**3GPP TSG CT WG3 Meeting #138 *C3-246048***

**Orlando, US, 18 - 22 November, 2024**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0334** | **rev** | **-** | **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:*** | SS\_ADAE\_location-related\_UE\_group\_analytics API definition | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eLSAPP | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19) Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | CR#0038 of 23.436 agreed in SA6#62 meeting specifies SS\_ADAE\_location-related\_UE\_group\_analytics API. Thus, the definition of this API shall be done in 29.549. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | This CR introduces the SS\_ADAE\_location-related\_UE\_group\_analytics API definition. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The stage 2 requirements are not implemented in stage 3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.1, 7.10.9 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 affect any OpenAPI file. | | | | | | | | |
| ***()*** | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\* \* \* First 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 |
| Notify\_Trigger\_Location\_Reporting | Notify | VAL server |
| SS\_LocationInfoEvent | Subscribe\_Location\_Info | Subscribe/Notify | VAL server |
| Update\_Location\_Info\_Subscription | VAL server |
| Unsubscribe\_Location\_Info | 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\_LocationMonitoring | Subscribe\_Location\_Monitoring | Subscribe/Notify | VAL server |
| Update\_Location\_Monitoring\_Subscription |
| Unsubscribe\_Location\_Monitoring |
| Notify\_Location\_Monitoring\_Events |
| SS\_LocationAreaMonitoring | Subscribe\_Location\_Area\_Monitoring | Subscribe/Notify | VAL server |
| Notify\_Location\_Area\_Monitoring\_Events |
| Update\_Location\_Area\_Monitoring\_Subscribe |
| Unsubscribe\_Location\_Area\_Monitoring |
| SS\_VALServiceAreaConfiguration | Configure\_VAL\_Service\_Area | Request/Response | VAL server |
| Obtain\_VAL\_Service\_Area | Request/Response | VAL server |
| Update\_VAL\_Service\_Area | Request/Response | VAL server |
| Delete\_VAL\_Service\_Area | Request/Response | VAL server |
| Subscribe\_VAL\_Service\_Area\_Change\_Event | Subscribe/Notify | SEAL server |
| Update\_Subscription\_VAL\_Service\_Area\_Change\_Event |
| Unsubscribe\_VAL\_Service\_Area\_Change\_Event |
| Notify\_VAL\_Service\_Area\_Change\_Event |
| 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\_VALServiceData | Obtain\_VAL\_Service\_Data | Request/Response | SEAL server |
| SS\_UserProfileEvent | Subscribe\_User\_Profile\_Update | Subscribe/Notify | VAL server |
| Notify\_User\_Profile\_Update | VAL server |
| SS\_NetworkResourceAdaptation  (NOTE 3) | 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 |
| Discover\_TSC\_Stream\_Availability | Request/Response | VAL server |
| Create\_TSC\_Stream | Request/Response | VAL server |
| Delete\_TSC\_Stream | Request/Response | VAL server |
| Create\_MBS\_Resource | Request/Response | VAL server |
| Update\_MBS\_Resource | Request/Response | VAL server |
| Delete\_MBS\_Resource | Request/Response | VAL server |
| Activate\_MBS\_Resource | Request/Response | VAL server |
| Deactivate\_MBS\_Resource | Request/Response | VAL server |
| Reliable\_Transmission\_Request | Request/Response | e.g., SEALDD Server, VAL Server |
| Subscribe\_Unified\_Traffic\_Pattern\_and\_Monitoring\_Management | Subscribe/Notify | VAL server |
| Update\_Unified\_Traffic\_Pattern\_and\_Monitoring\_Management\_Subscription |
| Unsubscribe\_Unified\_Traffic\_Pattern\_and\_Monitoring\_Management |
| Notify\_Unified\_Traffic\_Pattern\_Update |
| SS\_EventsMonitoring | Subscribe\_Monitoring\_Events | Subscribe/Notify | VAL server |
| Notify\_Monitoring\_Events |
