**3GPP TSG-CT WG3 Meeting #134 *C3-242462***

**Changsha, China, 15 - 19 April, 2024**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.549** | **CR** | **0267** | **rev** | **1** | **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:*** | Add reporting requirements to SUPSub | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Lenovo | | | | | | | | | |
| ***Source to TSG:*** | C3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | ADAES | | | | |  | ***Date:*** | | | 2024-03-29 |
|  |  | | | |  | |  | | |  |
| ***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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Clause 7.10.6 contains some editorial errors which should be corrected.  CR#0025 against TS 23.436 in document S6-240561 adds "Reporting requirements " information element to Network slice usage pattern analytics subscription request in clause 8.7.4.2 of TS 23.436.  No information regarding Network slice usage pattern analytics notification in clause 8.7.4.4 of TS 23.436, has been modified. Thus the detailed definition is as is. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Removal of residuals of ENs and correcting some formats from EN to Normal.  Replacing immRep with repReq attribute in SUPNotif and removal of the related EN.  Removal of EN for detailed definition of type SUPNotif. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Stage 3 is not in accordance to stage 2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.10.6.1, 7.10.6.2.1, 7.10.6.2.2.4, 7.10.6.4.1, 7.10.6.4.2.2, 7.10.6.4.2.3, 7.10.6.4.2.4, 7.10.6.4.2.5, A.20 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR introduces a backwards compatible correction into the OpenAPI file of the SS\_ADAE\_SliceUsagePatternAnalytics API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

#### 7.10.6.1 API URI

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

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

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

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 7.10.6.2.

Editor's Note: The OpenAPI for this API is FFS.

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

##### 7.10.6.2.1 Overview

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

Figure 7.10.6.2.1-1 depicts the resource URIs structure for the SS\_ADAE\_SliceUsagePatternAnalytics API.

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**Figure 7.10.6.2.1-1: Resource URI structure of the SS\_ADAE\_SliceUsagePatternAnalytics API**

Table 7.10.6.2.1-1 provides an overview of the resources and applicable HTTP methods.

**Table 7.10.6.2.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| Slice usage pattern event subscription | /slice-usage-pattern | POST | Subscriptions to the event of the slice usage pattern analytics |
| Individual slice usage pattern event subscription | /slice-usage-pattern/{subscriptionId} | GET | Request the retrieval of an existing "Individual subscription to the event of the slice usage pattern analytics" resource. |
|  |  |
|  |  |
| DELETE | Request the deletion of an existing "Individual subscription to the event of the slice usage pattern analytics" resource. |

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

###### 7.10.6.2.2.4 Resource Custom Operations

None.

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

##### 7.10.6.4.1 General

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

Table 7.10.6.4.1-1 specifies the data types defined specifically for the SS\_ADAE\_SliceUsagePatternAnalytics API service.

**Table 7.10.6.4.1-1\_SS\_ADAE\_SliceUsagePatternAnalytics API specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Section defined** | **Description** | **Applicability** |
| SUPSub | 7.10.6.4.2.2 | Subscription to the slice usage pattern analytics event. |  |
| SUPNotif | 7.10.6.4.2.3 | Notification information of the slice usage pattern analytics event. |  |

Table 7.10.6.4.1-2 specifies data types re-used by the SS\_ADAE\_SliceUsagePatternAnalytics API service:

**Table 7.10.6.4.1-2: Re-used Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| AnalyticsType | Clause 7.10.1.4.2.6 | Represents the type of analytics. |  |
| Dnn | 3GPP TS 29.571 [21] | Identifies a DNN. |  |
| LocationArea5G | 3GPP TS 29.122 [3] | Represents location information. |  |
| ReportingInformation | 3GPP TS 29.523 [20] | Used to indicate the reporting requirement, only the following information are applicable for SEAL:  - immRep  - notifMethod  - maxReportNbr  - monDur  - repPeriod |  |
| Snssai | 3GPP TS 29.571 [21] | Identifies the S-NSSAI. |  |
| SupportedFeatures | 3GPP TS 29.571 [21] | Supported features. |  |
| TimeWindow | 3GPP TS 29.122 [3] | A time window. |  |
| Uinteger | 3GPP TS 29.571 [21] | Unsigned integer. |  |
| Uri | 3GPP TS 29.122 [3] | Represents a URI. |  |
| ValTargetUe | Clause 7.3.1.4.2.3 | Indicate either VAL User ID or VAL UE ID. |  |

