**3GPP TSG-CT Meeting #106CP-243241**

**Madrid, Spain; 9th – 10th December 2024**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **24.559** | **CR** | **0008** | **rev** | **2** | **Current version:** | **18.1.0** |  |
|  |
| *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 | **x** | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Location-related UE Group Analytics |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | Ericsson |
|  |  |
| ***Work item code:*** | eLSAPP |  | ***Date:*** | 2024-11-28 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | SA6 specified in 3GPP TS 23.436 clause 8.15, specified support of the Location-related UE Group Analytics.This functionality needs to be implemented in stage 3. |
|  |  |
| ***Summary of change:*** | Introducing the stage 3 requirements to support Location-related UE Group Analytics functionality.Note that update of figure 7.1.3.1-1 also includes modification needed for the colision detection functionality introduced by CR 0007. |
|  |  |
| ***Consequences if not approved:*** | Missing functionality from stage 2 in stage 3 specification. |
|  |  |
| ***Clauses affected:*** | 6.x (new), 6.x.1(new), 6.x.2(new), 7.1.3.1, 7.1.3.X(new), 7.1.3.X.1(new), 7.1.3.X.2(new), 7.1.3.X.3(new), 7.1.3.X.3.1(new), 7.1.3.X.4(new), 7.1.3.Y(new), 7.1.3.Y.1(new), 7.1.3.Y.2(new), 7.1.3.Y.3(new), 7.1.3.Y.3.1(new), 7.1.3.Y.4(new), 7.1.4.1, 7.1.4.X(new), 7.1.4.X.1(new), 7.1.4.X.2(new), 7.1.5.1, A.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **x** |  |  Other core specifications  | TS 29.549 CR 0334  |
| ***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 OpenAPI file of the ADAE\_ServiceConfiguration API. |
|  |  |
| ***This CR's revision history:*** | CR version 2:[C1-247178](https://www.3gpp.org/ftp/tsg_ct/WG1_mm-cc-sm_ex-CN1/TSGC1_152_Orlando/Docs/C1-247178.zip) agreed in CT1 #152 meeting revised to correct the error in the OpenAPI file i.e. "UeGroupLocId" replaced with "ueGroupLocId" in path"/ue-group-loc-analytics/{ueGroupLocId}:" and the referenced file from CT3 TS 29.549 is named as:TS29549\_SS\_ADAE\_LocationRelatedUeGroupAnalytics. |

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

## 6.x Location-related UE Group Analytics

### 6.X.1 Service description

#### 6.X.1.1 Overview

The ADAE\_ServiceConfiguration API, as defined 3GPP TS 23.436 [3], allows the ADAES via ADAE-UU reference point, to obtain the location-related UE group analytics from the ADAEC.

### 6.X.2 Service operations

#### 6.X.2.1 Introduction

The service operations defined for ADAE\_ServiceConfiguration API for location-related UE group analytics are shown in the table 6.X.2.1-1.

Table 6.X.2.1-1: Operations for Location-related UE Group Analytics

|  |  |  |
| --- | --- | --- |
| Service operation name | Description | Initiated by |
| Subscribe\_UE\_Group\_Location | This service operation is used by ADAES to subscribe to location-related UE group analytics. | ADAES |
| Notify\_UE\_Group\_Location | This service operation is used by ADAEC to notify about location-related UE group analytics. | ADAEC |
| Unsubscribe\_UE\_Group\_Location | This service operation is used by ADAES to unsubscribe to location-related UE group analytics. | ADAES |

#### 6.X.2.2 Subscribe\_UE\_Group\_Location

##### 6.X.2.2.1 General

This service operation is used by the ADAES for obtaining the location-related UE group analytics from the ADAEC.

##### 6.X.2.2.2 Obtaining location-related UE group analytics using Subscribe\_UE\_Group\_Location service operation

To obtain the location-related UE group analytics, the ADAES shall send an HTTP POST request with a Request-URI according to the pattern "{apiRoot}/adae-sc/<apiVersion>/ue-group-loc-analytics" and with a body containing data type LocRelUeGroupSub as defined in clause 7.10.9.4.2.2 of 3GPP TS 29.549 [9].

