of type DownlinkMessageDeliveryData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ueId | V2xUeId | C | 0..1 | Contains the identifier of the V2X UE to which the downlink V2X message is addressed.(NOTE) |  |
| groupId | V2xGroupId | C | 0..1 | Contains the identifier of the V2X group to which the downlink V2X message is addressed.(NOTE) |  |
| serviceId | V2xServiceId | C | 0..1 | Contains the identifier of the V2X service to which the downlink V2X message is related.When the "V2XService" feature is supported, this attribute shall be present. | V2XService |
| geoId | GeoId | O | 0..1 | Contains the geographical area identifier. |  |
| payload | V2xMessagePayload | M | 1 | Constains the downlink V2X message payload data. |  |
| duration | DateTime | O | 0..1 | Contains the absolute time at which the related "Individual Downlink Message Delivery" resource is considered to expire.When omitted in the request, it indicates the resource is requested to be valid forever by the service consumer.When omitted in the response, it indicates the resource is set to valid forever by the VAE server. |  |
| receptionRepReq | boolean | O | 0..1 | Contains the indication on whether a reception report is requested for this downlink V2X message delivery.- "true" indicates that a reception report is requested.- "false" indicates that a reception report is not requested.- The default value is "true" when this attribute is omitted. | enNB |
| notifUri | Uri | C | 0..1 | Contains the notification URI.This attribute shall be present only in the case of a Standalone Downlink Message Delivery request and the downlink message delivery reception report is requested (i.e., the "receptionRepReq" attribute is either absent or present and set to "true"). |  |
| 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 is required. |  |
| NOTE: Either the "ueId" attribute or the "groupId" attribute shall be included. |

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

##### 6.1.6.2.3 Type: MessageDeliverySubscriptionData

Table 6.1.6.2.3-1: Definition of type MessageDeliverySubscriptionData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| appSerId | AppServerId | M | 1 | Contains the identifier of the service consumer. |  |
| serviceId | V2xServiceId | M | 1 | Contains the identifier of the V2X service to which the V2X Message Delivery Subscription is related. |  |
| geoId | GeoId | O | 0..1 | Contains the geographical area identifier. |  |
| notifUri | Uri | M | 1 | Contains the notification URI. |  |
| requestTestNotification | boolean | O | 0..1 | Contains the test notification indication.- Set to true by the service consumer to request the VAE Server to send a test notification.- Set to "false" or omitted otherwise. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Contains the configuration parameters to set up notification delivery over Websocket as defined in clause 6.1.5.4. | Notification\_websocket |
| 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 is required. |  |

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

##### 6.1.6.2.4 Type: UplinkMessageDeliveryData

Table 6.1.6.2.4-1: Definition of type UplinkMessageDeliveryData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| resourceUri | Uri | M | 1 | Contains the URI of the "Individual Message Delivery Subscription" resource to which the uplink message delivery is related.(NOTE) |  |
| ueId | V2xUeId | M | 1 | Contains the identifier of the sending V2X UE. |  |
| serviceId | V2xServiceId | C | 0..1 | Contains the identifier of the V2X service to which the uplink V2X message is related.When the "V2XService" feature is supported, this attribute shall be present. | V2XService |
| geoId | GeoId | O | 0..1 | Contains the geographical area identifier. |  |
| payload | V2xMessagePayload | M | 1 | Contains the uplink V2X message payload data. |  |
| NOTE: In this release of the specification, this attribute shall contain either the complete resource URI or only the "<apiSpecificResourceUriPart>" component (see clause 6.1.1) of the resource URI to identify the "Individual Message Delivery Subscription" resource to which the uplink message delivery is related. |

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

##### 6.1.6.2.5 Type: MsgDelSubscDataPatch

Table 6.1.6.2.5-1: Definition of type MsgDelSubscDataPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| serviceId | V2xServiceId | O | 0..1 | Contains the identifier of the V2X service to which the V2X message(s) belongs. |  |
| geoId | GeoId | O | 0..1 | Contains the updated geographical area identifier. |  |
| notifUri | Uri | O | 0..1 | Contains the updated notification URI. |  |

Editor’s Note: The list of attributes (i.e., attributes of the resource representation that can be modified) to be present within this data type is FFS.

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

##### 6.1.6.3.2 Simple data types

The simple data types defined in table 6.1.6.3.2-1 shall be supported.

Table 6.1.6.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
| AppServerId | string | Represents the identifier of the service consumer. |  |
| GeoId | string | Represents the identifier of a geographical area. |  |
| V2xGroupId | string | Represents the identifier of a V2X group. |  |
| V2xServiceId | string | Represents the identifier of a V2X service. |  |
| V2xUeId | string | Represents the identifier of a V2X UE. |  |
| V2xMessagePayload | Bytes | Represents a V2X message payload data. |  |

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

##### 6.2.6.3.3 Enumeration: Result

The enumeration Result represents the result of message delivery. It shall comply with the provisions defined in table 6.2.6.3.3-1.

