**3GPP TSG-SA WG6 Meeting #48-e S6-220612**

**e-meeting, 5th – 14th April 2022 (revision of S6-22xxxx)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.289** | **CR** | **0049** | **rev** | **-** | **Current version:** | **18.1.0** |  |
|  | | | | | | | | |
| *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:*** | Clarifications related to multi carrier support for MBS session update | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MCOver5MBS | | | | |  | ***Date:*** | | | 2022-04-05 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | In alignment with 3GPP TS 23.247, in case multi carrier deplyment is supported, and based on the business agreement, the MC service server is capable of updating the MBS Frequency Selection Area ID (MBS FSA ID) once the need has emerged. The MBS FSA ID update is applicable to broadcast MBS sessions, and is done by initiating an MBS session update procedure towards the 5GC (either directly towards MB-SMF or indirectly via NEF). | | | | | | | | |
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| ***Summary of change:*** | | * Among the aspects that can be updated during an MBS session update procedure (with or without dynamic PCC rule), the MBS FSA ID is included. | | | | | | | | |
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| ***Consequences if not approved:*** | | The MC service server is unable to update the MBS FSA ID. | | | | | | | | |
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| ***Clauses affected:*** | | 7.3.3.2.1, 7.3.3.2.2, and 7.3.3.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

##### 7.3.3.2.1 General

The MC service server can create one or several MBS sessions based on certain service requirements (e.g., QoS profile), a certain service area, or the activity status of multicast MBS sessions. However, during the life cycle of the MBS sessions, the MC service server may need to update the sessions to meet emerging needs including service requirements, service area, etc., as defined in 3GPP TS 23.247[x].

In case of dynamic PCC rule, the MC service server needs to determine what aspects are needed to be updated in order to interact with the required entity in the 5GC (either directly in case the MC service server is in trusted domain) or indirectly via NEF/MBSF as defined in 3GPP TS 23.247[x].

\* \* \* \* Second change \* \* \* \*

##### 7.3.3.2.2 Procedure for updating MBS resources without dynamic PCC rule

The procedure shown in figure 7.3.3.2.2-1 presents an MBS session update procedure triggered by the MC service server (either directly to the MB-SMF, or indirectly via NEF/MBSF). Within the update request, either the service requirements, MBS service area, activity status of multicast MBS session, or all three are done, as indicated in 3GPP TS 23.247 [15].

Pre-conditions:

- The MC service clients 1 to n are attached to the 5GS, registered and affiliated to the same active MC service group.

- The MC service server has obtained the required information related to the MB-SMF, either locally configured or during initial session configuration.

- The MBS session is created with certain service requirements and optionally with a certain broadcast/multicast service area. The MBS session is announced to be associated with the MC service group for group communication purposes.



Figure 7.3.3.2.2-1: MBS session update without dynamic PCC.

1. An MBS session is established as described in in 3GPP TS 23.247 [15] (either a multicast or a broadcast session), and associated with a certain active MC group for group communication purposes. In the case of a multicast MBS session, the MC service clients have already joined the session.

2. The MC service server invokes an MBS session update request towards the 5GC (either directly to the MB-SMF or indirectly via NEF/MBSF) once the need has emerged to modify some aspects for the given MBS session under consideration. Hence, the MC service server sends the MBS session update request as described in 3GPP TS 23.247 [15] and either directly to the MB-SMF or indirectly via NEF/MBSF, indicating the MBS session ID to be updated. Along with the update request, the updated aspects are sent, which are either service requirements (required QoS), service area, or both. In case of multicast MBS sessions, the MC service server may as well update the status (active or inactive) of the multicast MBS session once needed within the update request. In case of multi carrier support for broadcast MBS sessions, the MC service server may update the MBS FSI ID associated with a certain broadcast MBS session.

NOTE 1: the updated service area information is required for local MBS and for broadcast MBS services.

3. Based on the needed requirements, the corresponding MBS session is accordingly modified, as indicated in 3GPP TS 23.247 [15]. The update may lead to QoS Flow(s) addition, modification, or removal.

4. The MC service server receives an MBS session update response as described in 3GPP TS 23.247 [15], once the requested modifications are performed, and the indicated MBS session is updated accordingly.