Upon receipt of the HTTP POST request, the ADAEC shall:

a) verify the identity of the ADAES and determine if the ADAES is authorized to obtain the location-related UE group analytics; and

b) if the ADAES:

1) is not authorized, the ADAEC shall respond to the ADAES with an appropriate error status code; or

2) is authorized, the ADAC shall create a new "Individual location-related UE group analytics subscription" resource and respond to the ADAES with an HTTP "201 Created" status code with a Location header field containing the URI of the created "Individual location-related UE group analytics subscription" resource and the LocRelUeGroupSub data structure in the response body containing a representation of the created resource as defined in clause 7.1.3.

#### 6.X.2.3 Notify\_UE\_Group\_Location

##### 6.X.2.3.1 General

This service operation is used by the ADAEC to notify the ADAES about the location-related UE group analytics event.

##### 6.X.2.3.2 Notifying location-related UE group analytics event using Notify\_UE\_Group\_Location service operation

To notify location-related UE group analytics event, the ADAEC shall send an HTTP POST request with a Request-URI according to the pattern "{notifUri}" and with a body containing data type LocRelUeGroupNotif as defined in clause 7.10.9.4.2.3 of 3GPP TS 29.549 [9].

Upon receipt of the HTTP POST request, the ADAES shall respond to the ADAEC with:

a) if the request is successfully processed, a "204 No Content" status code and process the event notification; or

b) if error occurs when processing the request, an appropriate error response as specified in clause 7.1.6.

#### 6.X.2.4 Unsubscribe\_UE\_Group\_Location

##### 6.X.2.4.1 General

This service operation is used by the ADAEC to unsubscribe from the location-related UE group analytics event.

##### 6.X.2.4.2 Unsubscribing from location-related UE group analytics event using Unsubscribe\_UE\_Group\_Location service operation

To unsubscribe from location-related UE group analytics event, the ADAES shall send an HTTP DELETE request to the "Individual location-related UE group analytics subscription" resource as specified in clause 7.1.3.Y.

Upon receiving the HTTP DELETE request:

a) the ADAEC shall verify the identity of the ADAES and check if the ADAES is authorized to unsubscribe from the location-related UE group analytics event associated with the resource URI "{apiRoot}/adae-sc/<apiVersion>/ue-group-loc-analytics/{ueGroupLocId}";

b) if the ADAES is authorized to unsubscribe from the location-related UE group analytics event, the ADAEC shall delete the resource pointed by the resource URI "{apiRoot}/adae-sc/<apiVersion>/ue-group-loc-analytics/{ueGroupLocId}";

c) if the request is successfully processed, the ADAEC shall respond to the ADAES with a "204 No Content" status code; and

d) if error occurs when processing the request, the ADAEC shall respond to the ADAES with an appropriate error response as specified in clause 7.1.6.

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

#### 7.1.3.1 Overview

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

Figure 7.1.3.1-1 depicts the resource URI structure of the ADAE\_ServiceConfiguration API.



Figure 7.1.3.1-1: Resource URI structure of the ADAE\_ServiceConfiguration API

Table 7.1.3.1-1 provides an overview of the resources and applicable HTTP methods.

Table 7.1.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method | Description  |
| Application performance event subscription | /application-performance | POST | Subscription to the VAL performance analytics event. |
| Individual application performance event subscription | /application-performance/{appPerfId} | DELETE | Deletes an individual VAL performance analytics event. |
| UE-to-UE session performance analytics | /ue2ue-session-performance/fetch | fetch(POST) | Request for the UE-to-UE session performance analytics. |
| Edge load event subscription | /edge-load | POST | Subscription to the edge load data collection event. |
| Individual edge load event subscription | /edge-load/{edgeLdId} | DELETE | Deletes an individual edge load data collection subscription. |
| Service experience | /service-experience/pull | pull(POST) | Pull a service experience information report. |
| Location-related UE group analytics subscriptions | /ue-group-loc-analytics | POST | Creates an individual location-related UE group analytics subscription. |
| Individual location-related UE group analytics subscription | /ue-group-loc-analytics/{ueGroupLocId} | DELETE | Removes the individual location-related UE group analytics subscription. |

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

#### 7.1.3.X Resource: Location-related UE group analytics subscriptions

##### 7.1.3.X.1 Description

Location-related UE group analytics event subscription is used to subscribe to the ADAEC for the location-related UE group analytics events.

##### 7.1.3.X.2 Resource definition

Resource URI: **{apiRoot}/adae-sc/<apiVersion>/ue-group-loc-analytics**

This resource shall support the resource URI variables defined in the table 7.1.3.X.2-1.