| SS\_Events | Subscribe\_Event | Subscribe/Notify | VAL server |
| Notify\_Event | VAL server |
| Unsubscribe\_Event | VAL server |
| Update\_Subscription | VAL server |
| SS\_KeyInfoRetrieval | Obtain\_Key\_Info | Request/Response | VAL server |
| SS\_KMParametersProvisioning | Request | Request/Response | VAL server |
| SS\_NetworkResourceMonitoring | Subscribe\_Unicast\_QoS\_Monitoring\_Data | Subscribe/Notify | VAL server |
| Unsubscribe\_Unicast\_QoS\_Monitoring\_Data | VAL server |
| Notify\_Unicast\_QoS\_Monitoring\_Data | VAL server |
| Obtain\_Unicast\_QoS\_Monitoring\_Data | Request/Response | VAL server |
| Update\_Unicast\_QoS\_Monitoring\_Subscription | VAL server |
| SS\_IdmParameterProvisioning | Provide\_Configuration | Request/Response | VAL server |
| Get\_Configuration |
| Update\_Configuration |
| Delete\_Configuration |
| SS\_ADAE\_VALPerformanceAnalytics | Subscribe\_VAL\_Performance\_Analytics | Subscribe/Notify | VAL server |
| Notify\_VAL\_Performance\_Analytics |
| Unsubscribe\_VAL\_Performance\_Analytics |
| SS\_ADAE\_SlicePerformanceAnalytics API | Subscribe\_Slice\_Performance\_Analytics | Subscribe/Notify | VAL server |
| Notify\_Slice\_Performance\_Analytics |
| Unsubscribe\_Slice\_Performance\_Analytics |
| SS\_ADAE\_Ue2UePerformanceAnalytics | UE-to-UE\_Performance\_Analytics\_Subscribe | Subscribe/Notify | VAL server |
| UE-to-UE\_Performance\_Analytics\_Notify |
| UE-to-UE\_Performance\_Analytics\_Unsubscribe |
| SS\_ADAE\_LocationAccuracyAnalytics | Subscribe\_Location\_Accuracy\_Analytics | Subscribe/Notify | VAL server |
| Notify\_Location\_Accuracy\_Analytics |
| Unsubscribe\_Location\_Accuracy\_Analytics |
| SS\_ADAE\_ServiceApiAnalytics | Subscribe\_Service\_API\_Analytics | Subscribe/Notify | VAL server |
| Notify\_Service\_API\_Analytics |
| Unsubscribe\_Service\_API\_Analytics |
| SS\_ADAE\_SliceUsagePatternAnalytics | Subscribe\_Slice\_Usage\_Pattern\_Analytics | Subscribe/Notify | VAL server, NSCE server |
| Notify\_Slice\_Usage\_Pattern\_Analytics |
| Unsubscribe\_Slice\_Usage\_Pattern\_Analytics |
| Get\_Slice\_Usage\_Stats | Request/Response | VAL server, NSCE server |
| SS\_ADAE\_EdgeLoadAnalytics | Subscribe\_Edge\_Load | Subscribe/Notify | VAL server, EAS, EES |
| Notify\_Edge\_Load |
| Unsubscribe\_Edge\_Load |
| Get\_Edge\_Load\_Data | Request/Response | VAL server, EAS, EES |
| SS\_ADAE\_LocationRelatedUeGroupAnalytics | Subscribe\_LocationRelatedUeGroupAnalytics | Subscribe/Notify | e.g. LM server |
| Notify\_LocationRelatedUeGroupAnalytics |
| Unsubscribe\_LocationRelatedUeGroupAnalytics |
| SS\_AADRF\_DataManagement | SS\_AADRF\_DataManagement\_Subscribe | Subscribe/Notify | ADAE server |
| SS\_AADRF\_DataManagement\_Unsubscribe |
| SS\_AADRF\_DataManagement\_Notify |
| NOTE 1: The service operations of SS\_Events API are reused by the SS\_LocationInfoEvent, SS\_LocationMonitoring, SS\_LocationAreaMonitoring, SS\_GroupManagementEvent, SS\_UserProfileEvent and SS\_EventsMonitoring for events related services.  NOTE 2: The service APIs exposed by the SEALDD Server and the corresponding service operations, operation semantics and service consumers are specified in clause 5 of 3GPP TS 29.548 [35].  NOTE 3: The "Create\_MBS\_Resource", "Update\_MBS\_Resource", "Delete\_MBS\_Resource", "Activate\_MBS\_Resource" and "Deactivate\_MBS\_Resource" service operations correspond to the stage 2 "Request\_Multicast/Broadcast\_Resource", "Update\_Multicast/Broadcast\_Resource", "Delete\_Multicast/Broadcast\_Resource", "Activate\_Multicast\_Resource" and "Deactivate\_Multicast\_Resource" service operations defined in clause 14.4.2 of 3GPP TS 23.434 [2].  NOTE 4: The service APIs exposed by the NSCE Server and the corresponding service operations, operation semantics and service consumers are specified in clause 5 of 3GPP TS 29.435 [42]. | | | |

