**3GPP TSG-CT WG3 Meeting #110eC3-203414**

**E-Meeting, 02-11 June 2020** (Revision of C3-203234)

**Source: Ericsson, Samsung, Huawei, Hisilicon**

**Title: Pseudo-CR on generic CM GET**

**Spec: 3GPP TS 29.549 v1.2.0**

**Agenda item: 16.27**

**Document for: Decision**

**1. Introduction**

This pCR solves the remaining editor note in SS\_UserProfileRetrieval API.

Editor’s note: It is FFS, whether the current Resource URI fits into the requirement and how the VAL server is aware of valServiceId in advance.

**2. Reason for Change**

The Get VAL user profile in TS 23.434 also allows to retrieve one or more VAL user profiles:

Table 11.3.2.3-1: Get VAL user profile request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Requester Identity  | M | The identity of the configuration management client performing the request. |
| Identity | M | The VAL user ID of the VAL user or VAL UE ID. |

Table 11.3.2.4-1: Get VAL user profile response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| VAL user profile data | M (NOTE) | One or more VAL user profiles associated with the VAL user ID or VAL UE ID provided in the associated get VAL user profile request. |
| Result | M | Indicates the success or failure for the operation |
| NOTE: If the Result information element indicates failure then the value of VAL user profile data information element has no meaning. |

Since VAL user id or ue id is unique within a VAL service, one service may include multiple VAL users and its corresponding user profile. Currently the ProfilelDoc may be part of the entire resource representation associated to the VAL service id. It is fine to have this filtered view but still in order to satisfy the requirement in table 11.3.2.4-1 above, a generic GET on the CM resource collection level is needed for retrieving multiple CM resource representations for a specific UE (i.e. a UE having multiple val services and each val service is represented in a .../{valServiceId} resource).

By introducing the GET on resource collection level, the individual resource level GET is supported as part of its function (i.e. with the optional query parameter val-service-id), therefore the operation on individual VAL service can be removed.

**3. Conclusions**

Add the GET method for the resource ../val-services and remove the operation on the indiviudal val service level.

Due to new VAL target UE data type, change all places in the whole TS to re-use such data type.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.549 v1.2.0.

\* \* \* First Change \* \* \* \*

##### 5.4.1.2.1 Introduction

The service operation defined for SS\_UserProfileRetrieval API is shown in the table 5.4.1.2.1-1.

Table 5.4.1.2.1-1: Operations of the SS\_UserProfileRetrieval API

|  |  |  |
| --- | --- | --- |
| Service operation name | Description | Initiated by |
| Obtain\_User\_Profile | This service operation is used by VAL server to obtain user profile. | VAL server |

\* \* \* Next Change \* \* \* \*

###### 5.4.1.2.2.2 VAL server retrieving VAL user profile information using Obtain\_User\_Profile service operation

To obtain a VAL user’s profile, the VAL server shall send HTTP GET request message to configuration management server, on VAL service’s resource representation URI, with query parameters VAL user ID or VAL UE ID and optionally VAL service ID, as specified in 7.3.1.2.2.3.1.

Upon receiving the HTTP GET message as described above, the configuration management server shall:

1. verify the identity of the VAL server and check if the VAL server is authorized to fetch the VAL user profile information;

2. if the VAL server is authorized to obtain the requested VAL user profile information, the configuration management server shall;

a. return in the response message with profile information corresponding to the query parameters that was sent in the request message.

\* \* \* Next Change \* \* \* \*

### 5.4.2 SS\_UserProfileEvent API

The SS\_UserProfileEvent API, as defined in 3GPP TS 23.434 [2], allows a VAL server via CM-S reference point to subscribe for and receive notifications from the Configuration Management server on profile updates to VAL

\* \* \* Next Change \* \* \* \*

##### 7.1.1.4.1 General

This clause specifies the application data model supported by the API. Data types listed in clause 6.2 apply to this API.

Table 7.1.1.4.1-1 specifies the data types defined specifically for the SS\_LocationReporting API service.

Table 7.1.1.4.1-1: SS\_LocationReporting API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| LocationReportConfiguration | 7.1.1.4.2.2 |  |  |

Table 7.1.1.4.1-2 specifies data types re-used by the SS\_LocationReporting API service.

