**3GPP TSG- Meeting #C3-243xxx**

**Hyderabad, IN, 27 - 31 May, 2024 was C3-243253**

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| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **0010** | **rev** | **1** | **Current version:** |  |  |
|  |
| *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:***  | Various essential corrections to the SDD\_TransmissionQualityMeasurement API |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | SEALDD |  | ***Date:*** | 2024-05-20 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** |  |
|  | *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 canbe 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:*** | There are various errors (e.g., incorrect cardinality) and documentation enhancements (e.g., terminology alignments, missing clarifications, etc.) that should be applied to the SDD\_TransmissionQualityMeasurement API. |
|  |  |
| ***Summary of change:*** | This CR proposes to:* Address these various errors and documentation enhancements.
 |
|  |  |
| ***Consequences if not approved:*** | * These various errors and documentation enhancements are not applied and the quality of the specification is not enhanced.
 |
|  |  |
| ***Clauses affected:*** | 5.5.2.1, 5.5.2.4, 5.5.2.4.1, 5.5.2.3.2, 5.5.2.5.2, 5.5.2.4, 5.5.2.4.1, 5.5.2.4.2, 6.4.3.2.3.1, 6.4.3.3.1, 6.4.3.4.3.1, 6.4.5.1, 6.4.5.2.1, 6.4.5.2.3.1, 6.4.6.1, 6.4.6.2.2 |
|  |  |
|  | **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 does not impact the OpenAPI descriptions of the APIs defined in this specification. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* Start of changes \* \* \* \*

#### 5.5.2.1 Introduction

The service operations defined for the SDD\_TransmissionQualityMeasurement service are shown in table 5.5.2.1-1.

Table 5.5.2.1-1: SDD\_TransmissionQualityMeasurement Service Operations

|  |  |  |
| --- | --- | --- |
| Service Operation Name | Description | Initiated by |
| SDD\_TransmissionQualityMeasurement\_Subscribe | This service operation enables a service consumer to create a Transmission Quality Measurement Subscription. | e.g. VAL Server |
| SDD\_TransmissionQualityMeasurement\_Update | This service operation enables a service consumer to update an existing Transmission Quality Measurement Subscription. | e.g. VAL Server |
| SDD\_TransmissionQualityMeasurement\_Unsubscribe | This service operation enables a service consumer to delete an existing Transmission Quality Measurement Subscription. | e.g. VAL Server |
| SDD\_TransmissionQualityMeasurement\_Notify | This service operation enables a service consumer to receive Transmission Quality Measurement notifications. | SEALDD Server |
| SDD\_TransmissionQualityMeasurement\_Query | This service operation enables a service consumer to request historical Transmission Quality Measurement reports. | e.g., VAL Server, SEALDD Server, NSCE Server, ADAE Server |

\* \* \* \* Next changes \* \* \* \*

#### 5.5.2.4 SDD\_TransmissionQualityMeasurement\_Unsubscribe

\* \* \* \* Next changes \* \* \* \*

##### 5.5.2.4.1 General

This service operation is used by a service consumer to request the deletion of a Transmission Quality Measurement Subscription at the SEALDD Server.

The following procedures are supported by the "SDD\_TransmissionQualityMeasurement\_Unsubscribe" service operation:

- Transmission Quality Measurement Subscription Deletion.

\* \* \* \* Next changes \* \* \* \*

##### 5.5.2.3.2 Transmission Quality Measurement Subscription Update

Figure 5.5.2.3.2-1 depicts a scenario where a service consumer sends a request to the SEALDD Server to request the update of an existing Transmission Quality Measurement Subscription (see also clause 9.7 of 3GPP°TS°23.433°[7]).



Figure 5.5.2.3.2-1: Procedure for Transmission Quality Measurement Subscription Update

1. In order to request the update of an existing transmission quality measurement subscription, the service consumer shall send an HTTP PUT/PATCH request to the SEALDD Server, targeting the URI of the corresponding "Individual Transmission Quality Measurement Subscription" resource, with the request body including either:

- the updated representation of the resource within the TransQualMeasSubsc data structure, in case the HTTP PUT method is used; or

- the requested modifications to the resource within the TransQualMeasSubscPatch data structure, in case the HTTP PATCH method is used.

NOTE: An alternative service consumer (i.e. other than the one that requested the creation of the targeted resource) can initiate this request.

