**3GPP TSG- Meeting #C3-234xxx**

**Xiamen, China, – was C3-234147**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.549** | **CR** | **0177** | **rev** | **1** | **Current version:** | **18.3.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  | Further progressing the definition of MBS resources management |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | SEAL\_Ph3 |  | ***Date:*** | 2023-09-29 |
|  |  |  |  |  |
| ***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 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | The following remaining open issues need to be resolved:* The MBS service area should be provided only in the form of an external MBS service area (i.e., geographical area(s) or civic address(es)). It is the SEAL layer or the NEF/MBSF that should take care of translating it to a network internal MBS service area in the form of a list of TAIs and/or cell IDs.
* The PUT method should be allowed for updating an existing MBS resource in addition to PATCH.
* The data type in the body of an update response should be the MBSResource data type as it is the one containing the resource representation. There is no need to have feature negotiation during the update request/response interaction.
* The MbsSession Data type defined in TS 29.571 should be used to encode the MBS session related configuration information as it is the case for the other involved APIs.
 |
|  |  |
| ***Summary of change:*** | This CR proposes to:* Define the "Activate\_Multicast\_Resource" service operation of the SS\_NetworkResourceAdaptation API.
 |
|  |  |
| ***Consequences if not approved:*** | * Stage 2 requirements for MBS resource management are not fully defined/supported in stage 3.
 |
|  |  |
| ***Clauses affected:*** | 7.4.1.2.1, 7.4.1.2.10.3.2 (new clause), 7.4.1.2.10.3.3, 7.4.1.2.10.3.4, 7.4.1.4.1, 7.4.1.4.2.12, 7.4.1.4.2.13, 7.4.1.4.2.15, 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 introduces a backwards compatible new feature to the OpenAPI description of the SS\_NetworkResourceAdaptation API defined in this specification. |
|  |  |
| ***This CR's revision history:*** |  |

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

##### 7.4.1.2.1 Overview

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

Figure 7.4.1.2.1-1 depicts the resource URIs structure for the SS\_NetworkResourceAdaptation API.

Figure 7.4.1.2.1-1: Resource URI structure of the SS\_NetworkResourceAdaptation API

Table 7.4.1.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 7.4.1.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| Multicast Subscriptions | /multicast-subscriptions | POST | Create a new Individual Multicast Subscription resource. |
| Individual Multicast Subscription | /multicast-subscriptions/{multiSubId} | GET | Read an Individual Multicast Subscription resource. |
| DELETE | Remove an Individual Multicast Subscription resource. |
| MBS Resources | /mbs-resources | POST | Request the creation of an MBS resource. |
| Individual MBS Resource | /mbs-resources/{mbsResId} | GET | Request the retrieval of an existing "Individual MBS Resource" resource. |
| PUT | Request the update of an existing "Individual MBS Resource" resource. |
| PATCH | Request the modification of an existing "Individual MBS Resource" resource. |
| DELETE | Request the deletion of an existing "Individual MBS Resource" resource. |
| Activate | Request the activation of an existing MBS Resource. |
| Deactivate | Request the deactivation of an existing MBS Resource. |
| Unicast Subscriptions | /unicast-subscriptions | POST | Create a new Individual Unicast Subscription resource. |
| Individual Unicast Subscription | /unicast-subscriptions/{uniSubId} | GET | Read an Individual Unicast Subscription resource. |
| DELETE | Remove an Individual Unicast Subscription resource. |
| TSC Stream Availability | /tsc-stream-availability | GET | Retrieve TSC stream availability information. |
| TSC Streams | /tsc-streams | GET | Retrieve TSC stream information. |
| Individual TSC Stream | /tsc-streams/{valStreamId} | GET | Read an Individual TSC stream resource. |
| PUT | Create a new Individual TSC stream resource. |
| DELETE | Remove an Individual TSC stream resource. |

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

7.4.1.2.10.3.2 PUT

This method enables a VAL Server to request the update of an existing "Individual MBS Resource" resource managed by the NRM Server.