Table 7.1.1.4.1-2: SS\_LocationReporting API Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| Accuracy | 3GPP TS 29.122 [3] |  |  |
| DateTime | 3GPP TS 29.571 [21] |  |  |
| DurationSec | 3GPP TS 29.571 [21] |  |  |
| SupportedFeatures | 3GPP TS 29.571 [21] | Used to negotiate the applicability of optional features defined in table 7.1.1.6-1. |  |
| ValTargetUe | Clause 7.3.1.4.2.x | Used to indicate either VAL User ID or VAL UE ID, to which location reporting applies. |  |

\* \* \* Next Change \* \* \* \*

###### 7.1.1.4.2.2 Type: LocationReportConfiguration

Table 7.1.1.4.2.2-1: Definition of type LocationReportConfiguration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valServerId | string | M | 1 | Represents the VAL server identifier. |  |
| valTgtUe | ValTargetUe | M | 1 | Represents the VAL User ID or VAL UE ID to which the location reporting applies. |  |
|  |  |  |  |  |  |
| immRep | boolean | O | 0..1 | Indication of immediate reporting. If included, when it is set to true it indicates immediate reporting of the subscribed events, if available. Otherwise, reporting will occur when the event is met. |  |
| monDur | DateTime | O | 0..1 | Represents the time at which the subscription ceases to exist (i.e the reporting trigger becomes invalid). If omitted, there is no time limit. |  |
| repPeriod | DurationSec | O | 0..1 | Indicates the time interval between successive location reports. |  |
| accuracy | Accuracy | O | 0..1 | Represents the desired level of accuracy of the requested location information. |  |
| suppFeat | SupportedFeatures | O | 0..1 | Used to negotiate the supported features of the API as defined in clause 7.1.1.6.This attribute shall be provided in the HTTP POST request and in the response of successful resource creation. |  |
|  |

\* \* \* Next Change \* \* \* \*

##### 7.2.1.4.1 General

This clause specifies the application data model supported by the API. Data types listed in clause 6.2 apply to this API

Table 7.2.1.4.1-1 specifies the data types defined specifically for the SS\_GroupManagement API service.

Table 7.2.1.4.1-1: SS\_GroupManagement API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| VALGroupDoument | 7.2.1.4.2.2 | VAL group document details. |  |

Table 7.2.1.4.1-2 specifies data types re-used by the SS\_GroupManagement API service.

Table 7.2.1.4.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| SupportedFeatures | 3GPP TS 29.571 [21] | Used to negotiate the applicability of optional features defined in table 7.2.1.6-1. |  |
| LocationInfo | 3GPP TS 29.122 [3] | The location information related to VAL group.  |  |
| ValTargetUe | Clause 7.3.1.4.2.x | Used to indicate either VAL User ID or VAL UE ID, to which location reporting applies. |  |

\* \* \* Next Change \* \* \* \*

###### 7.2.1.4.2.2 Type: VALGroupDocument

Table 7.2.1.4.2.2-1: Definition of type VALGroupDocument

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valGroupId | string | M | 1 | This is VAL group identity (VAL group ID) as per TS 23.434 [2], which is a unique identifier within the VAL service that represents a VAL group, set of VAL users or VAL UEs according to the VAL service. |  |
| grpDesc | string | O | 0..1 | Text description of the VAL group. |  |
| members | array(ValTargetUe) | O | 1..N | List of VAL User IDs or VAL UE IDs, which are members of the VAL group. |  |
| valGrpConf | string | O | 0..1 | Configuration data for the VAL group.Shall be present in HTTP POST request message from VAL server to Group Management server. |  |
| valServiceIds | array(string) | O | 1..N | List of VAL services whose communications enabled on the group. |  |
| suppFeat | SupportedFeatures | O | 0..1 | Used to negotiate the supported optional features of the API as described in clause 6.8.This attribute shall be provided in the HTTP POST request and in the response of successful resource creation. |  |
| resUri | Uri | O | 0..1 | The URI for individual VAL group document resource. (NOTE) |  |
| locInfo | LocationInfo | O | 0..1 | The location information related to the VAL group. This information is used to determine the members of the group. |  |
| NOTE:      The “resUri” attribute is not modifiable by the VAL server. |

