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

**Hyderabad, IN, 27 - 31 May, 2024 was C3-243252**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0009** | **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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | |
| ***Title:*** | Essential corrections to the Historical Transmission Quality Measurement Report(s) retrieval procedure | | | | | | | | |
|  |  | | | | | | | | |
| ***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 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:*** | | | The following isses have been identified in the definition of the Essential corrections to the Historical Transmission Quality Measurement Report(s) retrieval procedure:   * The possibility to filter based on the VAL user(s) is missing in the GET request query string, whereas the possibility to return Historical Transmission Quality Measurement Report(s) for one or several VAL user(s) is already considered/supported in the response. This is also supported in stage 2, as per Table 9.7.3.4-1 of TS 23.433. * The NOTE in Table 6.4.6.2.6-1 only considers the case where this data type is conveyed in a Transmission Quality Measurement notification, not in a Historical Transmission Quality Measurement Report(s) retrieval response. * Further clarifications on the content of the "reports" attribute in Table 6.4.6.2.9-1 are needed when there are no historical reports to return for the received query parameters. * The application error "NO\_AVAILABLE\_MEAS\_DATA" is not needed as the corresponding scenario is covered by returning an empty array withing the "reports" attribute in Table 6.4.6.2.9-1. Also, this scenario cannot be considered as an error case as it does not correspond to any error/misbehaviour at neither the client nor the server sides. | | | | | | |
|  | | |  | | | | | | |
| ***Summary of change:*** | | | This CR proposes to:   * Correct the above-detailed issues. | | | | | | |
|  | | |  | | | | | | |
| ***Consequences if not approved:*** | | | * The definition of the Historical Transmission Quality Measurement Report(s) retrieval procedure in stage 3 continues to contain the above-detailed errors and is hence misaligned with stage 2. | | | | | | |
|  | |  | | | | | | | |
| ***Clauses affected:*** | | 6.4.3.4.3.1, 6.4.6.2.6, 6.4.6.2.9, 6.4.7.3, A.5 | | | | | | | |
|  | |  | | | | | | | |
|  | | **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 \* \* \* \*

###### 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 | Contains the identifier(s) of the targeted application traffic. This can be in the form of 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) |  |
| val-user-ids-list | array(string) | O | 1..N | Contains the list of the identifier(s) of the VAL user(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/user(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/user(s).  - "false" indicates that the request is not related to all VAL UE/user(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/or the "val-user-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 | Response  codes | Description |
| HistTransQualMeasReports | M | 1 | 200 OK | Successful case. The requested Historical Transmission Quality Measurement Report(s), if any, 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]. |
| NOTE: 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. | | | | |

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 \* \* \* \*

##### 6.4.6.2.6 Type: TransQualMeasReport

Table 6.4.6.2.6-1: Definition of type TransQualMeasReport

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| measId | array(MeasurementId) | M | 1..N | Contains the reported transmission quality measurement(s). |  |
| valUeIds | array(string) | C | 1..N | Contains the list of the identifier(s) of the VAL UE(s) to which the transmission quality measurement report is related.  (NOTE) |  |
| valUserIds | array(string) | C | 1..N | Contains the list of the identifier(s) of the VAL user(s) to which the transmission quality measurement report is related.  (NOTE) |  |
| measData | TransQualMeasData | O | 0..1 | Contains the reported transmission quality measurement data. |  |
| NOTE: These attributes are mutually exclusive. Either one of them shall be present, unless the corresponding request targets a single VAL UE/user, in which case these attributes may not be present. | | | | | |

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

##### 6.4.6.2.9 Type: HistTransQualMeasReports

Table 6.4.6.2.9-1: Definition of type HistTransQualMeasReports

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| reports | array(TransQualMeasReport) | M | 0..N | Contains the Historical Transmission Quality Measurement Report(s).  If there are no Historical Transmission Quality Measurement Report(s) fulfilling the request, this attribute shall contain an empty array. |  |
| 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. |  |

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

#### 6.4.7.3 Application Errors

The application errors defined for the SDD\_TransmissionQualityMeasurement API are listed in Table 6.4.7.3-1.

Table 6.4.7.3-1: Application errors

|  |  |  |  |
| --- | --- | --- | --- |
| Application Error | HTTP status code | Description | Applicability |
| NO\_TRANS\_CONN | 403 Forbidden | Indicates that the Transmission Quality Measurement Subscription creation/update request is rejected because there are no existing Regular/URLLC transmission connections corresponding to the parameters provided in the request. |  |

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

# A.5 SDD\_TransmissionQualityMeasurement API

openapi: 3.0.0

info:

title: SEALDD Server Data Transmission Quality Measurement Service

version: 1.0.0-alpha.8

description: |

SEALDD Server Data Transmission Quality Measurement Service.

