**3GPP TSG-RAN WG2#127 R2-24xxxxx**

**Maastricht, Netherlands, 19-23 August 2024**

**Title:** DraftLS on data block sizes for Ambient IoT

**Response to:**

**Release:** Release 19

**Work Item:** FS\_Ambient\_IoT\_solutions

**Source:** MediaTek [to be RAN2)

**To:** RAN1, SA2

**Cc:**

**Contact Person:**

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**Attachments:** None

**1. Overall Description:**

RAN2 have discussed the role of the MAC in handling upper-layer data blocks (MAC SDUs) and processing them into transport blocks (MAC PDUs). It is RAN2 understanding that this processing may require segmentation as a MAC function, depending on the upper-layer block sizes supported by SA2 and the transport block sizes supported by RAN1.

RAN2 wish to inform RAN1 that RAN2 can define MAC PDU sizes to correspond to the capacity of the physical layer. Accordingly, RAN2 intend to follow RAN1 on the values used for transport block sizes. If RAN1 define multiple transport block sizes, RAN2 will need to understand the maximum and minimum TB sizes, in both D2R and R2D directions, and the conditions under which each size can be used over the AIoT interface.

Depending on the relationship between the supportable TB sizes and the size of a data block provided to the AS by upper layers (i.e., the maximum MAC SDU size), RAN2 may need to specify segmentation functionality as part of the AIoT MAC. RAN2 understand from TR 38.848 and TS 22.369 that a maximum “typical” message size of ~1000 bits is expected, but it is not clear to RAN2 what the true maximum size is, nor if upper layers would perform some segmentation to adapt large messages to the TB size. Accordingly, RAN2 would like to understand from SA2 the maximum data block size that is expected to be provided from upper layers to AS layers, in both D2R and R2D directions.

RAN2 would like to observe that there may be benefit to aligning the minimum TB size across different device types, to allow a consistent design of the first messages sent in each direction during paging/access procedures.

**2. Actions:**

**To RAN1:**

RAN2 respectfully request that RAN1 take this information into account, and feed back when it is possible to indicate what maximum and minimum TB sizes are expected to be supportable in PHY, in both D2R and R2D directions, and, in case there are multiple TB sizes, the conditions under which TBs of different sizes can be transmitted.

**To SA2:**

RAN2 respectfully ask SA2 to feed back on the expected maximum data block size delivered from upper layers to the AIoT AS layers, in both D2R and R2D directions.

**3. Date of Next RAN2 Meetings:**

TSG-RAN WG2 Meeting #127bis 14-18 October 2024 Hefei, CN

TSG-RAN WG2 Meeting #128 18-22 November 2024 Orlando, FL, US