**3GPP TSG- Meeting #C3-242xxx**

**Changsha, China, – was C3-242348**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0121** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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 additional corrections | | | | | | | | |
|  |  | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | |
|  |  | | | | | | | | |
| ***Work item code:*** | NBI18 | | | | |  | ***Date:*** | | 2024-04-18 |
|  |  | | | |  | |  | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | |  |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | |
| ***Reason for change:*** | | | The following issues have been identified:   * Many of the references to TS 29.500 in the tables defing the responses are incorrect (i.e., wrong reference number) in addition to the fact that these tables should refer rather to TS 29.122 as this is a NBI TS. * The agreed C3-235620 (CR#0101) generalized the "service consumer" terminology, but there are still a few occurrences that were missed. * The "VASS" abbreviation defined in clause 3 should be used everywhere across the specification, there are still some occurrences of "V2X Application Specific Server". * Clauses 6.X.2 should also be aligned to refer to TS 29.122 as this is a NBI TS. | | | | | | |
|  | | |  | | | | | | |
| ***Summary of change:*** | | | This CR proposes to:   * Address and correct the above-detailed issues. * Apply additional editorial enhancements to improve the quality of the specification and alignments with the drafting rules and the NBI TS skeleton that do not lead to any NBC issues. | | | | | | |
|  | | |  | | | | | | |
| ***Consequences if not approved:*** | | | * The above-detailed issues are not corrected and the quality of the specification is not enhanced. | | | | | | |
|  | |  | | | | | | | |
| ***Clauses affected:*** | | 4, 5.2.2.2.2, 5.8.2.2.2, 6.1.1, 6.1.2, 6.1.3.2.3.1, 6.1.3.3.3.1, 6.1.3.3.3.2, 6.1.3.4.3.1, 6.1.3.5.3.1, 6.1.3.5.3.2, 6.1.5.6.2, 6.1.5.7.2, 6.1.6.1, 6.1.6.2.3, 6.2.1, 6.2.2, 6.2.3.2.3.1, 6.2.3.3.3.1, 6.2.3.3.3.2, 6.3.1, 6.3.2, 6.3.3.2.3.1, 6.3.3.3.3.1, 6.3.3.3.3.2, 6.3.5.6.2, 6.4.1, 6.4.2, 6.4.3.2.3.1, 6.4.3.3.3.1, 6.4.3.3.3.2, 6.4.5.6.2, 6.5.1, 6.5.2, 6.5.3.2.3.1, 6.6.1, 6.6.2, 6.6.3.2.3.1, 6.6.3.3.3.1, 6.6.3.3.3.2, 6.6.5.6.2, 6.7.1, 6.7.2, 6.7.3.2.3.1, 6.7.3.3.3.1, 6.7.3.3.3.2, 6.7.3.3.3.3, 6.7.5.6.2, 6.7.6.2.2, 6.8.1, 6.8.2, 6.8.3.2.3.1, 6.8.3.3.3.1, 6.8.3.3.3.2, 6.8.3.3.3.3, 6.9.1, 6.9.2, 6.9.3.2.3.1, 6.9.3.3.3.1, 6.9.3.3.3.2, 6.9.3.3.3.3, 6.9.5.6.2, 6.9.6.1 | | | | | | | |
|  | |  | | | | | | | |
|  | | **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 does not impact the OpenAPI descriptions of the APIs defined in this specification. | | | | | | | |
|  | |  | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | |

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

# 4 Overview

The Vs interface is between the VASS and the VAE Server. It specifies RESTful APIs that allow the VASS to access the services and capabilities provided by VAE Server.

The stage 2 level requirements and signalling flows for the Vs interface are defined in 3GPP TS 23.286 [4].

The Vs interface supports the following APIs:

- VAE\_MessageDelivery

- VAE\_FileDistribution

- VAE\_ApplicationRequirement

- VAE\_DynamicGroup

- VAE\_HDMapDynamicInfo

- VAE\_SessionOrientedService

- VAE\_V2VConfigRequirement

- VAE\_PC5ProvisioningRequirement

- VAE\_ServiceAndQoSControlInfo

- VAE\_VRUZoneManagement

- VAE\_V2PApplicationRequirement

The VAE-E interface is between VAE Servers. It specifies RESTful APIs that allow the VAE server to access the services and capabilities provided by other VAE Server.

