**3GPP TSG-CT WG1 Meeting #146C1-240306**

**Online , 22– 26 January 2024**

**Source: Lenovo**

**Title: Service description and operations for service-experiment**

**Spec: 3GPP TS 24.559V0.3.1**

**Agenda item: 18.2.29**

**Document for: Agreement**

**1. Introduction**

<Introduction part (optional)>

**2. Reason for Change**

Detailed service description and service operations for service experience information reporting.

Added deletion operation of the ADAE server to abolish the trigger configuration for service experience.

Replacing PushExpInfo with existing SrvExpInfoRep.

Added missing reference number.

Defining SrvExpRepCrit enumeration and thereby removal of EN.

Other miscellaneous correction

**3. Conclusions**

<Conclusion part (optional)>

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.559V0.3.1.

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

## 6.5 Service experience performance analytics

### 6.5.1 General

The ADAE\_ServiceConfiguration API, as defined 3GPP TS 23.436 [3], allows the ADAES via ADAE-UU reference point to:

- configure the ADAEC with triggers for reporting service experience information;

- configure the ADAEC to push the service experience information report; and

- pull from the ADAEC, the service experience information report.

### 6.5.2 Service Operations

#### 6.5.2.1 Introduction

The service operation defined for ADAE\_ServiceConfiguration API for service experience information is shown in the table 6.5.2.1-1.

Table 6.5.2.1-1: Operations for service experience information

|  |  |  |
| --- | --- | --- |
| Service operation name | Description | Initiated by |
| Configure\_Triggers\_Service\_Experience\_Information\_Report | This service operation is used by ADAES to configure triggers for service experience information report. | ADAES |
| Service\_Experience\_Information\_Report | This service operation is used by ADAEC to service experience information report. | ADAEC |
| Abolish\_Triggers\_Service\_Experience\_Information\_Report | This service operation is used by ADAES to abolish already configured triggers for service experience information report. | ADAES |
| Push\_Service\_Experience\_Information\_Report | This service operation is used by ADAEC to push service experience information report. | ADAEC |
| Pull\_Service\_Experience\_Information\_Report | This service operation is used by ADAES to pull service experience information report. | ADAES |

#### 6.5.2.2 Configure\_Triggers\_Service\_Information\_Experience\_Report

##### 6.5.2.2.1 General

This service operation is used by the ADAES to configure the ADAEC with triggers for reporting the service experience information.

##### 6.5.2.2.2 Configuring service experience information reporting using Configure\_Triggers\_Service\_Information\_Experience\_Report service operation

To configure triggers for reporting service experience information, the ADAES shall send an HTTP POST request with a Request-URI according to the pattern "{apiRoot}/adae-sc/<apiVersion>/service-experience" and with a body containing data type ConfigRepTrigger as defined in clause 7.1.5.2.4.

Upon receipt of the HTTP POST request, the ADAEC shall:

a) verify the identity of the ADAES and determine if the ADAES is authorized to configure triggers for service experience information report; and

b) if the ADAES:

1) is not authorized, the ADAEC shall respond to the ADAES with an appropriate error status code; or

2) is authorized, the ADAEC shall create a new "Individual service experience information" resource and respond to the ADAES with an HTTP "201 Created" status code, including a Location header field containing the URI for the created "Individual service experience information " and the response body including the ConfigRepTrigger data structure containing a representation of the created resource as defined in clause 7.1.3.

#### 6.5.2.3 Service\_Experience\_Information\_Report

##### 6.5.2.3.1 General

This service operation is used by the ADAEC which is configured by VAL client or other triggers to send service experience information report to the ADAES.

##### 6.5.2.3.2 Reporting service experience information using Service\_Experience\_Infomation\_Report service operation

To report service experience information, the ADAEC shall send an HTTP POST request with a Request-URI according to the pattern "{notifUri}" and with a body containing data type SrvExpInfoRep as defined in clause 7.1.5.2.7.

Upon receipt of the HTTP POST request, the ADAES shall respond to the ADAEC with:

a) if the request is successfully processed, a "204 No Content" status code and process the event notification; or

b) if errors occur when processing the request, an appropriate error response as specified in clause 7.1.6.

Editor's note: Whether the data type SrvExpInfoRep can be used by the ADAEC which is configured by triggers for service experience information reporting, is FFS.