This method shall support the URI query parameters specified in table 7.4.1.2.10.3.2-1.

Table 7.4.1.2.10.3.2-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 7.4.1.2.10.3.2-2 and the response data structures and response codes specified in table 7.4.1.2.10.3.2-3.

Table 7.4.1.2.10.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| MBSResource | M | 1 | Represents the updated representation of the "Individual MBS Resource" resource. |

Table 7.4.1.2.10.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MBSResource | M | 1 | 200 OK | Successful case. The targeted "Individual MBS Resource" resource is successfully updated and a representation of the updated resource is returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The targeted "Individual MBS Resource" resource is successfully updated and no content is returned in the response body. |
| 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 NRM Server.Redirection handling is defined in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| 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 NRM Server.Redirection handling is defined in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.6-1 of 3GPP TS 29.122 [3] shall also apply. |

Table 7.4.1.2.10.3.2-4: 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 NRM Server. |

Table 7.4.1.2.10.3.2-5: 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 NRM Server. |

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

7.4.1.2.10.3.3 PATCH

This method enables a VAL Server to request the modification of an existing "Individual MBS Resource" resource managed by the NRM Server.

This method shall support the URI query parameters specified in table 7.4.1.2.10.3.3-1.

Table 7.4.1.2.10.3.3-1: URI query parameters supported by the PATCH method on this resource

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

This method shall support the request data structures specified in table 7.4.1.2.10.3.3-2 and the response data structures and response codes specified in table 7.4.1.2.10.3.3-3.

Table 7.4.1.2.10.3.3-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| MBSResourcePatch | M | 1 | Represents the requested modifications to the "Individual MBS Resource" resource. |

Table 7.4.1.2.10.3.3-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MBSResource | M | 1 | 200 OK | Successful case. The targeted "Individual MBS Resource" resource is successfully modified and a representation of the updated resource is returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The targeted "Individual MBS Resource" resource is successfully modified and no content is returned in the response body. |
| 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 NRM Server.Redirection handling is defined in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| 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 NRM Server.Redirection handling is defined in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.6-1 of 3GPP TS 29.122 [3] shall also apply. |

Table 7.4.1.2.10.3.3-4: 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 NRM Server. |

Table 7.4.1.2.10.3.3-5: 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 NRM Server. |

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

7.4.1.2.10.3.4 DELETE

This method enables a VAL Server to request the deletion of an existing "Individual MBS Resource" resource managed by the NRM Server.

This method shall support the URI query parameters specified in table 7.4.1.2.10.3.4-1.

Table 7.4.1.2.10.3.4-1: 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 7.4.1.2.10.3.4-2 and the response data structures and response codes specified in table 7.4.1.2.10.3.4-3.

Table 7.4.1.2.10.3.4-2: Data structures supported by the DELETE Request Body on this resource

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

Table 7.4.1.2.10.3.4-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful case. The targeted "Individual MBS Resource" resource is successfully deleted. |
| 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 NRM Server.Redirection handling is defined in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| 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 NRM Server.Redirection handling is defined in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [3] shall also apply. |

Table 7.4.1.2.10.3.4-4: 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 NRM Server. |

Table 7.4.1.2.10.3.4-5: 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 NRM Server. |

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

##### 7.4.1.4.1 General

This clause specifies the application data model supported by the API. Data types listed in clause 6.2 apply to this API

Table 7.4.1.4.1-1 specifies the data types defined specifically for the SS\_NetworkResourceAdaptation API service.

