**3GPP TSG RAN WG2#126 R2-240xxxxx**

**Fukuoka, Japan, 20th - 24th May 2024**

**Title:** DRAFTLS on RAN2 agreements and assumptions for Ambient IoT

**Response to:**

**Release:** Release 19

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

**Source:** OPPO (to be RAN2)

**To:** SA3, SA2

**Cc:** RAN3

**Contact Person:**

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**Attachments:** None

**1. Overall Description:**

During Ambient IoT’s study so far, RAN2 has made following agreements and assumptions which are related to SA2 and SA3 work.

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| **Agreements**1. Unless explicitly stated all agreements apply to all device types and for both topologies.
2. From RAN2 perspective, the aim is that the design on the interface between reader and A-IoT device is common for topology 1 and topology 2.
3. RAN2 will support two use cases, “inventory” and “command”. The definition, detailed wording is FFS
4. FFS if *Initial Trigger Message* can also include “command”.
5. As baseline, the “inventory only” case is supported by the procedure:

- Step A: A-IoT paging;- Step B: Device ID transmission (via Random Access or without using RA). Details are FFS 1. As baseline, the “inventory and command” case is supported by the procedure:

- Step A: A-IoT paging;- Step B: Device ID transmission (via Random Access or without using RA). Details are FFS - Step C: reader to device data transmission (e.g. the R2D command), and- Step D: corresponding device to reader data transmission (e.g. the feedback). FFS whether this is optional, pending other WG discussions. Clarify in TR that inventory and command doesn’t mean that AIoT paging includes both Inventory and Command in the same message. This doesn’t mean that inventory and command are received by the reader at the same time from upper layer. 1. From RAN2 point of view we will study “Command only” use case.

FFS the options on how to support it: A-IoT paging message from the reader contains the command. Final feasibility depends on SA2 and SA3 work/conclusions. Use baseline procedure for “inventory and command”(i.e. first triggers inventory procedure and then sends command) |

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| **Agreements**1. PDCP layer is not needed. FFS how to handle AS security (if needed pending SA3 discussion) and any other really needed functionalities.
2. RAN2 will continue the study of ambient IoT assuming no support of AS security until SA3 provides further input.
3. SDAP is not supported for UP protocol stack.
4. RAN2 assumes that no per-packet QoS and no per-QoS flow is supported at AS level (for both UL/DL). FFS how to handle the general QoS requirements from SA2
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| **Agreements**1. RAN2 assumes that the device will not support tracking/RAN area update procedure.  |

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| **Agreements**1 RAN2 will study the following cases for AIoT paging message:* a message containing an ID of a single A-IoT device.
* a message containing a group ID that maps to multiple A-IoT devices.
* a message that does not contain an ID, i.e., addressed for all devices that can receive the AIoT message.
* a message containing multiple IDs of A-IoT devices. Need to confirm the need for this use case based on SA2 discussion.

What device ID and group ID and scenarios is depending on SA2 discussion.AIoT paging message indicate information from which the device can determine resources to be used for response (D2R message). FFS how (e.g. implicit/explicit/configured/preconfigured) and what resources (dedicated and/or shared) are provided to the device taking into account RAN1 discussion.  |

RAN2 will continue work on the details of the procedues and would welcome feedback on the aspects which are in the remit of SA2 and SA3.

**2. Actions:**

**To SA2 and SA3:**

RAN2 respectfully asks SA2 and SA3 to take the agreements/assumptions into account for future work and to provide feedback on the aspects which are in the remit of SA2 and SA3.

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

TSG-RAN WG2 Meeting #127 August 19 – August 23, 2024 Maastricht, NL.

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