#### 6.5.2.4 Abolish\_Triggers\_Service\_Experience\_Information\_Report

##### 6.5.2.4.1 General

This service operation is used by the ADAES to abolish the configured triggers on the ADAEC for the service experience information reporting.

##### 6.5.2.4.2 Abolishing service experience information reporting using Abolish\_Triggers\_Service\_Experience\_Information\_Report service operation

To abolish triggers from the configured service experience information reporting, the ADAES shall send an HTTP DELETE request to the resource representing the event in the ADAES as specified in clause 7.1.3.8.

Upon receiving the HTTP DELETE request:

a) the ADAEC shall verify the identity of the ADAES and check if the ADAES is authorized to abolish triggers from the configured service experience information reporting associated with the resource URI "{apiRoot}/adae-sc/<apiVersion>/service-experience/{srvTrigId}";

b) if the ADAES is authorized to abolish triggers from the configured service experience information reporting, the ADAEC shall delete the resource pointed by the resource URI "{apiRoot}/adae-sc/<apiVersion>/service-experience/{srvTrigId}";

c) if the request is successfully processed, the ADAEC shall respond to the ADAES with a "204 No Content" status code; and

d) if errors occur when processing the request, the ADAEC shall respond to the ADAES with an appropriate error response as specified in clause 7.1.6.

#### 6.5.2.5 Push\_Service\_Experience\_Information\_Report

##### 6.5.2.5.1 General

This service operation is used by the ADAEC to push the service experience information report to the ADAES.

Editor's note: Whether the mechanism for PUSH experience information report is the same as the mechanism for service experience information report in clause 6.5.2.3, is FFS.

##### 6.5.2.5.2 Pushing service experience information report using Push\_Service\_Experience\_Information\_Report service operation

To push the service experience information report to the ADAES, the ADAES shall configure the ADAEC by sending an HTTP POST request with a Request-URI according to the pattern "{apiRoot}/adae-sc/<apiVersion>/service-experience/push" and with a body containing data type Uri as defined in clause 5.2.2 of 3GPP TS 29.571 [8].

Upon receipt of the HTTP POST request, the ADAEC shall:

a) verify the identity of the ADAES and determine if the ADAES is authorized to configure push for service experience information report; and

b) if the ADAES:

1) is not authorized, the ADAEC shall respond to the ADAES with an appropriate error status code; or

2) is authorized, the ADAEC shall respond to the ADAES with an HTTP "200 OK" status code and with a body containing data type SrvExpInfoRep as defined in clause 7.1.5.2.7.

#### 6.5.2.6 Pull\_Service\_Experience\_Information\_Report

##### 6.5.2.6.1 General

This service operation is used by the ADAES to pull the service experience information report from the ADAEC.

##### 6.5.2.6.2 Pulling service experience information report using Pull\_Service\_Experience\_Information\_Report service operation

To pull the service experience information report from the ADAEC, the ADAES shall send an HTTP POST request with a Request-URI according to the pattern "{apiRoot}/adae-sc/<apiVersion>/service-experience/pull" and with a body containing data type PullSrvExpInfo as defined in clause 7.1.5.2.6.

Upon receipt of the HTTP POST request:

a) the ADAEC shall verify the identity of the ADAES and determine if the ADAES is authorized to pull the service experience information report; and

b) if the ADAES:

1) is not authorized, the ADAEC shall respond to the ADAES with an appropriate error status code; or

2) is authorized, the ADAEC shall respond to the ADAES with an HTTP "200 OK" status code and with a body containing data type SrvExpInfoRep as defined in clause 7.1.5.2.7.

 Upon receipt of the HTTP POST request, the ADAES shall respond to the ADAEC with a "204 No Content" status code and process the report.

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

#### 7.1.3.7 Resource: Service experience information

##### 7.1.3.7.1 Description

The resource is used by the ADAES to:

a) configure the ADAEC with triggers for reporting service experience information;

b) configure the ADAEC to push the service experience information report to the ADAES; and

c) pull the service experience information report from the ADAEC.

##### 7.1.3.7.2 Resource definition

Resource URI: **{apiRoot}/adae-sc/<apiVersion>/service-experience**

This resource shall support the resource URI variables defined in the table 7.1.3.7.2-1.

Table 7.1.3.7.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 5.2.4 in 3GPP TS 29.122 [4] |

##### 7.1.3.7.3 Resource standard methods

###### 7.1.3.7.3.1 POST

This operation is used by the ADAES to configure ADAEC with triggers for reporting the service experience information and shall support the URI query parameters specified in table 7.1.3.7.3.1-1.