Table 7.4.1.4.1-1: SS\_NetworkResourceAdaptation API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| DeliveryMode | 7.4.1.4.3.2 | Indicates the delivery mode. |  |
| MbsResAct | 7.4.1.4.2.16 | Represents the parameters related to the activation of the MBS Resource. |  |
| MbsResDeact | 7.4.1.4.2.17 | Represents the parameters related to the deactivation of the MBS Resource. |  |
| MbsResource | 7.4.1.4.2.12 | Represents an MBS Resource. |  |
| MbsResourcePatch | 7.4.1.4.2.15 | Represents the parameters to request the modification of an MBS Resource. |  |
| MbsResourceReq | 7.4.1.4.2.11 | Represents the parameters to request the creation of an MBS Resource. |  |
| MbsResourceRespInfo | 7.4.1.4.2.13 | Represents NRM Server side information related to the MBS Resource. |  |
| MbsResourceResp | 7.4.1.4.2.14 | Represents a response to an MBS Resource creation/modification request. |  |
| MulticastSubscription | 7.4.1.4.2.2 | Represents a multicast subscription. |  |
| NetSysIndicator | 7.4.1.4.3.4 | Represents the network system indicator, i.e. 5GS, EPS or both. |  |
| NrmEvent | 7.4.1.4.3.3 | Indicates the NRM event. |  |
| NrmEventNotification | 7.4.1.4.2.5 | Represents a notification on an individual User Plane event. |  |
| ServiceAnnoucementMode | 7.4.1.4.3.1 | Indicates the service announcement mode. |  |
| StreamSpecification | 7.4.1.4.2.9 | Represents a stream specification that includes MAC addresses of the source and destination DS-TT ports. |  |
| TrafficSpecification | 7.4.1.4.2.10 | Represents the traffic class supported by the DS-TTs and available end-to-end maximum latency value. |  |
| TrafficSpecInformation | 7.4.1.4.2.7 | Represents the traffic class supported by the DS-TTs and available end-to-end latency value and Priority Code Point (PCP) value. |  |
| TscStreamAvailability | 7.4.1.4.2.8 | Represents the TSC stream availability information including the stream specification and list of traffic specifications. |  |
| TscStreamData | 7.4.1.4.2.6 | Represents the TSC stream data information. |  |
| UnicastSubscription | 7.4.1.4.2.3 | Represents a unicast subscription. |  |
| UserPlaneNotification | 7.4.1.4.2.4 | Represents a notification on User Plane events. |  |

Table 7.4.1.4.1-2 specifies data types re-used by the SS\_NetworkResourceAdaptation API service.

Table 7.4.1.4.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| DateTime | 3GPP TS 29.571 [21] | Used to represent the subscription duration. |  |
| DurationSec | 3GPP TS 29.122 [3] | Used to represent the duration in seconds. |  |
| ExternalMbsServiceArea | 3GPP TS 29.571 [21] | Represents an MBS Service Area. |  |
| Ipv4Addr | 3GPP TS 29.571 [21] | Used to identify the IPv4 address. |  |
| Ipv6Addr | 3GPP TS 29.571 [21] | Used to identify the IPv6 address. |  |
| LocalMbmsInfo | 3GPP TS 29.486 [27] | Used to represent the local MBMS information. |  |
| MacAddr48 | 3GPP TS 29.571 [21] | Used to identify a MAC address. |  |
| MbmsLocArea | 3GPP TS 29.122 [3] | Used to indicate the requested area of the MBMS bearer. |  |
| MbsServiceInfo | 3GPP TS 29.571 [21] | Represents MBS Service Information. |  |
| MbsSession | 3GPP TS 29.571 [21] | Represents an MBS Session. |  |
| MbsSessionId | 3GPP TS 29.571 [21] | Represents the identifier of an MBS Session. |  |
| Port | 3GPP TS 29.122 [3] | Used to identify the port. |  |
| SupportedFeatures | 3GPP TS 29.571 [21] | Used to negotiate the supported optional features of the API. |  |
| Uint32 | 3GPP TS 29.571 [21] | Represents an unsigned integer. |  |
| Uinteger | 3GPP TS 29.571 [21] | Represents an unsigned integer. |  |
| Uri | 3GPP TS 29.571 [21] | Used to indicate the notification URI. |  |
| ValTargetUe | Clause 7.3.1.4.2.3 | Used to identify either a VAL User ID or a VAL UE ID. |  |
| WebsockNotifConfig | 3GPP TS 29.122 [3] | Used to indicate the configuration parameters to set up notification delivery over Websocket protocol. |  |

