**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 may be related to SA2 and/or SA3 work.

RAN2#125bis:

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| **Agreements*** Unless explicitly stated all agreements apply to all device types and for both topologies.
* 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.
* RAN2 will support two use cases, “inventory” and “command”. The definition, detailed wording is FFS
* FFS if *Initial Trigger Message* can also include “command”.
* RAN2 assumes that the device will not support tracking/RAN area update procedure.
* PDCP layer is not needed. FFS how to handle AS security (if needed pending SA3 discussion) and any other really needed functionalities.
* RAN2 will continue the study of ambient IoT assuming no support of AS security until SA3 provides further input.
* SDAP is not supported for UP protocol stack.
* 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
* Periodical System information and MIB are not supported by AIoT devices.
* For the case of reaching single or group of devices, an identifier may be required to identify the device/group of devices in the trigger message. FFS pending the details from SA2
* RAN2 assumes, AIoT devices are not required to support ASN.1 encoding/decoding.
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RAN2#126:

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| **Agreements*** 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
* 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 A-IoT 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. * 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)
* RAN2 will study the following cases for A-IoT 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 A-IoT 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.
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Note that the detailed terminologies and procedures can be found in the latest version of TR 38.769.

**2. Actions:**

**To SA2 and SA3:**

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

**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