Table 7.1.3.X.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 5.2.4 in 3GPP TS 29.122 [6] |

##### 7.1.3.X.3 Resource standard methods

###### 7.1.3.X.3.1 POST

This method is used for the subscription to the location-related UE group analytics events and shall support the URI query parameters specified in table 7.1.3.X.3.1-1.

Table 7.1.3.X.3.1-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 7.1.3.X.3.1-2 and the response data structures and response codes specified in table 7.1.3.X.3.1-3.

Table 7.1.3.X.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 7.1.3.X.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 7.1.3.X.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}/adae-sc/<apiVersion>/ue-group-loc-analytics/{ueGroupLocId} |

##### 7.1.3.X.4 Resource custom operations

None.

#### 7.1.3.Y Resource: Individual location-related UE group analytics subscription

##### 7.1.3.Y.1 Description

The individual location-related UE group analytics event subscription resource represents an individual subscription to the location-related UE group analytics events.

##### 7.1.3.Y.2 Resource Definition

Resource URI: **{apiRoot}/adae-sc/<apiVersion>/ue-group-loc-analytics/{ueGroupLocId}**

This resource shall support the resource URI variables defined in the table 7.1.3.Y.2-1.

Table 7.1.3.Y.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 5.2.4 in 3GPP TS 29.122 [6] |
| ueGroupLocId | string | Represents the identifier of an Individual location-related UE group analytics subscription. |

##### 7.1.3.Y.3 Resource Standard Methods

###### 7.1.3.Y.3.1 DELETE

This method shall support the URI query parameters specified in table 7.1.3.Y.3.1-1.

Table 7.1.3.Y.3.1-1: 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 7.1.3.Y.3.1-2 and the response data structures and response codes specified in table 7.1.3.Y.3.1-3.

Table 7.1.3.Y.3.1-2: Data structures supported by the DELETE Request Body on this resource

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

Table 7.1.3.Y.3.1-3: 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 ueGroupLocId 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 7.1.3.Y.3.1-4: 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 ADAEC. |

Table 7.1.3.Y.3.1-5: 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 ADAEC. |

##### 7.1.3.Y.4 Resource Custom Operations

None.

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

#### 7.1.4.1 General

Table 7.1.4.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method | Description(service operation) |
| Application performance event notification | {notifUri} | POST | Notification for the VAL performance analytics event |
| Edge load event notification | {notifUri} | POST | Notification for the edge load data collection event |
| Service experience report event notification | {notifUri} | POST | Notification for the service experience report event |
| Location-related UE group analytics notification | {notifUri} | POST | Notification on location-related UE group analytics. |

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

#### 7.1.4.X Location-related UE group analytics notification

##### 7.1.4.X.1 Description

The location-related UE group analytics event notification is used by the ADAEC to notify about the location-related UE group analytics events.

##### 7.1.4.X.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 7.1.4.X.2-1.

Table 7.1.4.X.2-1: URI query parameters supported by the POST method on this resource

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

If the notification is on the location-related UE group analytics, this method shall support the request data structures specified in table 7.1.4.X.2-2 and the response data structures and response codes specified in table 7.1.4.X.2-3.

Table 7.1.4.X.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 7.1.4.X.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 7.1.4.X.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 ADAES towards which the notification should be redirected. |

Table 7.1.4.X.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 ADAES towards which the notification should be redirected. |

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

#### 7.1.5.1 General

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

Table 7.1.5.1-1 specifies the data types defined for the ADAE\_ServiceConfiguration API.

Table 7.1.5.1-1: ADAE\_ServiceConfiguration API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| DataCollectReq | 7.1.5.2.9 | Contains data collection requirements. |  |
| PullSrvExpInfo | 7.1.5.2.6 | Pull an individual service experience information |  |
| SrvExpInfoRep | 7.1.5.2.7 | Response to pull an individual service experience information |  |
| Ue2UePerfReq | 7.1.5.2.2 | Request for the UE-to-UE session performance analytics |  |
| Ue2UePerfResp | 7.1.5.2.3 | Response for the UE-to-UE session performance analytics |  |
| Ue2UeRepThreshold | 7.1.5.2.8 | Represents reporting threshold. |  |

Table 7.1.5.1-2 specifies data types re-used by the ADAE\_ServiceConfiguration API service.

