**3GPP TSG-WG SA2 Meeting #140E e-meeting *S2-2005415r34***

**Elbonia, August 19 – September 2, 2020 (revision of S2-200xxxx)**

Title: [DRAFT] LS on RAN impact of FS\_5MBS Study

Release: Release 17

Work Item: FS\_5MBS, NR\_MBS-Core

Source: [Huawei to be] SA2

To: SA, RAN2, RAN3

Cc:

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**Attachments:** [**TR 23.757 v0.4.0**](http://www.3gpp.org/ftp/Specs/archive/23_series/23.757/23757-040.zip) **(version before** **SA2#140e)**

Note: [**TR 23.757 v0.5.0**](http://www.3gpp.org/ftp/Specs/archive/23_series/23.757/23757-050.zip) containing the results of SA2#140e will be available shortly after SA2#140E

**1. Overall Description:**

SA2 has been discussing on Rel-17 FS\_5MBS solutions since SA2 #135 meeting in TR 23.757, and captured several proposed solutions.

SA2 would like to kindly inform RAN2 and RAN3 the following interim agreements in SA2:

- SA2 will develop means to provide QoS requirements for an MBS Session to RAN nodes.

- SA2 agrees that for N3 transport of the shared delivery method of MBS data, GTP-U tunnelling using a transport layer IP multicast method and shared N3 (GTP-U) Point-to-Point tunnel shall be supported from MB-UPF to NG-RAN nodes. This tunnel can use either IP multicast transport (NG-RAN sends IGMP/MLD Join/Leave to a multicast router) or point-to-point unidirectional N3 tunnels from MB-UPF to NG-RAN nodes. For unicast transport there shall be 1-1 mapping between MBS Session and GTP-U tunnel towards a RAN node, and for multicast transport there shall be 1-1 mapping between MBS Session and the GTP-U tunnel.

- SA2 agreed that the UE shall be able to receive on-going data of a multicast MBS session while in CM-CONNECTED state.

- Based on SA plenary decisions, Key Issue #5 ("Support of Broadcast TV Video and Radio communication services") is out of scope of Rel-17.

SA2 would like to inform that no solution or combination of solutions has been adopted yet, and would like to receive feedback from RAN2 and RAN3 on the RAN impacts, produced by some of the company proposed solutions in SA2, and for some of the solutions documented in current TR, SA2 would like to kindly ask RAN2 and RAN3 the following questions:

1. There are different proposals how to handle the CM-IDLE/CM-CONNECTED state transitions:
   1. UE within a multicast MBS session shall stay in CM-CONNECTED state,
   2. UE can receive data of a multicast MBS session also while in CM-IDLE state.
   3. UEs can transition into CM-IDLE while no multicast MBS data are transmitted.
   4. Some solutions propose that 5G CN may trigger notification to CM-IDLE and/or CM-CONNECTED mode UEs (e.g. paging CM-IDLE mode UEs) for establishing transmission resources for an multicast MBS session when data of an multicast MBS session are ready to be delivered.
   5. Some solutions propose that the multicast MBS session can be deactivated by the network while no multicast MBS data are transmitted to save power.
   6. Some solutions propose that the network can activate the multicast MBS session and trigger notification to UEs when multicast MBS data are transmitted again.

SA2 would appreciate RAN2 and RAN3 feedback on the above and comments, if any.

1. Some Xn/N2 handover solutions in the SA2 study are documented in the TR.
   1. Some solutions consider to have temporary MBS data forwarding from S-RAN to the T-RAN, to address potential data loss or duplication in case of a UE moving to a T-RAN supporting 5MBS.
   2. Some solutions have left forwarding FFS and would appreciate RAN feedback on possibilities for forwarding at Xn/N2 handovers with considerations of minimization of data loss, data duplication and complexity.
   3. Some solutions introduce HO for local MBS service that can only transmit data in a certain area, which has impact on RAN for service area restriction.

SA2 would appreciate RAN2 and RAN3 feedback and considerations on these solutions and topics.

1. SA2 is debating whether broadcast (i.e. without awareness of the network about UEs receiving broadcast contents and for other use cases than the ones excluded already for Rel-17) should be further down-scoped in Rel-17 for remaining broadcast requirement in the SID. Some companies have provided solutions on broadcast (which are documented in the TR). SA2 would like to ask SA, RAN, RAN2 and RAN3 for feedback on broadcast support in Rel-17.
2. Some solution suggests the 5GC sends MBS assistance information to RAN for PTP/PTM delivery method decision and switching.

SA2 would appreciate RAN2 and RAN3 feedback on the above and comments, if any.

SA2 would like to reiterate that none of the solutions with RAN impacts as described above have been concluded as way forward, and intends to use RAN WGs feedback on the RAN considerations, together with SA2’s own system level and core network considerations to reach final conclusions.

**2. Actions:**

**To RAN2 and RAN3 group.**

**ACTION:**

SA2 respectfully requests RAN2 and RAN3 to take the above information into account and to answer the questions raised by SA2 and to provide any other feedback to SA2 (including any feedback on the proposed interim agreements).

**To TSG SA and RAN group.**

**ACTION:**

SA2 respectfully requests TSG SA and TSG RAN to provide feedback on Question 3 on broadcast support in Rel-17.

**3. Date of Next TSG SA WG2 Meetings:**

TSG-SA2 Meeting #141E October 12 – 23, 2020 Elbonia

TSG-SA2 Meeting #142E November 16 – 20, 2020 Elbonia