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\_NetworkResourceAdaptation | 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  (NOTE 2) | 7.6 | Key Information Retrieval Service | TS29549\_SS\_KeyInfoRetrieval.yaml | ss-kir | A.7 |
| SS\_LocationAreaInfoRetrieval | 7.1 | Location Area Info Retrieval Service | TS29549\_SS\_LocationAreaInfoRetrieval.yaml | ss-lair | A.8 |
| SS\_NetworkResourceMonitoring | 7.4 | Network Resource Monitoring | TS29549\_SS\_NetworkResourceMonitoring.yaml | ss-nrm | A.10 |
| SS\_VALServiceData | 7.3 | VAL Service Data Service | TS29549\_SS\_VALServiceData.yaml | ss-vsd | A.11 |
| SS\_VALServiceAreaConfiguration | 7.1 | VAL Service Area Configuration Service | TS29549\_SS\_VALServiceAreaConfiguration.yaml | ss-vsac | A.12 |
| SS\_KMParametersProvisioning  (NOTE 3) | 7.6 | Key Management Parameters Provisioning Service | TS29549\_SS\_KMParametersProvisioning.yaml | ss-kpp | A.14 |
| SS\_ADAE\_VALPerformanceAnalytics | 7.10 | ADAE VAL performance analytics service | TS29549\_SS\_ADAE\_VALPerformanceAnalytics.yaml | ss-adae-pa | A.15 |
| SS\_ADAE\_SlicePerformanceAnalytics | 7.10 | ADAE slice specific application performance analytics service | TS29549\_SS\_ADAE\_SlicePerformanceAnalytics.yaml | ss-adae-sspa | A.16 |
| SS\_ADAE\_Ue2UePerformanceAnalytics | 7.10 | ADAE UE-to-UE PerformanceAnalytics Service | TS29549\_SS\_ADAE\_Ue2UePerformanceAnalytics.yaml | ss-adae-lruga | A.17 |
| SS\_ADAE\_LocationAccuracyAnalytics | 7.10 | ADAE location accuracy performance analytics service | TS29549\_SS\_ADAE\_LocationAccuracyAnalytics.yaml | ss-adae-laa | A.18 |
| SS\_ADAE\_ServiceApiAnalytics | 7.10 | ADAE service API analytics service | TS29549\_SS\_ADAE\_ServiceApiAnalytics.yaml | ss-adae-sa | A.19 |
| SS\_ADAE\_SliceUsagePatternAnalytics | 7.10 | ADAE slice usage pattern analytics service | TS29549\_SS\_ADAE\_SliceUsagePatternAnalytics.yaml | ss-adae-sup | A.20 |
| SS\_ADAE\_EdgeLoadAnalytics | 7.10.7 | Edge load analytics service | TS29549\_SS\_ADAE\_EdgeLoadAnalytics.yaml | ss-adae-el | A.21 |
| SS\_AADRF\_DataManagement | 7.10.8 | A-ADRF Data Management Service | TS29549\_SS\_AADRF\_DataManagement.yaml | ss-aadrf-datamanagement | A.22 |
| SS\_ADAE\_LocationRelatedUeGroupAnalytics | 7.10.9 | ADAE Location-Related UE Group Analytics service | TS29549\_ADAE\_LocationRelatedUeGroupAnalytics.yaml | ss-adae-lruga | A.23 |
| NOTE 1: The APIs exposed by the SEALDD Server are specified in clause 5 of 3GPP TS 29.548 [35].  NOTE 2: The stage 2 requirements for this API are defined in clause 5.3 of 3GPP TS 33.434 [26].  NOTE 3: The stage 2 requirements for this API are defined in clause 5.8 of 3GPP TS 33.434 [26].  NOTE 4: The APIs exposed by the NSCE Server are specified in clause 5 of 3GPP TS 29.435 [42]. | | | | | |

