**3GPP TSG-CT WG3 Meeting #122-eC3-223151**

**E-Meeting, 12th – 20th May 2022**

|  |
| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **22** | **CR** | **0608** | **rev** | **-** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  | Resolution of EN related to Error cases related to MBS session management. |
|  |  |
| ***Source to WG:*** | , Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | 5MBS |  | ***Date:*** | 05 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | Editor Notes was added for all the procedures related to MBS session management to further add any possible Error cases and its responses. Based on final SA2 updates, no new error cases were identified and hence propose to resolve the ENs. |
|  |  |
| ***Summary of change:*** | Remove ENs related to MBS session management. |
|  |  |
| ***Consequences if not approved:*** | Incomplete requirements.  |
|  |  |
| ***Clauses affected:*** | 4.4.29.3.3, 4.4.29.3.4, 4.4.29.3.5, 4.4.29.3.6, 4.4.29.3.7, 5.20.2.3.3.1, 5.20.2.3.3.3, 5.20.2.4.3.1, 5.20.2.4.3.2, 5.20.2.5.3.1, 5.20.2.5.3.2  |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR … |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR does not impact the OpenAPI file. |
|  |  |
| ***This CR's revision history:*** |  |

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

##### 4.4.29.3.3 Procedure for MBS session update

This procedure is used by an AF to request the modification of an existing multicast or a broadcast MBS session.

In order to request the modification of an existing MBS Session, an AF send a Nnef\_MBSSession\_Update request using the HTTP PATCH method targeting the URI of the corresponding "Individual MBS Session" resource and the request message body including an array of PatchItem data structure(s) containing the requested modifications. Only the attributes "mbsServiceArea", "qosInformation" and "activityStatus" may be modified.

On successful MBS session modification, the NEF shall return a Nnef\_MBSSession\_Update response with an HTTP "204 No Content" status code.

On failure or if the NEF receives an error code from the MB-SMF, the NEF shall take proper error handling actions, as specified in subclause 5.20.7, and respond to the AF with an appropriate error status code.

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

##### 4.4.29.3.4 Procedure for MBS session deletion

This procedure is used by an AF to request the deletion of an existing multicast or a broadcast MBS session.

In order to request the deletion of an existing MBS Session, an AF shall send a Nnef\_MBSSession\_Delete request using the HTTP DELETE method targeting the URI of the concerned Individual MBS Session.

On successful release of the MBS session, the NEF shall return a Nnef\_MBSSession\_Delete response with an HTTP "204 No Content" status code.

On failure or if the NEF receives an error code from the MB-SMF, the NEF shall take proper error handling actions, as specified in subclause 5.20.7, and respond to the AF with an appropriate error status code.

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

##### 4.4.29.3.5 Procedure for MBS session status subscription

This procedure is used by an AF to request to subscribe to MBS session status events notifications for a multicast or a broadcast session.

In order to request the creation of a subscription to MBS Session status events notifications, an AF shall send a Nnef\_MBSSession\_StatusSubscribe request to the NEF using the HTTP POST method targeting the "MBS Session Subscriptions" resource, with the request body including the MbsSessionSubsc data structure.

On successful MBS session subscription creation, the NEF shall return a Nnef\_MBSSession\_StatusSubscribe response with an HTTP "201 Created" status code to the AF, including a "Location" header containing the URI of the created "Individual MBS Session Subscription" resource and the response body containing a representation of the created resource within the MbsSessionSubsc data structure.

On failure or if the NEF receives an error code from the MB-SMF, the NEF shall take proper error handling actions, as specified in subclause 5.20.7, and respond to the AF with an appropriate error status code.

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

##### 4.4.29.3.6 Procedure for MBS session status unsubscription

This procedure is used by an AF to request to delete an existing subscription to MBS session status events notifications for a multicast or a broadcast session.

In order to request the deletion of an existing subscription to MBS Session status events notifications, an AF shall send a Nnef\_MBSSession\_StatusUnsubscribe request to the NEF using the HTTP DELETE method targeting the corresponding "Individual MBS Session Subscription" resource.

On successful deletion of the subscription, the NEF shall return a Nnef\_MBSSession\_StatusUnsubcribe response with an HTTP "204 No Content" status code.

On failure or if the NEF receives an error code from the MB-SMF, the NEF shall take proper error handling actions, as specified in subclause 5.20.7, and respond to the AF with an appropriate error status code.

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

##### 4.4.29.3.7 Procedure for MBS session status notification

This procedure is used by the NEF to send MBS session status events notifications for a multicast or a broadcast session to a previously subscribed AF.

In order to send an MBS Session status events notification, the NEF shall send a Nnef\_MBSSession\_StatusNotify request to the AF using the HTTP POST method, with the request body including the MbsSessionStatusNotif data structure.

Upon reception of this notification request, the AF shall acknowledge its successful reception by sending a Nnef\_MBSSession\_StatusNotify response message with an HTTP "204 No Content" status code.

On failure, the AF shall take proper error handling actions, as specified in subclause 5.20.7, and respond to the NEF with an appropriate error status code.

\* \* \* Next Changes \* \* \* \*

###### 5.20.2.3.3.1 PATCH

The HTTP PATCH method is used to partially modify an existing Individual MBS Session resource in the NEF. The AF shall initiate the HTTP PATCH request message and the NEF shall respond to the message.

This method shall support the URI query parameters specified in table 5.20.2.3.3.1-1.