The stage 2 level requirements and signalling flows for the VAE-E interface are defined in 3GPP TS 23.286 [4].

The VAE-E interface supports the following APIs:

- VAE\_ServiceContinuity

\* \* \* \* 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 the message from the V2X UE and/or send the message to the V2X UE, the service consumer shall send the POST method as step 1of the 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.

The service consumer within MessageDeliverySubscriptionData data structure shall include:

- the identity of the service consumer within the "appSerId" attribute;

- the V2X service ID within the "serviceId" attribute;

- the notification URI within the "notifUri" attribute; and

- the supported features with the "suppFeat" attribute;

and may include

- the geographical area identifier within the "geoId" attribute.

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 resource, which represents "Individual Message Delivery Subscription", 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 a 201 Created message, including 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 to refer to the "Individual Message Delivery Subscription" resource.

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

##### 5.8.2.2.2 Establish Session

Figure 5.8.2.2.2-1 depicts a scenario where a service consumer sends a request to the VAE Server to request the creation of a Session Oriented Service Subscription.



Figure 5.8.2.2.2-1: Establish Session

When the service consumer needs to trigger the establishment of the session-oriented service by the VAE server, the service consumer shall send the POST method as step 1 of the figure 5.8.2.2.2-1 to request to create an "Individual Session Oriented Service Subscription".

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

The service consumer within the SessionOrientedData data structure shall include:

- the notification URI within the "notifUri" attribute;

- the remote V2X UE ID within the "ueId" attribute;

- the V2X service ID within the "serviceId" attribute;

- the identity of the service consumer within the "appSerId" attribute; and

- the application QoS requirements for the session within the "appQosReq" attribute.

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 resource, which represents "Individual Session Oriented Service Subscription", addressed by a URI as defined in clause 6.7.3.3.2 and contains a VAE Server created resource identifier. The VAE Server shall respond to the service consumer with a 201 Created message, including Location header field containing the URI for the created resource.

The service consumer shall use the URI received in the Location header in subsequent requests to the VAE Server to refer to the "Individual Session Oriented Service Subscription".

After the VAE Server responded to the service consumer, the VAE Server shall invoke the procedure defined in 3GPP TS 24.486 [28] to establish a session-oriented service with VAE client.

If errors occur when processing the HTTP POST request, the VAE Server shall apply error handling procedures as specified in clause 6.7.7.

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

### 6.1.1 Introduction

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

The API URI of the VAE\_MessageDelivery shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], 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 3GPP TS 29.501 [3].

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

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.1.3.

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

###### 6.1.3.2.3.1 POST

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 | Parameters to create an Individual Message Delivery Subscription resources. |

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 |
| MessageDeliverySubscriptionData | O | 0..1 | 201 Created | An Individual Message Delivery Subscription resource for the V2X UE ID or V2X group ID is created successfully. |
| 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 \* \* \* \*

###### 6.1.3.3.3.1 GET

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 | An individual Message Delivery Subscription resource for the V2X UE ID or V2X group ID is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and SCS/AS is replaced by the service consumer. |
| 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] with the difference that the SCEF is replaced by the VAE Server and SCS/AS is replaced by the service consumer. |
| 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 \* \* \* \*

###### 6.1.3.3.3.2 DELETE

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 | Response  codes | Description |
| n/a |  |  | 204 No Content | Individual Message Delivery Subscription was 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] with the difference that the SCEF is replaced by the VAE Server and SCS/AS is replaced by the service consumer. |
| 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] with the difference that the SCEF is replaced by the VAE Server and SCS/AS is replaced by the service consumer. |
| 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 \* \* \* \*

###### 6.1.3.4.3.1 POST

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 | Parameters to create an Individual Downlink Message Delivery resource. |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| DownlinkMessageDeliveryData | O | 0..1 | 201 Created | An Individual Downlink Message Delivery resource for the V2X UE ID **or** V2X group ID is created successfully. |
| 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 \* \* \* \*

###### 6.1.3.5.3.1 GET

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 | An individual Downlink Message Delivery resource for the V2X UE ID **or** V2X group ID is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 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

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 | Response  codes | Description |
| n/a |  |  | 204 No Content | Individual Downlink Message Delivery resource was 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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 \* \* \* \*