\* \* \* Next change \* \* \* \*

### 7.10.9 SS\_ADAE\_LocationRelatedUeGroupAnalytics

#### 7.10.9.1 Introduction

The ADAE Location-Related UE Group Analytics service shall use the SS\_ADAE\_LocationRelatedUeGroupAnalytics.

The API URI of the SS\_ADAE\_CollisionDetectionAnalytics API shall be:

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

The request URIs used in HTTP requests from the service consumer towards the ADAE server shall have the Resource URI structure as defined in clause 6.5 with the following clarifications:

The request URIs used in HTTP requests shall have the Resource URI structure defined in clause 6.5, i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in clause 6.5.

- The <apiName>shall be "ss-adae-lruga".

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 7.10.9.2.

NOTE: When 3GPP TS 29.122 [3] is referenced for the common protocol and interface aspects for API definition in the clauses under clause 6.5, the ADAE Server takes the role of the SCEF and the service consumer takes the role of the SCS/AS.

#### 7.10.9.2 Usage of HTTP

The provisions of clause 6.3 of 3GPP TS 29.549 [15] shall apply for the SDD\_PolicyConfiguration API.

#### 7.10.9.3 Resources

##### 7.10.9.3.1 Overview

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

Figure 7.10.9.3.1-1 depicts the resource URIs structure for the SS\_ADAE\_LocationRelatedUeGroupAnalytics.

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**Figure 7.10.9.3.1-1: Resource URI structure of the SS\_ADAE\_LocationRelatedUeGroupAnalytics**

Table 7.10.9.3.1-1 provides an overview of the resources and applicable HTTP methods.

**Table 7.10.9.3.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| Location-Related UE Group Analytics Subscriptions | /subscriptions | POST | Create an individual location-related UE group analytics subscription. |
| Individual Location-Related UE Group Analytics Subscription | /subscriptions/{subscriptionId} | GET | Read the individual location-related UE group analytics subscription. |
| DELETE | Remove the individual location-related UE group analytics subscription. |

##### 7.10.9.3.2 Resource: Location-Related UE Group Analytics Subscriptions

###### 7.10.9.3.2.1 Description

The Location-Related UE Group Analytics Subscriptions to the event of the location-related UE group analytics.

###### 7.10.9.3.2.2 Resource Definition

Resource URI: **{apiRoot}/ss-adae-lruga/<apiVersion>/subscriptions**

This resource shall support the resource URI variables defined in the table 7.10.9.3.2.2-1.

Table 7.10.9.3.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 6.5 |

###### 7.10.9.3.2.3 Resource Standard Methods

7.10.9.3.2.3.1 POST

This method to subscribe to the event of the UE-to-UE session performance analytics and shall support the URI query parameters specified in table 7.10.9.3.2.3.1-1.

Table 7.10.9.3.2.3.1-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 7.10.9.3.2.3.1-2 and the response data structures and response codes specified in table 7.10.9.3.2.3.1-3.

Table 7.10.9.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| LocRelUeGroupSub | M | 1 | Subscription to the location-related UE group analytics. |

Table 7.10.9.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| LocRelUeGroupSub | M | 1 | 201 Created | Subscription to the location-related UE group analytics is created. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [3] shall also apply. | | | | |

Table 7.10.9.3.2.3.1-4: 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}/ss-adae-lruga/<apiVersion>/subscriptions/{subscriptionId} |

###### 7.10.9.3.2.4 Resource Custom Operations

None.