2a. Upon success, the SEALDD Server shall update the targeted "Individual Transmission Quality Measurement Subscription" resource accordingly and respond with either:

- an HTTP "200 OK" status code with the response body containing a representation of the updated "Individual Transmission Quality Measurement Subscription" resource within the TransQualMeasSubsc data structure; or

- an HTTP "204 No Content" status code.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP PUT/PATCH response body, as specified in clause 6.4.7.

\* \* \* \* Next changes \* \* \* \*

##### 5.5.2.5.2 Transmission Quality Measurement Notification

Figure 5.5.2.5.2-1 depicts a scenario where the SEALDD Server sends a request to notify a previously subscribed service consumer on Transmission Quality Measurement report(s) (see also clause 9.7 of 3GPP°TS°23.433°[7]).



Figure 5.5.2.5.2-1: Procedure for Transmission Quality Measurement Notification

1. In order to notify a previously subscribed service consumer on Transmission Quality Measurement report(s), the SEALDD Server shall send an HTTP POST request to the service consumer with the request URI set to "{notifUri}", where the "notifUri" variable is set to the value received from the service consumer during the creation/update of the corresponding Transmission Quality Measurement Subscription using the procedures defined in clauses 5.5.2.2 and 5.5.2.3, and the request body including the TransQualMeasNotif data structure.

2a. Upon success, the service consumer shall respond to the SEALDD Server with an HTTP "204 No Content" status code to acknowledge the reception of the notification.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.4.7.

\* \* \* \* Next changes \* \* \* \*

#### 5.5.2.4 SDD\_TransmissionQualityMeasurement\_Query

\* \* \* \* Next changes \* \* \* \*

##### 5.5.2.4.1 General

This service operation is used by a service consumer to retrieve Historical Transmission Quality Measurement Report(s) from the SEALDD Server.

The following procedures are supported by the "SDD\_TransmissionQualityMeasurement\_Query" service operation:

- Historical Transmission Quality Measurement Report(s) Retrieval.

\* \* \* \* Next changes \* \* \* \*

##### 5.5.2.4.2 Historical Transmission Quality Measurement Report(s) Retrieval

Figure 5.5.2.4.2-1 depicts a scenario where a a service consumer sends a request to the SEALDD Server to retrieve Historical Transmission Quality Measurement Report(s) (see also clause 9.7 of 3GPP°TS°23.433°[7]).



Figure 5.5.2.4.2-1: Procedure for Historical Transmission Quality Measurement Report(s) Retrieval

1. In order to retrieve Historical Transmission Quality Measurement Report(s), the service consumer shall send an HTTP GET request to the SEALDD Server targeting the URI of the "Historical Transmission Quality Measurement Reports" collection resource, with the request URI containing query parameter(s) to filter the responses from the SEALDD Server.

2a. Upon success, the SEALDD Server shall respond with an HTTP "200 OK" status code with the response body containing the requested Historical Transmission Quality Measurement Report(s) within the HistTransQualMeasReports data structure.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP GET response body, as specified in clause 6.4.7.

\* \* \* \* Next changes \* \* \* \*

###### 6.4.3.2.3.1 POST

The HTTP POST method allows a service consumer to request the creation of a Transmission Quality Measurement Subscription at the SEALDD Server.

This method shall support the URI query parameters specified in table 6.4.3.2.3.1-1.

Table 6.4.3.2.3.1-1: 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 6.4.3.2.3.1-2 and the response data structures and response codes specified in table 6.4.3.2.3.1-3.

Table 6.4.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| TransQualMeasSubsc | M | 1 | Represents the parameters to request the creation of a Transmission Quality Measurement Subscription. |

Table 6.4.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| TransQualMeasSubsc | M | 1 | 201 Created | Successful case. The Transmission Quality Measurement Subscription is successfully created and a representation of the created "Individual Transmission Quality Measurement Subscription" resource shall be returned in the response body.An HTTP "Location" header that contains the URI of the created resource shall also be included. |
| ProblemDetails | O | 0..1 | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply.NOTE 2: Failure causes are described in clause 6.4.7. |

Table 6.4.3.2.3.1-4: 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}/sdd-tqm/<apiVersion>/subscriptions/{subscriptionId} |

\* \* \* \* Next changes \* \* \* \*

##### 6.4.3.3.1 Description

This resource represents a Transmission Quality Measurement Subscription managed by the SEALDD Server.

\* \* \* \* Next changes \* \* \* \*

###### 6.4.3.4.3.1 GET

The HTTP GET method allows a service consumer to retrieve Historical Transmission Quality Measurement Report(s) from the SEALDD Server.

