**3GPP TSG-SA WG6 Meeting #38-e S6-201231**

**e-meeting, 20th – 31st July 2020 (revision of S6-201091)**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
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| *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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Enhancement of MBMS user service usage procedures | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eMCData3 | | | | |  | ***Date:*** | | | 2020-07-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | The procedures in clauses 7.3.5.3.1 and 7.3.5.3.2 for pre-established and dynamic MBMS user services, respectively, indicate that when the MBMS user service architecture over the xMB interface is used, the MCData server only can define the pull ingest mode during the MBMS session creation. Hence, the MCData server provides the file location where the BM-SC can pull the file from. However, as described in 3GPP TS 26.348 and in the companion CR S6-201230, when the MBMS user service architecture is used, two different ingest modes can be defined by the MCData server. Therefore, the procedures in clauses 7.3.5.3.1 and 7.3.5.3.2 are enhanced to properly indicate that both ingest modes, pull and push, can be supported for file distribution over MBMS. | | | | | | | | |
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| ***Summary of change:*** | | The procedures in clauses 7.3.5.3.1 and 7.3.5.3.2 are enhanced to properly indicate that both ingest modes, pull and push, can be supported for file distribution over MBMS. | | | | | | | | |
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| ***Consequences if not approved:*** | | The procedures in clauses 7.3.5.3.1 and 7.3.5.3.2 will remain defined as if only one option, pull ingest mode, is supported to provide a file for distribution over MBMS. | | | | | | | | |
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| ***Clauses affected:*** | | 7.3.5.3.1, 7.3.5.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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's revision history:*** | |  | | | | | | | | |

\* \* \* First change \* \* \*

###### 7.3.5.3.1.2 Procedure

Editor's note: The procedure in this clause needs to be revised considering that MBMS user services, as specified in 3GPP TS 26.346 [21], cannot be supported over the MB2 interface.

The procedure figure 7.3.5.3.1.2-1 shows only one of the receiving MCData clients using an MBMS user service.

Pre-conditions:

- The participating users are already affiliated.



Figure 7.3.5.3.1.2-1: Use of pre-established MBMS user service

1. The MCData server determines to create an MBMS user service with a given MBMS user service id. If the MCData server makes use of the xMB interface, the MCData server creates an MBMS user service over xMB-C (subclause 5.3 from 3GPP TS 26.348 [19]).

NOTE 1: The procedure to determine the creation of MBMS user services is implementation specific.

2. If the MCData server makes use of the xMB interface, the MCData server creates an MBMS session over xMB-C for the MBMS user service (subclause 5.4 from 3GPP TS 26.348 [19]), with the type set to "Files" to use the MBMS download delivery method. Additionally, the MCData server defines the ingest mode, pull or push, to provide the file into the BM‑SC via xMB‑U. This MBMS session will be used for file distribution. In response, the MCData server gets the TMGI of the MBMS bearer used for the MBMS session, and the SA file containing the metadata of the MBMS user service. When the push ingest mode is used, as part of the response from the BM‑SC the MCData server also obtains the URL to be used to push the file.

3a. Else, the MCData server activates an MBMS bearer over MB2-C for the MBMS user service.

3b. The MCData server, if not already in the possession of the SA file, generates the SA file containing the metadata of the MBMS user service.

4. The MCData server passes using control plane signalling the MBMS user service info for the service description associated with the pre-established MBMS user service to the MCData client. The MCData client obtains the TMGI, identifying the MBMS bearer, from the SA file included in the MBMS user service description.

5. The MCData client stores the information associated with the MBMS user service. The MCData client uses the TMGI and other MBMS user service related information to activate the monitoring of the MBMS bearer.

6. The MCData client that enters or is in the service area of at least one announced TMGI indicates to the MCData server that the MCData client is able to receive file distributed over MBMS, whereby the MCData server may decide to use this MBMS user service instead of unicast bearer for MC communication sessions.

NOTE 2: Step 4 is optional for the MCData UE on subsequent MBMS user service announcements.

NOTE 3: The information flow is specified in subclause 10.7.2.2 from 3GPP TS 23.280 [5].

