**3GPP TSG-CT WG3 Meeting #134C3-242207**

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.549** | **CR** | **0273** | **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:*** | Update the analytics type in the subscription | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***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 only contains the statistics or predictions. The AnalyticsType data type needs to be updated accordingly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Remove the AnalyticsMode data type, change the AnalyticsType data type. * Update the OpenAPI file accordingly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Misalignment with stage 2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.10.1.4.1, 7.10.1.4.2.3, 7.10.1.4.2.6, 7.10.1.4.3.7, 7.10.2.4.2.3, A.15 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

##### 7.10.1.4.1 General

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

Table 7.10.1.4.1-1 specifies the data types defined specifically for the SS\_ADAE\_VALPerformanceAnalytics API service.

**Table 7.10.1.4.1-1\_SS\_ADAE\_VALPerformanceAnalytics API specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Section defined** | **Description** | **Applicability** |
| AppPerfSub | 7.10.1.4.2.2 | Subscription to the VAL application performance analytics |  |
| AppPerfNotif | 7.10.1.4.2.3 | Notification information of the application performance analytics. |  |
| ProdProfileInfo | 7.10.1.4.2.4 | Information about the data producer's support data collection and its access to the produced data |  |
| AnalyticsCategory | 7.10.1.4.3.3 | Represents the category of analytics. |  |
| AnalyticsType | 7.10.1.4.2.6 | Represents the type of analytics. |  |
| ProducerCap | 7.10.1.4.3.5 |  |  |
| ProducerType | 7.10.1.4.3.4 | Type of the data producer. |  |
| ProducerData | 7.10.1.4.3.5 | Type of the data produced by the data producer. |  |
| ProducerRole | 7.10.1.4.3.6 | The role of the data producer. |  |

Table 7.10.1.4.1-2 specifies data types re-used by the SS\_ADAE\_VALPerformanceAnalytics API service:

**Table 7.10.1.4.1-2: Re-used Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| BitRate | 3GPP TS 29.571 [21] | Represents a bit rate measurement value. |  |
| DateTime | 3GPP TS 29.571 [21] | Used to represent a date and time. |  |
| DurationSec | 3GPP TS 29.122 [3] | Represents a period of time in units of seconds. |  |
| LocationArea5G | 3GPP TS 29.122 [3] | Represents location information. |  |
| ScheduledCommunicationTime | 3GPP TS 29.122 [3] | Used to define the time frame for message filters. |  |
| SupportedFeatures | 3GPP TS 29.571 [21] | Represents the supported features. |  |
| TimeWindow | 3GPP TS 29.122 [3] | Represents a time window. |  |
| Uinteger | 3GPP TS 29.571 [21] | Represents an unsigned integer. |  |
| Uri | 3GPP TS 29.122 [3] | Represents a URI. |  |
| ValTargetUe | Clause 7.3.1.4.2.3 | Used to indicate either VAL User ID or VAL UE ID. |  |

\*\*\* 2nd 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. |  |
| analyticsType | AnalyticsType | O | 0..1 | Identifies the type of analytics that are provided. |  |
| 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 "analyticsType" attribute in the subscription was set to "PREDICTIVE" and it may not be provided otherwise. | | | | | |
|  | | | | | |

Editor's Note: The metrics and details of the "output", as well as the exact contents/requirements of the "analyticsType", are FFS.

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

7.10.1.4.2.6 Type: AnalyticsType

**Table 7.10.1.4.2.6-1: Definition of type AnalyticsType**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| category | AnalyticsCategory | M | 1 | Represents the analytics category. |  |

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

###### 7.10.1.4.3.7 Void



\*\*\* 5th 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. |  |
| analyticsType | AnalyticsType | O | 0..1 | Identifies the type of the slice-specific application performance analytics |  |
| 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 "analyticsType" attribute in the subscription was set to "PREDICTIVE" and it may not be provided otherwise. | | | | | |

Editor's Note: The metrics and details of the "output", as well as the exact content/requirements of "analyticsType", are FFS.

\*\*\* 6th 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.

analyticsType:

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

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'

required:

- category

# 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.

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.

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