\* \* \* Next Change \* \* \* \*

### 7.3.1 SS\_UserProfileRetrieval API

\* \* \* Next Change \* \* \* \*

##### 7.3.1.2.1 Overview



Figure 7.3.1.2.1-1: Resource URI structure of the SS\_UserProfileRetrieval API

Table 7.3.1.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 7.3.1.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| VAL Services | {apiRoot}/ss-upr/<apiVersion>/val-services | GET | Retrieve VAL User or VAL UE's profile information.  |
|  |  |  |  |

\* \* \* Next Change \* \* \* \*

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##### 7.3.1.2.x Resource: VAL Services

###### 7.3.1.2.x.1 Description

The VAL Services resource represents all the VAL services that are created at a given configuration management server.

###### 7.3.1.2.x.2 Resource Definition

Resource URI: **{apiRoot}/ss-upr/<apiVersion>/val-services**

This resource shall support the resource URI variables defined in the table 7.3.1.2.x.2-1.

Table 7.3.1.2.x.2-1: Resource URI variables for this resource

|  |  |
| --- | --- |
| Name | Definition |
| apiRoot | See clause 6.5 |
| apiVersion | See clause 7.3.1.1 |

###### 7.3.1.2.x.3 Resource Standard Methods

7.3.1.2.x.3.1 GET

This operation retrieves VAL User or VAL UE profile information satisfying the filter criteria. This method shall support the URI query parameters specified in table 7.3.1.2.x.3.1-1.

Table 7.3.1.2.x.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| val-tgt-ue | ValTargetUe | M | 1 | Identifying a VAL target UE. |
| val-service-id | string | O | 0..1 | String identifying a VAL service. |

This method shall support the request data structures specified in table 7.3.1.2.x.3.2-2 and the response data structures and response codes specified in table 7.3.1.2.x.3.2 -3.

Table 7.3.1.2.x.3.2-2: Data structures supported by the GET Request Body on this resource

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

Table 7.3.1.2.x.3.2-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| array(ProfileDoc) | M | 0..N | 200 OK | List of VAL User / VAL UE profile documents. This response shall include user profile information matching the query parameters provided in the request.  |
| NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [3] also apply. |

###### 7.3.1.2.x.4 Resource Custom Operations

None.

\* \* \* Next Change \* \* \* \*

##### 7.3.1.4.1 General

This clause specifies the application data model supported by the API. Data types listed in clause 6.2 apply to this API

Table 7.3.1.4.1-1 specifies the data types defined specifically for the SS\_UserProfileRetrieval API service.

Table 7.3.1.4.1-1: SS\_UserProfileRetrieval API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| ProfileDoc | 7.3.1.4.2.2 | Profile information associated with VAL user ID or VAL UE ID. |  |
| ValTargetUe | 7.3.1.4.2.x | Information identifying a VAL user ID or VAL UE ID. |  |

Table 7.3.1.4.1-2 specifies data types re-used by the SS\_UserProfileRetrieval API service.

Table 7.3.1.4.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| n/a |  |  |  |

\* \* \* Next Change \* \* \* \*

###### 7.3.1.4.2.2 Type: ProfileDoc

Table 7.3.1.4.2.2-1: Definition of type ProfileDoc

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| profileInformation | string | M | 1 | Profile information associated with valTgtUe. |  |
| valTgtUe | ValTargetUe | M | 1 | Unique identifier of a VAL user or a VAL UE. |  |
|  |  |  |  |  |  |
|  |

\* \* \* Next Change \* \* \* \*

###### 7.3.1.4.2.x Type: ValTargetUe

Table 7.3.1.4.2.x-1: Definition of type ValTargetUe

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valUserId | string | O | 0..1 | Unique identifier of a VAL user. |  |
| valUeId | string | O | 0..1 | Unique identifier of a VAL UE. |  |
| NOTE: Either "valUserId" or "valUeId" shall be provided. |

\* \* \* Next Change \* \* \* \*

##### 7.4.1.4.1 General

This clause specifies the application data model supported by the API. Data types listed in clause 6.2 apply to this API

Table 7.4.1.4.1-1 specifies the data types defined specifically for the SS\_NetworkResourceAdaptation API service.

