**TSG-CT WG3 Meeting #118-e *C3-215095***

**E-Meeting, 11th – 15th October 2021 (Revision of C3-215xyz)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.549** | **CR** | 0033 | **rev** | **-** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Support Tracking UE and obtaining dynamic UE information | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eV2XAPP, eSEAL | | | | |  | ***Date:*** | | | 2021-10-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | As defined in cluase 9.3.10 of TS 23.343, VAL server can request to get UE(s) information at the LM server providing a location information and application defined proximity range. Corresponding API is defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Defines the procedure to support SS\_LocationAreaInfoRetrieval API. 2. Extend the SS\_Events API to support SS\_LocationAreaInfoRetrieval API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Not aligned with stage 2. VAL server can’t get the UE(s) information. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.1, 5.2.x, 7.5.1.4.1, 7.5.1.4.2.4, 7.5.1.4.2.5, 7.5.1.4.2.x(new), 7.5.1.4.3.3, 7.5.1.6, A.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR introduces backward compatible feature to the SS\_Events OpenAPI file | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

## 5.1 Introduction of SEAL services

The table 5.1-1 lists the SEAL server APIs below the service name. A service description clause for each API gives a general description of the related API.

Table 5.1-1: List of SEAL Service APIs

|  |  |  |  |
| --- | --- | --- | --- |
| Service Name | Service Operations | Operation Semantics | Consumer(s) |
| SS\_LocationReporting | Create\_Trigger\_Location\_Reporting | Request/ Response | VAL server |
| Fetch\_Location\_Report\_Trigger | Request/Response | VAL server |
| Update\_Trigger\_Location\_Reporting | Request/ Response | VAL server |
| Cancel\_Trigger\_Location\_Reporting | Request/ Response | VAL server |
| SS\_LocationInfoEvent | Subscribe\_Location\_Info | Subscribe/Notify | VAL server |
| Notify\_Location\_Info | VAL server |
| SS\_LocationInfoRetrieval | Obtain\_Location\_Info | Request/ Response | VAL server |
| SS\_LocationAreaInfoRetrieval | Obtain\_UEs\_Info | Request/ Response | VAL server |
| SS\_GroupManagement | Query\_Group\_Info | Request/ Response | VAL server |
| Update\_Group\_Info | Request/ Response | VAL server |
| Create\_Group | Request/ Response | VAL server |
| Delete\_Group | Request/Response | VAL server |
| SS\_GroupManagementEvent | Subscribe\_Group\_Info\_Modification | Subscribe/Notify | VAL server |
| Notify\_Group\_Info\_Modification | VAL server |
| Notify\_Group\_Creation | VAL server |
| SS\_UserProfileRetrieval | Obtain\_User\_Profile | Request/ Response | VAL server |
| SS\_UserProfileEvent | Subscribe\_User\_Profile\_Update | Subscribe/Notify | VAL server |
| Notify\_User\_Profile\_Update | VAL server |
| SS\_NetworkResourceAdaptation | Reserve\_Network\_Resource | Request/Response | VAL server |
| Request\_Unicast\_Resource | Request/Response | VAL server |
| Update\_Unicast\_Resource | Request/Response | VAL server |
| Request\_Multicast\_Resource | Request/Response | VAL server |
| Notify\_UP\_Delivery\_Mode | Subscribe/Notify | VAL server |
| SS\_Events | Subscribe\_Event | Subscribe/Notify | VAL server |
| Notify\_Event | VAL server |
| Unsubscribe\_Event | VAL server |
| SS\_KeyInfoRetrieval | Obtain\_Key\_Info | Request/Response | VAL server |
| NOTE: The service operations of SS\_Events API are reused by the SS\_LocationInfoEvent, SS\_GroupManagementEvent and SS\_UserProfileEvent for events related services. | | | |

Table 5.1-2 summarizes the corresponding APIs defined in this specification.

Table 5.1-2: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Service Name** | **Clause** | **Description** | **OpenAPI Specification File** | **apiName** | **Annex** |
| SS\_LocationReporting | 7.1 | Report Location Information Service. | TS29549\_SS\_LocationReporting.yaml | ss-lr | A.2 |
| SS\_GroupManagement | 7.2 | Group Management Service | TS29549\_SS\_GroupManagement.yaml | ss-gm | A.3 |
| SS\_UserProfileRetrieval | 7.3 | User Profile Retrieval Service | TS29549\_SS\_UserProfileRetrieval.yaml | ss-upr | A.4 |
| SS\_Network\_Resource\_Adaptation | 7.4 | Network Resource Adaptation Service | TS29549\_SS\_NetworkResourceAdaptation.yaml | ss-nra | A.5 |
| SS\_Events | 7.5 | Events Notify Service | TS29549\_SS\_Events.yaml | ss-events | A.6 |
| SS\_KeyInfoRetrieval | 7.6 | Key Information Retrieval Service | TS29549\_SS\_KeyInfoRetrieval.yaml | ss-kir | A.7 |

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

### 5.2.x SS\_LocationAreaInfoRetrieval API

The SS\_LocationAreaInfoRetrieval API, as defined 3GPP TS 23.434 [2], enables the VAL server via LM-S reference point to obtain UE(s) information in an application defined proximity range of a location. The SS\_LocationInfoRetrieval API supports this via the event "LM\_LOCATION\_AREA\_INFO\_CHANGE" of the SS\_Events API by setting the "immRep" attribute to true and setting the "notifMethod" attribute to "ONE\_TIME" within the "eventReq" attribute, and including the range information of a location over which the UE(s) information is required within the "range" attribute, as specified in clause 7.5.