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externalDocs:

description: >

3GPP TS 29.548 V18.0.0; Service Enabler Architecture Layer for Verticals (SEAL);

SEAL Data Delivery (SEALDD) Server Services; Stage 3.

url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.548/

servers:

- url: '{apiRoot}/sdd-tqm/v1'

variables:

apiRoot:

default: https://example.com

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

security:

- {}

- oAuth2ClientCredentials: []

paths:

/subscriptions:

post:

summary: Request the creation of a Transmission Quality Measurement Subscription.

operationId: CreateTransQualMeasSubsc

tags:

- Transmission Quality Measurement Subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'201':

description: >

Created. The Transmission Quality Measurement Subscription is successfully created

and a representation of the created Individual Transmission Quality Measurement

Subscription resource shall be returned.

content:

application/json:

schema:

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

headers:

Location:

description: >

Contains the URI of the created Individual Transmission Quality Measurement

Subscription 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:

TransQualMeasNotif:

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

post:

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'204':

description: >

No Content. The Transmission Quality Measurement notification is successfully

received and acknowledged.

'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'

/subscriptions/{subscriptionId}:

parameters:

- name: subscriptionId

in: path

description: >

Represents the identifier of the Individual Transmission Quality Measurement Subscription

resource.

required: true

schema:

type: string

get:

summary: Retrieve an existing Individual Transmission Quality Measurement Subscription resource.

operationId: GetIndTransQualMeasSubsc

tags:

- Individual Transmission Quality Measurement Subscription (Document)

responses:

'200':

description: >

OK. The requested Individual Transmission Quality Measurement Subscription resource

shall be returned.

content:

application/json:

schema:

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

'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'

put:

summary: Request the update of an existing Individual Transmission Quality Measurement Subscription resource.

operationId: UpdateIndTransQualMeasSubsc

tags:

- Individual Transmission Quality Measurement Subscription (Document)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'200':

description: >

OK. The Individual Transmission Quality Measurement Subscription resource is

successfully updated and a representation of the updated resource shall be returned in

the response body.

content:

application/json:

schema:

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

'204':

description: >

No Content. The Individual Transmission Quality Measurement Subscription resource is

successfully updated and no content is returned in the response body.

'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'

patch:

summary: Request the modification of an existing Individual Transmission Quality Measurement Subscription resource.

operationId: ModifyIndTransQualMeasSubsc

tags:

- Individual Transmission Quality Measurement Subscription (Document)

requestBody:

required: true

content:

application/merge-patch+json:

schema:

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

responses:

'200':

description: >

OK. The Individual Transmission Quality Measurement Subscription resource is

successfully modified and a representation of the updated resource shall be returned in

the response body.

content:

application/json:

schema:

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

'204':

description: >

No Content. The Individual Transmission Quality Measurement Subscription resource is

successfully modified and no content is returned in the response body.

'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:

summary: Request the deletion of an existing Individual Transmission Quality Measurement Subscription resource.

operationId: DeleteIndTransQualMeasSubsc

tags:

- Individual Transmission Quality Measurement Subscription (Document)

responses:

'204':

description: >

No Content. The Individual Transmission Quality Measurement Subscription resource is

successfully 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'

'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'

/reports:

get:

summary: Retrieve Historical Transmission Quality Measurement Report(s).

operationId: GetHistTransQualMeasReports

tags:

- Historical Transmission Quality Measurement Reports (Collection)

parameters:

- name: app-traffic-ids

in: query

required: true

schema:

type: array

items:

type: string

minItems: 1

- name: val-group-id

in: query

required: false

schema:

type: string

- name: val-ue-ids-list

in: query

required: false

schema:

type: array

items:

type: string

minItems: 1

- name: val-user-ids-list

in: query

required: false

schema:

type: array

items:

type: string

minItems: 1

- name: all-val-ues

in: query

required: false

schema:

type: boolean

default: false

description: >

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.

- name: supp-feat

in: query

required: false

schema:

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

responses:

'200':

description: >

OK. The requested Historical Transmission Quality Measurement Report(s), if any, shall

be returned.

content:

application/json:

schema:

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

'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'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

#

# STRUCTURED DATA TYPES

#

TransQualMeasSubsc:

description: >

Represents a Transmission Quality Measurement Subscription.

type: object

properties:

appTrafficIds:

type: array

items:

type: string

minItems: 1

valGroupId:

type: string

valUeIdsList:

type: array

items:

type: string

minItems: 1

valUserIdsList:

type: array

items:

type: string

minItems: 1

allValUesInd:

type: boolean

default: false

measConds:

type: array

items:

$ref: 'TS29549\_SS\_Events.yaml#/components/schemas/ValidityConditions'

minItems: 1

reqs:

type: object

additionalProperties:

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

minProperties: 1

nullable: true

description: >

Represents the transmission quality measurement reporting requirements of the

subscription.

The key of the map shall be any unique string encoded value.

subsExpTime:

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

notifUri:

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

suppFeat:

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

required:

- appTrafficIds

- reqs

- notifUri

oneOf:

- required: [valGroupId]

- required: [valUeIdsList]

- required: [valUserIdsList]

- required: [allValUesInd]

TransQualMeasReq:

description: >

Represents Transmission Quality Measurement requirements.

type: object

properties:

measId:

type: array

items:

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

minItems: 1

repType:

$ref: 'TS29508\_Nsmf\_EventExposure.yaml#/components/schemas/NotificationMethod'

repPeriodicity:

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

repGranularity:

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

measWindow:

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

measExpTime:

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

repCriteriaSets:

type: object

additionalProperties:

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

minProperties: 1

description: >

Contains one or several set(s) of transmission quality measurement reporting

criteria.

