**3GPP TSG- Meeting #130**

**Xiamen, China, 9th Oct 2023 – 13th Oct 2023 revision of C3-234195**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **1064** | **rev** | **1** | **Current version:** |  |  |
|  |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  |  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | As per C3-232410, CT3 agreed to update specifications based on feedbacks from SA2 and CT4 regarding the error handling scenarios related to MBS service area.In this regard, there is a scenario when the AF could request an MBS Service area that is larger than the MB-SMF service area, in which case the network should provide appropriate error message and additional information for AF to request with appropriate MBS Service area that can be served by one MB-SMF. Based on the additional information along with the error cause, the AF could use multiple requests with non overlapping MBS Service area for MBS Session creation. |
|  |  |
| ***Summary of change:*** | This CR proposes to update:1. Clause 4.4.29.3.2 with error handling procedure description
2. Clause 5.20.2.2.3.1 to include a new error response with additional information.
3. Clause 5.20.5.2.10 (new), 5.20.5.4.1(new) to define the data types used to indicate the additional information in the error response.
4. Clause 5.20.7.3 with new application error cause.

MBSSession API with above changes. |
|  |  |
| ***Consequences if not approved:*** | Error cases not handled by the specifications. |
|  |  |
| ***Clauses affected:*** | 4.4.29.3.2, 5.20.2.2.3.1, 5.20.5.1, 5.20.5.2.10(new),5.20.5.4 (new), 5.20.5.4.1(new), 5.20.7.3, A.18 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS/TR 23.247 CR 0275 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces backward compatabile correction to the Open API – MBSSession API |
|  |  |
| ***This CR's revision history:*** |  |

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

##### 4.4.29.3.2 Procedure for MBS session creation

This procedure is used by an AF to request the creation of a multicast or a broadcast MBS session or, for a location dependent MBS session, the part of an MBS Session within an MBS service area.

In order to request the creation of an MBS Session, an AF shall send a Nnef\_MBSSession\_Create request to the NEF using the HTTP POST method and targeting the "MBS Sessions" collection resource with the request message body including the MbsSessionCreateReq data structure that shall contain:

- within the "afId" attribute, the identifier of the AF that is sending the request; and

- within the "mbsSession" attribute, the characteristics of the MBS session that is to be created.

The "mbsSession" attribute shall be encoded using the MbsSession data structure that shall contain:

- within the "mbsSessionId" attribute, the identifier of the MBS Session (e.g. SSM, TMGI), if available;

- within the "tmgiAllocReq" attribute, the TMGI allocation request indication, if the "mbsSessionId" attribute is either absent or does not contain a TMGI; and

- within the "serviceType" attribute, the MBS service type (i.e. multicast or broadcast);

- within the "locationDependent" attribute, the location dependent MBS session indication, if the request is related to a location dependent MBS;

and may further contain:

- for a multicast or a broadcast MBS session:

- within the "ingressAddrReq" attribute, the ingress transport address request indication to indicate whether the allocation of an ingress transport address is requested or not;

- within the "extMbsServiceArea" attribute, the MBS service area, for a location dependent MBS session or a local MBS session;

- within the "activationTime" attribute, the MBS session activation time;

- within the "terminationTime" attribute, the MBS session termination time;

- within the "mbsServInfo" attribute, the MBS Service Information for the MBS session; and

- within the "mbsSessionSubsc" attribute, the parameters to request the creation of a subscription to MBS session status event(s) reporting;

- for a multicast MBS session:

- within the "activityStatus" attribute, the MBS session activity status (i.e. active or inactive); and

- within the "anyUeInd" attribute, the indication of whether any UE may join the MBS session;

- for a broadcast MBS session:

- within the " mbsFsaIdList" attribute, the list of MBS frequency selection area Identifiers (i.e. FSA IDs); and

- within the "associatedSessionId" attribute, the Associated Session ID.

Editor's note: For location dependent broadcast service, whether the Associated Session ID is sufficient to identify multiple broadcast MBS Sessions via different CNs delivering the same content is FFS and pending stage 2 progress.