Table 7.4.1.4.1-1: SS\_NetworkResourceAdaptation API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| DeliveryMode | 7.4.1.4.3.2 |  |  |
| MulticastSubscription | 7.4.1.4.2.2 |  |  |
| NrmEvent | 7.4.1.4.3.3 |  |  |
| NrmEventNotification | 7.4.1.4.2.5 |  |  |
| ServiceAnnoucementMode | 7.4.1.4.3.1 |  |  |
| UserPlaneNotification | 7.4.1.4.2.4 |  |  |
| UnicastSubscription | 7.4.1.4.2.3 |  |  |

Table 7.4.1.4.1-2 specifies data types re-used by the SS\_NetworkResourceAdaptation API service.

Table 7.4.1.4.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| DateTime | 3GPP TS 29.571 [21] |  |  |
| MbmsLocArea | 3GPP TS 29.122 [3] |  |  |
| SupportedFeatures | 3GPP TS 29.571 [21] |  |  |
| Uint32 | 3GPP TS 29.571 [21] |  |  |
| Uri | 3GPP TS 29.571 [21] |  |  |
| WebsockNotifConfig | 3GPP TS 29.122 [3] |  |  |
| ValTargetUe | 7.3.1.4.2.x | Used to identify either a VAL User ID or a VAL UE ID. |  |

\* \* \* Next Change \* \* \* \*

###### 7.4.1.4.2.3 Type: UnicastSubscription

Table 7.4.1.4.2.3-1: Definition of type UnicastSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valTgtUe | ValTargetUe | M | 1 | The identity of the VAL user or VAL UE that the unicast bearer is requested for. |  |
| qosReq | UnicastQosRequirement | O | 1 | The QoS requirement for the unicast. |  |
| duration | DateTime | O | 0..1 | Identifies the absolute time at which the subscription resource is considered to expire. When omitted in the request, it indicates the resource is requested to be valid forever by the VAL server. When omitted in the response, it indicates the resource is set to valid forever by the VAL server. |  |
| notifUri | Uri | M | 1 | Identifies the notification URI where the NRM notification shall be sent to. |  |
| reqTestNotif | Boolean | O | 0..1 | Set to true by the NF 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 |
| wsNotifCfg | 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 | O | 1 | This parameter may be supplied by VAL server in the POST request that request the creation of a Unicast Subscription resource and may be supplied in the reply of corresponding request. |  |

Editor's note: Definition of UnicastQosRequirement is FFS.

\* \* \* Next Change \* \* \* \*

##### 7.5.1.4.1 General

This clause specifies the application data model supported by the API. Data types listed in clause 6.2 apply to this API.

Table 7.5.1.4.1-1 specifies the data types defined specifically for the SS\_Events API service.

Table 7.5.1.4.1-1: SS\_Events API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| SEALEventSubscription | 7.5.1.4.2.2 | Represents an individual SEAL Event Subscription resource |  |
| SEALEventNotification | 7.5.1.4.2.3 | Represents an individual SEAL Event Subscription Notification  |  |
| EventSubscription | 7.5.1.4.2.4 | Represents the subscription to a single SEAL event. |  |
| SEALEventDetail | 7.5.1.4.2.5 | Represents the SEAL event detail |  |
| VALGroupFilter | 7.5.1.4.2.6 | Represents a filter of VAL group identifiers belonging to a VAL service. |  |
| IdentityFilter | 7.5.1.4.2.7 | Represents a filter of VAL User / UE identities belonging to a VAL service. |  |
| SEALEvent | 7.5.1.4.3.3 | Represents the type of SEAL events that can be subscribed. |  |
| LMInformation | 7.5.1.4.2.8 | The location information for a VAL User ID or a VAL UE ID. |  |

Table 7.5.1.4.1-2 specifies data types re-used by the SS\_Events API service:

Table 7.5.1.4.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| ReportingInformation | 3GPP TS 29.523 [20] | Used to indicate the reporting requirement, only the following information are applicable for SEAL:- immRep- notifMethod- maxReportNbr- monDur- repPeriod |  |
| SupportedFeatures | 3GPP TS 29.571 [21] | Used to negotiate the applicability of optional features defined in table 7.5.1.6-1. |  |
| TestNotification | 3GPP TS 29.122 [3] | Following differences apply:- The SCEF is the SEAL server; and- The SCS/AS is the subscribing VAL server. |  |
| Uri | 3GPP TS 29.122 [3] |  |  |
| WebsockNotifConfig | 3GPP TS 29.122 [3] | Following differences apply:- The SCEF is the CAPIF core function; and- The SCS/AS is the Subscribing functional entity. |  |
| VALGroupDocument | Clause 7.2.1.4.2.2 | Used to send VAL group document as part of event detail in the event notification. |  |
| ProfileDoc | Clause 7.3.1.4.2.2 | Used to send VAL User or VAL UE profile information as part of event detail in the event notification. |  |
| LocationInfo | 3GPP TS 29.122 [3] | Location information |  |
| ValTargetUe | 7.3.1.4.2.x | Used to identify a VAL user ID or a VAL UE ID. |  |

\* \* \* Next Change \* \* \* \*

###### 7.5.1.4.2.7 IdentityFilter

Table 7.5.1.4.2.7-1: Definition of type IdentityFilter

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valSvcId | string | O | 0..1 | Identity of the VAL Service that the subscriber is interested in. |  |
| valTgtUes | array(ValTargetUe) | C | 1..N | VAL User IDs or VAL UE IDs that the event subscriber wants to know in the interested event. |  |
|  |  |  |  |  |  |
|  |

\* \* \* Next Change \* \* \* \*

###### 7.5.1.4.2.8 LMInformation

Table 7.5.1.4.2.8-1: Definition of type LMInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
|  |  |  |  |  |  |
| valTgtUe | ValTargetUe | M | 1 | VAL User ID or UE ID that the event subscriber wants to know in the interested event. |  |
| locInfo | LocationInfo | M | 1 | The location information associated with the valTgtUe. |  |
|  |

\* \* \* Next Change \* \* \* \*

## A.2 SS\_GroupManagement API

openapi: 3.0.0

info:

 title: SS\_GroupManagement

 description: |

 API for SEAL Group management.

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 version: "1.0.0.alpha-2"

externalDocs:

 description: 3GPP TS 29.549 V1.2.0 Service Enabler Architecture Layer for Verticals (SEAL); Application Programming Interface (API) specification; Stage 3.

 url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.549/

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/ss-gm/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549

paths:

 /group-documents:

 post:

 description: Creates a new VAL group document.

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: VAL group created sucessfully.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/ss-gm/v1/group-documents/{groupDocId}'

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 get:

 description: Retrieves VAL group documents satisfying filter criteria

 parameters:

 - name: val-group-id

 in: query

 description: String identifying the VAL group.

 schema:

 type: string

 - name: val-service-id

 in: query

 description: String identifying the Val service.

 schema:

 type: string

 responses:

 '200':

 description: List of VAL group documents matching the query parameters in the request.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 '204':

 description: No matching VAL group document found.

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /group-documents/{groupDocId}:

 get:

 description: Retrieves VAL group information satisfying filter criteria

 parameters:

 - name: groupDocId

 in: path

 description: String identifying an individual VAL group document resource

 required: true

 schema:

 type: string

 - name: group-members

 in: query

 description: When set to true indicates the group management server to send the members list information of the VAL group.

 schema:

 type: boolean

 - name: group-configuration

 in: query

 description: When set to true indicates the group management server to send the group configuration information of the VAL group.

 schema:

 type: boolean

 responses:

 '200':

 description: The VAL group information based on the request from the VAL server. Includes VAL group members list if group-members flag is set to true in the request, VAL group configuration information if the group-configuration flag is set to true in the request, VAL group identifier, whole VAL group document resource if both group-members and group-configuration flags are omitted/set to false in the request.

 content:

 application/json:

 schema:

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 put:

 description: Updates an individual VAL group document.

 parameters:

 - name: groupDocId

 in: path

 description: String identifying an individual VAL group document resource

 required: true

 schema:

 type: string

 requestBody:

 description: VAL group document to be updated in Group management server.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: VAL group document updated successfully

 content:

 application/json:

 schema:

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 description: Deletes a VAL Group.

 parameters:

 - name: groupDocId

 in: path

 description: String identifying an individual VAL group document resource

 required: true

 schema:

 type: string

 responses:

 '204':

 description: The individual VAL group matching groupDocId was deleted.

