**3GPP TSG-CT WG3 Meeting #134C3-242205**

**Changsha, China, 15 - 19 April, 2024 (revision of C3-242abc)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.549** | **CR** | **0271** | **rev** | **-** | **Current version:** | **18.5.0** |  |
|  | | | | | | | | |
| *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:*** | Removal of the Editor’s Note for the analytics type in the notification | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Lenovo, Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | ADAES | | | | |  | ***Date:*** | | | 2024-04-01 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | According to the reply LS S6-240553 and agreed CRs S6-240504, S6-240507, S6-240510, S6-240558 and S6-240559, the Analytics Type in the notification were removed. Hence the related Editor’s Notes can be solved. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Remove the "analyticsType" attribute from the analytics notification and the related Editor’s Notes. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Open issues in the specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.10.1.1, 7.10.1.2.1, 7.10.1.4.2.2, 7.10.1.4.2.3, 7.10.1.4.2.4, 7.10.1.4.2.5, 7.10.1.4.3.3, 7.10.2.1, 7.10.2.2.1, 7.10.2.4.2.2, 7.10.2.4.2.3, 7.10.3.4.2.3, 7.10.4.1, 7.10.4.2.1, 7.10.4.4.2.2, 7.10.4.4.2.3, 7.10.7.4.2.3, A.15, A.16, A.17, A.18, A.21 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | * The CR introduces backward compatible corrections to the OpenAPI file for SS\_ADAE\_VALPerformanceAnalytics API, SS\_ADAE\_SlicePerformanceAnalytics API, SS\_ADAE\_Ue2UePerformanceAnalytics API, SS\_ADAE\_LocationAccuracyAnalytics API and SS\_ADAE\_EdgeLoadAnalytics API. * The analytics output of the Editor’s Notes in clauses 7.10.1.4.2.3, 7.10.2.4.2.3 and 7.10.4.4.2.3 were solved in CR#0272. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

#### 7.10.1.1 API URI

The SS\_ADAE\_VALPerformanceAnalytics service shall use the SS\_ADAE\_VALPerformanceAnalytics API.

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

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

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 7.10.1.2.

\*\*\* 2nd Change \*\*\*

##### 7.10.1.2.1 Overview

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

Figure 7.10.1.2.1-1 depicts the resource URIs structure for the SS\_ADAE\_VALPerformanceAnalytics API.

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**Figure 7.10.1.2.1-1: Resource URI structure of the SS\_ADAE\_VALPerformanceAnalytics API**

Table 7.10.1.2.1-1 provides an overview of the resources and applicable HTTP methods.

**Table 7.10.1.2.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| Application performance event subscription | /application-performance | POST | Subscription to VAL performance analytics. |
| Individual application performance event subscription | /application-performance/{appPerfId} | GET | Request the retrieval of an existing "Individual subscription to the event of the application performance analytics" resource. |
|  |  |
|  |  |
| DELETE | Removal of VAL performance analytics subscriptions. |

\*\*\* 3rd Change \*\*\*

###### 7.10.1.4.2.2 Type: AppPerfSub

**Table 7.10.1.4.2.2-1: Definition of type AppPerfSub**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| notifUri | Uri | M | 1 | Represents the notification URI. |  |
| analyticsType | AnalyticsType | M | 1 | Identifies the type of the VAL application performance analytics. Only the "category" attribute is applicable here. |  |
| valServiceId | string | M | 1 | The identifier of the VAL service, to which the performance analytics subscription is applied. |  |
| valUeIds | array(ValTargetUe) | O | 1..N | A list of identities of one or more VAL UEs, whose performance analytics are subscribed to. |  |
| valServerId | string | O | 0..1 | If the consumer is different from the VAL server, this identifier represents the VAL server to which the VAL performance analytics subscription is applied. |  |
| dataProdProfile | ProdProfileInfo | O | 0..1 | Characteristics of the data producer to be used. |  |
| confLevel | Uinteger | O | 0..1 | Indicates the preferred confidence level of the prediction.  Minimum = 0. Maximum = 100. |  |
| area | LocationArea5G | O | 0..1 | The geographical or service area to which the VAL performance analytics subscription is applied. |  |
| timeValidity | TimeWindow | O | 0..1 | The time validity of the subscription. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Used to negotiate the supported features of the API as defined in clause 7.10.1.6.  This attribute shall be provided in the HTTP POST response of successful subscription creation if it was provided in the request. |  |

Editor's Note: The exposure level requirements as defined in 3GPP TS 23.436 clause 8.2.4.2 are FFS.