At the reception of this HTTP POST request for MBS session creation:

- the NEF may decide to interact with the PCF for MBS policy authorization of the received MBS Service Information;

- if the NEF decides to interact with the PCF, then:

- if the NEF did not receive an MBS Session Identifier or received a TMGI allocation request within the "tmgiAllocReq" attribute, the NEF shall request TMGI allocation to the MB-SMF using the Nmbsmf\_TMGI service API, as specified in 3GPP TS 29.532 [52];

- if the received MBS Session Creation request is for the creation of an MBS Session that is part of a location dependent MBS, i.e. the "locationDependent" attribute is present and set to "true", and there is a need to select the same PCF for all the MBS Sessions composing the location dependent MBS, the NEF shall interact with the BSF using the Nbsf\_Management service API to check whether there is already a PCF serving the MBS Sessions of the location dependent MBS based on the MBS Session Identifier, as specified in 3GPP TS 29.532 [52]. Then:

NOTE 1: Interacting with the BSF to discover whether there is already a PCF serving the MBS Session is not necessary in a deployment with a single PCF.

- if there is a PCF already serving the MBS Sessions of the location dependent MBS, the NEF shall use this PCF for MBS policy authorization of the received MBS Service Information;

- if there is no PCF already serving the MBS Sessions of the location dependent MBS or the NEF did not interact with the BSF, the NEF shall interact with the NRF using the Nnrf\_NFDiscovery service API to discover a PCF (service) instance to serve the MBS Session possibly based on the MBS Session Identifier, as specified in 3GPP TS 29.510 [57];

- the NEF shall then interact with the selected PCF (service) instance using the Npcf\_MBSPolicyAuthorization service API for MBS policy authorization of the received MBS Service Information and the creation of a corresponding MBS Application Session Context at the PCF, as specified in 3GPP TS 29.537 [63]; and

- if MBS session authorization is successful or when the NEF decides to not interact with the PCF for MBS policy authorization, the NEF shall interact with the MB-SMF using the Nmbsmf\_MBSSession service API to request the creation of a corresponding MBS session at the MB-SMF as specified in 3GPP TS 29.532 [52]; and

- if the MBS Service Area information is provided within the "extMbsServiceArea" attribute, the NEF shall translate the received geographical area(s) or civic address(es) to a list of cell ID(s) and/or list of TAI(s) before relaying it to the MB-SMF. If the MBS Service Area information cannot be mapped to a single MB-SMF service area, the NEF shall respond to the AF with a "403 Forbidden" status code with the response body including the ProblemDetailsMbsSessionCreate data structure containing the "cause" attribute set to the "MBS\_SERVICE\_AREA\_TOO\_LARGE" application error and including the MBS area information in "AdditionalInfoMbsSessionCreate" attribute that would aid AF to request(s) with appropriate MBS Service area.

Upon reception of a successful response from the MB-SMF and successful MBS session creation at the NEF, the NEF shall return a Nnef\_MBSSession\_Create response with an HTTP "201 Created" status code to theAF including a "Location" header that shall contain the URI of the created "Individual MBS Session" resource, and the response body including the MbsSessionCreateRsp data structure that shall contain:

- within the "mbsSession" attribute, a representation of the created Individual MBS Session resource encoded using the MbsSession data structure, including:

- the area session ID assigned by the MB-SMF in the case of a location dependent MBS within the "areaSessionId" attribute of the MbsSession data structure;

- the allocated TMGI for the MBS session, if the MBS session creation request included a "tmgiAllocReq" attribute requesting TMGI allocation for the MBS session, within the "tmgi" attribute;

- if unicast transport is used over N6mb/Nmb9, the ingress MB-UPF tunnel information, within the "ingressTunAddr" attribute;

- if the "serviceType" value is "BROADCAST" and any MBS FSA ID(s) received from the MB-SMF, the list of MBS FSA ID(s) within the "mbsFsaIdList" attribute.

- within the "eventList" attribute, a list of MBS Session Status Event(s) report(s), if available.

If the MBS session creation request contained a request to also create a subscription to MBS session status event(s) within the "mbsSessionSubsc" attribute, the the NEF shall also create a corresponding "Individual MBS Session Subscription" resource and return a representation of it in the HTTP POST response body within the "mbsSessionSubsc" attribute of the MbsSession data structure. The "mbsSessionSubsc" attribute shall contains the identifier of the created "Individual MBS Session Subscription" resource within the "subscriptionId" attribute. The AF shall construct the URI of the created "Individual MBS Session Subscription" resource by appending the path segments "/subscriptions/{subscriptionId}", where the "subscriptionId" takes the value of the received "subscriptionId" attribute, to the URI of the created "Individual MBS Session" resource received within the HTTP Location header.

