**3GPP TSG-CT WG4 Meeting #110-eC4-223061v1**

**E-Meeting, 12th – 20th May 2022 was C4-223061**

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

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| ***Title:*** | Completion of HTTP Response | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | |  |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | In current procedure description, it states for 4xx/5xx response a ProblemDetails SHALL be included in the HTTP payload of response message. However, in the clause of resource operation methods, the ProblemDetails for 4xx/5xx response is Optional. | | | | | | | | |
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| ***Summary of change:*** | | Correct the procedure description of HTTP 4xx/5xx response. | | | | | | | | |
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| ***Consequences if not approved:*** | | Inconsistency remains in TS29.518. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.6.2.2, 5.6.2.3, 5.6.2.4, 5.6.2.5, 5.7.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR doesn't introduces any change to the OpenAPI files. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* Begin of Changes \* \* \* \*

#### 5.6.2.2 ContextCreate

The ContextCreate service operation shall be used by the NF Service Consumer (e.g. MB-SMF) to request the AMF to create a broadcast MBS session context.

It is used in the following procedures:

- MBS Session Start for Broadcast (see clause 7.3.1 of 3GPP TS 23.247 [55]);

- Support for Local Broadcast Service (see clause 7.3.4 of 3GPP TS 23.247 [55]).

There shall be only one broadcast MBS session context per MBS session, or per MBS session and Area Session ID for an MBS session with Location dependent Broadcast service.

The NF Service Consumer (e.g. MB-SMF) shall create a broadcast MBS session context by using the HTTP POST method as shown in Figure 5.6.2.2-1.



Figure 5.6.2.2-1: Broadcast MBS session context creation

1. The NF Service Consumer shall send a POST request targeting the Broadcast MBS session contexts collection resource of the AMF. The payload body of the POST request shall contain the following information:

- MBS Session ID (i.e. TMGI, or TMGI and NID for an MBS session in an SNPN);

- Area Session ID, if this is a Location dependent broadcast MBS service;

- MBS service area;

- N2 MBS Session Management container (see MBS Session Information Setup Request Transfer IE in 3GPP TS 38.413 [12]); and

- Notification URI where to be notified about the status change of the broadcast MBS session context.

The NF Service Consumer may also include the maxResponseTime IE in the request to indicate the maximum response time to receive information about the completion of the Broadcast MBS session establishment.

2a. On success, "201 Created" shall be returned. The AMF should respond success when it receives the first successful response from the NG-RAN(s). The 201 Created response may contain one or more N2 MBS Session Management containers, if additional information (e.g. MBS Session Information Response Transfer IE or MBS Session Information Failure Transfer IE in 3GPP TS 38.413 [12]) needs to be transferred to the MB-SMF. If the AMF received the NG-RAN responses from all involved NG-RAN(s), e.g. if the broadccast MBS session involves only one NG-RAN, the AMF shall include an indication of completion of the operation in all NG-RANs in the 201 Created response.

Upon receipt of subsequent responses from other NG-RANs after sending the 201 Created response, if additional information (e.g. MBS Session Information Response Transfer IE or MBS Session Information Failure Transfer IE in 3GPP TS 38.413 [12]) needs to be transferred to the MB-SMF, the AMF shall transfer such information by sending one or more Namf\_MBSBroadcast\_ContextStatusNotify requests to the MB-SMF. A Namf\_MBSBroadcast\_ContextStatusNotify request may include a list of N2 MBS Session Management containers received from different NG-RANs. When the AMF receives the response from all NG-RANs, the AMF shall include an indication of the completion of the operation in the Namf\_MBSBroadcast\_ContextStatusNotify request.

If the AMF does not receive responses from all NG-RAN nodes before the maximum response time elapses since the reception of the Namf\_MBSBroadcast\_ContextCreate Request, then the AMF should send one Namf\_MBSBroadcast\_ContextStatusNotify request indicating the incompletion of the Broadcast MBS session establishment.