##### 6.1.5.6.2 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 delivery 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 | The uplink message is delivery successfully. |
| 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 where the uplink message 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. |
| 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 where the uplink message 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 6.1.5.6.2-3: 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 uplink message 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 uplink message should be redirected. |

\* \* \* \* 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 messagege 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 | The reception report is successfully. |
| 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 where the uplink message 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 where the uplink message 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 uplink message 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 uplink message 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 application server. |  |
| DownlinkMessageDeliveryData | 6.1.6.2.2 | Contains the downlink V2X message delivery data |  |
| GeoId | 6.1.6.3.2 | Geographical area identifier |  |
| MessageDeliverySubscriptionData | 6.1.6.2.3 | Contains the V2X message delivery subscription data |  |
| Result | 6.1.6.3.4 | Contains the result of the downlink message delivery | ReceptionReport |
| UplinkMessageDeliveryData | 6.1.6.2.4 | Contains the uplink V2X message delivery data |  |
| V2xGroupId | 6.1.6.3.2 | The group ID for which the V2X message is addressed |  |
| V2xServiceID | 6.1.6.3.2 | The V2X service ID to which the V2X message belongs to |  |
| V2xUeId | 6.1.6.3.2 | Identifier of the destination V2X UE |  |
| V2xMessagePayload | 6.1.6.3.2 | V2X message payload carried by the V2X message |  |

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] | String with format "byte" as defined in OpenAPI Specification [6], i.e, base64-encoded characters |  |
| DateTime | 3GPP TS 29.571 [11] | String with format "date-time" as defined in OpenAPI Specification [6]. |  |
| SupportedFeatures | 3GPP TS 29.571 [11] |  |  |
| 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] |  |  |
| WebsockNotifConfig | 3GPP TS 29.122 [22] | Pepresents configuration for the delivery of notifications over Websockets. | Notification\_websocket |

\* \* \* \* 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 | Identity of the service consumer. |  |
| serviceId | V2xServiceId | M | 1 | Indicates a V2X service ID to which the V2X message belongs to. |  |
| geoId | GeoId | O | 0..1 | Indicates a geographical area identifier. |  |
| notifUri | Uri | M | 1 | Contains the notification URI。 |  |
| requestTestNotification | boolean | O | 0..1 | Set to true by the service consumer to request the VAE server to send a test notification as defined in clause 6.1.5.3. Set to false or omitted otherwise. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol as defined in clause 6.1.5.4. | Notification\_websocket |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the features supported by the service consumer and VAE server. It shall be included in the request and response of the creation of individual Message Delivery Subscription resource. |  |

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

### 6.2.1 Introduction

The VAE\_FileDistribution shall use the VAE\_FileDistribution API.

The API URI of the VAE\_FileDistribution shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [3].

- The <apiName>shall be "vae-file-distribution".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.2.3.

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

###### 6.2.3.2.3.1 POST

This method shall support the URI query parameters specified in table 6.2.3.2.3.1-1.

Table 6.2.3.2.3.1-1: 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 6.2.3.2.3.1-2 and the response data structures and response codes specified in table 6.2.3.2.3.1-3.

Table 6.2.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| FileDistributionData | M | 1 | Parameters to create an individual File Distribution resource. |

Table 6.2.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| FileDistributionData | O | 0..1 | 201 Created | An individual File Distribution resource for the V2X group ID is created successfully. |
| 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 6.2.3.2.3.1-4: 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-file-distribution/<apiVersion>/file-distributions/{distributionId} |

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

###### 6.2.3.3.3.1 GET

This method shall support the URI query parameters specified in table 6.2.3.3.3.1-1.

Table 6.2.3.3.3.1-1: 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 6.2.3.3.3.1-2 and the response data structures and response codes specified in table 6.2.3.3.3.1-3.

Table 6.2.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.2.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| FileDistributionData | M | 1 | 200 OK | An individual File Distribution resource for the V2X group ID is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.2.3.3.3.1-4: 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 6.2.3.3.3.1-5: 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 \* \* \* \*

###### 6.2.3.3.3.2 DELETE

This method shall support the URI query parameters specified in table 6.2.3.3.3.2-1.

Table 6.2.3.3.3.2-1: 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 6.2.3.3.3.2-2 and the response data structures and response codes specified in table 6.2.3.3.3.2-3.