##### 7.10.9.3.3 Resource: Individual Location-Related UE Group Analytics Subscription

###### 7.10.9.3.3.1 Description

###### 7.10.9.3.3.2 Resource Definition

Resource URI: {**apiRoot**}/**ss-adae-lruga**/<**apiVersion**>/**subscriptions**/{**subscriptionId**}

This resource shall support the resource URI variables defined in table 7.10.9.3.3.2-1.

Table 7.10.9.3.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 6.5. |
| subscriptionId | string | Represents the identifier of an Individual Location-Related UE Group Analytics Subscription. |

###### 7.10.9.3.3.3 Resource Standard Methods

7.10.9.3.3.3.1 GET

This operation reads the individual unicast monitoring subscription resource. This method shall support the URI query parameters specified in table 7.10.9.3.3.3.1-1.

Table 7.10.9.3.3.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
|  |  |  |  |  |

This method shall support the request data structures specified in table 7.10.9.3.3.3.1-2 and the response data structures and response codes specified in table 7.10.9.3.3.3.1-3.

Table 7.10.9.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 7.10.9.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

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

Table 7.10.9.3.3.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative ADAE server. |

Table 7.10.9.3.3.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative ADAE server. |

7.10.9.3.3.3.2 DELETE

This operation deletes the Individual Location-Related UE Group Analytics Subscription resource. This method shall support the URI query parameters specified in table 7.10.9.3.3.3.2-1.

Table 7.10.9.3.3.3.2-1: 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 7.10.9.3.3.3.2-2 and the response data structures and response codes specified in table 7.10.9.3.3.3.2-3.

Table 7.10.9.3.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 7.10.9.3.3.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | The Individual Location-Related UE Group Analytics Subscription matching the subscriptionId is 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 ADAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing an alternative URI of the resource located in an alternative ADAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [3] also apply. | | | | |

Table 7.10.9.3.3.3.2-4: Headers supported by the 307 Response Code on this resource

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

Table 7.10.9.3.3.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative ADAE server. |

7.10.9.3.3.4 Resource Custom Operations

None.

#### 7.10.9.4 Custom Operations without associated resources

There are no custom operations without associated resources defined for this API in this release of the specification.

#### 7.10.9.5 Notifications

7.10.9.5.1 General

Table 7.10.9.5.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description  (service operation) |
| Location-Related UE Group Analytics Notification | {notifUri} | POST | Notification on location-related UE group analytics. |

##### 7.10.9.5.2 Location-Related UE Group Analytics Notification

###### 7.10.9.5.2.1 Description

Location-related UE group analytics notification is to notify on the event of location-related UE group analytics.

###### 7.10.9.5.2.2 Notification definition

The POST method shall be used for the event notification and the callback URI shall be the one provided by the consumer during the subscription to the event.

Callback URI: **{notifUri}**

This method shall support the URI query parameters specified in table 7.10.9.5.2.2-1.

Table 7.10.9.5.2.2-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 7.10.9.5.2.2-2 and the response data structures and response codes specified in table 7.10.9.5.2.2-3.

Table 7.10.9.5.2.2-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| LocRelUeGroupNotif | M | 1 | Notification information of location-related UE group analytics. |

Table 7.10.9.5.2.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Notification for the location-related UE group analytics is accepted. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection, during notification.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative notification destination where the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection, during notification.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative notification destination where the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.122 [3] shall also apply. | | | | |

**Table 7.10.9.5.2.2-4: Headers supported by the 307 Response Code on this resource**

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

**Table 7.10.9.5.2.2-5: Headers supported by the 308 Response Code on this resource**

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

#### 7.10.9.6 Data Model

##### 7.10.9.6.1 General

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

Table 7.10.9.6.1-1 specifies the data types defined specifically for the SS\_ADAE\_LocationRelatedUeGroupAnalytics service.