Upon receipt of the immediate reporting indication in the "immRep" attribute within the "eventReq" attribute sets to true in the HTTP POST request, the location management server shall ignore the "notificationDestination" attribute within the SEALEventSubscription data type and include the event details in the "eventDetails" attribute, if available, in the HTTP POST response.

\*\*\* 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. |  |
| RangeFilter | 7.5.1.4.2.x | Represents a filter of an application defined proximity range of a location over which the UE(s) information is required. |  |
| 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. |  |
| MessageFilter | 7.5.1.4.2.9 | The message filter information applicable to member VAL UEs or Users of the VAL group in the group change notification. |  |

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 | 7.3.1.4.2.3 | Used to identify a VAL user ID or a VAL UE ID. |  |
| ScheduledCommunicationTime | 3GPP TS 29.122 [3] | Used to define the time frame for message filters. |  |
| Uinteger | 3GPP TS 29.571 [21] | Used to represent maximum number of messages in MesageFilter data type. |  |
| Float | 3GPP TS 29.571 [21] | Used to represent number of range in RangeFilter data type. |  |

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

###### 7.5.1.4.2.4 EventSubscription

Table 7.5.1.4.2.4-1: Definition of type EventSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| eventId | SEALEvent | M | 1 | Subscribed event |  |
| valGroups | array(VALGroupFilter) | C | 1..N | 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.  This parameter shall be present only if the event subscribed is “GM\_GROUP\_INFO\_CHANGE”. | GM\_GroupInfoChange |
| Identities | array(IdentityFilter) | C | 1..N | 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.  This parameter shall be present only if the event subscribed is “CM\_USER\_PROFILE\_CHANGE” or “LM\_LOCATION\_INFO\_CHANGE”. (NOTE) | CM\_UserProfileChange, LM\_LocationInfoChange |
| range | RangeFilter | C | 0..1 | Represents an application defined proximity range of a location that the event subscriber wants to know in the interested event.  This parameter shall be present only if the event subscribed is "LM\_LOCATION\_AREA\_INFO\_CHANGE". | LM\_LocationAreaInfoChange |
| NOTE:      The "valSvcId" attribute within IdentityFilter is not applicable for the event “LM\_LOCATION\_INFO\_CHANGE”. | | | | | |

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

###### 7.5.1.4.2.5 SEALEventDetail

Table 7.5.1.4.2.5-1: Definition of type SEALEventDetail

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| eventId | SEALEvent | M | 1 | Event that is notified |  |
| lmInfos | array(LMInformation) | C | 1..N | The location information for the interested VAL User IDs or VAL UE IDs.  This parameter shall be present only if the event in event notification is “LM\_LOCATION\_INFO\_CHANGE” or "LM\_LOCATION\_AREA\_INFO\_CHANGE". | LM\_LocationInfoChange,  LM\_LocationAreaInfoChange |
| valGroupDocuments | array(VALGroupDocument) | C | 1..N | Newly created VAL group documents or the VAL groups documents with modified membership and configuration information. This parameter shall be present only if the event in event notification is “GM\_GROUP\_INFO\_CHANGE” or “GM\_GROUP\_CREATE”. | GM\_GroupInfoChange, GM\_GroupCreate |
| profileDocs | array(ProfileDoc) | C | 1..N | Updated profile information associated with VAL Users or VAL UEs.  This parameter shall be present only if the event in event notification is “CM\_USER\_PROFILE\_CHANGE”. | CM\_UserProfileChange |
| msgFltrs | array(MessageFilter) | C | 1..N | The message filters applicable to various member VAL User or UEs of the VAL group. This parameter may be present only if the event in the even notification is “GM\_GROUP\_INFO\_CHANGE” | GM\_MessageFilter |

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

###### 7.5.1.4.2.x RangeFilter

Table 7.5.1.4.2.x-1: Definition of type RangeFilter

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| locInfo | LocationInfo | M | 1 | Location information around which the UE(s) information is requested. |  |
| range | Float | M | 1 | The range information over which the UE(s) information is required, expressed in meters.  Minimum = 0 |  |