Table 6.2.3.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.2.3.3.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Individual File Distribution resource was 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] also apply. | | | | |

Table 6.2.3.3.3.2-4: 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 6.2.3.3.3.2-5: 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 \* \* \* \*

### 6.3.1 Introduction

The VAE\_ApplicationRequirement Service shall use the VAE\_ApplicationRequirement API.

The API URI of the VAE\_ApplicationRequirement API shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [3].

- The <apiName>shall be "vae-app-req".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.3.3.

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

###### 6.3.3.2.3.1 POST

This method shall support the URI query parameters specified in table 6.3.3.2.3.1-1.

Table 6.3.3.2.3.1-1: 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 6.3.3.2.3.1-2 and the response data structures and response codes specified in table 6.3.3.2.3.1-3.

Table 6.3.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ApplicationRequirementData | M | 1 | Parameters to create an individual Application Requirement resource. |

Table 6.3.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| ApplicationRequirementData | O | 0..1 | 201 Created | An individual Application Requirement resource for the V2X UE ID or the V2X group ID is created successfully. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.3.3.2.3.1-4: 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-app-req/<apiVersion>/application-requirements/{requirementId} |

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

###### 6.3.3.3.3.1 GET

This method shall support the URI query parameters specified in table 6.3.3.3.3.1-1.

Table 6.3.3.3.3.1-1: 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 6.3.3.3.3.1-2 and the response data structures and response codes specified in table 6.3.3.3.3.1-3.

Table 6.3.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.3.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| ApplicationRequirementData | M | 1 | 200 OK | An individual Application Requirement resource for the V2X UE ID or V2X group ID is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.3.3.3.3.1-4: 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 6.3.3.3.3.1-5: 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 \* \* \* \*

###### 6.3.3.3.3.2 DELETE

This method shall support the URI query parameters specified in table 6.3.3.3.3.2-1.

Table 6.3.3.3.3.2-1: 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 6.3.3.3.3.2-2 and the response data structures and response codes specified in table 6.3.3.3.3.2-3.

Table 6.3.3.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.3.3.3.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Individual Application Requirement resource was 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.3.3.3.3.2-4: 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 6.3.3.3.3.2-5: 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 \* \* \* \*

##### 6.3.5.6.2 Operation Definition

This operation shall support the request data structures specified in table 6.3.5.6.2-1 and the response data structure and response codes specified in table 6.3.5.6.2-2.

Table 6.3.5.6.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AppReqNotification | M | 1 | Notify the result of the network resource adaptation corresponding to the V2X application requirement. |

Table 6.3.5.6.2-2: 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 notification is successfully received and processed. |
| 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 where 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. |
| 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 where 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 1: 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 6.3.5.6.2-3: 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 6.3.5.6.2-4: 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 \* \* \* \*

### 6.4.1 Introduction

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

The API URI of the VAE\_DynamicGroup API shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [3].

- The <apiName>shall be "vae-dynamic-group".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.4.3.

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

###### 6.4.3.2.3.1 POST

This method shall support the URI query parameters specified in table 6.4.3.2.3.1-1.

Table 6.4.3.2.3.1-1: 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 6.4.3.2.3.1-2 and the response data structures and response codes specified in table 6.4.3.2.3.1-3.

Table 6.4.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| GroupConfigurationData | M | 1 | Parameters to create an individual Group Configuration resource. |

Table 6.4.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| GroupConfigurationData | O | 0..1 | 201 Created | An individual Group Configuration resource for the V2X group ID is created successfully. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.4.3.2.3.1-4: 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-dynamic-group/<apiVersion>/group-configurations/{configId} |

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

###### 6.4.3.3.3.1 GET

This method shall support the URI query parameters specified in table 6.4.3.3.3.1-1.

Table 6.4.3.3.3.1-1: 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 6.4.3.3.3.1-2 and the response data structures and response codes specified in table 6.4.3.3.3.1-3.

Table 6.4.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.4.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| GroupConfigurationData | M | 1 | 200 OK | An individual Group Configuration resource for the V2X group ID is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.4.3.3.3.1-4: 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 6.4.3.3.3.1-5: 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 \* \* \* \*

###### 6.4.3.3.3.2 DELETE

This method shall support the URI query parameters specified in table 6.4.3.3.3.2-1.