\*\*\* 4th Change \*\*\*

###### 7.10.1.4.2.3 Type: AppPerfNotif

**Table 7.10.1.4.2.3-1: Definition of type AppPerfNotif**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| output | string | M | 1 | Predicted (or computed, for statistics) change or sustainability of the VAL performance for a VAL server or a VAL session. |  |
| valServerId | string | M | 1 | Identity of the VAL server, the data collection is related to, in the case of the notification is on the VAL performance data collection. |  |
| valUeIds | array(ValTargetUe) | O | 1..N | A list of identities of one or more VAL UEs, the data collection is related to, in the case of the notification is on the VAL performance data collection. |  |
| confLevel | Uinteger | C | 0..1 | Indicates the achieved confidence level in the case of prediction.  Minimum = 0. Maximum = 100. (NOTE) |  |
| timeHorizon | TimeWindow | C | 0..1 | The time window to which the predictive analytics apply. (NOTE) |  |
| NOTE: This attribute shall be provided if the "category" attribute of the "analyticsType" attribute in the subscription was set to "PREDICTIVE" and it may not be provided otherwise. | | | | | |
|  | | | | | |

\*\*\* 5th Change \*\*\*

###### 7.10.1.4.2.4 Type: ProdProfileInfo

**Table 7.10.1.4.2.4-1: Definition of type ProdProfileInfo**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| prodId | string | M | 1 | Identity of the data producer |  |
| prodType | ProducerType | M | 1 | Type of the data producer. |  |
| dataType | ProducerData | M | 1 | Type of information that can be provided by the data producer. |  |
| prodRole | ProducerRole | O | 0..1 | Role of the data producer. |  |
| origProdIds | array(string) | O | 1..N | Identifies the identity of the original data producer if the prod-role is not set to the value "ORIGINAL\_PRODUCER"or "GENERATING\_ENTITY".  If the type of the data producer is that value of “A\_DCCF”, this attribute is a list of identities of data producers. |  |
| dataFresh | integer | O | 0..1 | It is set to the duration of the time (in seconds) elapsed time after the data generated if the producer-role does not have the value "ORIGINAL\_PRODUCER"or "GENERATING\_ENTITY". |  |
| producerCap | ProducerCap | O | 0..1 | Represents data producer capability. |  |

\*\*\* 6th Change \*\*\*

###### 7.10.1.4.2.5 Type: ProducerCap

**Table 7.10.1.4.2.5-1: Definition of type ProducerCap**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| durationTime | DateTime | O | 0..1 | Duration time that the data can be stored |  |
| anonymization | boolean | O | 0..1 | The value "true" means that anonymization is supported. while the value "false" means that anonymization is not supported. The default value is "false" if omitted. |  |
| dataRate | BitRate | O | 0..1 | Rate of data generation; |  |
| schedule | ScheduledCommunicationTime | O | 0..1 | Represents scheduling |  |

\*\*\* 7th Change \*\*\*

###### 7.10.1.4.3.3 Enumeration: AnalyticsCategory

**Table 7.10.1.4.3.3-1: Enumeration AnalyticsCategory**

|  |  |  |
| --- | --- | --- |
| **Enumeration value** | **Description** | **Applicability** |
| PREDICTIVE | The event for the VAL application performance analytics is for predictive analytics. |  |
| STATISTICS | The event for the VAL application performance analytics is for statistics analytics. |  |

\*\*\* 8th Change \*\*\*

#### 7.10.2.1 API URI

The SS\_ADAE\_SlicePerformanceAnalytics service shall use the SS\_ADAE\_SlicePerformanceAnalytics API.

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

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

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 7.10.2.2.

\*\*\* 9th Change \*\*\*

##### 7.10.2.2.1 Overview

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

Figure 7.10.2.2.1-1 depicts the resource URIs structure for the SS\_ADAE\_SlicePerformanceAnalytics API.

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**Figure 7.10.2.2.1-1: Resource URI structure of the SS\_ADAE\_SlicePerformanceAnalytics API**

Table 7.10.2.2.1-1 provides an overview of the resources and applicable HTTP methods.