Table 7.1.3.7.3.1-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 7.1.3.7.3.1-2 and the response data structures and response codes specified in table 7.1.3.7.3.1-3.

Table 7.1.3.7.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ConfigRepTrigger | M | 1 | Configure triggers for service experience information reporting |

Table 7.1.3.7.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| ConfigRepTrigger | M | 1 | 201 Created | Configuration of service experience information reporting was successful. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

Table 7.1.3.7.3.1-4: 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}/adea-sc/<apiVersion>/service-experience /{srvTrigId}. |

##### 7.1.3.7.4 Resource custom operations

###### 7.1.3.7.4.1 Overview

Table 7.1.3.7.4.1-1: Custom operations

|  |  |  |  |
| --- | --- | --- | --- |
| Operation name | Custom operation URI | Mapped HTTP method | Description |
| Push | /service-experience/push | POST | Push a service experience information report |
| Pull | /service-experience/pull | POST | Pull a service experience information report |

###### 7.1.3.7.4.2 Operation: PUSH Service Experience Information

This method is used by the ADAEC to push the service experience information report to the ADAES and shall support the URI query parameters specified in table 7.1.3.7.4.2-1.

Table 7.1.3.7.4.2-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 7.1.3.7.4.2-2 and the response data structures and response codes specified in table 7.1.3.7.4.2-3.

Table 7.1.3.7.4.2-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| Uri | M | 1 | Configure to report the service experience information |

Table 7.1.3.7.4.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SrvExpInfoRep |  |  | 200 OK | Configuration to report on the service experience information is accepted. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

###### 7.1.3.7.4.3 Operation: PULL Service Experience Information

This operation is used by the ADAES to pull the service experience information report from the ADAEC and shall support the URI query parameters specified in table 7.1.3.7.4.3-1.

Table 7.1.3.7.4.3-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 7.1.3.7.4.3-2 and the response data structures and response codes specified in table 7.1.3.7.4.3-3.

Table 7.1.3.7.4.3-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| PullSrvExpInfo | M | 1 | Request for the report on the service experience information |

Table 7.1.3.7.4.3-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SrvExpInfoRep | M | 1 | 200 OK | Successfully obtaining the report on the service experience information |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

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

#### 7.1.3.8 Resource: Individual trigger configuration for service experience information reporting

##### 7.1.3.8.1 Description

The individual trigger configuration for service experience information reporting resource represents an individual event trigger configuration of the ADAES.

##### 7.1.3.8.2 Resource Definition

Resource URI: **{apiRoot}/adae-sc/<apiVersion>/service-experience/{srvTrigId}**

This resource shall support the resource URI variables defined in the table 7.1.3.8.2-1.

Table 7.1.3.6.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 5.2.4 in 3GPP TS 29.122 [4] |
| srvTrigId | string | Identifies a trigger configuration for service experience information reporting |

##### 7.1.3.8.3 Resource Standard Methods

##### 7.1.3.8.3.1 DELETE

This method shall support the URI query parameters specified in table 7.1.3.8.3.1-1.

Table 7.1.3.8.3.1-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 7.1.3.8.3.1-2 and the response data structures and response codes specified in table 7.1.3.8.3.1-3.

Table 7.1.3.8.3.1-2: Data structures supported by the DELETE Request Body on this resource

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

Table 7.1.3.8.3.1-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | The individual trigger-configured service experience information reporting matching the srvTrigId is deleted. |
| NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. |

##### 7.1.3.8.4 Resource Custom Operations

None.

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

#### 7.1.4.4 Service experience information report event notification

##### 7.1.4.4.1 Description

The service experience information report event notification is used by the ADAEC to notify the ADAES, the service experience information.

##### 7.1.4.4.2 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: **{notifUri}**

This method shall support the URI query parameters specified in table 7.1.4.4.2-1.

Table 7.1.4.4.2-1: 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 experience information, this method shall support the request data structures specified in table 7.1.4.4.2-2 and the response data structures and response codes specified in table 7.1.4.4.2-3.

Table 7.1.4.4.2-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SrvExpInfoRep | M | 1 | Notification of service experience information report |

Table 7.1.4.4.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a | M | 1 | 204 (No Content) | Notification of the service experience information report is accepted. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

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

### 7.1.5 Data model

#### 7.1.5.1 General

This clause specifies the application data model supported by the API.