7. If the MCData server makes use of the xMB interface and wants to deliver a file to a group, the MCData server updates the MBMS session to provide the file list when the pull ingest mode is defined. As described in 3GPP TS 26.348 [19], the file list includes, among other information, the file URL to be used by the BM‑SC to fetch the file and the earliest fetch time.

8. The MCData server signals the file transmission over the MBMS user service to the targeted MCData clients.

NOTE 4: After step 8, the file can be provided for distribution over the MBMS session. If the pull ingest mode is defined, the BM‑SC fetches the file from the indicated file URL. If the push ingest mode is defined, the MCData server can start pushing the file to the corresponding URL.

9. The file, transmitted with the MBMS download delivery method, is received by the MCData clients. If the MCData server does not make use of the xMB interface, the MCData server fragments the file to be sent, applies error correction according to the MBMS download delivery method (3GPP TS 26.346 [21]) and sent the FLUTE packets over MB2-U.

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

##### 7.3.5.3.2 Use of dynamic MBMS user service establishment

Editor's note: The procedure in this clause needs to be revised considering that MBMS user services, as specified in 3GPP TS 26.346 [21], cannot be supported over the MB2 interface.

In this scenario depicted in figure 7.3.5.3.2-1, the MCData server decides to establish an MBMS user service for the distribution of a given file. The MBMS user service is announced to the MCData client, together with the file information to be received.

NOTE 1: The MCData server logic for determining when to establish the new MBMS user service is implementation specific. For example, the MCData server could decide to establish the MBMS delivery based on the location of the UE's that are a part of the targeted group.



Figure 7.3.5.3.2-1: Use of dynamic MBMS user service establishment

1. The MCData server determines to create a MBMS user service with a given an MBMS user service id for the group communication session. If the MCData server makes use of the xMB interface, the MCData server creates an MBMS user service over xMB-C (subclause 5.3 from 3GPP TS 26.348 [19]).

2. If the MCData server makes use of the xMB interface, the MCData server creates a MBMS session for the MBMS user service (subclause 5.4 from 3GPP TS 26.348 [19]), with the type set to "Files" to use the MBMS download delivery method. Additionally, the MCData server defines the ingest mode, pull or push, to provide the file into the BM‑SC via xMB‑U. When the pull ingest mode is defined, the MCData server provides the file list. The file list includes, among other information, the file URL to be used by the BM‑SC to fetch the file and the earliest fetch time. In response, the MCData server gets the TMGI of the MBMS bearer used for the MBMS session and the SA file containing the metadata of the MBMS user service. When the pull ingest mode is defined, the MCData server also obtains the scheduling parameter for the file delivery. When the push ingest mode is used, as part of the response from the BM‑SC the MCData server obtains the URL to be used to push the file.

3a. Else, the MCData server activates an MBMS bearer over MB2-C for the MBMS user service.

3b. The MCData server, if not already in the possession of the SA file, generates the SA file containing the metadata of the MBMS user service.

4. The MCData server passes using control plane signalling the SA file to the MCData client. The MCData client obtains the TMGI, identifying the MBMS bearer, from the SA file included in the MBMS user service description.

5. The MCData client stores the information associated with the MBMS user service. The MCData client uses the TMGI and other MBMS user service related information to activate the monitoring of the MBMS bearer.

6. The MCData client that enters or is in the service area of at least one announced TMGI indicates to the MCData server that the MCData client is able to receive file distributed over MBMS, whereby the MCData server may decide to use this MBMS user service instead of unicast bearer for MC communication sessions.

7. The MCData server signals the file transmission over the MBMS user service to the targeted MCData clients.

NOTE 2: After step 7, the file can be provided for distribution over the MBMS session. If the pull ingest mode is defined, the BM‑SC fetches the file from the indicated file URL. If the push ingest mode is defined, the MCData server can start pushing the file to the corresponding URL.

8. The file, transmitted with the MBMS download delivery method, is received by the MCData clients. If the MCData server does not make use of the xMB interface, the MCData server fragments the file to be sent, applies error correction according to the MBMS download delivery method (3GPP TS 26.346 [21]) and sent the FLUTE packets over MB2-U.