Table 7.1.5.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AppPerfSub | 3GPP TS 29.549 [9] | Subscription to the VAL application performance analytics |  |
| AppPerfNotif | 3GPP TS 29.549 [9] | Notification information of the application performance analytics. |  |
| DurationSec | 3GPP TS 29.122 [6] | Represent the time interval between successive location reports. |  |
| EdgeSub | 3GPP TS 29.549 [9] | Subscription to the edge load analytics event |  |
| EdgeNotif | 3GPP TS 29.549 [9] | Notification information of the edge load analytics event. |  |
| LocationArea | 3GPP TS 29.122 [6] | Represents location information. |  |
| LocRelUeGroupNotif | 3GPP TS 29.549 [9] | Represents the location-related UE group analytics notification. |  |
| LocRelUeGroupSub | 3GPP TS 29.549 [9] | Represents the location-related UE group analytics subscription. |  |
| MatchingDirection | 3GPP TS 29.520 [18] | Used to indicate a threshold matching direction. |  |
| Pc5QoSPara | 3GPP TS 29.571 [10] | Represents policy data on the PC5 QoS parameters. |  |
| ReportingInformation | 3GPP TS 29.523 [8] | Indicates the reporting requirement. |  |
| SupportedFeatures | 3GPP TS 29.571 [10] | Used to negotiate the applicability of the optional features defined in table 7.1.7-1. |  |
| TimeWindow | 3GPP TS 29.122 [6] | Represents a start time and a stop time of a time window |  |
| U2UAnalytics | 3GPP TS 29.549 [9] | Indicates the list of the requested analytics. |  |
| ValTargetUe | 3GPP TS 29.549 [9] | Used to indicate either VAL User ID or VAL UE ID. |  |

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

# A.2 ADAE\_ServiceConfiguration API

openapi: 3.0.0

info:

 title: ADAE\_ServiceConfiguration

 version: 1.0.0

 description: |

 API for ADAE service configuration.

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externalDocs:

 description: >

 3GPP TS 24.559 V18.1.0 Application Data Analytics Enablement Service; Stage 3.

 url: https://www.3gpp.org/ftp/Specs/archive/24\_series/24.559/

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/adae-sc/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /application-performance:

 post:

 description: >

 Creates a new individual VAL performance analytics event subscription.

 operationId: VALPerformanceSubscription

 tags:

 - VAL performance event subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_VALPerformanceAnalytics.yaml#/components/schemas/AppPerfSub'

 callbacks:

 notificationUri:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_VALPerformanceAnalytics.yaml#/components/schemas/AppPerfNotif'

 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: VAL performance event subscription resource created successfully.

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_VALPerformanceAnalytics.yaml#/components/schemas/AppPerfSub'

 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'

 /application-performance/{appPerfId}:

 delete:

 description: Deletes an individual VAL performance event subscription.

 operationId: DeleteIndValPerfEventSubsc

 tags:

 - Individual VAL performance event subscription

 parameters:

 - name: appPerfId

 in: path

 description: Identifier of an individual VAL performance event subscription.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 The individual VAL performance subscription matching the appPerfId 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'

 /ue2ue-session-performance/fetch:

 post:

 description: >

 Obtain the UE-to-UE session performance analytics.

 operationId: FetchUe2UeSessionPerformance

 tags:

 - Fetch UE-to-UE session performance analytics

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/Ue2UePerfReq'

 responses:

 '200':

 description: >

 Successful case. The UE-to-UE session performance information is returned in

 the response body.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/Ue2UePerfResp'

 '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'

 /edge-load:

 post:

 description: >

 Creates a new individual edge load data collection event subscription.

 operationId: EdgeLoadDataCollectionSubscription

 tags:

 - Edge load data collection event subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_EdgeLoadAnalytics.yaml#/components/schemas/EdgeSub'

 callbacks:

 notificationUri:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_EdgeLoadAnalytics.yaml#/components/schemas/EdgeNotif'

 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: Edge load data collection event subscription resource created successfully.