Table 5.20.2.3.3.1-1: URI query parameters supported by the PATCH method on this resource

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

This method shall support the request data structures specified in table 5.20.2.3.3.1-2 and the response data structures and response codes specified in table 5.20.2.3.3.1-3.

Table 5.20.2.3.3.1-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| array(PatchItem) | M | 1 | Represents the list of modifications to be applied to the concerned existing Individual MBS Session resource, as specified in subclause 4.6.1.1.3 of 3GPP TS 29.501 [32]. |

Table 5.20.2.3.3.1-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful response. The Individual MBS Session resource was successfully modified. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE 1: The mandadatory HTTP error status code for the PATCH method listed in Table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. |

Table 5.20.2.3.3.1-4: Headers supported by the 307 Response Code on this resource

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

Table 5.20.2.3.3.1-5: Headers supported by the 308 Response Code on this resource

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

\* \* \* Next Changes \* \* \* \*

###### 5.20.2.3.3.3 DELETE

This method enables an AF to request the deletion of an Individual MBS Session resource in the NEF.

This method shall support the URI query parameters specified in table 5.20.2.3.3.3-1.

Table 5.20.2.3.3.3-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 5.20.2.3.3.3-2 and the response data structures and response codes specified in table 5.20.2.3.3.3-3.

Table 5.20.2.3.3.3-2: Data structures supported by the DELETE Request Body on this resource

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

Table 5.20.2.3.3.3-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | ResponseCodes | Description |
| n/a |  |  | 204 No Content | Successful response. The Individual MBS Session resource was successfully deleted. |
|  |  |  | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
|  |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE 1: The mandadatory HTTP error status code for the DELETE method listed in Table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. |

Table 5.20.2.3.3.3-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located on an alternative service instance within the same NEF.Or the same URI, if a request is redirected to the same target resource via a different SCP. |

Table 5.20.2.3.3.3-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative URI of the resource located on an alternative service instance within the same NEF.Or the same URI, if a request is redirected to the same target resource via a different SCP. |

\* \* \* Next Changes \* \* \* \*

###### 5.20.2.4.3.1 GET

This method enables an AF to request to retrieve all the MBS Session Subscription resources managed by the NEF.

This method shall support the URI query parameters specified in table 5.20.2.4.3.1-1.

Table 5.20.2.4.3.1-1: URI query parameters supported by the GET method on this resource

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

This method shall support the request data structures specified in table 5.20.2.4.3.1-2 and the response data structures and response codes specified in table 5.20.2.4.3.1-3.

Table 5.20.2.4.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 5.20.2.4.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| array(MbsSessionSubsc) | M | 1..N | 200 OK | Successful case. All the Individual MBS Session Subscription resources managed by the NEF are returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status code for the GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. |

Table 5.20.2.4.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative target URI located in an alternative NEF. |

Table 5.20.2.4.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative target URI of the resource located in an alternative NEF. |

\* \* \* Next Changes \* \* \* \*

###### 5.20.2.4.3.2 POST

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

This method shall support the URI query parameters specified in table 5.20.2.4.3.2-1.

Table 5.20.2.4.3.2-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 5.20.2.4.3.2-2 and the response data structures and response codes specified in table 5.20.2.4.3.2-3.

Table 5.20.2.4.3.2-2: Data structures supported by the POST Request Body on this resource

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

Table 5.20.2.4.3.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MbsSessionSubsc | M | 1 | 201 Created | Successful case. A representation of the created Individual MBS Session Subscription resource is returned.The URI of the created resource shall be returned in an HTTP "Location" header. |
| NOTE: 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. |

Table 5.20.2.4.3.2-4: 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/subscriptions/{subscriptionId} |

\* \* \* Next Changes \* \* \* \*

###### 5.20.2.5.3.1 GET

This method enables an AF to request to retrieve an Individual MBS Session Subscription resource managed by the NEF.

This method shall support the URI query parameters specified in table 5.20.2.5.3.1-1.

Table 5.20.2.5.3.1-1: URI query parameters supported by the GET method on this resource

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

This method shall support the request data structures specified in table 5.20.2.5.3.1-2 and the response data structures and response codes specified in table 5.20.2.5.3.1-3.

Table 5.20.2.5.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 5.20.2.5.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MbsSessionSubsc | M | 1 | 200 OK | Successful case. All the Individual MBS Session Subscription resources managed by the NEF is returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status code for the GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. |

Table 5.20.2.5.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative target URI located in an alternative NEF. |

Table 5.20.2.5.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative target URI of the resource located in an alternative NEF. |

\* \* \* Next Changes \* \* \* \*

###### 5.20.2.5.3.2 DELETE

This method enables an AF to request the deletion of an Individual MBS Session Subscription resource at the NEF.

This method shall support the URI query parameters specified in table 5.20.2.5.3.2-1.

Table 5.20.2.5.3.2-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 5.20.2.5.3.2-2 and the response data structures and response codes specified in table 5.20.2.5.3.2-3.

Table 5.20.2.5.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 5.20.2.5.3.2-3: 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 concerned Individual MBS Session Subscription resource was successfully deleted. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing an alternative target URI located in an alternative NEF.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status code for the DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. |

Table 5.20.2.5.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative target URI located in an alternative NEF. |

Table 5.20.2.5.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative target URI of the resource located in an alternative NEF. |

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