On failure or if the NEF receives an error code from the PCF, the NRF or the MB-SMF, the NEF shall take proper error handling actions, as specified in clause 5.20.7, and respond to the AF with an appropriate error status code. If the NEF received within an error response a "ProblemDetails" data structure with a "cause" attribute indicating an application error, the NEF shall relay this error response to the AF with a corresponding application error, when applicable.

\* \* \* \* Next change \* \* \* \*

###### 5.20.2.2.3.1 POST

This method enables an AF to request the creation of an MBS session resource at the NEF.

This method shall support the URI query parameters specified in table 5.20.2.2.3.1-1.

Table 5.20.2.2.3.1-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| N/A |  |  |  |  |  |

This method shall support the request data structures specified in table 5.20.2.2.3.1-2 and the response data structures and response codes specified in table 5.20.2.2.3.1-3.

Table 5.20.2.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| MbsSessionCreateReq | M | 1 | Representation of the MBS session to be created at the NEF. |

Table 5.20.2.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MbsSessionCreateRsp | M | 1 | 201 Created | Successful case. A representation of the created Individual MBS Session resource is returned.The URI of the created resource shall be returned in an HTTP "Location" header. |
| ProblemDetails | O | 0..1 | 400 Bad Request | (NOTE 2) |
| ProblemDetailsMbsSessionCreate | O | 0..1 | 403 Forbidden | The request is rejected by the NEF and more details (along with ProblemDetails) may be returned.(NOTE 2) |
| ProblemDetails | O | 0..1 | 404 Not Found | (NOTE 2) |
| ProblemDetails | O | 0..1 | 500 Internal Server Error | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status code for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply.NOTE 2: Failure cases are described in clause 5.20.7. |

Table 5.20.2.2.3.1-4: Headers supported by the 201 response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-mbs-session/v1/mbs-sessions/{mbsSessionRef} |

\* \* \* \* Next change \* \* \* \*

#### 5.20.5.1 General

This clause specifies the application data model supported by the MBSSession API. Table 5.20.5.1-1 specifies the data types defined for the MBSSession API.

Table 5.20.5.1-1: MBSSession specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| AdditionalInfoMbsSessionCreate | 5.20.5.2.10 | Represents the list of MBS Service area(s) that AF can use to request individually. |  |
| MbsPpData | 5.20.5.2.6 | Represents MBS Parameters Provisioning data. |  |
| MbsPpDataPatch | 5.20.5.2.8 | Represents the requested modification to existing MBS Parameters Provisioning data. |  |
| MbsSessAuthData | 5.20.5.2.7 | Represents the MBS Session Authorization data. |  |
| MbsSessAssistInfo | 5.20.5.2.9 | Represents the MBS Session Assistance information. | 5MBS2 |
| MbsSessionCreateReq | 5.20.5.2.2 | Represents the parameters to request MBS Session creation. |  |
| MbsSessionCreateResp | 5.20.5.2.3 | Represents the parameters to be returned in an MBS Session creation response. |  |
| MbsSessionSubsc | 5.20.5.2.4 | Represents an MBS Session Subscription. |  |
| MbsSessionStatusNotif | 5.20.5.2.5 | Represents an MBS Session Status notification. |  |
| ProblemDetailsMbsSessionCreate | 5.20.5.4.1 | Represents an extension to the ProblemDetails data structure with additional information to aid in subsequent AF request(s). |  |

Table 5.20.5.1-2 specifies data types re-used by the MBSSession API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the MBSSession API.

Table 5.20.5.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| 5MbsAuthorizationInfo | 3GPP TS 29.503 [17] | Contains the MBS Session authorization information. |  |
| DateTime | 3GPP TS 29.122 [4] | Represents a date and a time |  |
| ExternalGroupId | 3GPP TS 29.122 [4] | Represents the External Group Identifier for a user group. |  |
| ExternalMbsServiceArea | 3GPP TS 29.571 [8] | Represents an external MBS service area. |  |
| Gpsi | 3GPP TS 29.571 [8] | Represents a GPSI. |  |
| MbsServiceArea | 3GPP TS 29.571 [8] | Represents an MBS service area. |  |
| MbsSessAssistData | 3GPP TS 29.571 [8] | Represents the MBS Session Assistance data. | 5MBS2 |
| MbsSession | 3GPP TS 29.571 [8] | Represents MBS session information. |  |
| MbsSessionId | 3GPP TS 29.571 [8] | Represents the identifier of an MBS Session. |  |
| PatchItem | 3GPP TS 29.571 [8] | Represents the requested modifications to a resource via the PATCH method. |  |
| ProblemDetails | 3GPP TS 29.122 [4] | Represents Problem details on returning an error response. |  |
| MbsSessionEventReportList | 3GPP TS 29.571 [8] | Represents the list of MBS Session Event Report(a). |  |
| MbsSessionSubscription | 3GPP TS 29.571 [8] | Represents an MBS Session Subscription |  |
| SupportedFeatures | 3GPP TS 29.571 [8] | Represents the list of supported feature(s) and used to negotiate the applicability of the optional features. |  |
| Tmgi | 3GPP TS 29.571 [8] | Represents a TMGI. |  |
| TunnelAddress | 3GPP TS 29.571 [8] | Represents a Tunnel Address (UDP/IP). |  |
| Uri | 3GPP TS 29.122 [4] | Represents a URI. |  |