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_EdgeLoadAnalytics.yaml#/components/schemas/EdgeSub'

 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'

 /edge-load/{edgeLdId}:

 delete:

 description: Deletes an individual edge load data collection event subscription.

 operationId: DeleteIndEdgeLdDataCollectEventSubsc

 tags:

 - Individual edge load data collection event subscription

 parameters:

 - name: edgeLdId

 in: path

 description: Identifier of an individual edge load data collection event subscription.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 The individual edge load data collection subscription matching the edgeLdId 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'

 /service-experience/pull:

 post:

 description: >

 ADAE server pulls service experience report from the ADAE client.

 operationId: PullSrvExpReport

 tags:

 - Pull service experienec report

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 Successful case. The ADAE client provides service experience reporting to

 the ADAE server.

 content:

 application/json:

 schema:

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

 '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'

 /ue-group-loc-analytics:

 post:

 description: >

 Creates an individual location-related UE group analytics subscription.

 operationId: LocRelUeGroupSubscription

 tags:

 - Location-related UE group analytics subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_LocationRelatedUeGroupAnalytics.yaml#/components/schemas/LocRelUeGroupSub'

 callbacks:

 notificationUri:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_LocationRelatedUeGroupAnalytics.yaml#/components/schemas/LocRelUeGroupNotif'

 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: >

 The location-related UE group analytics subscription resource created successfully.

 content:

 application/json:

 schema:

 $ref: 'TS29549\_SS\_ADAE\_LocationRelatedUeGroupAnalytics.yaml#/components/schemas/LocRelUeGroupSub'

 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'

 /ue-group-loc-analytics/{ueGroupLocId}:

 delete:

 description: Deletes the individual location-related UE group analytics subscription.

 operationId: DeleteIndLocRelUeGroupSubsc

 tags:

 - Individual location-related UE group analytics subscription

 parameters:

 - name: ueGroupLocId

 in: path

 description: Identifier of an individual location-related UE group analytics subscription.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 The individual location-related UE group analytics subscription matching the

 appPerfId 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:

 Ue2UePerfReq:

 description: ADAES requests ADAEC for the UE-to-UE session performance analytics.

 type: object

 properties:

 serverId:

 type: string

 description: String identifying the ADAE server

 analyticsId:

 type: string

 description: String identifying the UE-to-UE session analytics

 valUeIds:

 type: array

 items:

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

 minItems: 1

 description: >

 One or more VAL UE IDs whose UE-to-UE session performance is requested.

 pc5Qos:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Pc5QoSPara'

 reportConfig:

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

 repThresholds:

 description: >

 Identifies reporting threshold corresponding to the analytics.

 type: array

 items:

 $ref: '#/components/schemas/Ue2UeRepThreshold'

 minItems: 1

 dataAbstractReq:

 description: >

 Indicates whether the data abstraction is required (true) or not (false).

 type: boolean

 default: false

 dataCollectReq:

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

 area:

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

 timeWindow:

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

 suppFeat:

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

 required:

 - serverId

 - valUeIds

 - pc5Qos

 Ue2UePerfResp:

 description: >

 ADAEC responds to ADAES with the UE-to-UE session performance analytics information.

 type: object

 properties:

 dataOutputs:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 UE-to-UE session performance analytics for prediction or statistics.

 valUeIds:

 type: array

 items:

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

 minItems: 1

 description: >

 One or more VAL UE IDs whose UE-to-UE session performance has been requested.

 analyticsId:

 type: string

 description: String identifying the UE-to-UE session analytics

 suppFeat:

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

 required:

 - dataOutputs

 - valUeIds

 Ue2UeRepThreshold:

 description: Identifies reporting threshold corresponding to the analytics.

 type: object

 properties:

 thrName:

 $ref: 'TS29549\_SS\_ADAE\_Ue2UePerformanceAnalytics.yaml#/components/schemas/U2UAnalytics'

 thrValue:

 description: Indicates the value for the analytics threshold.

 type: string

 thrMatchDirect:

 $ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/MatchingDirection'

 required:

 - thrName

 - thrValue

 - thrMatchDirect

 DataCollectReq:

 description: Contains data collection requirements.

 type: object

 properties:

 dataFormat:

 description: Indicates the format of the requested data.

 type: string

 repPeriod:

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

 abstractLevel:

 description: Indicates the desired level of abstraction of the requested data.

 type: string

 accuracyLevel:

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

 required:

 - dataFormat

 PullSrvExpInfo:

 description: Contains VAL server and service identities.

 type: object

 properties:

 valServerId:

 type: string

 valServiceId:

 type: string

 required:

 - valServerId

 SrvExpInfoRep:

 description: Allows ADAEC to provide the service experience report to the ADAES.

 type: object

 properties:

 valUeId:

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

 valServerId:

 type: string

 description: String identifying the VAL server the service experience report applies.

 valServiceId:

 type: string

 description: String identifying the VAL service

 timeStamp:

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

 valSrvExpRep:

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

 required:

 - valUeId

 - valServerId

# Simple data types and Enumerations

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