2b. On failure or redirection, one of the HTTP status code listed in Table 6.5.3.2.3.1-3 shall be returned. For a 4xx/5xx response, the message body may contain a ProblemDetails structure with the "cause" attribute set to one of the application errors listed in Table 6.5.3.2.3.1-3.

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

#### 5.6.2.3 ContextUpdate

The ContextUpdate service operation shall be used by the NF Service Consumer (e.g. MB-SMF) to request the AMF to update a broadcast MBS session context.

It is used in the following procedures:

- MBS Session Update for Broadcast (see clause 7.3.3 of 3GPP TS 23.247 [55]).

The NF Service Consumer (e.g. MB-SMF) shall update a broadcast MBS session context by using the HTTP POST method as shown in Figure 5.6.2.3-1.



Figure 5.6.2.3-1: Broadcast MBS session context update

1. The NF Service Consumer shall send a POST request targeting the individual Broadcast MBS session context resource to be updated in the AMF. The payload body of the POST request may contain the following information:

- N2 MBS Session Management container (see MBS Session Information Modify Request Transfer IE in 3GPP TS 38.413 [12]);

- Notification URI, if the NF Service Consumer wishes to modify the notification URI where to be notified about the status change of the broadcast MBS session context;

- updated MBS service area.

The NF Service Consumer may also include the maxResponseTime IE in the request to indicate the maximum response time to receive information about the completion of the Broadcast MBS session update.

2a. On success, "200 OK" shall be returned if additional information needs to be returned in the response. The 200 OK response may contain one or more N2 MBS Session Management containers, if such information (e.g. MBS Session Information Response Transfer IE or MBS Session Information Failure Transfer IE in 3GPP TS 38.413 [12]) needs to be transferred to the MB-SMF. If the AMF received the NG-RAN responses from all involved NG-RAN(s), the AMF shall include an indication of completion of the operation in all NG-RANs.

2b. On success, "204 No Content" shall be returned if no additional information needs to be returned in the response.

In both 2a and 2b cases, upon receipt of subsequent responses from other NG-RANs after sending the 200 OK response or the 204 No Content response, if additional information (e.g. MBS Session Information Response Transfer IE or MBS Session Information Failure Transfer IE in 3GPP TS 38.413 [12]) needs to be transferred to the MB-SMF, the AMF shall transfer such information by sending one or more Namf\_MBSBroadcast\_ContextStatusNotify requests to the MB-SMF. A Namf\_MBSBroadcast\_ContextStatusNotify request may include a list of N2 MBS Session Management containers received from different NG-RANs. When the AMF receives the response from all NG-RANs, the AMF shall include an indication of the completion of the operation in the Namf\_MBSBroadcast\_ContextStatusNotify request.

If the AMF does not receive responses from all NG-RAN nodes before the maximum response time elapses since the reception of the Namf\_MBSBroadcast\_ContextUpdate Request, then the AMF should send one Namf\_MBSBroadcast\_ContextStatusNotify request indicating the incompletion of the Broadcast MBS session update.

2c. On failure or redirection, one of the HTTP status code listed in Table 6.5.3.2.4.2.2-2 shall be returned. For a 4xx/5xx response, the message body may contain a ProblemDetails structure with the "cause" attribute set to one of the application errors listed in Table 6.5.3.2.4.2.2-2.

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

#### 5.6.2.4 ContextRelease

The ContextRelease service operation shall be used by the NF Service Consumer (e.g. MB-SMF) to request the AMF to release a broadcast MBS session context.

It is used in the following procedures:

- MBS Session Release for Broadcast (see clause 7.3.2 of 3GPP TS 23.247 [55]).

The NF Service Consumer (e.g. MB-SMF) shall release a broadcast MBS session context by using the HTTP DELETE method as shown in Figure 5.6.2.4-1.



Figure 5.6.2.4-1: Broadcast MBS session context creation

1. The NF Service Consumer shall send a DELETE request targeting the individual Broadcast MBS session context resource to be released in the AMF.