Table 6.4.3.3.3.2-1: 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 6.4.3.3.3.2-2 and the response data structures and response codes specified in table 6.4.3.3.3.2-3.

Table 6.4.3.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.4.3.3.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Successful case. The "Individual Group Configuration" 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.4.3.3.3.2-4: 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 6.4.3.3.3.2-5: 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 \* \* \* \*

##### 6.4.5.6.2 Operation Definition

This operation shall support the request data structures specified in table 6.4.5.6.2-1 and the response data structure and response codes specified in table 6.4.5.6.2-2.

Table 6.4.5.6.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DynamicGroupNotification | M | 1 | Notify the dynamic group information (i.e. group member joins or leaves). |

Table 6.4.5.6.2-2: 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 notification is successfully received and processed. |
| 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 where 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. |
| 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 where 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 1: 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 6.4.5.6.2-3: 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 6.4.5.6.2-4: 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 \* \* \* \*

### 6.5.1 Introduction

The VAE\_ServiceContinuity shall use the VAE\_ServiceContinuity API.

The API URI of the VAE\_ServiceContinuity API shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [3].

- The <apiName>shall be "vae-service-continuity".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.5.3.

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

###### 6.5.3.2.3.1 GET

This method shall support the URI query parameters specified in table 6.5.3.2.3.1-1.

Table 6.5.3.2.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| service-id | V2xServiceId | M | 1 | V2X service id |  |
| supp-feat | SupportedFeatures | O | 0..1 | To filter irrelevant responses related to unsupported features. |  |

This method shall support the request data structures specified in table 6.5.3.2.3.1-2 and the response data structures and response codes specified in table 6.5.3.2.3.1-3.

Table 6.5.3.2.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.5.3.2.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| V2xServiceInfo | M | 1 | 200 OK | An individual geographical area resource including the designated V2X service id is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.5.3.2.3.1-4: 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 6.5.3.2.3.1-5: 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 \* \* \* \*

### 6.6.1 Introduction

The VAE\_HDMapDynamicInfo Service shall use the VAE\_HDMapDynamicInfo API.

The API URI of the VAE\_HDMapDynamicInfo API shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [3].

- The <apiName>shall be "vae-hdmap-dynamic-info".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.6.3.

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

###### 6.6.3.2.3.1 POST

This method shall support the URI query parameters specified in table 6.6.3.2.3.1-1.

Table 6.6.3.2.3.1-1: 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 6.6.3.2.3.1-2 and the response data structures and response codes specified in table 6.6.3.2.3.1-3.

Table 6.6.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| HdMapDynamicInfoData | M | 1 | Parameters to create an individual HdMap DynamicInfo Subscription resource. |

Table 6.6.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| HdMapDynamicInfoData | O | 0..1 | 201 Created | An individual HdMap DynamicInfo Subscription resource for the V2X UE ID is created successfully. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.6.3.2.3.1-4: 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-hdmap-dynamic-info/<apiVersion>/subscriptions/{subscriptionId} |

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

###### 6.6.3.3.3.1 GET

This method shall support the URI query parameters specified in table 6.6.3.3.3.1-1.

Table 6.6.3.3.3.1-1: 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 6.6.3.3.3.1-2 and the response data structures and response codes specified in table 6.6.3.3.3.1-3.

Table 6.6.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.6.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| HdMapDynamicInfoData | M | 1 | 200 OK | An individual HdMap DynamicInfo Subscription resource for the V2X UE ID is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.6.3.3.3.1-4: 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 6.6.3.3.3.1-5: 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 \* \* \* \*

###### 6.6.3.3.3.2 DELETE

This method shall support the URI query parameters specified in table 6.6.3.3.3.2-1.

Table 6.6.3.3.3.2-1: 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 6.6.3.3.3.2-2 and the response data structures and response codes specified in table 6.6.3.3.3.2-3.

Table 6.6.3.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.6.3.3.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Individual HdMap DynamicInfo Subscription resource was 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.6.3.3.3.2-4: 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 6.6.3.3.3.2-5: 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 \* \* \* \*

##### 6.6.5.6.2 Operation Definition

This operation shall support the request data structures specified in table 6.6.5.6.2-1 and the response data structure and response codes specified in table 6.6.5.6.2-2.