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 VALGroupDocument:

 type: object

 properties:

 valGroupId:

 type: string

 description: The VAL group idenitity.

 grpDesc:

 type: string

 description: The text description of the VAL group.

 members:

 type: array

 description: The list of VAL User IDs orVAL UE IDs, which are members of the VAL group.

 items:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 minItems: 1

 valGrpConf:

 type: string

 description: Configuration data for the VAL group.

 valServiceIds:

 type: array

 description: The list of VAL services enabled on the group.

 items:

 type: string

 minItems: 1

 suppFeat:

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

 resUri:

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

 locInfo:

 $ref: 'TS29122\_MonitoringEvent.yaml#/components/schemas/LocationInfo'

 required:

 - valGroupId

\* \* \* Next Change \* \* \* \*

## A.3 SS\_UserProfileRetrieval API

openapi: 3.0.0

info:

 title: SS\_UserProfileRetrieval

 description: |

 API for SEAL User Profile Retrieval.

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 version: "1.0.0.alpha-2"

externalDocs:

 description: 3GPP TS 29.549 V1.2.0 Service Enabler Architecture Layer for Verticals (SEAL); Application Programming Interface (API) specification; Stage 3.

 url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.549/

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/ss-upr/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549

paths:

 /val-services:

 get:

 description: Retrieve VAL User or VAL UE profile information.

 parameters:

 - name: val-service-id

 in: query

 description: String identifying an individual VAL service

 required: false

 schema:

 type: string

 - name: val-tgt-ue

 in: query

 description: Identifying a VAL target UE.

 required: true

 schema:

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

 responses:

 '200':

 description: The Profile information of the VAL User or VAL UE.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 ProfileDoc:

 type: object

 properties:

 profileInformation:

 type: string

 description: Profile information associated with the valUserId or valUeId.

 valTgtUe:

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

 required:

 - profileInformation

 - valTgtUe

 ValTargetUe:

 type: object

 properties:

 valUserId:

 type: string

 description: Unique identifier of a VAL user.

 valUeId:

 type: string

 description: Unique identifier of a VAL UE.

 oneOf:

 - required: [valUserId]

 - required: [valUeId]

\* \* \* Next Change \* \* \* \*

## A.4 SS\_NetworkResourceAdaptation API

openapi: 3.0.0

info:

 version: 1.0.0.alpha-2

 title: SS\_NetworkResourceAdaptation

 description: |

 SS Network Resource Adaptation Service.

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externalDocs:

 description: 3GPP TS 29.549 V1.2.0; Service Enabler Architecture Layer for Verticals (SEAL); Application Programming Interface (API) specification; Stage 3.

 url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.549/

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/ss-nra/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

paths:

 /multicast-subscriptions:

 post:

 summary: Creates a new Individual Multicast Subscription resource

 operationId: CreateMulticastSubscription

 tags:

 - Multicast Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Success

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the created individual multicast subscription resource'

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 callbacks:

 UserPlaneNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content, Notification was succesfull

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /multicast-subscriptions/{multiSubId}:

 get:

 summary: "Reads an existing Individual Multicast Subscription"

 operationId: GetMulticastSubscription

 tags:

 - Individual Multicast Subscription (Document)

 parameters:

 - name: multiSubId

 in: path

 description: Multicast Subscription ID

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK. Resource representation is returned

 content:

 application/json:

 schema:

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 summary: "Delete an existing Individual Multicast Subscription"

 operationId: DeleteMulticastSubscription

 tags:

 - Individual Multicast Subscription (Document)

 parameters:

 - name: multiSubId

 in: path

 description: Multicast Subscription ID

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was succesfully deleted

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /unicast-subscriptions:

 post:

 summary: Creates a new Individual Unicast Subscription resource

 operationId: CreateUnicastSubscription

 tags:

 - Unicast Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Success

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the created individual unicast subscription resource'

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 callbacks:

 UserPlaneNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content, Notification was succesfull

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /unicast-subscriptions/{uniSubId}:

 get:

 summary: "Reads an existing Individual Unicast Subscription"

 operationId: GetUnicastSubscription

 tags:

 - Individual Unicast Subscription (Document)

 parameters:

 - name: uniSubId

 in: path

 description: Unicast Subscription ID

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK. Resource representation is returned

 content:

 application/json:

 schema:

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 summary: "Delete an existing Individual Unicast Subscription"

 operationId: DeleteUnicastSubscription

 tags:

 - Individual Unicast Subscription (Document)

 parameters:

 - name: uniSubId

 in: path

 description: Unicast Subscription ID

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was succesfully deleted

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 MulticastSubscription:

 type: object

 properties:

 valGroupId:

 type: string

 anncMode:

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

 qosReq:

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

 locArea:

 $ref: 'TS29122\_GMDviaMBMSbyMB2.yaml#/components/schemas/MbmsLocArea'

 duration:

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

 tmgi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 notifUri:

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

 reqTestNotif:

 type: boolean

 wsNotifCfg:

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

 suppFeat:

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

 required:

 - valGroupId

 - anncMode

 - qosReq

 - notifUri

 UnicastSubscription:

 type: object

 properties:

 valTgtUe:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 qosReq:

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

 duration:

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

 notifUri:

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

 reqTestNotif:

 type: boolean

 wsNotifCfg:

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

 suppFeat:

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

 required:

 - valTgt

 - notifUri

 UserPlaneNotification:

 type: object

 properties:

 notifId:

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

 eventNotifs:

 type: array

 items:

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

 minItems: 1

 required:

 - notifId

 - eventNotifs

 NrmEventNotification:

 type: object

 properties:

 event:

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

 ts:

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

 deliveryMode:

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

 streamIds:

 type: array

 items:

 type: string

 minItems: 1

 required:

 - event

 - ts

 MulticastQosRequirement:

 type: string

# Multicast QoS requirment definition is FFS

 UnicastQosRequirement:

 type: string

# Unicast QoS requirment definition is FFS

# Simple data types and Enumerations

 ServiceAnnoucementMode:

 anyOf:

 - type: string

 enum:

 - NRM

 - VAL

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - NRM: NRM server performs the service announcement.

 - VAL: VAL server performs the service announcement.

 DeliveryMode:

 anyOf:

 - type: string

 enum:

 - UNICAST

 - MULTICAST

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - UNICAST: Unicast delivery.

 - MULTICAST: Multicast delivery.

 NrmEvent:

 anyOf:

 - type: string

 enum:

 - UP\_DELIVERY\_MODE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - UP\_DELIVERY\_MODE: User Plane delivery mode.

\* \* \* Next Change \* \* \* \*

## A.5 SS\_Events API

openapi: 3.0.0

info:

 title: SS\_Events

 description: |

 API for SEAL Events management.

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 version: "1.0.0.alpha-2"

externalDocs:

 description: 3GPP TS 29.549 V1.2.0 Service Enabler Architecture Layer for Verticals (SEAL); Application Programming Interface (API) specification; Stage 3.

 url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.549/

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/ss-events/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549

paths:

 /subscriptions:

 post:

 description: Creates a new individual SEAL Event Subscription.

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 callbacks:

 notificationDestination:

 '{request.body#/notificationDestination}':

 post:

 requestBody: # contents of the callback message

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content (successful notification)

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 responses:

 '201':

 description: SEAL Events subscription resource created successfully.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/ss-events/v1/subscriptions/{subscriptionId}'

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /subscriptions/{subscriptionId}:

 delete:

 description: Deletes an individual SEAL Event Subscription.

 parameters:

 - name: subscriptionId

 in: path

 description: Identifier of an individual Events Subscription

 required: true

 schema:

 type: string

 responses:

 '204':

 description: The individual SEAL Events Subscription matching the subscriptionId is deleted.

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 SEALEventSubscription:

 type: object

 properties:

 subscriberId:

 type: string

 description: String identifying the subscriber of the event.

 eventSubs:

 type: array

 items:

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

 minItems: 1

 description: Subscribed events.

 eventReq:

 $ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/ReportingInformation'

 notificationDestination:

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

 requestTestNotification:

 type: boolean

 description: Set to true by Subscriber to request the SEAL server to send a test notification. Set to false or omitted otherwise.

 websockNotifConfig:

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

 suppFeat:

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

 required:

 - subscriberId

 - eventSubs

 - eventReq

 - notificationDestination

 SEALEventNotification:

 type: object

 properties:

 subscriptionId:

 type: string

 description: Identifier of the subscription resource.

