**3GPP T****SG-RAN WG2 Meeting #119bis-e R2-221xxxx**

Online, 10 – 19 Oct 2022

**Title: [DRAFT] Reply LS on FS\_5MBS\_Ph2 progress**

**Response to: LS of R2-2209356/S2-2207470 on FS\_5MBS\_Ph2 progress from SA2**

**Release: Release 18**

**Work Item: NR\_MBS\_enh**

Source: Huawei [will be RAN2]

**To: SA2, RAN3**

**Cc: RAN1**

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**Attachments:** **None**

# 1 Overall description

RAN2 thanks SA2 for their LS on FS\_5MBS\_Ph2 progress, based on the discussion in RAN2, RAN2 would like to provide the following feedback for SA2’s questions:

**RAN2 Answer to Q1-a):**

* When comparing quality and reliability of MBS reception in a given cell:
	+ - If the comparison is between situation 1, where the MBS session is delivered only to UEs in the *RRC\_CONNECTED* state (employing H-ARQ), and situation 2, where the MBS session is delivered only to UEs in the *RRC\_INACTIVE* state, then the UEs in situation 1 may have higher reception quality and reliability;
		- If the UEs are in situation 3 (see the answer to Q1-b), where some UEs are in the *RRC\_CONNECTED* state and some UEs are in the *RRC\_INACTIVE* state, while the MBS session is delivered, then all UEs will receive the same traffic (including retransmissions driven by the *RRC\_CONNECTED* UEs with H-ARQ) and will have similar reception quality and reliability.

**RAN2 Answer to Q1-b):**

* Yes, it is supported that gNB transmits service of one multicast session to both UEs in CONNECTED and INACTIVE in the same cell.

**RAN2 Answer to Q1-c):**

* There may or may not be interruptions during state transition, depending on the solution to provide the PTM configuration and also network implementation. If any interruptions occur, we expect those interruptions to have a minimal impact on MBS service.

**RAN2 answer to Q1 d) and Q2:**

* For the MBS session handling: the existing MBS session QoS parameters (e.g. ARP, 5QI) can be used to differentiate different MBS sessions to decide whether the corresponding services can be provided to RRC Inactive UEs.
* For the case of differentiating different UEs: as the MBS session related QoS parameters are the same for different UEs within the same MBS session, the existing QoS parameters of MBS QoS Flow(s) cannot be used by NG-RAN to differentiate the handling for different UEs. Thus, RAN2 confirms that additional assistance information is needed if the handling for different UEs needs to be differentiated.

**RAN2 answer to Q3:**

* Yes, the UE capability for supporting to receive multicast data in RRC\_INACTIVE state can be reported to RAN, which is subject to the discussion of UE capability.

**RAN2 answer to Q4:**

* Yes, the idle UEs need to be transited to connected state to start receiving the MBS data and thus the CN initiated group paging is still needed to be performed.

**RAN2 answer to Q5:**

* It is possible that the RRC\_INACTIVE UE receives MBS data without going back to RRC connected state first when the MBS session is being activated. Whether and how Rel-18 UE in INACTIVE can be informed when the session is activated is under discussion in RAN2.
* For group paging initiated for idle UEs, per Rel-17 specification, the RRC inactive UEs will also respond. However, for Rel-18, if the MBS session can be received in RRC inactive state, the RRC inactive UE may not need to go back to RRC connected state. It is FFS how to avoid these UEs going back to RRC connected state when the CN group paging is received.

**RAN2 answer to Q6:**

* RAN2 has made the following agreement: Multicast service continuity after cell reselection in RRC\_INACTIVE state (i.e. without resuming RRC connection) will be supported (if the configuration of the new cell is available for the UE). Upon cell reselection to neighbour cells during active multicast session, if the configuration of the session is not available for the new cell for UEs in INACTIVE, then the UE is required to resume RRC connection to get the Multicast MRB configuration.

**RAN2 answer to Q7:**

* RAN2 would like to leave RAN3 to respond to this question.

# 2 Actions

**To SA2, RAN3 group:**

**ACTION:** RAN2 kindly ask SA2 and RAN3 to take the above feedback into account in their discussion.

# 3 Dates of next RAN2 meetings

TSG-RAN WG2#120 November 14th – 18th, 2022 Toulouse, France

TSG-RAN WG2#121 February 27th – March 3rd, 2023 Athens, GR