This method shall support the URI query parameters specified in table 6.4.3.4.3.1-1.

Table 6.4.3.4.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| app-traffic-ids | array(string) | M | 1..N | Contains the identifier(s) of the targeted application traffic (e.g., VAL Service ID, VAL Server ID). |  |
| val-group-id | string | O | 0..1 | Contains the identity of the VAL group to which the request is related.(NOTE) |  |
| val-ue-ids-list | array(string) | O | 1..N | Contains the list of the identifier(s) of the VAL UE(s) to which the request is related.(NOTE) |  |
| all-val-ues | boolean | O | 0..1 | Indicates that the request is related to all VAL UE(s) of the application traffic identified by the application traffic identifier(s) provided within the "appTrafficIds" attribute.- "true" indicates that the request is related to all VAL UE(s).- "false" indicates that the request is not related to all VAL UE(s).- The default value when this query parameter is omitted is "false".(NOTE) |  |
| supp-feat | SupportedFeatures | O | 0..1 | Contains the list of supported features among the ones defined in clause 6.4.8.This query parameter shall be present only when feature negotiation needs to take place. |  |
| NOTE: The "val-group-id" query parameter, the "val-ue-ids-list" query parameter, and when set to "true", the "all-val-ues" query parameter are mutually exclusive. Either one of them may be present. |

This method shall support the request data structures specified in table 6.4.3.4.3.1-2 and the response data structures and response codes specified in table 6.4.3.4.3.1-3.

Table 6.4.3.4.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.4.3.4.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| HistTransQualMeasReports | M | 1 | 200 OK | Successful case. The requested Historical Transmission Quality Measurement Report(s) shall be returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative SEALDD Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative SEALDD Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| ProblemDetails | O | 0..1 | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the HTTP GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply.NOTE 2: Failure causes are described in clause 6.2.7. |

Table 6.4.3.4.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative SEALDD Server. |

Table 6.4.3.4.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative SEALDD Server. |

\* \* \* \* Next changes \* \* \* \*

#### 6.4.5.1 General

Notifications shall comply to clause 6.6 of 3GPP TS 29.549 [15].

Table 6.4.5.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description(service operation) |
| Transmission Quality Measurement Notification | {notifUri} | POST | Enables a SEALDD Server to notify a previously subscribed service consumer on Transmission Quality Measurement report(s). |

\* \* \* \* Next changes \* \* \* \*

##### 6.4.5.2.1 Description

The Transmission Quality Measurement Notification is used by a SEALDD Server to notify a previously subscribed service consumer on Transmission Quality Measurement report(s).

\* \* \* \* Next changes \* \* \* \*

###### 6.4.5.2.3.1 POST

This method shall support the request data structures specified in table 6.4.5.2.3.1-1 and the response data structures and response codes specified in table 6.4.5.2.3.1-2.

Table 6.4.5.2.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| TransQualMeasNotif | M | 1 | Represents the Transmission Quality Measurement Notification. |

Table 6.4.5.2.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The Transmission Quality Measurement Notification is successfully received and acknowledged. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. |

Table 6.4.5.2.3.1-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

Table 6.4.5.2.3.1-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

\* \* \* \* Next changes \* \* \* \*

#### 6.4.6.1 General

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

Table 6.4.6.1-1 specifies the data types defined for the SDD\_TransmissionQualityMeasurement API.

Table 6.4.6.1-1: SDD\_TransmissionQualityMeasurement API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| HistTransQualMeasReports | 6.4.6.2.9 | Represents the Historical Transmission Quality Measurement Report(s). |  |
| MeasurementId | 6.4.6.3.3 | Represents the transmission quality measurement type. |  |
| RepGranularity | 6.4.6.3.4 | Represents the reporting granularity. |  |
| TransQualMeasCriteria | 6.4.6.2.7 | Represents the transmission quality measurement reporting criteria. |  |
| TransQualMeasCriteriaSet | 6.4.6.2.10 | Represents a set of transmission quality measurement reporting criteria. |  |
| TransQualMeasData | 6.4.6.2.8 | Represents the transmission quality measurement data. |  |
| TransQualMeasNotif | 6.4.6.2.5 | Represents a Transmission Quality Measurement Notification. |  |
| TransQualMeasReport | 6.4.6.2.6 | Represents a Transmission Quality Measurement report. |  |
| TransQualMeasReq | 6.4.6.2.3 | Represents the Transmission Quality Measurement reporting requirements. |  |
| TransQualMeasSubsc | 6.4.6.2.2 | Represents a Transmission Quality Measurement Subscription. |  |
| TransQualMeasSubscPatch | 6.4.6.2.4 | Represents the requested modifications to a Transmission Quality Measurement Subscription. |  |

Table 6.4.6.1-2 specifies data types re-used by the SDD\_TransmissionQualityMeasurement API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the SDD\_TransmissionQualityMeasurement API.