Table 6.6.5.6.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| HdMapDynamicInfoNotification | M | 1 | Notify the HD Map dynamic information corresponding to the subscription. |

Table 6.6.5.6.2-2: 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 notification is successfully received and processed. |
| 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 where 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. |
| 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 where 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 6.6.5.6.2-3: 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 6.6.5.6.2-4: 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 \* \* \* \*

### 6.7.1 Introduction

The VAE\_SessionOrientedService Service shall use the VAE\_SessionOrientedService API.

The API URI of the VAE\_SessionOrientedService API shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [3].

- The <apiName>shall be "vae-session-oriented-service".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.7.3.

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

###### 6.7.3.2.3.1 POST

This method shall support the URI query parameters specified in table 6.7.3.2.3.1-1.

Table 6.7.3.2.3.1-1: 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 6.7.3.2.3.1-2 and the response data structures and response codes specified in table 6.7.3.2.3.1-3.

Table 6.7.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SessionOrientedData | M | 1 | Parameters to create an Individual Session Oriented Service Subscription resource. |

Table 6.7.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| SessionOrientedData | O | 0..1 | 201 Created | An individual Session Oriented Service Subscription resource is created successfully. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.7.3.2.3.1-4: 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-session-oriented-service/<apiVersion>/subscriptions/{subscriptionId} |

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

###### 6.7.3.3.3.1 GET

This method shall support the URI query parameters specified in table 6.7.3.3.3.1-1.

Table 6.7.3.3.3.1-1: 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 6.7.3.3.3.1-2 and the response data structures and response codes specified in table 6.7.3.3.3.1-3.

Table 6.7.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.7.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| SessionOrientedData | M | 1 | 200 OK | An Individual Session Oriented Service Subscription resource is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.7.3.3.3.1-4: 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 6.7.3.3.3.1-5: 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 \* \* \* \*

###### 6.7.3.3.3.2 PUT

This method shall support the URI query parameters specified in table 6.7.3.3.3.2-1.

Table 6.7.3.3.3.2-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 6.7.3.3.3.2-2 and the response data structures and response codes specified in table 6.7.3.3.3.2-3.

Table 6.7.3.3.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SessionOrientedData | M | 1 | Parameters to update an Individual Session Oriented Service Subscription resource. |

Table 6.7.3.3.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| SessionOrientedData | M | 1 | 200 OK | The Individual Session Oriented Service Subscription resource was successfully updated. |
| n/a |  |  | 204 No Content | The Individual Session Oriented Service Subscription resource was successfully updated. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.7.3.3.3.2-4: 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 6.7.3.3.3.2-5: 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 \* \* \* \*

###### 6.7.3.3.3.3 DELETE

This method shall support the URI query parameters specified in table 6.7.3.3.3.3-1.

Table 6.7.3.3.3.3-1: 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 6.7.3.3.3.3-2 and the response data structures and response codes specified in table 6.7.3.3.3.3-3.

Table 6.7.3.3.3.3-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.7.3.3.3.3-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Individual Session Oriented Service Subscription resource was 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.7.3.3.3.3-4: 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 6.7.3.3.3.3-5: 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 \* \* \* \*

##### 6.7.5.6.2 Operation Definition

This operation shall support the request data structures specified in table 6.7.5.6.2-1 and the response data structure and response codes specified in table 6.7.5.6.2-2.

Table 6.7.5.6.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| Notification | M | 1 | Notify the result of establishment or update of the session-oriented service to the subscription. |

Table 6.7.5.6.2-2: 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 notification is successfully received and processed. |
| 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 where 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. |
| 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 where 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 6.7.5.6.2-3: 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 6.7.5.6.2-4: 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 \* \* \* \*

##### 6.7.6.2.2 Type: SessionOrientedData

Table 6.7.6.2.2-1: Definition of type SessionOrientedData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ueId | V2xUeId | M | 1 | V2X UE ID of the host vehicle |  |
| notifUri | Uri | M | 1 | Identifies the recipient of notification sent by the VAE server. |  |
| serviceId | V2xServiceId | M | 1 | The V2X service ID for which application requirement corresponds to. |  |
| appSerId | AppServerId | M | 1 | Identity of the service consumer. |  |
| appQosReq | AppplicationQosRequirement | O | 0..1 | The application QoS requirements for the session-oriented service. |  |
| requestTestNotification | boolean | O | 0..1 | Set to true by the service consumer to request the VAE server to send a test notification as defined in clause 6.3.5.3. Set to false or omitted otherwise. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol as defined in clause 6.3.5.4. | Notification\_websocket |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the features supported by the service consumer. It shall be included in the first interaction. |  |

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

### 6.8.1 Introduction

The VAE\_V2VConfigRequirement Service shall use the VAE\_V2VConfigRequirement API.