**Table 7.10.2.2.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| Slice specific application performance event subscription | /slice-specific-application-performance | POST | Subscription to the event of the slice-specific application performance analytics. |
| Individual slice specific application performance event subscription | /slice-specific-application-performance/{ssAppPerfId} | GET | Request the retrieval of an existing "Individual subscription to the event of the slice-specific application performance analytics" resource. |
| DELETE | Request the deletion of an existing subscription to slice-specific application performance analytics. |

\*\*\* 10th Change \*\*\*

###### 7.10.2.4.2.2 Type: SliceAppPerfSub

**Table 7.10.2.4.2.2-1: Definition of type SliceAppPerfSub**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| notifUri | Uri | M | 1 | Represents the notification URI. |  |
| analyticsType | AnalyticsType | M | 1 | Identifies the type of the slice-specific application performance analytics. Only the attributes "category" and "mode" are applicable here. |  |
| sliceId | Snssai | M | 1 | The identifier of the slice or slice instance to which the performance analytics subscription is applied. |  |
| dnn | Dnn | O | 0..1 | Associated DNN. |  |
| valUeIds | array(ValTargetUe) | O | 1..N | A list of identities of one or more VAL UEs whose slice-specific performance analytics are subscribed to. |  |
| valServerId | string | O | 0..1 | If the consumer is different from the VAL server, this identifier represents the VAL server to which the slice-specific performance analytics subscription is applied. |  |
| confLevel | Uinteger | O | 0..1 | Indicates the preferred confidence level of the prediction.  Minimum = 0. Maximum = 100. |  |
| area | LocationArea5G | O | 0..1 | The geographical or service area to which the slice specific application performance analytics subscription is applied. |  |
| timeValidity | TimeWindow | O | 0..1 | The time validity of the subscription in seconds. |  |
| timeHorizon | TimeWindow | O | 0..1 | The time horizon for predictive analytics. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Used to negotiate the supported features of the API as defined in clause 7.10.2.6.  This attribute shall be provided in the HTTP POST response of successful subscription creation if it was provided in the request. |  |

\*\*\* 11th Change \*\*\*

###### 7.10.2.4.2.3 Type: SliceAppPerfNotif

**Table 7.10.2.4.2.3-1: Definition of type SliceAppPerfNotif**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| output | string | M | 1 | Predicted or expected performance change or sustainability of the slice-specific performance for a VAL server or a VAL session. |  |
| confLevel | Uinteger | O | 0..1 | Indicates the achieved confidence level in the case of prediction.  Minimum = 0. Maximum = 100. (NOTE) |  |
| timeHorizon | TimeWindow | O | 0..1 | The time window to which the predictive analytics apply. (NOTE) |  |
| NOTE: This attribute shall be provided if the "category" attribute of the "analyticsType" attribute in the subscription was set to "PREDICTIVE" and it may not be provided otherwise. | | | | | |

\*\*\* 12th Change \*\*\*

###### 7.10.3.4.2.3 Type: U2UPerfNotif

Table 7.10.3.4.2.3-1: Definition of type U2UPerfNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| analyticsOutput | array(U2UAnalyticsData) | M | 1..N | UE-to-UE session performance analytics for prediction or statistics depending on the type. |  |
| confLevel | Uinteger | C | 0..1 | Indicates the confidence of the prediction.  This attribute shall be provided if the "analyticsType" is set to "ANALYTICS\_PREDICTIVE".  Minimum = 0. Maximum = 100. |  |

\*\*\* 13th Change \*\*\*

#### 7.10.4.1 API URI

The SS\_ADAE\_LocationAccuracyAnalytics service shall use the SS\_ADAE\_LocationAccuracyAnalytics API.

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

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

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 7.10.4.2.

\*\*\* 14th Change \*\*\*

##### 7.10.4.2.1 Overview

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

Figure 7.10.4.2.1-1 depicts the resource URIs structure for the SS\_ADAE\_LocationAccuracyAnalytics API.

****

**Figure 7.10.4.2.1-1: Resource URI structure of the SS\_ADAE\_LocationAccuracyAnalytics API**

Table 7.10.4.2.1-1 provides an overview of the resources and applicable HTTP methods.

**Table 7.10.4.2.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| Location accuracy event subscription | /location-accuracy | POST | Subscription to the event of the location accuracy performance analytics |
| Individual location accuracy event subscription | /location-accuracy /{locAccId} | GET | Request the retrieval of an existing "Individual subscription to the event of the location accuracy analytics" resource. |
| DELETE | Request the deletion of an existing "Individual subscription to the event of the location accuracy analytics" resource. |