Table 6.4.6.1-2: SDD\_TransmissionQualityMeasurement API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| BitRate | 3GPP TS 29.571 [18] | Represents a bit rate. |  |
| DateTime | 3GPP TS 29.122 [2] | Represents a date and a time. |  |
| DateTimeRo | 3GPP TS 29.122 [2] | Represents a date and a time with the read-only property. |  |
| DurationSec | 3GPP TS 29.122 [2] | Represents a time duration in seconds. |  |
| MatchingDirection | 3GPP TS 29.520 [20] | Represents the threshold matching direction. |  |
| NotificationMethod | 3GPP TS 29.508 [16] | Represents the reporting type. |  |
| PacketLossRate | 3GPP TS 29.571 [18] | Represents the packet loss rate. |  |
| ProblemDetails | 3GPP TS 29.122 [2] | Represents error related information. |  |
| SupportedFeatures | 3GPP TS 29.571 [18] | Represents the list of supported feature(s) and used to negotiate the applicability of the optional features. |  |
| TimeWindow | 3GPP TS 29.122 [2] | Represents a time window. |  |
| Uint32 | 3GPP TS 29.571 [18] | Represents an unsigned 32-bit integer. |  |
| Uinteger | 3GPP TS 29.571 [18] | Represents an unsigned integer. |  |
| Uri | 3GPP TS 29.122 [2] | Represents a URI. |  |
| ValidityConditions | 3GPP TS 29.549 [15] | Represents temporal and/or spatial validity conditions. |  |

\* \* \* \* Next changes \* \* \* \*

##### 6.4.6.2.2 Type: TransQualMeasSubsc

Table 6.4.6.2.2-1: Definition of type TransQualMeasSubsc

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| appTrafficIds | array(string) | M | 1..N | Contains the identifier(s) of the targeted application traffic (e.g., VAL Service ID, VAL Server ID).. |  |
| notifUri | Uri | M | 1 | Contains the URI via which Transmission Quality Measurement notifications shall be delivered. |  |
| valGroupId | string | C | 0..1 | Contains the identity of the VAL group to which the subscription is related.(NOTE) |  |
| valUeIdsList | array(string) | C | 1..N | Contains the list of the identifier(s) of the VAL UE(s) to which the subscription is related.(NOTE) |  |
| valUserIdsList | array(string) | C | 1..N | Contains the list of the identifier(s) of the VAL user(s) to which the subscription is related.(NOTE) |  |
| allValUesInd | boolean | C | 0..1 | Indicates that the subscription is related to all VAL UE/user(s) of the application traffic identified by the application traffic identifier(s) provided within the "appTrafficIds" attribute.- "true" indicates that the subscription is related to all VAL UE/user(s).- "false" indicates that the subscription is not related to all VAL UE/user(s).- The default value when this attribute is omitted is "false".(NOTE) |  |
| measConds | array(ValidityConditions) | O | 1..N | Contains the set of temporal and/or spatial measurement condition(s) of the subscription. |  |
| reqs | map(TransQualMeasReq) | M | 1..N | Contains the transmission quality measurement reporting requirements of the subscription.The key of the map shall be any unique string encoded value. |  |
| subsExpTime | DateTimeRo | O | 0..1 | Indicates the time at which the subscription shall expire.This attribute may be present only in Transmission Quality Measurement subscription creation/update responses.If this attribute is absent, this means that the subscription shall not expire, until explicitly deleted by the service consumer. |  |
|  |  |  |  |  |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported features among the ones defined in clause 6.4.8.This attribute shall be present only when feature negotiation needs to take place. |  |
| NOTE: The "valGroupId" attribute, the "valUeIdsList" attribute and/or the "valUserIdsList" attribute, and when set to "true", the "allValUesInd" attribute, are mutually exclusive. Either one of them shall be present. |

\* \* \* \* End of changes \* \* \* \*