**SA WG2 Meeting #S2-145E S2-2104242r08**

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**Source: vivo**

**Title: AF requested multicast session management procedure**

**Document for: Approval**

**Agenda Item: 8.9**

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

*Abstract of the contribution: AF requested multicast session management procedure.*

# 1 Introduction

This paper proposes procedure of AF requested multicast session join.

FS\_5MBS has concluded that both UE-triggered and AF-triggered join/leave are to be supported, as documented in 8.2.2.2 of TR 27.757:

- For multicast session establishment/join/leave/release:

- The UE may perform application level join/leave to a multicast session, the 5GC shall support multicast session join/leave operation for a user, e.g based on AF request.

**Q: If AF cannot get UE IP, how does the solution work?**

**A:** It is common for PDU Session modification triggered by AF as described in clause 4.15.6.6 and 4.15.6.6a of TS 23.502. The revision indicates the AF/AS is a **TRUSTED AF/AS**. In case the AF/AS is not able to have UE IP, then the AF/AS is not allowed to perform the solution by the UE or MNO.

**Q: How to perform UE consent?**

**A:** The revision describe an example that AF requests MNO to provide SMS code to UE and UE sends it to AF, the AF perform the operation together with the code for UE consent verification by MNO.

It is depends on MNO whether to request UE consent via the SLA between the MNO and AF, after all, if UE does not request the operation, UE will discard the multicast session data due to no APP receiving it, it will not bring any benefit for **TRUSTED AF** but harm.

**Q: What if UE request AF using a different PDU Session from the associated PDU Session?**

**A:** The MNO is able to make sure the UE uses the associated PDU Session for the interaction with the AF, if the MNO support this operation, the MNO can use the “internet” PDN for the associated PDU Session, or use URSP for UE interacting with the AF via the associated PDU Session.

# 2 Proposal

It is proposed to approve following changes in TS 23.247:

\* \* \* \* First change (new text) \* \* \* \*

#### 7.2.X Multicast session management requested by trusted content provider

Multicast transmission requested by trusted AF allows a trusted internal or external party to request the 5GC establishing or releasing the transmission resources for some UEs, who request the operation to the trusted AF.

The trusted AF instructs the PCF via NEF or directly for the UEs, which indicates the MBS Session ID, Target UE information, and operation type for different services/applications. The PCF instructs the SMF per the UE of the MBS Session ID and operation type. Then the SMF updates the transmission resources of the MBS session indicated by the MBS Session ID for the UE.

The following call flow depicts the multicast session management requested by content provider, and the procedure is based on clause 4.15.6.6 and 4.15.6.6a of TS 23.502 [6] as well as clause 7.2.1.3 and 7.2.2.2.

Pre-condition:

- The multicast session has been configured in the 5GS.

- UE has registered in the 5GS, has established a PDU Session associated with the MBS Session as described in clause 7.2.1.2, and is able to interact with AF/AS over application layer (e.g. via web portal) via the PDU Session, e.g. based on URSP.

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**Figure 7.2.X-1: Multicast session management requested by trusted content provider**

1. The UE and the trusted AF interact over application layer..

NOTE: A typical example of the interactions are as following:
a) The UE requests join/leave operation for multicast sessions from the AF/AS via web portal, then the AF/AS requests the mobile operator network to provide the UE an code, e.g. via SMS;
b) The UE indicates the code to the AF/AS and then AF/AS requests the mobile operator network for the operation to the UE together with the code, the mobile operator network verifies whether the UE allows the AF/AS to perform the join/leave for the multicast sessions.

2. The trusted external AF/AS of the content provider sends MBS Session Application Request message to the NEF/MBSF. Besides the AF Identifier, operation type, and MBS Session ID, the message includes information of UE address.

3. The NEF/MBSF or trusted internal AF invokes Npcf\_PolicyAuthorization\_Create/Update (UE address, AF parameters) towards the PCF per the UE, the AF parameters include MBS Session ID and operation type. The NEF/MBSF may query BSF to find the PCF associated with the PDU Session of the UE.

 The NEF/MBSF may verify the request from trusted AF/AS, e.g., whether the MBS Session is performed by the trusted AF/AS.

4. The NEF/MBSF responses to the trusted external AF/AS.

5. The PCF invokes Npcf\_SMPolicyControl\_UpdateNotify with MBS Session ID towards the SMF serving the UE.

6. This step is same as steps 3-7 described in clause 7.2.1.3 for multicast session establishment or is same as steps 3-11 described in clause 7.2.2.2 for multicast session leave with the following differences:

- The SMF invokes Namf\_Communication\_N1N2MessageTransfer towards the AMF instead of returns response to the Nsmf\_PDUSession\_UpdateSMContext request.

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