**3GPP TSG-WG SA6 Meeting #46-e *S6-212xxx***

**e-meeting, November 15 – 23, 2021 (revision of S6-212644)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.289** | **CR** | **0020** | **rev** | **1** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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:*** | MC service control signalling over 5G MBS | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MCOver5MBS | | | | |  | ***Date:*** | | | 2021-10-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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:*** | | Application level Control signalling can be transmitted over 5G MBS.  This CR is to add the related procedure for Application level Control signalling over 5G MBS for a group communication, based on TR conclusion on this topic. | | | | | | | | |
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| ***Summary of change:*** | | 1. Adding general description and procedure about usage of 5G MBS for control signalling transmission | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | No related content about supporting application level control signalling distribution over 5G MBS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.x.3.Z (new), 7.x.3.Z.1 (new), 7.x.3.Z.2 (new), | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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.X.3.Z Aplication level control signalling over 5G MBS sessions

##### 7.x.3.z.1 Description

The MC service server may use an 5G MBS session for application level control signalling. An 5G bearer for application level control signalling is typically used for the purposes beyond the benefit for using 5G for resource efficiency, e.g. for improved MC service performance (KPIs), handling of high load scenarios.

Similar to the usage of eMBMS, both broadcast and multicast 5MBS session for application level control signalling may be used to transmit the following messages,

- Transmission control (e.g. call setup and floor control)

- MBMS bearer announcement for media bearers

- Group application paging

- Group dynamic data (e.g. status of the group)

- Group state (e.g. emergency alerts)

Similar to the usage of MBMS bearer in 3GPP TS 23.280 [3], 5G MBS session for application level control signalling is created in a service area that is larger than the estimated service for media MBS session. The service area for the media sessions is mainly based on counting of group members in each defined service area. The MBS session for application level control signalling is also created with a QoS that is better than MBS media session since the packet loss requirements are much stricter.

The MC service client shall not send responses to group-addressed application level control signalling unless instructed or configured to respond.

##### 7.x.3.z.2 Procedure

The procedure in figure 7.x.3.z.2-1 shows only one of the receiving MC service clients using an 5G MBS session.



Figure 7.x.3.z.2-1: Use of 5G MBS for application level control signalling

1. The MC service server determines to create MBS session for application level control signalling, The creation of the 5G MBS session is done according to 3GPP TS 23.247 [xx].

2. The MC service server passes the 5G MBS session info for the service description associated with the 5G MBS session to the MC service client. The MC service client obtains the MBS session ID, from the service description.

NOTE 1: For 5G MBS and 4G MBMS co-existence, the MBMS bearers activation and service announcement is performed as specified in the procedure for pre-created MBS session and service announcement .

3. The MC service client stores the information associated with the MBS session ID. The MC service client uses the MBS session ID and other 5G MBS session related information to enable monitoring of the 5G MBS session by the MC service UE. In the case of multicast, UE may make network layer multicast MBS joining as defined in 3GPP TS 23.247 [xx].

4. The MC service client that enters or is in the service area of the announced MBS session ID indicates to the MC service server that the MC service client is able to receive application level control messages over the MBS session. The MC service client may also indicate at which MBS reception quality level it has received the MC service media on the MBS session if broadcast MBS session is used or the MC service client may send the multicast MBS session join notification to indicate the successful join for the multicast MBS session. Hence, the MC service server may decide to use the MBS session for MC application control messages.

5. The MC service server transmit MC application control messages over the MBS session.

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