The API URI of the VAE\_V2VConfigRequirement API shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [3].

- The <apiName>shall be "vae-v2v-config-req".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.8.3.

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

###### 6.8.3.2.3.1 POST

This method shall support the URI query parameters specified in table 6.8.3.2.3.1-1.

Table 6.8.3.2.3.1-1: 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 6.8.3.2.3.1-2 and the response data structures and response codes specified in table 6.8.3.2.3.1-3.

Table 6.8.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| V2vConfigurationData | M | 1 | Parameters to create an Individual V2V Configuration resource. |

Table 6.8.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| V2vConfigurationData | O | 0..1 | 201 Created | An Individual V2V Configuration resource is created successfully. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.8.3.2.3.1-4: 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-pc5-prov-req/<apiVersion>/configurations/{configurationId} |

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

###### 6.8.3.3.3.1 GET

This method shall support the URI query parameters specified in table 6.8.3.3.3.1-1.

Table 6.8.3.3.3.1-1: 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 6.8.3.3.3.1-2 and the response data structures and response codes specified in table 6.8.3.3.3.1-3.

Table 6.8.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.8.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| V2vConfigurationData | M | 1 | 200 OK | An Individual V2V Configuration resource is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.8.3.3.3.1-4: 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 6.8.3.3.3.1-5: 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 \* \* \* \*

###### 6.8.3.3.3.2 PUT

This method shall support the URI query parameters specified in table 6.8.3.3.3.2-1.

Table 6.8.3.3.3.2-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 6.8.3.3.3.2-2 and the response data structures and response codes specified in table 6.8.3.3.3.2-3.

Table 6.8.3.3.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| V2vConfigurationData | M | 1 | Parameters to update an Individual V2V Configuration resource. |

Table 6.8.3.3.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| V2vConfigurationData | M | 1 | 200 OK | The Individual V2V Configuration resource was successfully updated. |
| n/a |  |  | 204 No Content | The Individual V2V Configuration resource was successfully updated. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP PUT method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.8.3.3.3.2-4: 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 6.8.3.3.3.2-5: 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 \* \* \* \*

###### 6.8.3.3.3.3 DELETE

This method shall support the URI query parameters specified in table 6.8.3.3.3.3-1.

Table 6.8.3.3.3.3-1: 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 6.8.3.3.3.3-2 and the response data structures and response codes specified in table 6.8.3.3.3.3-3.

Table 6.8.3.3.3.3-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.8.3.3.3.3-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Individual V2V Configuration resource was 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.8.3.3.3.3-4: 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 6.8.3.3.3.3-5: 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 \* \* \* \*

### 6.9.1 Introduction

The VAE\_PC5ProvisioningRequirement Service shall use the VAE\_PC5ProvisioningRequirement API.

The API URI of the VAE\_PC5ProvisioningRequirement API shall be:

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

The request URIs used in HTTP requests from the service consumer towards the VAE Server shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [3], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [3].

- The <apiName>shall be "vae-pc5-prov-req".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.9.3.

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

###### 6.9.3.2.3.1 POST

This method shall support the URI query parameters specified in table 6.9.3.2.3.1-1.

Table 6.9.3.2.3.1-1: 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 6.9.3.2.3.1-2 and the response data structures and response codes specified in table 6.9.3.2.3.1-3.

Table 6.9.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ProvisioningRequirement | M | 1 | Parameters to create an Individual PC5 Provisioning Requirement Subscription resource. |

Table 6.9.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| ProvisioningRequirement | O | 0..1 | 201 Created | An individual PC5 Provisioning Requirement Subscription resource is created successfully. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.9.3.2.3.1-4: 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-pc5-prov-req/<apiVersion>/subscriptions/{subscriptionId} |

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

###### 6.9.3.3.3.1 GET

This method shall support the URI query parameters specified in table 6.9.3.3.3.1-1.