 eventDetails:

 type: array

 items:

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

 minItems: 1

 description: Detailed notifications of individual events.

 required:

 - subscriptionId

 - eventDetails

 EventSubscription:

 type: object

 properties:

 eventId:

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

 valGroups:

 type: array

 items:

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

 minItems: 1

 description: Each element of the array represents the VAL group identifier(s) of a VAL service that the subscriber wants to know in the interested event.

 identities:

 type: array

 items:

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

 minItems: 1

 description: Each element of the array represents the VAL User / UE IDs of a VAL service that the event subscriber wants to know in the interested event.

 required:

 - eventId

 SEALEventDetail:

 type: object

 properties:

 eventId:

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

 lmInfos:

 type: array

 items:

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

 minItems: 1

 valGroupDocuments:

 type: array

 items:

 $ref: 'TS29549\_SS\_GroupManagement.yaml#/components/schemas/VALGroupDocument'

 minItems: 1

 description: The VAL groups documents with modified membership and configuration information.

 profileDocs:

 type: array

 items:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ProfileDoc'

 minItems: 1

 description: Updated profile information associated with VAL Users or VAL UEs.

 required:

 - eventId

 VALGroupFilter:

 type: object

 properties:

 valSvcId:

 type: string

 description: Identity of the VAL service

 valGrpIds:

 type: array

 items:

 type: string

 minItems: 1

 description: VAL group identifiers that event subscriber wants to know in the interested event.

 required:

 - valGrpIds

 IdentityFilter:

 type: object

 properties:

 valSvcId:

 type: string

 description: Identity of the VAL service

 valTgtUes:

 type: array

 items:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 minItems: 1

 description: VAL User IDs or VAL UE IDs that the event subscriber wants to know in the interested event.

 LMInformation:

 type: object

 properties:

 valTgtUe:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 locInfo:

 $ref: 'TS29122\_MonitoringEvent.yaml#/components/schemas/LocationInfo'

 required:

 - locInfo

 - valTgtUe

 SEALEvent:

 anyOf:

 - type: string

 enum:

 - LM\_LOCATION\_INFO\_CHANGE

 - GM\_GROUP\_INFO\_CHANGE

 - CM\_USER\_PROFILE\_CHANGE

 - GM\_GROUP\_CREATE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - LM\_LOCATION\_INFO\_CHANGE: Events related to the location information of VAL Users or VAL UEs from the Location Management Server.

 - GM\_GROUP\_INFO\_CHANGE: Events related to the modification of VAL group membership and configuration information from the Group Management Server.

 - CM\_USER\_PROFILE\_CHANGE: Events related to update of user profile information from the Configuration Management Server.

 - GM\_GROUP\_CREATE: Events related to creation of new VAL groups from the Group Mananagement Server.

\* \* \* Next Change \* \* \* \*

## A.6 SS\_LocationReporting API

openapi: 3.0.0

info:

 title: SS\_LocationReporting

 description: |

 API for SEAL Location Reporting Configuration.

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 version: "1.0.0.alpha-1"

externalDocs:

 description: 3GPP TS 29.549 V1.2.0 Service Enabler Architecture Layer for Verticals (SEAL); Application Programming Interface (API) specification; Stage 3.

 url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.549/

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/ss-lr/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549

paths:

 /trigger-configurations:

 post:

 description: Creates a new location reporting configuration.

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: location reporting confirguation resource is created sucessfully.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/ss-lr/{apiVersion}/trigger-configurations/{configurationId}'

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /trigger-configurations/{configurationId}:

 get:

 description: Retrieves an individual SEAL location reporting configuration information

 parameters:

 - name: configurationId

 in: path

 description: String identifying an individual configuration resource

 required: true

 schema:

 type: string

 responses:

 '200':

 description: The location reporting configuration information.

 content:

 application/json:

 schema:

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 LocationReportConfiguration:

 type: object

 properties:

 valServerId:

 type: string

 valTgtUe:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 immRep:

 type: boolean

 monDur:

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

 repPeriod:

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

 accuracy:

 $ref: 'TS29122\_MonitoringEvent.yaml#/components/schemas/Accuracy'

 suppFeat:

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

 required:

 - valServerId

 - valTgtUe

\* \* \* End of Change \* \* \* \*