The key of the map shall be any unique string encoded value.

Only the criteria related to the subscribed measurement(s) within the measId attribute

shall be present within this attribute.

required:

- measId

TransQualMeasSubscPatch:

description: >

Represents the requested modifications to a Transmission Quality Measurement Subscription.

type: object

properties:

measConds:

type: array

items:

$ref: 'TS29549\_SS\_Events.yaml#/components/schemas/ValidityConditions'

minItems: 1

reqs:

type: object

additionalProperties:

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

minProperties: 1

nullable: true

description: >

Represents the transmission quality measurement reporting requirements of the

subscription.

The key of the map shall be any unique string encoded value and shall be set to the same

value as the one provided during the creation of the transmission quality measurement

subscription.

notifUri:

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

TransQualMeasNotif:

description: >

Represents a Transmission Quality Measurement Notification.

type: object

properties:

subscriptionId:

type: string

reports:

type: array

items:

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

minItems: 1

required:

- subscriptionId

- reports

TransQualMeasReport:

description: >

Represents a Transmission Quality Measurement report.

type: object

properties:

measId:

type: array

items:

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

minItems: 1

valUeIds:

type: array

items:

type: string

minItems: 1

valUserIds:

type: array

items:

type: string

minItems: 1

measData:

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

required:

- measId

not:

required: [valUeIds, valUserIds]

TransQualMeasCriteria:

description: >

Represents the Transmission Quality Measurement reporting criteria.

type: object

properties:

minLatency:

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

avgLatency:

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

maxLatency:

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

minBitRate:

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

avgBitRate:

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

maxBitRate:

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

minPackLossRate:

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

avgPackLossRate:

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

maxPackLossRate:

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

minJitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

avgJitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

maxJitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

oneOf:

- required: [minLatency]

- required: [avgLatency]

- required: [maxLatency]

- required: [minBitRate]

- required: [avgBitRate]

- required: [maxBitRate]

- required: [minPackLossRate]

- required: [avgPackLossRate]

- required: [maxPackLossRate]

- required: [minJitter]

- required: [avgJitter]

- required: [maxJitter]

TransQualMeasData:

description: >

Represents the Transmission Quality Measurement data.

type: object

properties:

minLatency:

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

maxLatency:

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

avgLatency:

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

stdDevLatency:

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

kPercLatency:

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

kValLatency:

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

minBitRate:

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

maxBitRate:

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

avgBitRate:

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

stdDevBitRate:

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

kPercBitRate:

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

kValBitRate:

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

minPackLossRate:

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

maxPackLossRate:

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

avgPackLossRate:

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

stdDevPackLossRate:

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

kPercPackLossRate:

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

kValPackLossRate:

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

minJitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

maxJitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

avgJitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

stdDevJitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

kPercJitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

kValJitter:

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

measPeriod:

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

timestamp:

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

anyOf:

- required: [minLatency]

- required: [maxLatency]

- required: [avgLatency]

- required: [minBitRate]

- required: [maxBitRate]

- required: [avgBitRate]

- required: [minPackLossRate]

- required: [maxPackLossRate]

- required: [avgPackLossRate]

- required: [minJitter]

- required: [maxJitter]

- required: [avgJitter]

HistTransQualMeasReports:

description: >

Represents Historical Transmission Quality Measurement Report(s).

type: object

properties:

reports:

type: array

items:

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

minItems: 0

description: >

Contains the Historical Transmission Quality Measurement Report(s).

If there are no Historical Transmission Quality Measurement Report(s) fulfilling the

request, this attribute shall contain an empty array.

suppFeat:

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

required:

- reports

TransQualMeasCriteriaSet:

description: >

Represents a set of transmission quality measurement reporting criteria.

type: object

properties:

criteria:

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

direction:

$ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/MatchingDirection'

required:

- criteria

- direction

# SIMPLE DATA TYPES

#

#

# ENUMERATIONS

#

MeasurementId:

anyOf:

- type: string

enum:

- LATENCY

- BITRATE

- PACKET\_LOSS\_RATE

- JITTER

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the transmission quality measurement type.

Possible values are:

- LATENCY: Indicates that the requested/reported measurement is the latency.

- BITRATE: Indicates that the requested/reported measurement is the bit rate.

- PACKET\_LOSS\_RATE: Indicates that the requested/reported measurement is the packet loss

rate.

- JITTER: Indicates that the requested/reported measurement is the jitter.

RepGranularity:

anyOf:

- type: string

enum:

- INDIVIDUAL\_VAL\_UE

- VAL\_GROUP

- ALL\_VAL\_UES

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the reporting granularity.

Possible values are:

- INDIVIDUAL\_VAL\_UE: Indicates that the granularity is individual VAL UE/user.

- VAL\_GROUP: Indicates that the granularity is VAL Group.

- ALL\_VAL\_UES: Indicates that the granularity is all VAL UE/user(s).

# Data types describing alternative data types or combinations of data types:

#

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