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

###### 7.4.1.4.2.12 Type: MBSResource

Table 7.4.1.4.2.12-1: Definition of type MBSResource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valGroupId | string | C | 0..1 | Contains the identity of the VAL group to which the MBS Resource is related.(NOTE 1) |  |
| valUeIdsList | array(ValTargetUe) | C | 1..N | Contains the list of the identitier(s) of the VAL UE(s) to which the MBS Resource is related.(NOTE 1) |  |
| servAnmtMode | ServiceAnnoucementMode | M | 1 | Contain the MBS Service Announcement mode to be used, i.e. whether the MBS Service Announcement is delivered by the NRM Server or the VAL Server. |  |
| mbsResServInfo | MbsServiceInfo | M | 1 | Contains the MBS Service Information for the MBS Resource. |  |
| mbsResServiceArea | ExternalMbsServiceArea | O | 0..1 | Contains the Service Area of the MBS Resource. |  |
| notifUri | Uri | M | 1 | Contains the URI towards which the user plane delivery mode notifications shall be sent. |  |
| netSysInd | NetSysIndicator | O | 0..1 | Indicates whether the MBS Resource requires multicast/broadcast services from 5GS, EPS or both. |  |
| localMbmsInfo | LocalMbmsInfo | O | 0..1 | Contains the local MBMS information.This attribute may only be provided if the "netSysInd" attribute is set to "EPS" or "5GS\_AND\_EPS".(NOTE 2) |  |
| localMbmsActInd | boolean | O | 0..1 | Set to true by the service consumer to indicate that the local MBMS is activated.Set to false or omitted otherwise.(NOTE 2) |  |
| mbsResRespInfo | MBSResourceRespInfo | O | 0..1 | Represents the NRM Server side information related to the created MBS Resource.This attribute may only be present in the response to the request to create/update/modify/retrieve the MBS Resource. |  |
| NOTE 1: These attributes are mutually exclusive. Either one of them shall be present.NOTE 2: These attributes are mutually exclusive. Either one of them may be present. |

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

###### 7.4.1.4.2.13 Type: MBSResourceRespInfo

Table 7.4.1.4.2.13-1: Definition of type MBSResourceRespInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mbs5gSessionId | MbsSessionId | O | 0..1 | Contains the identifier of the MBS session (i.e. TMGI and/or SSM, in addition to the NID in the case an SNPN).This attribute may not be present if the MBS Service Announcement is delivered by the NRM Server (i.e. the "servAnmtMode" attribute in the corresponding request is set to "NRM"). |  |
| mbmsBearerId | MbsSessionId | O | 0..1 | Contains the identifier of the MBMS bearer (i.e. TMGI).This attribute may not be present if the MBS Service Announcement is delivered by the NRM Server (i.e. the "servAnmtMode" attribute in the corresponding request is set to "NRM"). |  |
| upIpv4Addr | Ipv4Addr | C | 0..1 | Contains the user plane IPv4 address of the NRM Server to be used by the VAL Server for downlink packets delivery.(NOTE 1) |  |
| upIpv6Addr | Ipv6Addr | C | 0..1 | Contains the user plane IPv6 address of the NRM Server to be used by the VAL Server for downlink packets delivery.(NOTE 1) |  |
| upPortNum | Port | O | 0..1 | Contains the user plane UDP port number to be used by VAL Server for downlink packets delivery. |  |
| mbs5GInfo | MbsSession | O | 0..1 | Contains MBS related configuration information.This attribute may only be present if the network system used for multicast/broadcast services is 5GS or both 5GS and EPS. |  |
| epsMbmsInfo | ??? | O | 0..1 | Contains MBMS related configuration information.This attribute may only be present if the network system used for multicast/broadcast services is EPS or both 5GS and EPS. |  |
| NOTE 1: At least one of these attributes shall be present. |

Editor's Note: The encoding of the "epsMbmsInfo" attribute is FFS.