Table 6.2.6.3.3-1: Enumeration Result

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| SUCCESS | Indicates that the downlink message delivery was successful. |  |
| FAIL | Indicates that the downlink message delivery failed. |  |

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

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

There are no data types describing alternative data types or combinations of data types defined for this API in this release of the specification.

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

#### 6.2.6.5 Binary data

##### 6.2.6.5.1 Binary Data Types

Table 6.2.6.5.1-1: Binary Data Types

|  |  |  |
| --- | --- | --- |
| Name | Clause defined | Content type |
|  |  |  |

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

#### 6.1.7.1 General

For the VAE\_MessageDelivery API, HTTP error responses shall be supported as specified in clause 5.2.6 of 3GPP TS 29.122 [22]. Protocol errors and application errors specified in clause 5.2.6 of 3GPP TS 29.122 [22] shall be supported for the HTTP status codes specified in table 5.2.6-1 of 3GPP TS 29.122 [22].

In addition, the requirements in the following clauses are applicable for the VAE\_MessageDelivery API.

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

#### 6.1.7.2 Protocol Errors

No specific protocol errors for the VAE\_MessageDelivery API are specified.

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

#### 6.1.7.3 Application Errors

The application errors defined for the VAE\_MessageDelivery service are listed in Table 6.1.7.3-1.

Table 6.1.7.3-1: Application errors

|  |  |  |  |
| --- | --- | --- | --- |
| Application Error | HTTP status code | Description | Applicability |
|  |  |  |  |

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

### 6.1.8 Feature negotiation

The optional features in table 6.1.8-1 are defined for the VAE\_MessageDelivery API. They shall be negotiated using the extensibility mechanism defined in clause 5.2.7 of 3GPP TS 29.122 [22].

Table 6.1.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | Notification\_test\_event | The testing of notification connection is supported according to clause 6.1.5.3. |
| 2 | Notification\_websocket | The delivery of notifications over Websocket is supported according to clause 6.1.5.4. This feature requires that the Notification\_test\_event feature is also supported. |
| 3 | V2XService | Indicates the support of provisioning the V2X service ID within the uplink/downlink message delivery procedures. |
| 4 | enNB | This feature indicates the support of the Rel-19 generic enhancements to this application layer API.The following functionalities are supported:- Support the provisioning of the reception report indication within the downlink message delivery request. |

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

### 6.1.9 Security

The provisions of clause 6 of 3GPP TS 29.122 [22] shall apply for the VAE\_V2PApplicationRequirement API.

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

# A.2 VAE\_MessageDelivery API

openapi: 3.0.0

info:

 version: 1.2.0

 title: VAE\_MessageDelivery

 description: |

 API for VAE Message Delivery Service

 © 2024, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

 All rights reserved.

externalDocs:

 description: 3GPP TS 29.486 V18.3.0 V2X Application Enabler (VAE) Services

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.486/'

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/vae-message-delivery/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 5.2.4 of 3GPP TS 29.122

paths:

 /subscriptions:

 post:

 summary: Create a new Individual Message Delivery Data Subscription resource.

 operationId: CreateIndividualMessageDeliveryDataSubscription

 tags:

 - Message Delivery Data Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 The Message Delivery Subscription is successfully created and a representation of the

 created Individual Message Delivery Subscription resource shall be returned..

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: Contains the URI of the newly created resource.

 required: true

 schema:

 type: string

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

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

 callbacks:

 uplinkMessageDelivery:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content, the notification was successful received.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

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

 receptReportOfDownlinkMesageDelivery:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content, the notification was successfully received.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

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

 /subscriptions/{subscriptionId}:

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Contains the identifier of the Individual Message Delivery Subscription.

 required: true

 schema:

 type: string

 get:

 summary: Get an existing Individual Message Delivery Subscription resource

 operationId: ReadIndividualMessageDeliverySubscription

 tags:

 - Individual Message Delivery Subscription (Document)

 responses:

 '200':

 description: >

 The requested Individual Message Delivery Subscription resource shall be

 returned.

 content:

 application/json:

 schema:

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

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

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

 put:

 summary: Request the update of an existing Individual Message Delivery Subscription resource.

 operationId: UpdateMessageDeliverySubscription

 tags:

 - Individual Message Delivery Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Message Delivery 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/MessageDeliverySubscriptionData'

 '204':

 description: >

 No Content. The Individual Message Delivery 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 Message Delivery Subscription resource.

 operationId: ModifyMessageDeliverySubscription

 tags:

 - Individual Message Delivery Subscription (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Message Delivery 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/MessageDeliverySubscriptionData'