\*\*\* 15th Change \*\*\*

###### 7.10.4.4.2.2 Type: LocAccurSub

**Table 7.10.4.4.2.2-1: Definition of type LocAccurSub**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| notifUri | Uri | M | 1 | Represents the notification URI. |  |
| analyticsType | AnalyticsType | M | 1 | Identifies the type of the location accuracy analytics. Only the attributes "category" and "mode" are applicable here. |  |
| valUeIds | array(ValTargetUe) | M | 1..N | A list of identities of one or more VAL UEs whose location accuracy analytics are subscribed to. |  |
| accuracy | Accuracy | M | 1 | Represents the desired level of accuracy of the requested location information. |  |
| valServiceId | string | O | 0..1 | The identifier of the VAL service for which location accuracy analytics is requested. |  |
| confLevel | Uinteger | O | 0..1 | Indicates the preferred confidence level of the prediction.  Minimum = 0. Maximum = 100. |  |
| area | LocationArea5G | O | 0..1 | The geographical or service area to which the location accuracy analytics subscription is applied. |  |
| timeValidity | TimeWindow | O | 0..1 | The time validity of the location accuracy analytics subscription. |  |
| ueMobs | array(UeMobility) | O | 1..N | Mobility and route information of the one or more target VAL UE. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Used to negotiate the supported features of the API as defined in clause 7.10.4.6.  This attribute shall be provided in the HTTP POST response of successful subscription creation if it was provided in the request. |  |

\*\*\* 16th Change \*\*\*

###### 7.10.4.4.2.3 Type: LocAccurNotif

**Table 7.10.4.4.2.3-1: Definition of type LocAccurNotif**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| output | string | M | 1 | Location accuracy analytics output. |  |
| confLevel | Uinteger | O | 0..1 | Indicates the achieved confidence level in the case of prediction.  Minimum = 0. Maximum = 100. |  |

\*\*\* 17th Change \*\*\*

###### 7.10.7.4.2.3 Type: EdgeNotif

Table 7.10.7.4.2.3-1: Definition of type EdgeNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| analyticsOutput | string | M | 1 | Represents the edge load analytics. |  |
| confLevel | Uinteger | C | 0..1 | Represents the accuracy level of the edge load analytics in case of prediction.  Minimum = 0. Maximum = 100.  This attribute shall be provided if the analyticsType is "ANALYTICS\_PREDICTIVE". |  |

\*\*\* 18th Change \*\*\*

# A.15 SS\_ADAE\_VALPerformanceAnalytics API

openapi: 3.0.0

info:

title: SS\_ADAE\_VALPerformanceAnalytics

description: |

API for ADAE VAL performance analytics service.

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version: "1.0.0-alpha.1"

externalDocs:

description: >

3GPP TS 29.549 V18.5.0 Service Enabler Architecture Layer for Verticals (SEAL);

Application Programming Interface (API) specification; Stage 3.

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/ss-adae-pa/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/application-performance:

post:

description: Creates a new individual VAL performance event subscription.

operationId: CreateIndValPerfEventSubsc

tags:

- VAL performance event subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

callbacks:

paNotification:

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

post:

requestBody: # contents of the callback message

required: true

content:

application/json:

schema:

$ref: '#/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: '#/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}:

get:

description: Retrieves an individual VAL performance event subscription.

operationId: ReadIndValPerfEventSubsc

tags:

- Individual VAL performance event subscription (Document)

parameters:

- name: appPerfId

in: path

description: Identifier of an individual VAL performance event subscription.

required: true

schema:

type: string

responses:

'200':

description: >

The individual VAL performance subscription matching the appPerfId is retrieved.

content:

application/json:

schema:

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

'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'

'406':

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

'429':

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

'500':

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

'503':

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

default:

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

delete:

description: Deletes an individual VAL performance event subscription.

operationId: DeleteIndValPerfEventSubsc

tags:

- Individual VAL performance event subscription (Document)

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'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

AppPerfSub:

description: Represents an individual VAL performance event subscription resource.

type: object

properties:

notifUri:

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

analyticsType:

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

valServiceId:

type: string

valUeIds:

type: array

items:

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

minItems: 1

description: >

One or more VAL UE IDs whose analytics or data collection are subject to subcription.

valServerId:

type: string

description: Identity of the VAL server

dataProdProfile:

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

confLevel:

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

area:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

timeValidity:

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

suppFeat:

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

required:

- notifUri

- analyticsType

- valServiceId

AppPerfNotif:

description: Represents notification of the VAL performance event.

type: object

properties:

output:

type: string

description: Provided output for analytics.

valServerId:

type: string

description: VAL Server identifier.

valUeIds:

type: array

items:

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

minItems: 1

description: List of VAL UE identifiers.

confLevel:

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

timeHorizon:

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

required:

- output

- valServerId

ProdProfileInfo:

description: Represents capability of the data producer.

type: object

properties:

prodId:

type: string

description: Identity of the data producer.

prodType:

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

dataType:

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

prodRole:

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

origProdIds:

type: array

items:

type: string

minItems: 1

description: >

Identifies the identity of the original data producers.

dataFresh:

type: integer

description: Duration of elapsed time in seconds.

producerCap:

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

required:

- prodId

- prodType

- dataType

ProducerCap:

description: Represents capability of the data producer.

type: object

properties:

durationTime:

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

anonymization:

type: boolean

description: >

Set to true if anonymization is supported.

