**3GPP TSG- WG3 Meeting #C3-23XXXX**

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

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| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***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 |
| Service API analytics | /service-api-log | GET | Request for service API historical 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 |
| SrvApiAnalyticsSubs | 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 |
| n/a |  |  | 201 (Created) | Subscription to the service API analytics is created. |
| n/a |  |  | 401 (Unauthorized) | The requester for the subscription to the service API analytics has failed the authorization and cannot subscribe to the event. |

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

None.

##### 7.X.5.2.3 Resource: Service API analytics

###### 7.X.5.2.3.1 Description

Request for the service API data.

###### 7.X.5.2.3.2 Resource Definition

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

This resource shall support the resource URI variables defined in the table 7.X.5.2.3.2-1.

Table 7.X.5.2.3.2-1: Resource URI variables for this resource

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

###### 7.X.5.2.3.3 Resource Standard Methods

7.X.5.2.3.3.1 GET

This method retrieves the service API historic data and shall support the URI query parameters specified in table 7.X.5.2.3.3.1-1.

Table 7.X.5.2.3.3.1-1: URI query parameters supported by the GET 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.5.2.3.3.1-2 and the response data structures and response codes specified in table 7.X.5.2.3.3.1-3.

Table 7.X.5.2.3.3.1-2: Data structures supported by the GET Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SrvApiLogReq | M | 1 | Retrieval of to the service API data |

Table 7.X.5.2.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| SrvApiLogResp |  |  | 200 (OK) | The retrieval of the service API data is successful and returned in the response. |
| n/a |  |  | 401 (Unauthorized) | The requester for the service API data has failed the authorization and cannot subscribe to the event. |
| n/a |  |  | 404 (Not Found) | The service API log data was not found. |

###### 7.X.5.2.3.4 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 |
| SrvApiAnalyticsNotif | 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. |
| n/a |  |  | 401 (Unauthorized) | The notifier of the service API analytics event has failed the authorization. |

\* \* \* 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 |
| SrvApiAnalyticsSubs | 7.X.5.4.2.2 | Subscription to the service API analytics event |  |
| SrvApiAnalyticsNotif | 7.X.5.4.2.3 | Notification information of the service API analytics event. |  |
| SrvApiLogReq | 7.X.5.4.2.4 | Retrieval request of the service API log data |  |
| SrvApiLogResp | 7.X.5.4.2.5 | Retrieval response of the service API log data |  |
| IdentityType | 7.X.5.4.2.6 | Type of identity |  |
| ServiceApiIdType | 7.X.5.4.3.3 | Type of service API |  |
| ApiFilterType | 7.X.5.4.3.4 | Type of API filter |  |
| ExposureLevel | 7.X.5.4.3.5 | Level of exposure requirement |  |

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 |
| Accuracy | 3GPP TS 29.122 [3] | Represent the desired level of accuracy of the requested location information. |  |
| AnalyticsType | Clause 7.X.1.4.3.3 | Type of analytics for the event of the VAL application performance analytics. |  |
| 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. |  |
| ReportingInformation | 3GPP TS 29.523 [20] | Indicates the reporting requirement, only the following information are applicable for SEAL:  - immRep  - notifMethod  - maxReportNbr  - monDur  - repPeriod |  |
| ValTargetUe | Clause 7.3.1.4.2.3 | Indicate either VAL User ID or VAL UE ID. |  |

##### 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: SrvApiAnalyticsSubs

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| service-api-id | ServiceApiIdType | M | 1 | The identifier for the service API |  |
| area | LocationArea | O | 1 | The geographical or service area, to which the service API analytics subscription is applied. |  |
| time-interval | DurationSec | O | 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: SrvApiAnalyticsNotif

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

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

###### 7.X.5.4.2.4 Type: SrvApiLogReq

Table 7.X.5.4.2.4-1: Definition of type SrvApiLogReq

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| service-api-id | ServiceApiIdType | M | 1 | The identifier for the service API |  |
| identity | IdentityType | M | 1 | Identity for which the historical service API data, is requested. |  |
| api-type | ApiFilterType | O | 1 | Type of API |  |
| report-format | ReportingInformation | O | 1 | Configuration of service API reporting |  |
| area | LocationArea | O | 1 | The geographical or service area, to which the service API historical data request is applied. |  |
| time-interval | DurationSec | O | 1 | The time interval as the start and the end time, to which the service API historic data is applied. |  |
| exposure-level | EposureLevel | O | 1 | The level of exposure requirement for the logs |  |

###### 7.X.5.4.2.5 Type: SrvApiLogResp

Table 7.X.5.4.2.5-1: Definition of type LocationSrvApiLogResp

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| data-output | array(string) | M | 1..N | Service API data for target APIs |  |
| identity | IdentityType | M | 1 | Identity for which the historical service API data, is requested. |  |
| area | LocationArea | O | 1 | The geographical or service area, to which the service API data is applied. |  |
| time-interval | DurationSec | O | 1 | The time interval as the start and the end time, to which the service API historic data is applied. |  |

###### 7.X.5.4.2.6 Type: IdentityType

Table 7.X.5.4.2.7-1: Definition of type IdentityType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| val-service-id | string | O | 1 | Identity of the VAL service |  |
| val-ue-id | ValTargetUe | O | 1 | Identity of the VAL UE |  |

##### 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: ServiceApiIdType

Table 7.X.5.4.3.3-1: Enumeration ServiceApiIdType

|  |  |  |
| --- | --- | --- |
| 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. |  |

###### 7.X.5.4.3.4 Enumeration: ApiFilterType

Table 7.X.5.4.3.4-1: Enumeration ApiFilterType

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| AGGREGATION\_FILTER | Type of filter is aggregation. |  |
| ABSTRACTION\_FILTER | Type of filter is abstraction. |  |

###### 7.X.5.4.3.5 Enumeration: ExposureLevel

Table 7.X.5.4.3.5-1: Enumeration ExposureLevel

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| PERMISSION\_TO\_BE\_READ | Exposure requirement to be read |  |
| PERMISSION\_TO\_BE\_UPDATED | Exposure requirement to be updated |  |
| PERMISSION\_TO\_BE\_DELETED | Exposure requirement to be deleted |  |

\* \* \* 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 |
|  |  |  |  |

Editor's note: The application errors for the SS\_ADAE\_ServiceApiAnalytics API are FFS.

\* \* \* 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 \* \* \* \*