Editor's Note: The name of the MbsSessAssistData data type is FFS and pending SA2's progress and will be defined by CT4 in 3GPP TS 29.571.

\* \* \* \* Next change \* \* \* \*

5.20.5.2.10 Type: AdditionalInfoMbsSessionCreate

**Table 5.20.5.2.10-1: Definition of type AdditionalInfoMbsSessionCreate**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| mbsServAreaList | array(MbsServiceArea) | C | 1..N | Represents a list of the MBS service area(s) that AF could request individually.(NOTE) |  |
| extMbsServAreaList | array(ExternalMbsServiceArea) | C | 1..N | Represents a list of the external MBS service area(s) that AF could request individually.(NOTE) |  |
| NOTE: These attributes are mutually exclusive and either of them should be present when returning a 400 Bad Request with the application error “MBS\_SERVICE\_AREA\_TOO\_LARGE”. |

\* \* \* \* Next change \* \* \* \*

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

##### 5.20.5.4.1 Type: ProblemDetailsMbsSessionCreate

Table 5.20.5.4.1-1: Definition of type ProblemDetailsMbsSessionCreate as a list of to be combined data types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Cardinality | Description | Applicability |
| ProblemDetails | 1 | Details of the problem as defined in TS 29.122 [16]. |  |
| AdditionalInfoMbsSessionCreate | 0..1 | Contains additional information to indicate the MBS area information that AF can use to request individually. |  |

\* \* \* \* Next change \* \* \* \*

#### 5.20.7.3 Application Errors

The application errors defined for the MBSSession API are listed in table 5.20.7.3-1.

Table 5.20.7.3-1: Application errors

|  |  |  |
| --- | --- | --- |
| **Application Error** | **HTTP status code** | **Description** |
| TRANS\_RESOURCE\_RES\_FAILURE | 500 Internal Server Error | Indicates that the MBS Session creation failed due to transmission resources reservation failure. |
| INVALID\_MBS\_SERVICE\_INFO | 400 Bad Request | The provided MBS Service Information is invalid (e.g. invalid QoS reference), incorrect or insufficient to perform MBS policy authorization. |
| FILTER\_RESTRICTIONS\_NOT\_OBSERVED | 400 Bad Request | The MBS IP flow(s) description provided within the MBS Service Information cannot be handled due to the restrictions defined in clause 5.3.8 of 3GPP TS 29.214 [64] not being observed. |
| MBS\_SERVICE\_AREA\_TOO\_LARGE | 403 Forbidden | The MBS service area indicated in the AF request is too large to be served by a single MB-SMF.  |
| MBS\_SERVICE\_INFO\_NOT\_AUTHORIZED | 403 Forbidden | The provided MBS Service Information is rejected. |
| MBS\_SESSION\_ALREADY\_CREATED | 403 Forbidden | The requested MBS session has already been created at the NEF/MB-SMF. |
| OVERLAPPING\_MBS\_SERVICE\_AREA | 403 Forbidden | The provided MBS service area overlaps with the MBS service area of an existing MBS Session that shares the same MBS session Identifier. |
| UNKNOWN\_TMGI | 404 Not Found | The TMGI provided in the request does not exist. |
| MBS\_SESSION\_CONTEXT\_NOT\_FOUND | 404 Not Found | The targeted Individual MBS Session does not exist. |
| UNKNOWN\_MBS\_SERVICE\_AREA | 404 Not Found | The requested MBS service area (e.g. identified by the Area Session ID) cannot be found. |

\* \* \* \* Next change \* \* \* \*

# A.18 MBSSession API

openapi: 3.0.0

info:

 title: 3gpp-mbs-session

 version: 1.2.0-alpha.1

 description: |

 API for MBS Session Management.