 '204':

 description: >

 No Content. The Individual Message Delivery 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: Delete an individual Message Delivery Subscription resource

 operationId: DeleteMessageDeliverySubscription

 tags:

 - Individual Message Delivery Subscription (Document)

 responses:

 '204':

 description: >

 The Individual Message Delivery Subscription resource is successfully deleted.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

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

 /subscriptions/{subscriptionId}/message-deliveries:

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Contains the identifier of the Individual Message Delivery Subscription.

 required: true

 schema:

 type: string

 post:

 summary: Request the creation of a Downlink Message Delivery.

 operationId: CreateDownlinkMessageDelivery

 tags:

 - Downlink Message Deliveries (Collection)

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '201':

 description: >

 Created. The Downlink Message Delivery is successfully created and a representation of

 the created Individual Downlink Message Delivery resource shall be returned.

 headers:

 Location:

 description: Contains the URI of the newly created resource.

 required: true

 schema:

 type: string

 content:

 application/json:

 schema:

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

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

 /subscriptions/{subscriptionId}/message-deliveries/{dlDeliveryId}:

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Contains the identifier of the Individual Message Delivery Subscription.

 required: true

 schema:

 type: string

 - name: dlDeliveryId

 in: path

 description: Contains the identifier of the Individual Downlink Message Delivery resource.

 required: true

 schema:

 type: string

 get:

 summary: Enables to retrieve an existing Individual Downlink Message Delivery resource.

 operationId: ReadIndividualDownlinkMessageDelivery

 tags:

 - Individual Downlink Message Delivery (Document)

 responses:

 '200':

 description: >

 OK. The requested Individual Downlink Message Delivery resource is successfully

 returned.

 content:

 application/json:

 schema:

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

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 summary: Enables to delete an existing Individual Downlink Message Delivery resource.

 operationId: DeleteMessageDelivery

 tags:

 - Individual message delivery (Document)

 responses:

 '204':

 description: >

 No Content. The Individual Downlink Message Delivery resource is successfully

 deleted.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 DownlinkMessageDeliveryData:

 description: Represents the Downlink V2X Message Delivery data.

 type: object

 properties:

 ueId:

 $ref: '#/components/schemas/V2xUeId'

 groupId:

 $ref: '#/components/schemas/V2xGroupId'

 serviceId:

 $ref: '#/components/schemas/V2xServiceId'

 duration:

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

 geoId:

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

 payload:

 $ref: '#/components/schemas/V2xMessagePayload'

 receptionRepReq:

 type: boolean

 default: true

 description: >

 Contains the indication on whether a reception report is requested for this downlink V2X

 message delivery.

 true indicates that a reception report is requested.

 false indicates that a reception report is not requested.

 The default value is true when this attribute is omitted.

 notifUri:

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

 suppFeat:

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

 required:

 - payload

 MessageDeliverySubscriptionData:

 description: Represents the Message Delivery Subscription data.

 type: object

 properties:

 appSerId:

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

 serviceId:

 $ref: '#/components/schemas/V2xServiceId'

 geoId:

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

 notifUri:

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

 requestTestNotification:

 type: boolean

 description: >

 Contains the test notification indication.

 Set to true by the service consumer to request the VAE Server to send a test

 notification.

 Set to false or omitted otherwise.

 websockNotifConfig:

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

 suppFeat:

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

 required:

 - appSerId

 - serviceId

 - notifUri

 MsgDelSubscDataPatch:

 description: Represents the requested modifications to a Message Delivery Subscription.

 type: object

 properties:

 serviceId:

 $ref: '#/components/schemas/V2xServiceId'

 geoId:

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

 notifUri:

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

 UplinkMessageDeliveryData:

 description: Represents the Uplink V2X Message Delivery data.

 type: object

 properties:

 resourceUri:

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

 ueId:

 $ref: '#/components/schemas/V2xUeId'

 serviceId:

 $ref: '#/components/schemas/V2xServiceId'

 geoId:

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

 payload:

 $ref: '#/components/schemas/V2xMessagePayload'

 required:

 - resourceUri

 - ueId

 - payload

# SIMPLE DATA TYPES

#

 AppServerId:

 description: Represents the identifier of the service consumer.

 type: string

 V2xUeId:

 description: Represents the identifier of a V2X UE.

 type: string

 V2xGroupId:

 description: Represents the identifier of a V2X group.

 type: string

 V2xServiceId:

 description: Represents the the identifier of a V2X service.

 type: string

 GeoId:

 description: Represents the identifier of a geographical area.

 type: string

 V2xMessagePayload:

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

#

# ENUMERATIONS

#

 Result:

 anyOf:

 - type: string

 enum:

 - SUCCESS

 - FAIL

 - 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 result of message delivery.

 Possible values are:

 - SUCCESS: Indicates that the message delivery was successful.

 - FAIL: Indicates that the message delivery failed.

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