Table 7.10.9.6.1-1: SS\_ADAE\_LocationRelatedUeGroupAnalytics specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| AnalyticsIdLurga |  |  |  |
| LocDeviationTypeData | 7.10.9.6.2.6 | Represents the location-related UE group analytics deviation data. |  |
| LocDeviationCriteria | 7.10.9.6.2.7 | Represents the location-related UE group analytics deviation criteria. |  |
| LocRelUeGroupFilter | 7.10.9.6.2.4 | Represent the the location-related UE group analytics filtering information. |  |
| LocRelUeGroupNotif | 7.10.9.6.2.3 | Represents the location-related UE group analytics notification. |  |
| LocRelUeGroupSub | 7.10.9.6.2.2 | Represents the location-related UE group analytics subscription. |  |
| LocDeviationCriterion | 7.10.9.6.2.5 | Represents the threshold for the location-related UE group analytics deviation. |  |

Table 7.10.9.6.1-2 specifies data types re-used by the SS\_ADAE\_LocationRelatedUeGroupAnalytics service:

Table 7.10.9.6.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AnalyticsType | Clause 7.10.1.4.2.6 | Type of analytics for the event of the VAL application performance analytics. |  |
| AppGrpProfile | 3GPP TS 29.558 [A] | Represents the application group profile. |  |
| DurationSec | 3GPP TS 29.122 [3] | Represents a period of time in units of seconds. |  |
| Float | 3GPP TS 29.571 [21] | Used to represent float attributes. |  |
| LocationArea5G | 3GPP TS 29.122 [3] | Represents location information. |  |
| MatchingDirection | 3GPP TS 29.520 [33] | Used to indicate a threshold matching direction. |  |
| 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 supported optional features of the API. |  |
| TimeWindow | 3GPP TS 29.122 [3] | Used to indicate the time window. |  |
| Uri | 3GPP TS 29.122 [3] | Used to indicate the notification URI. |  |
| ValTargetUe | Clause 7.3.1.4.2.3 | Used to indicate either VAL User ID or VAL UE ID. |  |

##### 7.10.9.6.2 Structured data types

###### 7.10.9.6.2.1 Introduction

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

###### 7.10.9.6.2.2 Type: LocRelUeGroupSub

Table 7.10.9.6.2.2-1: Definition of type LocRelUeGroupSub

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| analyticsType | AnalyticsType | M | 1 | Represents the type of the UE-to-UE session performance analytics. |  |
| analyticsId | AnalyticsIdLruga | O | 0..1 | Represents the analytics ID. |  |
| analyticsFilt | LocRelUeGroupFilter | M | 1 | Represents the analytics filter information. |  |
| confLevel | Uinteger | C | 0..1 | Indicates the preferred accuracy level prediction.  This attribute shall be provided if the "analyticsType" attribute in the request is set to "PREDICTIVE".  Minimum = 0. Maximum = 100. |  |
| repReq | ReportingInformation | O | 0..1 | Represents the reporting requirements of the subscription. |  |
| notifUri | Uri | M | 1 | Represents the notification URI. |  |
| timeInterval | TimeWindow | O | 0..1 | The time interval as the start time and end time, to which the subscription is applied. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Used to negotiate the applicability of optional features.  This attribute shall be present only if feature negotiation needs to take place. |  |

###### 7.10.9.6.2.3 Type: LocRelUeGroupNotif

Table 7.10.9.6.2.3-1: Definition of type LocRelUeGroupNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| analyticsOutput | FFS | M | 1 | Represents the output. |  |
| timeValid | DurationSec | O | 0..1 | Represents the valid time duration of the analytics. |  |
| analyticsId | AnalyticsIdLruga | O | 0..1 | Represents the analytics ID. |  |
| confLevel | integer | C | 0..1 | Indicates the achieved confidence of the prediction.  This attribute shall be provided if the "analyticsType" attribute in the request is set to "PREDICTIVE".  Minimum = 0. Maximum = 100. |  |

Editor’s note: the "analyticsOutput" attribute is FFS.

