3GPP TSG-RAN WG3 Meeting #121 R3-23xxxx

Toulouse, France, 21 – 25 Aug, 2023

**Title: [DRAFT]** **Reply to LS on addressing packet loss during multicast MBS delivery**

**Response to: Reply LS S2-2307982 on addressing packet loss during multicast MBS delivery from SA2**

**Release: Rel-17**

**Work Item: 5MBS, MCOver5MBS**

Source: Huawei [will be RAN3]

**To: SA2, RAN2, SA6**

**Cc:**

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**Send any reply LS to: 3GPP Liaisons Coordinator,** [**mailto:3GPPLiaison@etsi.org**](mailto:3GPPLiaison@etsi.org)

**Attachments:** **-**

# 1 Overall description

RAN3 thanks SA2, SA6 for the LS on addressing packet loss during multicast MBS delivery.

RAN3 discussed about that TS 38.300 allows the gNB to move the UE to RRC\_INACTIVE for an active multicast session (see excerpt below).

*16.10.5.2 Configuration*

*A UE can receive data of MBS multicast session only in RRC\_CONNECTED state. If the UE which joined a multicast session is in RRC\_CONNECTED state and when the multicast session is activated, the gNB may send RRCReconfiguration message with relevant MBS configuration for the multicast session to the UE.*

***When there is temporarily no data to be sent to the UEs for a multicast session*** ***that is active, the gNB may move the UE to RRC\_INACTIVE state.*** *When an MBS multicast session is deactivated, the gNB may move the UE to RRC\_IDLE or RRC\_INACTIVE state. gNBs supporting MBS use a group notification mechanism to notify the UEs in RRC\_IDLE or RRC\_INACTIVE state when a multicast session has been activated by the CN. gNBs supporting MBS use a group notification mechanism to notify the UEs in RRC\_INACTIVE state when the session is already activated and the gNB has multicast session data to deliver. Upon reception of the group notification, the UEs reconnect to the network or resume the connection and transition to RRC\_CONNECTED state. The group notification is addressed with P-RNTI on PDCCH, and the paging channels are monitored by the UE as described in clause 9.2.5.*

RAN3 would like to clarify one aspect in this scenario:

1. upon receiving new DL packets, the gNB triggers RAN Paging within the UE’s RNA, if the UE access from a new gNB, multicast data forwarding is not supported and packet loss may occur, especially in case the multicast session was not established yet in the new cell.

And about the two questions from SA2 to RAN2, RAN3 would like to provide following answers:

*SA2 Question 1: what are the conditions upon which gNB may move the UE involved in an active MBS Session to RRC\_INACTIVE (as quoted in clause 16.10.5.2 of TS 38.300) and whether the QoS information (e.g. 5QI, ARP) of the multicast session is taken into account when deciding whether to move the UE to RRC\_INACTIVE state or not.*

RAN3 answer: The QoS Information of the multicast session could be considered. However, it is left to gNB implementation on how to make decision about moving a UE to RRC\_INACTIVE including which QoS parameters is considered, e.g. ARP or 5QI.

*SA2 Question 2: what is the typical latency of first downlink packet(s) transmission if the UE is in RRC\_INACTIVE state?*

RAN3 answer: in case the UE is under another cell of another gNB within the RNA, besides the latency of Uu signalling, the latency for backhaul signalling exchanging during XnAP RAN Paging and the UE Context Retrieval procedure should also be considered.

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# 2 Actions

**To SA2, RAN2, SA6:**

**ACTION:** RAN3 kindly asks SA2, RAN2, SA6 to take the above feedback into account.

# 3 Dates of next RAN3 meetings

Updated meeting schedule can be found at: <https://portal.3gpp.org/?tbid=373&SubTB=381#/>

RAN3#121-bis 2023-10-09 - 2023-10-13 Xiamen, CN

RAN3#122 2023-11-13 - 2023-11-17 Chicago, US