Set to false or omitted otherwise.

dataRate:

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

schedule:

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

AnalyticsType:

description: Represents type of requested analytics.

type: object

properties:

category:

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

mode:

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

mlEnabled:

type: boolean

description: >

Set to true if the provided analytics are ML-enabled.

Set to false if the provided analytics are not ML-enabled.

Omitted if the provided analytics lack onfo for being ML-enabled or not.

# Simple data types and Enumerations

AnalyticsCategory:

anyOf:

- type: string

enum:

- PREDICTIVE

- STATISTICS

- 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: |

Represents the type of the analytics with the values:

- PREDICTIVE: The event for the analytics is for predictive analytics.

- STATISTICS: The event for analytics is for statistics analytics.

AnalyticsMode:

anyOf:

- type: string

enum:

- OFFLINE

- ONLINE

- 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: |

Represents the mode of the analytics with the values:

- OFFLINE: Represents offline analytics.

- ONLINE: Represents online analytics.

ProducerType:

anyOf:

- type: string

enum:

- ADAE\_CLIENT

- A\_DCCF

- VAL\_SERVER

- SEAL\_SERVER

- SEAL\_CLIENT

- EES

- EAS

- 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: |

Represents the type of the data producer with the values:

- ADAE\_CLIENT: The data producer is ADAE client.

- A\_DCCF: The data producer is A-DCCF.

- VAL\_SERVER: The data producer is VAL server.

- SEAL\_SERVER: The data producer is SEAL server.

- SEAL\_CLIENT: The data producer is SEAL client.

- EES: The data producer is EES.

- EAS: The data producer is EAS.

ProducerData:

anyOf:

- type: string

enum:

- PERFORMANCE\_INDICATOR

- REPRODUCER\_USAGE\_DATA

- SERVER\_LOAD\_DATA

- APPLICATION\_PERFORMANCE

- EDGE\_LOAD

- 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: |

Represents the data type of the data producer with the values:

- PERFORMANCE\_INDICATOR: The data type of the data producer is

performance indictor.

- REPRODUCER\_USAGE\_DATA: The data type of the data producer is

reproducer usage data.

- REPRODUCER\_USAGE\_DATA: The data type of the data producer is

reproducer usage data.

- SERVER\_LOAD\_DATA: The data type of the data producer is

server load data.

- APPLICATION\_PERFORMANCE: The data type of the data producer is

application performance.

- EDGE\_LOAD: The data type of the data producer is

edge load.

ProducerRole:

anyOf:

- type: string

enum:

- GENERATING\_ENTITY

- ORIGINAL\_PRODUCER

- RESPOSITORY

- 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: |

Represents the role of the data producer with the values:

- GENERATING\_ENTITY: The role of the data producer is generating entity.

- ORIGINAL\_PRODUCER: The role of the data producer is origina producer.

- RESPOSITORY: The role of the data producer is repository.

\*\*\* 19th Change \*\*\*

# A.16 SS\_ADAE\_SlicePerformanceAnalytics API

openapi: 3.0.0

info:

title: SS\_ADAE\_SlicePerformanceAnalytics

description: |

API for ADAE slice-specific application performance analytics service.

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version: "1.0.0-alpha.1"

externalDocs:

description: >

3GPP TS 29.549 V18.5.0 Service Enabler Architecture Layer for Verticals (SEAL);

Application Programming Interface (API) specification; Stage 3.