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

###### 7.10.6.4.2.2 Type: SUPSub

**Table 7.10.6.4.2.2-1: Definition of type SUPSub**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 usage pattern analytics. Only the "mode" attribute is applicable. |  |
| sliceId | Snssai | M | 1 | Identity of the network slice. |  |
| dnn | Dnn | O | 0..1 | Associated target DNN. |  |
| valUeIds | array(ValTargetUe) | O | 1..N | A list of identities of one or more VAL UEs, whose slice usage patterns 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 usage pattern 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 usage pattern analytics subscription is applied. |  |
| timeValidity | TimeWindow | O | 0..1 | The time validity of the subscription. |  |
| historicTimeInt | TimeWindow | C | 0..1 | The historic time interval as the start and the end time, to which the slice usage pattern analytics subscription is applied. This attribute shall be provided in case immediate reporting of statistics is requested. |  |
| repReq | ReportingInformation | O | 0..1 | Represents the reporting requirement of the slice usage pattern analytics subscription. |  |
| immNotif | SUPNotif | C | 0..1 | Immediate notifications. It shall only be provided in the subscription request, if immediate reporting is requested and the outputs are available. |  |
| dataId | string | C | 0..1 | Identity of the slice usage statistics data which is to be collected. It shall be provided if immediate reporting of statistics is requested and may not be provided otherwise. |  |
| valServiceId | string | C | 0..1 | The identifier of the VAL service, for which the request applies. It shall be provided if immediate reporting of statistics is requested and may not be provided otherwise. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Used to negotiate the supported features of the API as defined in clause 7.10.6.6.  This attribute shall be provided in the HTTP POST response of successful subscription creation if it was provided in the request. |  |

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

###### 7.10.6.4.2.3 Type: SUPNotif

**Table 7.10.6.4.2.3-1: Definition of type SUPNotif**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| output | string | M | 1 | Slice usage pattern analytics.  The format is up to the implementation. |  |

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

###### 7.10.6.4.2.4 Void

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

###### 7.10.6.4.2.5 Void

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

# A.20 SS\_ADAE\_SliceUsagePatternAnalytics API

openapi: 3.0.0

info:

title: SS\_ADAE\_SliceUsagePatternAnalytics

description: |

API for ADAE Slice Usage Pattern 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-sup/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/slice-usage-pattern:

post:

description: Creates a new Individual slice usage pattern subscription.

operationId: CreateSliceUsageSub

tags:

- Slice Usage Pattern Subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'201':

description: Slice Usage Pattern subscription resource created successfully.

content:

application/json:

schema:

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

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'

callbacks:

SUPNotification:

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

post:

requestBody: # contents of the callback message

required: true

content:

application/json:

schema:

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

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'

/slice-usage-pattern/{subscriptionId}:

get:

description: Retrieves an individual Slice Usage Pattern Subscription.

operationId: ReadSUPSub

tags:

- Individual slice usage pattern subscription (Document)

parameters:

- name: subscriptionId

in: path

description: Identifier of an individual Events Subscription

required: true

schema:

type: string

responses:

'200':

description: The individual slice usage pattern subscription.

content:

application/json:

schema:

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

'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 Usage Pattern Subscription.

operationId: DeleteSUPSub

tags:

- Individual slice usage pattern subscription (Document)

parameters:

- name: subscriptionId

in: path

description: Identifier of an individual Events Subscription

required: true

schema:

type: string

responses:

'204':

description: >

The individual Slice Usage Pattern 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:

SUPSub:

description: Represents an individual Slice Usage Pattern Subscription.

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: List of identities of one or more VAL UEs.

valServerId:

type: string

description: VAL server identifier.

confLevel:

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

area:

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

timeValidity:

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

historicTimeInt:

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

repReq:

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

immNotif:

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

dataId:

type: string

description: Identity of the slice usage statistics data which is to be collected.

valServiceId:

type: string

description: VAL service identifier.

suppFeat:

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

required:

- notifUri

- analyticsType

- sliceId

SUPNotif:

description: Represents notification information of a Slice Usage Pattern Event.

type: object

properties:

output:

type: string

description: Implementation-specific string representing the slice usage analytics.

required:

- output

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