5. The MC service server may initiate a service announcement towards the MC service clients associated with the ongoing session in order to announce the updated information if required, e.g., the updated service area, SDP information, or MBS FSI ID.

NOTE 2: the updated service area information is required for local MBS and for broadcast MBS services.

6. The MC service server sends an MapGroupToSessionStream over the configured MBS session providing the required information to receive the media related to the established MC service group communication.

7. The MC service clients process the received information over the MapGroupToSessionStream in order to receive the associated MC media over the specific MBS session stream.

8. MC service client 1 sends media to the MC service server over unicast to be distributed for the established group communication.

9. The MC service server distributes the MC media to the MC services clients 2 to n over the indicated streams.

\* \* \* \* Third change \* \* \* \*

##### 7.3.3.2.3 Procedure for updating MBS resources with dynamic PCC rule

The procedure shown in figure 7.3.3.2.3-1 presents an MBS session update procedure triggered by the MC service server to the 5GC, either directly or via NEF/MBSF. Based on the required updates to be done, the MC service server needs to interact with the MB-SMF to update the MBS service area and multicast activity status, with the PCF to update the required QoS requirements, or sequentially both to update all the above, as indicated in 3GPP TS 23.247 [15].

Pre-conditions:

- The MC service clients 1 to n are attached to the 5GS, registered and affiliated to the same active MC service group.

- The MC service server has obtained the required information related to the MB-SMF, either locally configured or during initial session configuration.

- The MBS session is created with certain service requirements and optionally with a certain broadcast/multicast service area. The MBS session is announced to be associated with the MC service group for group communication purposes.



Figure 7.3.3.2.3-1: MBS session update with dynamic PCC.

1. An MBS session is established as described in 3GPP TS 23.247 [15] (either a multicast or a broadcast session), and associated with a certain active MC group for group communication purposes. In the case of a multicast MBS session, the MC service clients have already joined the session.

2. In case that updating only the MBS service area and/or the multicast MBS session activity status are needed to be updated: the MC service server sends an MBS session update request as described in 3GPP TS 23.247 [15] either directly to the MB-SMF or indirectly via NEF/MBSF, along with the MBS session ID, the updated MBS service area and/or session activity status. In case of multi carrier support for broadcast MBS sessions, the MC service server may update the MBS FSI ID associated with a certain broadcast MBS session.

NOTE 1: the updated service area information is required for local MBS and for broadcast MBS services.

3. Based on the needed requirements, the corresponding MBS session is accordingly modified, as described in 3GPP TS 23.247 [15] .

4. The MC service server may receive an MBS session update response as described in 3GPP TS 23.247 [15], once the requested modifications are performed, and the indicated MBS session is updated accordingly.

5. In case of only updating the service requirements: the MC service server sends an MBS policy authorization update request as described in 3GPP TS 23.247 [15] either directly to the PCF or indirectly via NEF/MBSF, with the MBS session ID and the updated QoS requirements.

6. Based on the needed requirements, the corresponding MBS session is accordingly modified, as described in 3GPP TS 23.247 [15].The update may lead to QoS Flow(s) addition, modification, or removal.

7. The MC service server may receive an MBS policy authorization response as described in 3GPP TS 23.247 [15] once the requested modifications are performed, and the indicated MBS session is updated accordingly.

NOTE 2: In case of updating the MBS service area and/or the multicast MBS session activity status as well as the service requirements: first, the MC service server sends an MBS session update request towards MB-SMF (or indirectly via NEF/MBSF) with the required updates, afterwards it sends an MBS policy authorization update request towards the PCF (either directly or via NEF/MBSF) indicating the required QoS requirements. In other words, steps 2 to 7 are all performed.

8. The MC service server may initiate a service announcement towards the MC service clients associated with the ongoing session in order to announce the updated information if required, e.g., the updated service area or SDP information.

NOTE 3: the updated service area information is required for local MBS and for broadcast MBS services.

9. The MC service server sends an MapGroupToSessionStream over the MBS session providing the required information to receive the media related to the established MC service group communication.

10. The MC service clients process the received information over the MapGroupToSessionStream in order to receive the associated MC media over the specific MBS session stream.

11. MC service client 1 sends media to the MC service server over unicast to be distributed for the established group communication.

12. The MC service server distributes the MC media to the MC services clients 2 to n over the indicated streams.

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