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/ss-adae-sspa/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/slice-specific-application-performance:

post:

description: >

Creates a new individual slice-specific application performance event subscription.

operationId: SliceAppPerfSubs

tags:

- Slice-specific application performance event subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

callbacks:

sspaNotification:

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

post:

requestBody: # contents of the callback message

required: true

content:

application/json:

schema:

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

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: Slice-specific performance event subscription resource created successfully.

content:

application/json:

schema:

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

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'

/slice-specific-application-performance/{ssAppPerfId}:

get:

description: >

Retrieves an individual slice-specific application performance event subscription.

operationId: ReadIndSliceAppPerfEventSubsc

tags:

- Individual slice-specific application performance event subscription (Document)

parameters:

- name: ssAppPerfId

in: path

description: >

Identifier of an individual slice-specific application performance event subscription.

required: true

schema:

type: string

responses:

'200':

description: >

The individual slice-specific application performance

subscription matching the ssAppPerfId is retrieved.

content:

application/json:

schema:

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

'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'

'406':

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

'429':

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

'500':

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

'503':

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

default:

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

delete:

description: Deletes an individual slice-specific application performance event subscription.

operationId: DeleteIndSliceAppPerfEventSubsc

tags:

- Individual slice-specific application performance event subscription (Document)

parameters:

- name: ssAppPerfId

in: path

description: >

Identifier of an individual slice-specific application performance event subscription.

required: true

schema:

type: string

responses:

'204':

description: >

The individual slice-specific application performance subscription matching

the ssAppPerfId 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:

SliceAppPerfSub:

description: >

Represents an individual slice-specific application performance event subscription resource.

type: object

properties:

notifUri:

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

analyticsType:

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

sliceId:

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

dnn:

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

valUeIds:

type: array

items:

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

minItems: 1

description: >

One or more VAL UE IDs whose analytics are subject to subcription.

valServerId:

type: string

description: >

Identity of the VAL server if the consumer is different than the VAL server of interest.

confLevel:

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

area:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

timeValidity:

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

timeHorizon:

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

suppFeat:

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

required:

- analyticsType

- notifUri

- sliceId

SliceAppPerfNotif:

description: Represents notification of the slice-specific application performance event.

type: object

properties:

output:

type: string

description: Output data.

confLevel:

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

timeHorizon:

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

required:

- output

\*\*\* 20th Change \*\*\*

# A.17 SS\_ADAE\_Ue2UePerformanceAnalytics API

openapi: 3.0.0

info:

title: SS\_ADAE\_Ue2UePerformanceAnalytics

description: |

API for SEAL VAL Service Area Configuration Service.

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version: "1.0.0-alpha.1"

externalDocs:

description: >

3GPP TS 29.549 V18.5.0 Service Enabler Architecture Layer for Verticals (SEAL);

Application Programming Interface (API) specification; Stage 3.

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/ss-adae-uupa/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/ue2ue-session-performance:

post:

summary: Create an individual UE-to-UE session performance analytics event subscription.

operationId: SubscribeUe2UePerfAnalytics

tags:

- UE-to-UE Performance Subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/U2UPerfSub'

responses:

'201':

description: >

Subscription to the UE-to-UE session performance analytics is created.

content:

application/json:

schema:

$ref: '#/components/schemas/U2UPerfSub'

headers:

Location:

description: Contains the URI of the newly created individual resource.

required: true

schema:

type: string

'400':

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

'401':

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

'403':

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

'404':

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

'411':

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

'413':

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

'415':

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

'429':

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

'500':

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

'503':

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

default:

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

callbacks:

NotifyU2USessionEvent:

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

post:

summary: Notify the UE-to-UE session performance analytics.

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/U2UPerfNotif'

responses:

'204':

description: The notification is successfully received.

'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'

/ue2ue-session-performance/{u2uPerfId}:

get:

summary: Read the individual UE-to-UE session performance analytics event subscription.

operationId: ReadU2UPerfSubscription

tags:

- Individual UE-to-UE Performance Subscription (Document)

parameters:

- name: u2uPerfId

in: path

description: >

Represents the identifier of an individual UE-to-UE session performance

analytics subscription.

required: true

schema:

type: string

responses:

'200':

description: >

The requested individual UE-to-UE session performance event subscription is returned.

content:

application/json:

schema:

$ref: '#/components/schemas/U2UPerfSub'

'400':

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

'401':

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

'403':

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

'404':

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

'406':

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

'429':

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

'500':

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

'503':

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

default:

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

delete:

summary: Remove the individual UE-to-UE session performance analytics event subscription.

operationId: RemoveU2UPerfSubscription

tags:

- Individual UE-to-UE Performance Subscription (Document)

parameters:

- name: u2uPerfId

in: path

description: >

Represents the identifier of an individual UE-to-UE session performance

analytics subscription.

required: true

schema:

type: string

responses:

'204':

description: >

The individual UE-to-UE session performance event subscription matching

the u2uPerfId 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:

U2UPerfSub:

description: >

Represents the UE-to-UE session performance analytics subscription.

type: object

properties:

analyticsType:

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

valUeIds:

type: array

description: >

Represent the list of VAL UEs, whose UE-to-UE session analytics are subscribed to.

