**SA WG2 Meeting #144E (e-meeting) S2-210xxxx**

**April 12 – 16, 2021, Elbonia**

**Source: CATT**

**Title: Procedures of configuration for MBS**

**Document for: Approval**

**Agenda Item: 8.9**

**Work Item / Release: 5MBS / Rel-17**

*Abstract of the contribution: This contribution proposes updates to the procedures of configuration for MBS.*

1. Introduction

Updates to the procedures of configuration for MBS are proposed.

2. Proposal

It is proposed to include the following changes in TS 23.247.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1st Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 7.1.1 Configuration for MBS

Editor's note: The heading and content needs to be revisited.

#### 7.1.1.1 Initial configuration for MBS

The procedure of initial configuration for MBS Session is used by the AF to start the MBS Session towards 5GC, and it applies to both multicast and broadcast communications unless otherwise stated.



Figure 7.1.1.1-1: Configuration for MBS

Editor's note: The services and messages used in this procedure are FFS.

Steps 1 to 5 are optional and only applicable if TMGI is used as MBS Session ID and required to be pre-allocated.

1. AF sends Allocate TMGI Request () message to NEF/MBSF to request allocation of a TMGI to identify a new group.

NOTE 1: Depending on the configuration, MB-SMF may receive requests from AF directly, or via NEF, or via MBSF, or via NEF and MBSF.

2. NEF/MBSF checks and authorizes the request of the AF.

3. NEF/MBSF discovers and selects an MB-SMF as specified in clause 7.1.2, and then sends an Allocate TMGI Request () message to the MB-SMF.

4. MB-SMF allocates a TMGI and returns the TMGI to the NEF/MBSF.

5. The NEF or MBSF responds to the AF by sending a Allocate TMGI Response (TMGI) message.

6. The AF may perform a Service Announcement towards UE. The AF informs UEs about MBS Session information with MBS Session ID, e.g., TMGI, source specific multicast address, and possibly other information e.g., MBS service area, session description information, etc.

 The UE needs to be aware if the service is broadcast or multicast to decide if JOIN is to be performed.

Editor's note: How to do service announcements requires SA WG4 /WG6 coordination.

7. AF of content provider may provide service layer configuration for a new MBS session (possibly providing information for a previously allocated TMGI) to NEF/MBSF. If step 1-5 has not been executed before, The AF may provide a source specific multicast address or it may request that the network allocates an identifier for the multicast group (TMGI). MBS information may further include QoS requirements, UE authorization information (e.g. a GPSI or an External Group Id or a UE ID to identify UEs authorized to join the multicast service, service area identifying the service scope.

Editor's note: What other information is to be sent by AF is FFS.

8. [Optional] NEF/MBSF selects the MBSTF and requests it to reserve user plane resources for the MBS Session. The NEF/MBSF includes service layer configuration for MBS service data handling.

9. NEF/MBSF checks and authorizes the request of the AF. NEF/MBSF selects MB-SMF as ingress control node, as specified in clause 7.1.2.

10. NEF/MBSF requests MB-SMF to create a MBS Session context, and provides MBS Session ID or request allocation of TMGI as the MBS Session ID. It also indicates if the allocation of an ingress transport address is requested.

11. [Optional] MB-SMF updates its NF profile with the MBS Session ID for the newly configured/established MBS Session towards the NRF.

12. [Optional] The MB-SMF sends SM MBS Policy Association Request to PCF with the MBS Session ID, AF Identifier, and the QoS requirements provided by the NEF/MBSF .

13. [Optional] The PCF responds with SM MBS Policy Association Response with policies for the MBS Session.

 In addition, the PCF determines whether the request is authorized.

 If the request is authorized, the PCF derives the required QoS parameters based on the information provided by the NEF/MBSF, which is forwarded by the MB-SMF, and local configuration, and notifies the authorized QoS parameters for the MBS Session to the MB-SMF.

 If the request is not authorized, e.g. the required QoS is not allowed, the PCF responds to the MB-SMF indicating the failure.

14. [Optional] If the SM MBS Policy Association is established successfully, the PCF registers at the BSF that it handles the multicast session. It provides the MBS Session ID, its own PCF ID and optionally its PCF set ID.

15. [Optional] MB-SMF selects the MB-UPF and requests it to reserve user plane ingress resources. If multicast transport of the multicast data towards RAN nodes is to be used, the MB-SMF also request the MB-UPF to reserve for the outgoing data a tunnel endpoint and the related identifiers (source IP address, source specific multicast address and GTP Tunnel ID) and to forward data received at the user plane ingress resource using that tunnel endpoint. The MB-SMF also indicates if the allocation of an ingress transport address is requested.

16. [Optional] If requested, MB-UPF selects an ingress address (IP address and port) and a tunnel endpoint for the outgoing data and provides it to MB-SMF.

17. [Optional] MB-SMF indicates the possibly allocated ingress address to the NEF/MBSF. MB-SMF may include TMGI if it is allocated in step 7. It also indicates the success or failure of reserving transmission resources.

18. [Optional] NEF/MBSF sends the MB-UPF information, e.g. MB-UPF ingress address (IP address and port), to the MBSTF.

19. The NEF/MBSF indicates the possibly allocated ingress address and other parameters (e.g. TMGI) to the AF.

20. Same as step 6. The AF may also perform a service announcement at this stage.

#### 7.1.1.2 Configuration update for MBS

The procedure of configuration update for MBS Session is used by the AF to update the MBS Session configuration towards 5GC, and it applies to both multicast and broadcast communications unless otherwise stated.

Editor's note: The procedure of configuration update for MBS is FFS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*