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

###### 7.5.1.4.3.3 Enumeration: SEALEvent

Table 7.5.1.4.3.3-1: Enumeration SEALEvent

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| LM\_LOCATION\_INFO\_CHANGE | Events related to the location information of VAL Users or VAL UEs from the Location Management Server. | LM\_LocationInfoChange |
| GM\_GROUP\_INFO\_CHANGE | Events related to the modification of VAL group membership and configuration information from the Group Management Server. | GM\_GroupInfoChange |
| CM\_USER\_PROFILE\_CHANGE | Events related to update of user profile information from the Configuration Management Server. | CM\_UserProfileChange |
| GM\_GROUP\_CREATE | Events related to creation of new VAL groups from the Group Management Server. | GM\_GroupCreate |
| LM\_LOCATION\_AREA\_INFO\_CHANGE | Events related to the UE(s) information in an application defined proximity range of a location from the Location Management Server. | LM\_LocationAreaInfoChange |

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

#### 7.5.1.6 Feature Negotiation

General feature negotiation procedures are defined in clause 6.8. Table 7.5.1.6-1 lists the supported features for SS\_Events API.

Table 7.5.1.6-1: Supported Features

|  |  |  |
| --- | --- | --- |
| **Feature number** | **Feature Name** | **Description** |
| 1 | Notification\_test\_event | Testing of notification connection is supported according to clause 6.6. |
| 2 | Notification\_websocket | The delivery of notifications over Websocket is supported according to clause 6.6. This feature requires that the Notification\_test\_event feature is also supported. |
| 3 | LM\_LocationInfoChange | This feature supports the location information change event. |
| 4 | GM\_GroupInfoChange | This feature supports the group information change event. |
| 5 | CM\_UserProfileChange | This feature supports the user profile change event. |
| 6 | GM\_GroupCreate | This feature supports the group creation event. |
| 7 | GM\_MessageFilter | This feature supports the message filter information in group information change event. |
| x | LM\_LocationAreaInfoChange | This feature supports the location area information change event. |

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

## A.6 SS\_Events API

openapi: 3.0.0

info:

title: SS\_Events

description: |

API for SEAL Events management.

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version: "1.1.0-alpha.3"

externalDocs:

description: 3GPP TS 29.549 V17.2.0 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)

'307':

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

'308':

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

'400':

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

'401':

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

'403':

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

'404':

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

'411':

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

'413':

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

'415':

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

'429':

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

'500':

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

'503':

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

default:

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

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'

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.

'307':

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

'308':

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

'400':

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

'401':

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

'403':

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

'404':

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

'429':

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

'500':

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

'503':

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

default:

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

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

SEALEventSubscription:

description: Represents an individual SEAL Event Subscription resource.

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'

eventDetails:

type: array

items:

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

minItems: 1

suppFeat:

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

required:

- subscriberId

- eventSubs

- eventReq

- notificationDestination

SEALEventNotification:

description: Represents notification information of a SEAL Event.

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:

description: Represents the subscription to a single SEAL event.

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.

range:

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

description: Represents an application defined proximity range of a location that the event subscriber wants to know in the interested event.

required:

- eventId

SEALEventDetail:

description: Represents the SEAL event details.

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.

msgFltrs:

type: array

items:

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

minItems: 1

description: The message filter information for various member VAL User or UEs of the VAL group.

required:

- eventId

VALGroupFilter:

description: Represents a filter of VAL group identifiers belonging to a VAL service.

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:

description: Represents a filter of VAL User / UE identities belonging to a VAL service.

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:

description: Represents the location information for a VAL User ID or a VAL UE ID.

type: object

properties:

valTgtUe:

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

locInfo:

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

required:

- locInfo

- valTgtUe

MessageFilter:

description: Represents the message filters applicable to a VAL User ID or VAL UE ID.

type: object

properties:

reqUe:

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

tgtUe:

type: array

items:

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

minItems: 1

description: List of VAL User or UE IDs whose message to be sent.

maxMsgs:

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

scheds:

type: array

items:

$ref: 'TS29122\_CpProvisioning.yaml#/components/schemas/ScheduledCommunicationTime'

minItems: 1

description: Time frame associated with total number of messages.

msgTypes:

type: array

items:

type: string

minItems: 1

description: List of message types to be sent to VAL UE.

required:

- reqUe

RangeFilter:

description: Represents a filter of an application defined proximity range of a location over which the UE(s) information is required.

type: object

properties:

locInfo:

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

range:

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

SEALEvent:

anyOf:

- type: string

enum:

- LM\_LOCATION\_INFO\_CHANGE

- GM\_GROUP\_INFO\_CHANGE

- CM\_USER\_PROFILE\_CHANGE

- GM\_GROUP\_CREATE

- LM\_LOCATION\_AREA\_INFO\_CHANGE

- 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.

- LM\_LOCATION\_AREA\_INFO\_CHANGE: Events related to the UE(s) information in an application defined proximity range of a location from the Location Management Server.

\*\*\* End of Changes \*\*\*