items:

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

minItems: 1

valServiceId:

description: Represents the VAL service for which the subscription applies.

type: string

confLevel:

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

area:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

repReqs:

$ref: '#/components/schemas/U2UReportingRequirements'

expReqs:

type: array

description: >

Represents the exposure level requirements for the analytics to be exposed.

items:

$ref: '#/components/schemas/U2UThreshold'

minItems: 1

notifUri:

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

timeInterval:

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

suppFeat:

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

required:

- analyticsType

- valUeIds

- notifUri

U2UPerfNotif:

description: >

Represents the threshold for UE-to-UE session performance analytics.

type: object

properties:

analyticsOutput:

type: array

description: >

Represents the exposure level requirements for the analytics to be exposed.

items:

$ref: '#/components/schemas/U2UAnalyticsData'

minItems: 1

confLevel:

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

required:

- analyticsOutput

U2UReportingRequirements:

description: >

Represents the UE-to-UE session performance analytics reporting requirements.

type: object

properties:

repMode:

$ref: 'TS29508\_Nsmf\_EventExposure.yaml#/components/schemas/NotificationMethod'

reportingPeriod:

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

reportingInds:

type: array

description: >

Indicates the list of the requested analytics.

items:

$ref: '#/components/schemas/U2UAnalytics'

minItems: 1

reportingThrs:

type: array

description: >

Identifies reporting threshold corresponding to the application QoS index(es).

items:

$ref: '#/components/schemas/U2UThreshold'

minItems: 1

reportingGrn:

$ref: '#/components/schemas/U2UReportingGranularity'

required:

- repMode

- reportingInds

- reportingGrn

U2UThreshold:

description: >

Represents the threshold for UE-to-UE session performance analytics.

type: object

properties:

value:

$ref: '#/components/schemas/U2UAnalyticsData'

thrDirect:

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

required:

- value

- thrDirect

U2UAnalyticsData:

description: >

Represents the UE-to-UE analytics data.

type: object

properties:

valUes:

$ref: '#/components/schemas/U2UPair'

avgLatency:

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

avgPer:

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

avgDataRate:

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

jitter:

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

U2UPair:

description: >

Represents the UE-to-UE pair.

type: object

properties:

valUeA:

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

valUeB:

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

# Simple data types and Enumerations

U2UAnalytics:

anyOf:

- type: string

enum:

- AVG\_LATENCY

- AVG\_PER

- AVG\_DATA\_RATE

- JITTER

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration and is not used to encode

content defined in the present version of this API.

description: |

Represents the UE-to-UE analytics types.

Possible values are:

- AVG\_LATENCY: The indication for requesting the average latency analytics.

- AVG\_PER: The indication for requesting the average packet error rate analytics.

- AVG\_DATA\_RATE: The indication for requesting the average data rate analytics.

- JITTER: The indication for requesting the jitter analytics.

U2UReportingGranularity:

anyOf:

- type: string

enum:

- GROUP

- INDIVIDUAL

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration and is not used to encode

content defined in the present version of this API.

description: |

Represents the UE-to-UE reporting granularity.

Possible values are:

- GROUP: The indication for requesting the analytics for all

VAL UE-to-UE application sessions.

- INDIVIDUAL: The indication for requesting the analytics for individual

VAL UE-to-UE application sessions.

\*\*\* 21th Change \*\*\*

# A.18 SS\_ADAE\_LocationAccuracyAnalytics API

openapi: 3.0.0

info:

title: SS\_ADAE\_LocationAccuracyAnalytics

description: |

API for ADAE location accuracy performance analytics service.

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version: "1.0.0-alpha.1"

externalDocs:

description: >

3GPP TS 29.549 V18.5.0 Service Enabler Architecture Layer for Verticals (SEAL);

Application Programming Interface (API) specification; Stage 3.

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/ss-adae-laa/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/location-accuracy:

post:

description: >

Creates a new individual location accuracy performance event subscription.

operationId: LocAccurSubs

tags:

- Location accuracy performance event subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

callbacks:

laaNotification:

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

post:

requestBody: # contents of the callback message

required: true

content:

application/json:

schema:

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

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: Location accuracy subscription resource created successfully.

content:

application/json:

schema:

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

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'

/location-accuracy/{locAccId}:

get:

description: Retrieves an individual location accuracy performance event subscription.

operationId: ReadIndLocAccurPerfEventSubsc

tags:

- Individual location accuracy performance event subscription (Document)

parameters:

- name: locAccId

in: path

description: >

Identifier of an individual location accuracy performance event subscription.