Table 7.1.5.1-1 specifies the data types defined for the ADAE\_ServiceConfiguration API.

Table 7.1.5.1-1: ADAE\_ServiceConfiguration API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| Ue2UePerfReq | 7.1.5.2.2 | Request for the UE-to-UE session performance analytics |  |
| Ue2UePerfResp | 7.1.5.2.3 | Response for the UE-to-UE session performance analytics |  |
| ConfigRepTrigger | 7.1.5.2.4 | Configure triggers for reports on the service experience information |  |
|  |  |  |  |
| PullSrvExpInfo | 7.1.5.2.5 | Pull an individual service experience information |  |
| SrvExpInfoRep | 7.1.5.2.6 | Response to pull an individual service experience information |  |

Table 7.1.5.1-2 specifies data types re-used by the ADAE\_ServiceConfiguration API service.

Table 7.1.5.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| DurationSec | 3GPP TS 29.571 [X] | Represent the time interval between successive location reports. |  |
| LocationArea | 3GPP TS 29.122 [X] | Represents location information. |  |
| Pc5QoSPara | 3GPP TS 29.571 [X] | Represents policy data on the PC5 QoS parameters. |  |
| ReportingInformation | 3GPP TS 29.523 [X] | Indicates the reporting requirement. |  |
| ValTargetUe | 3GPP TS 29.549 [X] | Used to indicate either VAL User ID or VAL UE ID. |  |
| Uri | 3GPP TS 29.571 [X] | Used to indicate the notification URI. |  |

Editor's note: Data types AppPerfSubs, AppPerfNotif, EdgeDataSubs, and EdgeDataNotif are for FFS.

Editor's note: References need to be added in the reference clause.

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

##### 7.1.5.2.4 Type: ConfigRepTrigger

Table 7.1.5.2.4-1: Definition of type ConfRepTrigger

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valServSpecCrit | ValServSpecCrit | M | 1 | Identity of the VAL server, requesting service experience information report. |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| commonTriggCrit | SrvExpRepCrit | O | 0..1 | Information criteria about the triggers (applicable to all VAL servers) on which the service experience information is fetched. |  |
| srvExpMeas | DurationSec | O | 0..1 | Information about the service experience information measurements which needs to be fetched and included in the report. If not present, by default end-to-end response time is measured. |  |
| notifyTarget | string | O | 0..1 | The target address which is notified. |  |

##### 7.1.5.2.5 Type: ValServSpecCrit

Table 7.1.5.2.5-1: Definition of type ValServSpecCrit

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
|  |  |  |  |  |  |
| valServerIds | array(string) | M | 1..N | Identities of one or more VAL servers, for which the configuration of the service experience information report applies. |  |
| triggCrit | SrvExpRepCrit | M | 1 | Information criteria about the triggers on which the service experience is information to be reported for the VAL server. |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

##### 7.1.5.2.6 Type: PullSrvExpInfo

Table 7.1.5.2.6-1: Definition of type PullSrvExpInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valServerId | string | M | 1 | Identity of the VAL server, for which the service experience information report is requested. |  |
| valServiceId | string | O | 0..1 | Identity of the VAL service |  |

##### 7.1.5.2.7 Type: SrvExpInfoRep

Table 7.1.5.2.7-1: Definition of type SrvExpInfoRep

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valUeId | ValTargetUe | M | 1 | Identity of VAL UE |  |
| valServerId | string | M | 1 | Identity of the VAL server, for which the service experience information report is requested. |  |
| valServiceId | string | O | 0..1 | Identity of the VAL service |  |
| timeStamp | DurationSec | O | 0..1 | Timestamp as start time and end time of the collected report |  |
| valSrvExpRep | ReportingInformation | O | 0..1 | Report on the VAL service experience information |  |

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

#### 7.1.5.3 Simple data types and enumerations

##### 7.1.5.3.1 Introduction

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

##### 7.1.5.3.2 Simple data types

None.

##### 7.1.5.3.3 Enumeration: SrvExpRepCrit

Table 7.1.5.3.3-1: Enumeration SrvExpRepCrit

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| TRIGGER\_CRITERIA | Information criteria that can trigger service experience information reporting to a VAL server. |  |
| COMMON\_TRIGGER\_CRITERIA | Information criteria that can trigger service experience information reporting to all VAL servers. |  |

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