**3GPP TSG- WG3 Meeting #C3-235518**

**Chicago, United States, 13 - 17 November, 2023**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.549** | **CR** | **0190** | **rev** | **1** | **Current version:** | **18.3.0** |  |
|  | | | | | | | | |
| *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:*** | Service API API | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Lenovo | | | | | | | | | |
| ***Source to TSG:*** | C3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | ADAES | | | | |  | ***Date:*** | | | 2023-10-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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:*** | | Stage 2 has created a new feature i.e. application data analytics enablement (ADAE) service with a new interface towards the SEAL server. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | This CR defines a new API, SS\_ADAE\_ServiceApiAnalytics, for the reference point with the new ADAE service. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | An API for service API analytics service for the new reference point with the ADAE service does not exist. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.X.5 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

### 7.X.5 SS\_ADAE\_ServiceApiAnalytics

#### 7.X.5.1 API URI

The SS\_ADAE\_ServiceApiAnalytics service shall use the SS\_ADAE\_ServiceApiAnalytics 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-sa".

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 7.X.5.2.

#### 7.X.5.2 Resources

##### 7.X.5.2.1 Overview

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

Figure 7.X.5.2.1-1 depicts the resource URIs structure for the SS\_ADAE\_ServiceApiAnalytics API.



Figure 7.X.5.2.1-1: Resource URI structure of the SS\_ADAE\_ServiceApiAnalytics API

Table 7.X.5.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 7.X.5.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method | Description |
| Service API event subscription | /service-api | POST | Subscription to the event of the service API analytics |

##### 7.X.5.2.2 Resource: Service API event subscription

###### 7.X.5.2.2.1 Description

Service API event subscription to the event of the service API analytics.

###### 7.X.5.2.2.2 Resource Definition

Resource URI: **{apiRoot}/ss-adae-sa/<apiVersion>/service-api**

This resource shall support the resource URI variables defined in the table 7.X.5.2.2.2-1.

Table 7.X.5.2.2.2-1: Resource URI variables for this resource

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

###### 7.X.5.2.2.3 Resource Standard Methods

7.X.5.2.2.3.1 POST

This method to subscribe to the event of the service API analytics and shall support the URI query parameters specified in table 7.X.5.2.2.3.1-1.

Table 7.X.5.2.2.3.1-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 7.X.5.2.2.3.1-2 and the response data structures and response codes specified in table 7.X.5.2.2.3.1-3.

Table 7.X.5.2.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SrvApiSubs | M | 1 | Subscription to the service API analytics event. |

Table 7.X.5.2.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| SrvApiSubs |  |  | 201 (Created) | Subscription to the service API analytics is created. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [22] shall also apply. | | | | |

Table 7.X.5.2.2.3.1-4: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/ss-adae-sa/<apiVersion>/service-api |

###### 7.X.5.2.2.4 Resource Custom Operations

None.

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

#### 7.X.5.3 Notifications

7.X.5.3.1 General

Table 7.X.5.3.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description  (service operation) |
| Service API event notification | {notificationUri} | POST | Notification on the service API analytics |

##### 7.X.5.3.2 Service API event notification

###### 7.X.5.3.2.1 Description

Service API event notification is to notify on the event of the service API analytics.

###### 7.X.5.3.2.2 Notification definition

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

Callback URI: **{notificationUri}**

This method shall support the URI query parameters specified in table 7.X.5.3.2.2-1.

Table 7.X.5.3.2.2-1: URI query parameters supported by the POST method on this resource

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

If the notification is on the service API analytics, this method shall support the request data structures specified in table 7.X.5.3.2.2-2 and the response data structures and response codes specified in table 7.X.5.3.2.2-3.

Table 7.X.5.3.2.2-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SrvApiNotif | M | 1 | Notification information of the service API analytics. |

Table 7.X.5.3.2.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 (No Content) | Notification for the service API analytics event is accepted. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [22] shall also apply. | | | | |

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

#### 7.X.5.4 Data Model

##### 7.X.5.4.1 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.X.5.4.1-1 specifies the data types defined specifically for the SS\_ADAE\_ServiceApiAnalytics API service.

Table 7.X.5.4.1-1\_SS\_ADAE\_ServiceApiAnalytics API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| SrvApiSubs | 7.X.5.4.2.2 | Subscription to the service API analytics event |  |
| SrvApiNotif | 7.X.5.4.2.3 | Notification information of the service API analytics event. |  |
| SrvApiIdType | 7.X.5.4.3.3 | Type of service API |  |

Table 7.X.5.4.1-2 specifies data types re-used by the SS\_ADAE\_ServiceApiAnalytics API service:

Table 7.X.5.4.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| ConfidenceLevel | 3GPP TS 29.122 [3] | Presents confidence level |  |
| DurationSec | 3GPP TS 29.122 [3] | Represents a period of time in units of seconds. |  |
| LocationArea | 3GPP TS 29.122 [3] | Represents location information. |  |

##### 7.X.5.4.2 Structured data types

###### 7.X.5.4.2.1 Introduction

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

###### 7.X.5.4.2.2 Type: SrvApiSubs

Table 7.X.5.4.2.2-1: Definition of type SrvApiSubs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| serviceApiId | SrviApiIdType | M | 1 | The identifier for the service API |  |
| area | LocationArea | O | 0..1 | The geographical or service area, to which the service API analytics subscription is applied. |  |
| timeInterval | DurationSec | O | 0..1 | The time interval as the start and the end time, to which the service API analytics subscription is applied. |  |

###### 7.X.5.4.2.3 Type: SrvApiNotif

Table 7.X.5.4.2.3-1: Definition of type SrvApiNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| serviceApiId | SrvApiIdType | M | 1 | The identifier for the service API |  |
| analyticsOutputs | array(string) | M | 1..N | Service API analytics for prediction or statistics depending on the type. |  |
| area | LocationArea | O | 0..1 | The geographical or service area, to which the service API analytics subscription is applied. |  |
| confidenceLevel | ConfidenceLevel | O | 0..1 | Provides accuracy level if the service API analytics is prediction. |  |

##### 7.X.5.4.3 Simple data types and enumerations

###### 7.X.5.4.3.1 Introduction

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

###### 7.X.5.4.3.2 Simple data types

None.

###### 7.X.5.4.3.3 Enumeration: SrvApiIdType

Table 7.X.5.4.3.3-1: Enumeration SrvApiIdType

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| SERVICE\_API\_NAME | The identity of the service API is the service API name. |  |
| SERVICE\_API\_TYPE | The identity of the service API is the service API type. |  |

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

#### 7.X.5.5 Error Handling

##### 7.X.5.5.1 General

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

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

##### 7.X.5.5.2 Protocol Errors

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

##### 7.X.5.5.3 Application Errors

The application errors defined for SS\_ADAE\_ServiceApiAnalytics API are listed in table 7.X.5.5.3-1.

Table 7.X.5.5.3-1: Application errors

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

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

#### 7.X.5.6 Feature Negotiation

General feature negotiation procedures are defined in clause 6.8. Table 7.X.5.6-1 lists the supported features for SS\_ADAE\_ServiceApiAnalytics API.

Table 7.X.5.6-1: Supported Features

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

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