**3GPP TSG-SA WG6 Meeting #49-bis-e S6-221731\_Rev1**

**e-meeting, 22nd June – 1st July 2022 (revision of S6-22xxxx)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.289** | **CR** | **0081** | **rev** | **-** | **Current version:** | 18.2.0 |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Clarification on MBS capable RAT usage | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Hisilicon | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MCOver5MBS | | | | |  | ***Date:*** | | | 2022-06-06 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | R18 |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Currently the MBS capable RAT is reported to the MC service server as the UE’ RAT capailities but never used in the specification. How the MC service server decide to create the MBS session is implementation specific, but some inputs/factors being taken into consideration should be captured.  Especially in the initial MC over 5GS stage, the MBS capable RAT UE may be the minority, it make sense for the MC service server to consider this when deciding to use MBS. Also the location may also another factor may be taken into consideration.  In clause 7.3.2.1, the scentence “Optionally it includes eMBMS related information elements once needed.” is not clear which case such eMBMS related information is needed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1) Update clause 7.3.1 to capture that the MBS capable RAT usage  2) Make it clear that the eMBMS related information is included in eMBMS and 5G MBS coexistence case. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Cause misunderstandings to the readers. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.3.1, 7.3.2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**

### 7.3.1 General

This subclause defines information flows and procedures for 5G MBS usage that applies to MC services. 5G MBS session can be used by any MC service for any MC service group.

The following subclauses specify the procedures and information flows for the usage of 5G MBS transmission that are utilized by the following MC services:

- MCPTT (as specified in 3GPP TS 23.379 [6]);

- MCVideo (as specified in 3GPP TS 23.281 [4]); and

- MCData (as specified in 3GPP TS 23.282 [5]).

MC service specific pre-requisites and resultant behavior by functional entities in performing these procedures are specified in the respective MC service TSs as listed above.

The first phase to utilize MBS sessions for MCX media transmission is to have the sessions created hence the network resources are reserved. MC service server may consider UE and service related information e.g., MBS capable RAT, location, MBS listening status of group members when it decides to use MBS sessions. The MC service server needs to interact with the 5GC for this matter. During the interaction, the necessary information related to the requested session is determined, e.g., MBS session mode (either a broadcast or a multicast session) and the required QoS profile. This interaction depends on the configuration option under consideration, i.e., whether the MC service server is in trusted domain (limited operations), and whether the session creation is done with or without a dynamic PCC rule.

NOTE 1: It is implementation specific whether the MC service server decides to use multicast or broadcast MBS sessions.

NOTE 2: It is implementation specific whether the MC service server decides to create (one or multiple) MBS sessions for MC media for MC group communications associated to a certain MC group or create (one or multiple) dynamic MBS sessions once the need has emerged, e.g., dynamic MBS sessions to be associated for an ad hoc group.

NOTE 3: It is implementation specific whether an MBS session is associated to one or multiple MC groups, and whether it is re-assigned to other MC groups.

NOTE 4: How the MC service server use the UE and service related information to decide to create the MBS session is implementation specific.

The information elements describing the MBS session under consideration is then sent to the MC service clients via MBS session announcement, where the latter need to react according to the announced session mode.

If eMBMS and 5G MBS co-exist for MC services, the MC service server may decide to trigger the establishment of an eMBMS bearer to deliver the MC media associated to the MC service group communications, if the target MC service group(s) consists of members with MBMS capable RAT. As a result, the MC service server subsequently needs to send an eMBMS bearer announcement towards the clients camping on LTE.

NOTE 4: It is implementation specific whether the MC service server triggers an eMBMS bearer or a unicast bearer to serve MC service clients camping on LTE.

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

#### 7.3.2.1 MBS session announcement

Table 7.3.2.1-1 provides the information elements during MBS session announcement, which are sent by the MC service server to the clients. The MBS session announcement includes information elements related to the announced MBS session. Optionally, it includes eMBMS related information elements, if eMBMS and 5G MBS co-exist.

Table 7.3.2.1-1: MBS session announcement

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| 5G MBS session information | M | Providing the MBS session related information if MCX server decides to use 5G MBS session to deliver MC service group communication data |
| **>**MBS session ID | M | The identity of the MBS session used to deliver MC service group communication data. It is either TMGI for broadcast MBS and multicast MBS sessions, or source specific IP multicast address for multicast MBS session |
| **>**MBS session mode | M | Indicate the service type of the MBS session, either a multicast MBS session or a broadcast MBS session |
| **>**MC service group ID | O | Indicate the MC service group ID associated to the MBS session |
| **>**MBS related SDP information | M | SDP related to application-level control signaling or media to be transmitted over the MBS session (e.g., codec, protocol ID, FEC information, IP address and ports) |
| **>**List of MBS Service Area information (see NOTE 5) | O | For the case of local MBS services, it indicates either multicast service area identifier(s) for multicast MBS session, or broadcast service area identifier(s) for broadcast MBS session |
| **>**MBS session announcement acknowledgement | O | Indicate if the MC service server requires an acknowledgement to the MBS session announcement |
| **>**Multicast MBS session related information (see NOTE 1) | O | Additional information to be used by the MC service client to join the multicast MBS session such as PLMN ID of the default PLMN service provider in case of source specific IP multicast address, DNN, and SNSSAI of the PDU session associated with the multicast MBS session |
| **>** UE session join notification (see NOTE 2) | O | Indicate if the MC service server requires a notification from the MC service client once it has joined the multicast MBS session |
| **>**Monitoring state | O | Indicate if the MC service client is required to actively monitor the MBS session quality and report it to the MC service server. This is applicable for both multicast and broadcast MBMS session. |
| **>**Frequency (see NOTE 3) | O | Identification of frequency associated with a broadcast MBS session, if multi carrier support is provided |
| **>**MBS Frequency Selection Area ID (MBS FSA ID) (see NOTE 3) | O | The frequency associated to a certain broadcast area, if multi carrier support is provided |
| eMBMS bearer information | O | Providing the 4G eMBMS bearer related information if MCX server decides to use 4G eMBMS additionally with 5G MBS session to deliver MC service group communication data |
| **>**TMGI (see NOTE 4) | M | TMGI information |
| **>**Alternative TMGI | O | A list of additional alternative TMGI may be included and used in roaming scenarios |
| **>**QCI | O | QCI information used by the ProSe UE-Network Relay to determine the ProSe Per-Packet Priority value to be applied for the multicast packets relayed to Remote UE over PC5 |
| **>**List of service area identifier | M | A list of service area identifier for the applicable MBMS broadcast area |
| **>**Frequency | O | Identification of frequency if multi carrier support is provided |
| **>**eMBMS related SDP information | M | SDP with media and floor control information applicable to groups that can use this eMBMS bearer (e.g., codec, protocol id, FEC information) |
| **>**Monitoring state | O | Indicate if the MC service client is required to actively monitor the eMBMS bearer quality and report it to the MC service server |
| **>**ROHC information | O | Indicate the usage of ROHC over the eMBMS bearer and provide the parameters of the ROHC channel to signal to the ROHC decoder |
| NOTE 1: Such information may be pre-configured in the MC service UE, or provided in any other implementation specific way  NOTE 2: It is applicable for multicast MBS session  NOTE 3: It is applicable for broadcast MBS session  NOTE 4: TMGI for 4G eMBMS bearer can be the same or different with 5G MBS session ID.  NOTE 5: Details of MBS service area information is defined in 3GPP TS 23.247 [15]. | | |

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