required: true

schema:

type: string

responses:

'200':

description: >

The individual location accuracy subscription matching the locAccId is retrieved.

content:

application/json:

schema:

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

'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'

'406':

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

'429':

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

'500':

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

'503':

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

default:

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

delete:

description: Deletes an individual location accuracy performance event subscription.

operationId: DeleteIndLocAccurPerfEventSubsc

tags:

- Individual location accuracy performance event subscription (Document)

parameters:

- name: locAccId

in: path

description: >

Identifier of an individual location accuracy performance event subscription.

required: true

schema:

type: string

responses:

'204':

description: >

The individual location accuracy performance subscription matching the locAccId

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:

LocAccurSub:

description: >

Represents an individual location accuracy performance event subscription resource.

type: object

properties:

notifUri:

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

analyticsType:

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

valUeIds:

type: array

items:

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

minItems: 1

description: >

One or more VAL UE IDs whose analytics are subject to subcription.

accuracy:

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

valServiceId:

type: string

description: >

Identifier of the VAL service for which location accuracy analytics is requested.

confLevel:

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

area:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

timeValidity:

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

ueMobs:

type: array

items:

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

minItems: 1

description: Mobility and route information of the target VAL UEs.

suppFeat:

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

required:

- analyticsType

- valUeIds

- accuracy

- notifUri

LocAccurNotif:

description: Represents notification of the location accuracy performance event.

type: object

properties:

output:

type: string

description: Event output data.

confLevel:

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

required:

- output

\*\*\* 22th Change \*\*\*

# A.21 SS\_ADAE\_EdgeLoadAnalytics API

openapi: 3.0.0

info:

title: SS\_ADAE\_EdgeLoadAnalytics

description: |

API for ADAE Edge Load Analytics.

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version: "1.0.0-alpha.1"

externalDocs:

description: >

3GPP TS 29.549 V18.5.0 Service Enabler Architecture Layer for Verticals (SEAL);

Application Programming Interface (API) specification; Stage 3.

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/ss-adae-el/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/edge-load:

post:

description: Creates a new individual Edge Load Event Subscription.

operationId: EdgeSub

tags:

- Edge Load Events Subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

callbacks:

notifUri:

'{request.body#/notifUri}':

post:

requestBody: # contents of the callback message

required: true

content:

application/json:

schema:

$ref: '#/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 Events subscription resource created successfully.

content:

application/json:

schema:

$ref: '#/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}:

get:

description: Retrieves an individual Edge Load Event Subscription.

operationId: RetrieveIndEdgeLdEventSubsc

tags:

- Individual Edge Load Events Subscription (Document)

parameters:

- name: edgeLdId

in: path

description: Identifier of an individual Events Subscription.

required: true

schema:

type: string

responses:

'200':

description: The individual edge load subscription.

content:

application/json:

schema:

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

'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'

'406':

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

'429':

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

'500':

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

'503':

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

default:

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

delete:

description: Deletes an individual Edge Load Event Subscription.

operationId: DeleteIndEdgeLdEventSubsc

tags:

- Individual Edge Load Events Subscription (Document)

parameters:

- name: edgeLdId

in: path

description: Identifier of an individual Events Subscription

required: true

schema:

type: string

responses:

'204':

description: >

The individual Edge Load 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:

EdgeSub:

description: Represents an individual Edge Load Subscription resource.

type: object

properties:

analyticsType:

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

destinationEasInfo:

type: string

description: String representing the information for the destination EAS.

destinationEesId:

type: string

description: String identifying the the destination EES.

dnai:

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

dnn:

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

dataProdProfile:

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

confLevel:

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

area:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

report:

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

reportReq:

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

notifUri:

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

timeInterval:

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

suppFeat:

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

required:

- analyticsType

- notifUri

anyOf:

- required: [destinationEasInfo]

- required: [destinationEesId]

- oneOf:

- required: [dnai]

- required: [dnn]

EdgeNotif:

description: Represents notification information of an Edge Load Event.

type: object

properties:

analyticsOutput:

type: string

description: String representing the edge load analytics.

confLevel:

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

required:

- analyticsOutput

ReportingConfig:

description: Represents notification information of an Edge Load Event.

type: object

properties:

reportingMode:

$ref: 'TS29508\_Nsmf\_EventExposure.yaml#/components/schemas/NotificationMethod'

immRep:

type: boolean

description: >

It indicates immediate reporting. When included and set to true,

it indicates that immediate reporting of the subscribed event(s)

is requested. The default value is false.

required:

- reportingMode

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