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externalDocs:

 description: >

 3GPP TS 29.522 V18.1.0; 5G System; Network Exposure Function Northbound APIs.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.522/'

servers:

 - url: '{apiRoot}/3gpp-mbs-session/v1'

 variables:

 apiRoot:

 default: https://example.com

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

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /mbs-sessions:

 post:

 summary: Request the creation of a new MBS Session.

 tags:

 - MBS Sessions collection

 operationId: CreateMBSSession

 requestBody:

 description: Representation of the new MBS session to be created at the NEF.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. Successful creation of a new Individual MBS session resource.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the newly created resource, according to the structure

 {apiRoot}/3gpp-mbs-session/v1/mbs-sessions/{mbsSessionRef}

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 description: >

 The request is rejected by the NEF and more details (along with ProblemDetails) may be

 returned.

 content:

 application/problem+json:

 schema:

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

 '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-sessions/{mbsSessionRef}:

 parameters:

 - name: mbsSessionRef

 in: path

 description: Identifier of the Individual MBS Session resource.

 required: true

 schema:

 type: string

 patch:

 summary: Request the modification of an existing Individual MBS Session resource.

 operationId: ModifyIndMBSSession

 tags:

 - Individual MBS Session

 requestBody:

 required: true

 content:

 application/json-patch+json:

 schema:

 type: array

 items:

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

 minItems: 1

 responses:

 '204':

 description: >

 No Content. The concerned Individual MBS Session resource was successfully modified.

 '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'

 delete:

 summary: Request the Deletion of an existing Individual MBS Session resource.

 operationId: DeleteIndMBSSession

 tags:

 - Individual MBS Session

 responses:

 '204':

 description: >

 No Content. Successful deletion of the concerned Individual MBS Session resource.

 '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-sessions/subscriptions:

 get:

 summary: Retrieve all the active MBS Sessions subscriptions.

 operationId: ReadMBSSessionsSubscs

 tags:

 - MBS Session Subscriptions

 responses:

 '200':

 description: >

 OK. All the active MBS Session Subscriptions resources managed by the NEF are returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 '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'

 post:

 summary: Request the creation of a new Individual MBS Session subscription resource.

 operationId: CreateMBSSessionsSubsc

 tags:

 - MBS Session Subscriptions

 requestBody:

 description: Request the creation of a new MBS Session subscription resource.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. Successful creation of a new Individual MBS Session subscription.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: Contains the URI of the newly created resource, according to the

 structure

 {apiRoot}/3gpp-mbs-session/v1/mbs-sessions/subscriptions/{subscriptionId}

 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:

 MBSSessionStatusNotification:

 '{request.body#/notificationUri}':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content. Successful reception of the notification.

 '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-sessions/subscriptions/{subscriptionId}:

 parameters:

 - name: subscriptionId

 in: path

 description: Identifier of the Individual MBS Session Subscription resource.

 required: true

 schema:

 type: string

 get:

 summary: Retrieve an existing Individual MBS Session Subscription resource.

 operationId: ReadIndMBSSessionsSubsc

 tags:

 - Individual MBS Session subscription

 responses:

 '200':

 description: >

 OK. Successful retrieval of the targeted Individual MBS Session subscription resource.

 content:

 application/json:

 schema:

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

 '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 MBS Session subscription resource.

 operationId: DeleteIndMBSSessionsSubsc

 tags:

 - Individual MBS Session Subscription

 responses:

 '204':

 description: >

 No Content. Successful deletion of the existing Individual MBS Session subscription

 resource.

 '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-pp:

 get:

 summary: Request to retrieve all the active MBS Parameters Provisioning resources at the NEF.

 operationId: GetMBSParamsProvisionings

 tags:

 - MBS Parameters Provisionings

 responses:

 '200':

 description: >

 OK. All the active MBS Parameters Provisioning resources managed by the NEF are

 returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 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'

 post:

 summary: Request the creation of a new MBS Parameters Provisioning.

 tags:

 - MBS Parameters Provisioning

 operationId: CreateMBSParamsProvisioning

 requestBody:

 description: Representation of the new MBS Parameters Provisioning to be created at the NEF.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. Successful creation of a new Individual MBS Parameters Provisioning resource.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the newly created resource, according to the structure