2a. On success, "204 No Content" shall be returned.

2b. On failure or redirection, one of the HTTP status code listed in Table 6.5.3.3.3.1-3shall be returned. For a 4xx/5xx response, the message body may contain a ProblemDetails structure with the "cause" attribute set to one of the application errors listed in Table 6.5.3.3.3.1-3.

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

#### 5.6.2.5 ContextStatusNotify

The ContextStatusNotify service operation shall be used by the AMF to notify status change of a broadcast MBS session context to the NF Service Consumer (e.g. MB-SMF).

It is used in the following procedures:

- MBS Session Start for Broadcast (see clause 7.3.1 of 3GPP TS 23.247 [55]);

- MBS Session Update for Broadcast (see clause 7.3.3 of 3GPP TS 23.247 [55]).

The AMF shall notify status change of a broadcast MBS session context to the NF Service Consumer (e.g. MB-SMF) by using the HTTP POST method as shown in Figure 5.6.2.5-1.



Figure 5.6.2.5-1: Broadcast MBS session context status change notification

1. The AMF shall send a POST request targeting the notification URI received from the NF Service Consumer. The payload body of the POST request shall contain the following information:

- MBS Session ID (i.e. TMGI, or TMGI and NID for an MBS session in an SNPN);

- Area Session ID, if this is a Location dependent broadcast MBS service;

- one or more N2 MBS Session Management containers, if N2 MBS Session Management information has been received from one or more NG-RANs that needs to be transferred to the NF Service Consumer;

- the operationStatus IE indicating the completion of the Broadcast MBS session establishment or update, if the NF Service Consumer has requested to establish or update the Broadcast MBS session context and a response has been received from all NG-RANs; and

- the operationStatus IE indicating the incompletion of the Broadcast MBS session establishment or update, if the NF Service Consumer has requested to establish or update the Broadcast MBS session context including a maximum response time and the AMF has not received responses from all NG-RANs before the maximum response time elapses.

2a. On success, the NF Service Consumer shall return a "204 No Content" response.

2b. On failure or redirection, one of the HTTP status code listed in Table 6.5.5.2.3.1-3 shall be returned. For a 4xx/5xx response, the message body may contain a ProblemDetails attribute with the "cause" attribute set to one of the application errors listed in Table 6.5.5.2.3.1-3.

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

##### 5.7.2.2 N2MessageTransfer

The N2MessageTransfer service operation shall be used by the NF Service Consumer (e.g. MB-SMF) to request the AMF to transfer an MBS related N2 message to the NG-RAN nodes serving the multicast MBS session. It is used during the following procedures:

- MBS session activation procedure (see clause 7.2.5.2 of 3GPP TS 23.247 [55]);

- MBS session deactivation procedure (see clause 7.2.5.3 of 3GPP TS 23.247 [55]); and

- Multicast session update procedure (see clause 7.2.6 of 3GPP TS 23.247 [55]).

The NF Service Consumer shall invoke the service operation by sending a POST request to the URI of the "transfer" custom operation (see clause 6.6.3.1) of the AMF. See Figure 5.7.2.2-1.



Figure 5.7.2.2-1 N2 Message Transfer for a multicast MBS session

1. The NF Service Consumer shall invoke the custom operation for N2 message transfer by sending a HTTP POST request and the request body shall carry the MbsN2MessageTransferReqData data structure which contains the N2 MBS Session Management information to be transferred.

2a. On success, the AMF shall respond with a "200 OK" status code with MbsN2MessageTransferRspData data structure. The AMF should respond success when it receives the first successful response from the NG-RAN(s).

2b. On failure or redirection, one of the HTTP status code listed in Table 6.6.3.1.4.2.2-2 shall be returned. For a 4xx/5xx response, the message body may contain a ProblemDetails attribute with the "cause" attribute set to one of the application errors listed in Table 6.6.4.2.2-2 if any.

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