###### 7.10.9.6.2.4 LocRelUeGroupFilter

Table 7.10.9.6.2.4-1: Definition of type LocRelUeGroupFilter

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| groupId | string | C | 0..1 | Contains the identifier of the application group.  (NOTE) |  |
| valTrgUes | array(string) | C | 1..N | Represents the list of VAL UEs, whose analytics are subscribed to.  (NOTE) |  |
| area | LocationArea5G | O | 0..1 | Represents the geographical or service area, to which the subscription is applied. |  |
| profiles | array(AppGrpProfile) | O | 1..N | Represents the application group profiles. |  |
| deviation | array(LocDeviationCriteria) | O | 1..N | Represents the deviation information. |  |
| NOTE: Only one of these attributes shall be provided. | | | | | |

###### 7.10.9.6.2.5 Type: LocDeviationCriterion

Table 7.10.9.6.2.5-1: Definition of type LocDeviationCriterion

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| value | LocDeviationTypeData | M | 1 | Indicates the value for the analytics threshold. |  |
| thrDirect | MatchingDirection | M | 1 | Indicates the threshold matching direction for the analytics threshold provided in the "value" attribute. |  |

###### 7.10.9.6.2.6 Type: LocDeviationTypeData

Table 7.10.9.6.2.6-1: Definition of type LocDeviationTypeData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| speed | Float | C | 0..1 | The speed in unit of meters per second.  (NOTE) |  |
| distance | Float | C | 0..1 | The distance in unit of meters.  (NOTE) |  |
| directionH | Float | C | 0..1 | The horizontal direction deviation in unit of radian.  (NOTE) |  |
| directionV | Float | C | 0..1 | The vertical direction deviation in unit of radian.  (NOTE) |  |
| NOTE: Only one of these attributes shall be provided. | | | | | |

###### 7.10.9.6.2.7 Type: LocDeviationCriteria

Table 7.10.9.6.2.7-1: Definition of type LocDeviationCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| target | string | M | 1 | Represent the target VAL UE. |  |
| criteria | array(LocDeviationCriterion) | M | 1..N | Represent the deviation criteria. |  |

##### 7.10.9.6.3 Simple data types and enumerations

##### 7.10.9.6.3.1 Introduction

This clause defines simple data types and enumerations that can be referenced from data structures defined in the previous clauses.

##### 7.10.9.6.3.2 Simple data types

The simple data types defined in table 7.10.9.6.3.2-1 shall be supported.

Table 7.10.9.6.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
|  |  |  |  |

##### 7.10.9.6.3.3 Enumeration: AnalyticsIdLruga

The enumeration AnalyticsIdLruga represents the analytic IDs for Location Related UR Group Analytics. It shall comply with the provisions defined in table 7.10.9.6.3.3-1.

Table 7.10.9.6.3.3-1: Enumeration AnalyticsIdLruga

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| GROUP\_ROUTE | Indicates that the requested analytics is UE group route analytics. |  |
| GROUP\_MEMBER\_DEVIATION | Indicates that the requested analytics is UE group member deviation analytics. |  |

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

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

#### 7.10.9.6.5 Binary data

##### 7.10.9.6.5.1 Binary Data Types

Table 7.10.9.6.5.1: Binary Data Types

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

#### 7.10.9.7 Error Handling

##### 7.10.9.7.1 General

HTTP error handling shall be supported as specified in clause 6.7.

In addition, the requirements in the following clauses shall apply.

##### 7.10.9.7.2 Protocol Errors

In this release of the specification, there are no additional protocol errors applicable for the SS\_ADAE\_LocationRelatedUeGroupAnalytics.

##### 7.10.9.7.3 Application Errors

The application errors defined for SS\_ADAE\_LocationRelatedUeGroupAnalytics are listed in table 7.10.9.7.3-1.

Table 7.10.9.7.3-1: Application errors

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

#### 7.10.9.8 Feature Negotiation

General feature negotiation procedures are defined in clause 6.8. Table 7.10.9.8-1 lists the supported features for SS\_ADAE\_LocationRelatedUeGroupAnalytics.

Table 7.10.9.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
|  |  |  |

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