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

###### 7.4.1.4.2.15 Type: MBSResourcePatch

Table 7.4.1.4.2.15-1: Definition of type MBSResourcePatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mbsResServInfo | MbsServiceInfo | O | 0..1 | Contains the updated MBS Service Information for the MBS Resource. |  |
| mbsResServiceArea | ExternalMbsServiceArea | O | 0..1 | Contains the updated Service Area of the MBS Resource. |  |
| notifUri | Uri | O | 0..1 | Contains the URI towards which the user plane delivery mode notifications shall be sent. |  |
| localMbmsInfo | LocalMbmsInfo | O | 0..1 | Contains the local MBMS information.This attribute may only be provided if the "netSysInd" attribute is set to "EPS" or "5GS\_AND\_EPS".(NOTE) |  |
| localMbmsActInd | boolean | O | 0..1 | Set to true by the service consumer to indicate that the local MBMS is activated.Set to false or omitted otherwise.(NOTE) |  |
| NOTE: These attributes are mutually exclusive. Either one of them may be present. |

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

# A.5 SS\_NetworkResourceAdaptation API

openapi: 3.0.0

info:

 version: 1.2.0-alpha.3

 title: SS\_NetworkResourceAdaptation

 description: |

 SS Network Resource Adaptation Service.

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externalDocs:

 description: >

 3GPP TS 29.549 V18.3.0; Service Enabler Architecture Layer for Verticals (SEAL);

 Application Programming Interface (API) specification; Stage 3.

 url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.549/

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/ss-nra/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

paths:

 /multicast-subscriptions:

 post:

 summary: Creates a new Individual Multicast Subscription resource

 operationId: CreateMulticastSubscription

 tags:

 - Multicast Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Success

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the created individual multicast 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:

 UserPlaneNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content, Notification was succesfull

 '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'

 /multicast-subscriptions/{multiSubId}:

 get:

 summary: "Reads an existing Individual Multicast Subscription"

 operationId: GetMulticastSubscription

 tags:

 - Individual Multicast Subscription (Document)

 parameters:

 - name: multiSubId

 in: path

 description: Multicast Subscription ID

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK. Resource representation is returned

 content:

 application/json:

 schema:

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

 '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: "Delete an existing Individual Multicast Subscription"

 operationId: DeleteMulticastSubscription

 tags:

 - Individual Multicast Subscription (Document)

 parameters:

 - name: multiSubId

 in: path

 description: Multicast Subscription ID

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was succesfully 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'

 '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'

 /mbs-resources:

 post:

 summary: Request the creation of a new MBS Resource.

 operationId: CreateMBSResource

 tags:

 - MBS Resources (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. Successfull case. The requested MBS resource is successfully created and a

 representation of the created Individual MBS Resource resource is returned in the

 response body.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the created Individual MBS Resource 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:

 UserPlaneNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content. The notification was succesfully received.

 '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'

 /mbs-resources/{mbsResId}:

 parameters:

 - name: mbsResId

 in: path

 description: Represents the identifier of the Individual MBS Resource resource.

 required: true

 schema:

 type: string

 get:

 summary: Request the retrieval of an existing Individual MBS Resource.

 operationId: GetIndivMBSResource

 tags:

 - Individual MBS Resource (Document)

 responses:

 '200':

 description: >

 OK. Successful case. A representation of the requested Individual MBS Resource resource

 is returned in the response body.

 content:

 application/json:

 schema:

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

 '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 MBS Resource.

 operationId: UpdateIndivMBSResource

 tags:

 - Individual MBS Resource (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. Successful case. The targeted Individual MBS Resource resource is successfully

 updated and a representation of the updated resource is returned in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. Successful case. The targeted Individual MBS Resource 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'

 '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 MBS Resource.

 operationId: ModifyIndivMBSResource

 tags:

 - Individual MBS Resource (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. Successful case. The targeted Individual MBS Resource resource is successfully

 modified and a representation of the updated resource is returned in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. Successful case. The targeted Individual MBS Resource 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'

 '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 MBS Resource.

 operationId: DeleteIndivMBSResource

 tags:

 - Individual MBS Resource (Document)

 responses:

 '204':

 description: >

 No Content. Successful case. The targeted Individual MBS Resource 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'

 '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'

 /mbs-resources/{mbsResId}/activate:

 parameters:

 - name: mbsResId

 in: path

 description: Represents the identifier of the Individual MBS Resource resource.

 required: true

 schema:

 type: string

 post:

 summary: Request the activation of an existing MBS Resource.

 operationId: ActivateMBSResource

 tags:

 - Individual MBS Resource (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The activation request is successfully received and processed.

 content:

 application/json:

 schema:

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

 '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'

 /mbs-resources/{mbsResId}/deactivate:

 parameters:

 - name: mbsResId

 in: path

 description: Represents the identifier of the Individual MBS Resource resource.

 required: true

 schema:

 type: string

 post:

 summary: Request the deactivation of an existing MBS Resource.

 operationId: DeactivateMBSResource

 tags:

 - Individual MBS Resource (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The deactivation request is successfully received and processed.

 content:

 application/json:

 schema:

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

 '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'

 /unicast-subscriptions:

 post:

 summary: Creates a new Individual Unicast Subscription resource

 operationId: CreateUnicastSubscription

 tags:

 - Unicast Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Success

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the created individual unicast 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:

 UserPlaneNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content, Notification was succesfull

 '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'

 /unicast-subscriptions/{uniSubId}:

 get:

 summary: "Reads an existing Individual Unicast Subscription"

 operationId: GetUnicastSubscription

 tags:

 - Individual Unicast Subscription (Document)

 parameters:

 - name: uniSubId

 in: path

 description: Unicast Subscription ID

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK. Resource representation is returned

 content:

 application/json:

 schema:

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

 '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: "Delete an existing Individual Unicast Subscription"

 operationId: DeleteUnicastSubscription

 tags:

 - Individual Unicast Subscription (Document)

 parameters:

 - name: uniSubId

 in: path

 description: Unicast Subscription ID

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was succesfully 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'

 '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'

 /tsc-stream-availability:

 get:

 summary: Discover the TSC stream availability information.

 operationId: GetTscStreamAvailability

 tags:

 - TSC stream availability discovery

 parameters:

 - name: stream-specs

 in: query

 description: >

 The MAC address(es) of the source DS-TT port(s) and the destination DS-TT port(s).

 required: true

 schema:

 type: array

 items:

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

 minItems: 1

 responses:

 '200':

 description: OK.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '204':

 description: No Content.

 '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'

 /tsc-streams:

 get:

 summary: Retrieval of TSC stream data.

 operationId: GetTscStream

 tags:

 - TSC stream retrieval

 parameters:

 - name: val-stream-ids

 in: query

 description: Retrieval of TSC Stream data, identified by the VAL Stream ID(s).

 required: false

 schema:

 type: array

 items:

 type: string

 minItems: 1

 responses:

 '200':

 description: OK (successful query of TSC stream resource)

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 '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'

 /tsc-streams/{valStreamId}:

 get:

 summary: "Reads an existing Individual TSC stream data information"

 operationId: GetTscStreamData

 tags:

 - Individual TSC Stream Retrieval

 parameters:

 - name: valStreamId

 in: path

 description: The VAL Stream ID identifies the TSC stream.