Table 6.9.3.3.3.1-1: 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 6.9.3.3.3.1-2 and the response data structures and response codes specified in table 6.9.3.3.3.1-3.

Table 6.9.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.9.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| ProvisioningRequirement | M | 1 | 200 OK | An Individual PC5 Provisioning Requirement Subscription resource is returned successfully. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.9.3.3.3.1-4: 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 6.9.3.3.3.1-5: 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 \* \* \* \*

###### 6.9.3.3.3.2 PUT

This method shall support the URI query parameters specified in table 6.9.3.3.3.2-1.

Table 6.9.3.3.3.2-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 6.9.3.3.3.2-2 and the response data structures and response codes specified in table 6.9.3.3.3.2-3.

Table 6.9.3.3.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ProvisioningRequirement | M | 1 | Parameters to update an Individual PC5 Provisioning Requirement Subscription resource. |

Table 6.9.3.3.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| ProvisioningRequirement | M | 1 | 200 OK | The Individual PC5 Provisioning Requirement Subscription resource was successfully updated. |
| n/a |  |  | 204 No Content | The Individual PC5 Provisioning Requirement Subscription resource was successfully updated. |
| 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP PUT method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.9.3.3.3.2-4: 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 6.9.3.3.3.2-5: 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 \* \* \* \*

###### 6.9.3.3.3.3 DELETE

This method shall support the URI query parameters specified in table 6.9.3.3.3.3-1.

Table 6.9.3.3.3.3-1: 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 6.9.3.3.3.3-2 and the response data structures and response codes specified in table 6.9.3.3.3.3-3.

Table 6.9.3.3.3.3-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.9.3.3.3.3-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Individual PC5 Provisioning Requirement Subscription resource was 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] with the difference that the SCEF is replaced by the VAE Server and the SCS/AS is replaced by the service consumer. |
| 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] 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 code for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [22] shall also apply. | | | | |

Table 6.9.3.3.3.3-4: 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 6.9.3.3.3.3-5: 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 \* \* \* \*

##### 6.9.5.6.2 Operation Definition

This operation shall support the request data structures specified in table 6.9.5.6.2-1 and the response data structure and response codes specified in table 6.9.5.6.2-2.

Table 6.9.5.6.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| Notification | M | 1 | Notify the result of multi operation PC5 provisioning requirement. |

Table 6.9.5.6.2-2: 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 notification is successfully received and processed. |
| 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 where 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. |
| 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 where 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 6.9.5.6.2-3: 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 6.9.5.6.2-4: 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 \* \* \* \*

#### 6.9.6.1 General

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

Table 6.9.6.1-1 specifies the data types defined for the VAE\_PC5ProvisioningRequirement API.

Table 6.9.6.1-1: VAE\_PC5ProvisioningRequirement specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| Notification | 6.9.6.2.3 | Represents a notificaton of result of PC5 Provisioning Requirement. |  |
| ProvisioningRequirement | 6.9.6.2.2 | Represents an Individual PC5 Provisioning Requirement Subscription resource. |  |

Table 6.9.6.1-2 specifies data types re-used by the VAE\_PC5ProvisioningRequirement 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\_PC5ProvisioningRequirement service based interface.

Table 6.9.6.1-2: VAE\_PC5ProvisioningRequirement re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AppplicationQosRequirement | 6.7.6.2.4 | Used to indicate a QoS requirements for an application. |  |
| AppServerId | 6.1.6.3.2 | Represents the identifier of the application server. |  |
| PlmnId | 3GPP TS 29.571 [11] | Used to indicate a PLMN identity. |  |
| Result | 6.2.6.3.3 | Used to indicate success or failure. |  |
| SupportedFeatures | 3GPP TS 29.571 [11] | Used to negotiate the applicability of the optional 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] | Used to indicate an URI. |  |
| V2xGroupId | 6.1.6.3.2 | Used to indicate the group ID |  |
| V2xServiceId | 6.1.6.3.2 | Used to indicate the V2X service ID. |  |
| V2xUeId | 6.1.6.3.2 | Identifier of the destination V2X UE |  |
| WebsockNotifConfig | 3GPP TS 29.122 [22] | Pepresents configuration for the delivery of notifications over Websockets. | Notification\_websocket |

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