 {apiRoot}/3gpp-mbs-session/v1/mbs-pp/{mbsPpId}

 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'

 /mbs-pp/{mbsPpId}:

 parameters:

 - name: mbsPpId

 in: path

 description: >

 Represents the identifier of the Individual MBS Parameters Provisioning resource.

 required: true

 schema:

 type: string

 get:

 summary: Request to retrieve an existing Individual MBS Parameters Provisioning resource.

 operationId: GetIndMBSParamsProvisioning

 tags:

 - Individual MBS Parameters Provisioning

 responses:

 '200':

 description: >

 OK. Successful retrieval of the requested Individual MBS Parameters Provisioning.

 resource.

 content:

 application/json:

 schema:

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

 '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 Parameters Provisioning resource.

 tags:

 - Individual MBS Parameters Provisioning

 operationId: UpdateIndMBSParamsProvisioning

 requestBody:

 description: >

 Represents the updated Individual MBS Parameters Provisioning resource representation.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual MBS Parameters Provisioning resource is successfully updated and a

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

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual MBS Parameters Provisioning resource is successfully updated.

 '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'

 patch:

 summary: Request the modification of an existing Individual MBS Parameters Provisioning resource.

 tags:

 - Individual MBS Parameters Provisioning

 operationId: ModifyIndMBSParamsProvisioning

 requestBody:

 description: >

 Contains the parameters to request the modification of the Individual Parameters

 Provisioning resource.

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual MBS Parameters Provisioning resource is successfully modified and a

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

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual MBS Parameters Provisioning resource is successfully

 modified.

 '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'

 delete:

 summary: Request the deletion of an existing Individual MBS Parameters Provisioning resource.

 tags:

 - Individual MBS Parameters Provisioning

 operationId: DeleteIndMBSParamsProvisioning

 responses:

 '204':

 description: >

 No Content. The Individual MBS Parameters Provisioning 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'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 MbsSessionCreateReq:

 description: Represents the parameters to request MBS Session creation.

 type: object

 properties:

 afId:

 type: string

 mbsSession:

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

 suppFeat:

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

 required:

 - afId

 - mbsSession

 MbsSessionCreateRsp:

 description: Represents the parameters to be returned in an MBS Session creation response..

 type: object

 properties:

 mbsSession:

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

 eventList:

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

 suppFeat:

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

 required:

 - mbsSession

 MbsSessionSubsc:

 description: Represents an MBS Session Subscription.

 type: object

 properties:

 afId:

 type: string

 subscription:

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

 subscriptionId:

 type: string

 required:

 - afId

 - subscription

 MbsSessionStatusNotif:

 description: Represents an MBS Session Status notification.

 type: object

 properties:

 eventList:

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

 required:

 - eventList

 MbsPpData:

 description: Represents MBS Parameters Provisioning data.

 type: object

 properties:

 afId:

 type: string

 mbsSessAuthData:

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

 suppFeat:

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

 required:

 - afId

 MbsSessAuthData:

 description: Represents the MBS Session Authorization data.

 type: object

 properties:

 extGroupId:

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

 gpsisList:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Represents the list of the GPSI(s) of the member UE(s) constituting the multicast MBS

 group. Any

 value of type can be used as a key of the map.

 mbsSessionIdList:

 $ref: 'TS29503\_Nudm\_PP.yaml#/components/schemas/5MbsAuthorizationInfo'

 required:

 - extGroupId

 - mbsSessionIdList

 MbsPpDataPatch:

 description: >

 Represents the requested modification to existing MBS Parameters Provisioning data.

 type: object

 properties:

 mbsSessAuthData:

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

 suppFeat:

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

 ProblemDetailsMbsSessionCreate:

 description: >

 Extends ProblemDetails to indicate more details during AF request rejection.

 anyOf:

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

 - $ref: '#/components/schemas/AdditionalInfoMbsSessionCreate'

 AdditionalInfoMbsSessionCreate:

 description: >

 Represents the list of MBS Service area(s) that AF can use to request individually.

 type: object

 properties:

 mbsServAreaList:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Represents a list of the MBS service area(s) that AF could request individually.

 extMbsServAreaList:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Represents a list of the external MBS service area(s) that AF could request

 individually.

 not:

 - required: [mbsServAreaList, extMbsServAreaList]

#

# SIMPLE DATA TYPES

#

#

# ENUMERATIONS

#

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