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK. Resource representation is returned

 content:

 application/json:

 schema:

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

 '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: Create a TSC stream identified by a VAL stream identifier.

 operationId: PutTscStream

 tags:

 - TSC stream creation

 description: Create an individual TSC stream identified by VAL Stream ID.

 parameters:

 - name: valStreamId

 in: path

 description: VAL stream identifier

 required: true

 schema:

 type: string

 requestBody:

 description: TSC stream creation request data from the VAL server to the NRM server.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Success

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: Contains the URI of the created individual TSC stream 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'

 delete:

 summary: "Delete an existing Individual TSC stream"

 operationId: DeleteTscStream

 tags:

 - Individual TSC Stream Deletion

 parameters:

 - name: valStreamId

 in: path

 description: The VAL Stream ID identifies the TSC stream.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was succesfully 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'

 '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:

 MulticastSubscription:

 description: Represents a multicast subscription.

 type: object

 properties:

 valGroupId:

 type: string

 anncMode:

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

 multiQosReq:

 type: string

 locArea:

 $ref: 'TS29122\_GMDviaMBMSbyMB2.yaml#/components/schemas/MbmsLocArea'

 duration:

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

 tmgi:

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

 localMbmsInfo:

 $ref: 'TS29486\_VAE\_FileDistribution.yaml#/components/schemas/LocalMbmsInfo'

 localMbmsActInd:

 type: boolean

 notifUri:

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

 reqTestNotif:

 type: boolean

 wsNotifCfg:

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

 suppFeat:

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

 upIpv4Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 upIpv6Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 upPortNum:

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

 radioFreqs:

 type: array

 items:

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

 minItems: 1

 required:

 - valGroupId

 - anncMode

 - multiQosReq

 - notifUri

 UnicastSubscription:

 description: Represents a unicast subscription.

 type: object

 properties:

 valTgtUe:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 uniQosReq:

 type: string

 duration:

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

 notifUri:

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

 reqTestNotif:

 type: boolean

 wsNotifCfg:

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

 suppFeat:

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

 required:

 - valTgtUe

 - notifUri

 UserPlaneNotification:

 description: Represents a notification on User Plane events.

 type: object

 properties:

 notifId:

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

 eventNotifs:

 type: array

 items:

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

 minItems: 1

 required:

 - notifId

 - eventNotifs

 NrmEventNotification:

 description: Represents a notification on an individual User Plane event.

 type: object

 properties:

 event:

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

 ts:

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

 deliveryMode:

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

 streamIds:

 type: array

 items:

 type: string

 minItems: 1

 required:

 - event

 - ts

 TscStreamAvailability:

 description: >

 TSC stream availability information includes the stream specification and list of traffic

 specifications. This response shall include stream specification matching one of the query

 parameters provided in the request.

 type: object

 properties:

 streamSpec:

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

 trafficSpecs:

 type: array

 items:

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

 minItems: 1

 required:

 - streamSpec

 - trafficSpecs

 StreamSpecification:

 description: >

 Stream specification includes MAC addresses of the source and destination DS-TT ports.

 type: object

 properties:

 srcMacAddr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 dstMacAddr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 required:

 - srcMacAddr

 - dstMacAddr

 TrafficSpecification:

 description: >

 The traffic classe supported by the DS-TTs and available end-to-end maximum latency value.

 type: object

 properties:

 trafficClass:

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

 e2eMaxLatency:

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

 required:

 - trafficClass

 - e2eMaxLatency

 TscStreamData:

 description: TSC stream data information.

 type: object

 properties:

 streamSpec:

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

 trafficSpecInfo:

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

 required:

 - streamSpec

 - trafficSpecInfo

 TrafficSpecInformation:

 description: >

 The traffic classe supported by the DS-TTs and available end-to-end latency

 value and Priority Code Point (PCP) value.

 type: object

 properties:

 pcpValue:

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

 maxFramInt:

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

 maxFramSize:

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

 maxIntFrames:

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

 maxLatency:

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

 required:

 - pcpValue

 - maxFramInt

 - maxFramSize

 - maxIntFrames

 - maxLatency

 MBSResourceReq:

 description: Represents the parameters to request the creation of an MBS Resource.

 type: object

 properties:

 mbsResource:

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

 suppFeat:

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

 required:

 - mbsResource

 MBSResource:

 description: Represents an MBS Resource.

