3GPP TSG-WG SA2 Meeting #141E e-meeting *S2-2007465r7*

Elbonia, October 12 – 23, 2020 (revision of S2-200xxxx)

**Source: Huawei, HiSilicon, CATT?, Vivo?, ZTE? OPPO**

**Title: KI#7: Evaluation and Conclusion of KI#7**

**Document for: Approval**

**Agenda Item: 8.9**

**Work Item / Release: FS\_5MBS / Rel-17**

*Abstract: This contribution contains the evaluation and conclusion for KI#7.*

1. Introduction

The following key issue #7 is documented in TR 23.757, this contribution propose evaluation and conclusion for KI#7.

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| 5.7 Key Issue #7: Reliable delivery method switching between unicast and multicast  5.7.1 Description  This key issue aims at providing support for dynamic delivery method switching between unicast and multicast in the 5GS. Depending on the number of devices receiving a specific content, their location, and RAN considerations, it may be necessary to support reliable and efficient delivery method switching between unicast and multicast. In addition, when a UE is receiving a multicast session, it may move across NG-RAN nodes and it is possible that the UE moves from a NG-RAN node that supports MBS to one that does not support MBS, or vice versa.  The following aspects will be studied:  - Triggers for delivery method switching between unicast and multicast.  - How switching between unicast delivery method and multicast delivery method is performed in the 5GS (including the UE) while supporting service continuity.  NOTE 1: The terms unicast delivery and multicast delivery methods may have different meaning depending on which part of the 5G system a solution is referring to as defined in clause 4.4, e.g. over-the-air it may mean PTP vs. PTM, between UPF and RAN it may mean shared tunnel vs unicast tunnel, etc.  NOTE 2: Towards application, the terms unicast delivery and multicast delivery methods may also the application is using multicast session vs PDU session, which is in SA6 scope.  NOTE 3: During the study of this key issue, RAN WGs, SA4 and SA6 will be involved, if needed. |

1. Discussion

There are 15 candidate solutions proposed to address key issue#7, i.e. solution#11/#12/#18/#22/#23/#24/#25/#26/#27/ #28/#29/#30/#31/#39/#40.

# 3. Text Proposal

It is proposed to capture the following changes VS. TR 23.757.

\* \* \* \* First change \* \* \* \*

8 Conclusions

8.X Key Issue #7: Reliable delivery method switching between unicast and multicast

For delivery method switching due to inter-RAN mobility, the following principle are agreed,

* When the UE moves from a NG-RAN node that supports MBS to one that does not support MBS, the network and UE shall support switch from 5GC Shared MBS traffic delivery method to 5GC Individual MBS traffic delivery method.
* When the UE moves from a NG-RAN node that does not support MBS to one that supports MBS, the network and UE shall support switch from 5GC Individual MBS traffic delivery method to 5GC Shared MBS traffic delivery method.

Editor’s Note: It is FFS before the handover procedure, whether the UE/NG-RAN need be aware of the linkage between the MBS Session and the associated unicast PDU Session before mobility. If yes, 5GC need provides this information to UE and NG-RAN.

* During the handover from NG-RAN not supporting MBS to NG-RAN supporting MBS, the PDU session associated with MBS session is handed over to target RAN as normal intra RAT Handover. After the handover, the (MB-)SMF triggers the switch from the 5GC Individual MBS traffic delivery method to 5GC Shared MBS traffic delivery method.
* During the handover from NG-RAN supporting MBS to NG-RAN not supporting MBS, the MBS Session flow is converted to the QoS flow within the associated PDU session at the target RAN.
* SA2 assumes support for lossless handover with data forwarding from source NG-RAN to the target NG-RAN, this needs to be confirmed by RAN.

For delivery method switching due to non-inter-RAN mobility, the following principle are agreed,

* Switching between multicast delivery and unicast delivery is not specified in normative work.
* On switching between PTP and PTM delivery methods for 5GC Shared MBS traffic delivery, NG-RAN is the decision point of the switching.
* If the NG-RAN node support MBS, the network shall use the 5GC Shared MBS traffic delivery method for MBS Session packet transferring unless UE move from the not supporting MBS RAN, e.g. EPS network. In that case (MB-)SMF triggers the switch from individual MBS delivery to shared MBS delivery.

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