 type: object

 properties:

 valGroupId:

 type: string

 valUeIdsList:

 type: array

 items:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 minItems: 1

 servAnmtMode:

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

 mbsResServInfo:

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

 mbsResServiceArea:

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

 notifUri:

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

 netSysInd:

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

 localMbmsInfo:

 $ref: 'TS29486\_VAE\_FileDistribution.yaml#/components/schemas/LocalMbmsInfo'

 localMbmsActInd:

 type: boolean

 mbsResRespInfo:

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

 oneOf:

 - required: [valGroupId]

 - required: [valUeIdsList]

 not:

 required: [localMbmsInfo, localMbmsActInd]

 required:

 - servAnmtMode

 - mbsResServInfo

 - notifUri

 MBSResourceRespInfo:

 description: Represents NRM Server side information related to the MBS Resource.

 type: object

 properties:

 mbs5gSessionId:

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

 mbmsBearerId:

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

 upIpv4Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

 upIpv6Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv6Addr'

 upPortNum:

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

 mbs5GInfo:

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

 anyOf:

 - required: [upIpv4Addr]

 - required: [upIpv6Addr]

 MBSResourceResp:

 description: Represents a response to an MBS Resource creation/modification request.

 type: object

 properties:

 mbsResource:

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

 suppFeat:

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

 required:

 - mbsResource

 MBSResourcePatch:

 description: Represents the parameters to request the modification of an MBS Resource.

 type: object

 properties:

 mbsResServInfo:

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

 mbsResServiceArea:

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

 notifUri:

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

 localMbmsInfo:

 $ref: 'TS29486\_VAE\_FileDistribution.yaml#/components/schemas/LocalMbmsInfo'

 localMbmsActInd:

 type: boolean

 mbsResRespInfo:

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

 anyOf:

 - required: [mbsResServInfo]

 - required: [mbsResServiceArea]

 - required: [localMbmsInfo]

 not:

 required: [localMbmsInfo, localMbmsActInd]

 MbsResAct:

 description: Represents the parameters related to the activation of the MBS Resource.

 type: object

 properties:

 mbs5gSessionId:

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

 suppFeat:

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

 required:

 - mbs5gSessionId

 MbsResDeact:

 description: Represents the parameters related to the deactivation of the MBS Resource.

 type: object

 properties:

 mbs5gSessionId:

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

 suppFeat:

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

 required:

 - mbs5gSessionId

# Simple data types and Enumerations

 ServiceAnnoucementMode:

 anyOf:

 - type: string

 enum:

 - NRM

 - VAL

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the service announcement mode.

 Possible values are:

 - NRM: NRM server performs the service announcement.

 - VAL: VAL server performs the service announcement.

 DeliveryMode:

 anyOf:

 - type: string

 enum:

 - UNICAST

 - MULTICAST

 - MBS\_MULTICAST

 - MBS\_BROADCAST

 - type: string

 description: >

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

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

 description: |

 Indicates the user plane delivery mode.

 Possible values are:

 - UNICAST: Indicates Unicast delivery.

 - MULTICAST: Indicates EPS MBMS Multicast delivery.

 - MBS\_MULTICAST: Indicates 5GS MBS Multicast delivery.

 - MBS\_BROADCAST: Indicates 5GS MBS Broadcast delivery.

 NrmEvent:

 anyOf:

 - type: string

 enum:

 - UP\_DELIVERY\_MODE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the NRM event.

 Possible values are:

 - UP\_DELIVERY\_MODE: User Plane delivery mode.

 NetSysIndicator:

 anyOf:

 - type: string

 enum:

 - 5GS

 - EPS

 - 5GS\_AND\_EPS

 - type: string

 description: >

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

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

 description: |

 Represents the network system indicator, i.e. 5GS, EPS or both.

 Possible values are:

 - 5GS: Indicates that the network system is 5GS.

 - EPS: Indicates that the network system is EPS.

 - 5GS\_AND\_EPS: Indicates that the network system is 5GS and EPS.

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