**3GPP TSG-WG SA2 Meeting #166 *S2-2412515***

**Orlando, USA, 18th Oct – 22nd Oct, 2024 (revision of S2-2412125)**

Title: [DRAFT] AIoT Conclusions in SA2

Response to: S2-2411311(R2-2409412)

Release: Release 19

Work Item: FS\_AmbientIoT, FS\_Ambient\_IoT\_solutions

Source: [Huawei to be] SA2

To: SA3, RAN2, RAN3

Cc: RAN, SA

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Attachments: TR 23.700-13, v2.0.0

**1. Overall Description:**

This LS provides information to the following aspects.

1. **Reply to LS on RAN2 agreements and assumptions for Ambient IoT**

SA2 thanks RAN2 for the LS (R2-2409412) on assistance information from the CN to the Reader for A-IoT. After discussion, SA2 would like to provide the answer to the questions in the LS as following:

Q1: Can the CN provide, to the reader, an estimate of the expected size of the following D2R message(s) in response to the service request?

SA2 answer: Yes. When an AF requests an AIoT service to the 5G network, the AF may provide the expected size of the following D2R message(s) in response to the service request. The CN can then derive the final expected size of these D2R message(s), taking into account the required AIoT device NAS messages, and provide this information to the reader.

Q2: If such information (see Q1) can be provided by CN to the reader, can it be provided only in some cases or in all cases?

SA2 answer: SA2 assumes that the expected size of the following D2R message(s) in response to the service request can be provided to the reader in all cases.

1. **Summary of overall progress/conclusion in the SA2 study item, which may be useful for the future work of other WGs**

SA2 has discussed and drawn the conclusion on the Ambient IoT including following aspects:

- General architecture design which is topology 1 and 2 agnostic.

- Architecture to support topology 1.

- Architecture to support topology 2.

- Ambient IoT Device ID device management, including AIoT Device permanent identification format and the subscription-like information.

- Ambient IoT Services and their exposure to an AF.

For detailed conclusion content, please check the attached TR.

SA2 expects coordination between RAN and SA to align the scope of normative work in Rel-19.

1. **SA2 will re-visit the following issues in coordination with other WGs in the normative phase**
2. Issues in coordination with SA WG3:

* Architecture aspects to support security e.g. Authentication, ID Validation.
* Whether the temporary ID in the AIoT NAS layer is required for the privacy protection is FFS and is pending SA WG3 decision.
* Whether and how to support enabling temporarily disabled AIoT devices. (In the approved SP-231806/240969, it is stated that enable/disable device operation will be handled by SA3)

1. Issues in coordination with RAN WG:

* Radio resources allocation (what information and how to provide it) to Readers for topology 2.
* For RRC based option of topology2, whether the gNB performs the down selection of UE readers provided by AIOTF.
* AIoT Reader Control layer.

1. **Following issues are still open in SA2 and should be handled in the normative phase**

* Information that can be stored in the AIoT Device subscription-like data (static information).
* Information that can be stored in AIoT device context data (dynamic information).
* The network entity(ies) to store the AIoT Device subscription-like data and the AIoT device context information.
* AIoT reader selection procedure.
* AIoT reader authorization procedure.
* AIoT data aggregation procedure.
* Correlation between AIoT request and response.
* AMF service enhancement to communicate with AIOTF.
* CN control on the PDU session establishment for the UP-based option in topology 2.
* NEF exposure service design principle.
* NF profile for AIOTF.
* Device permanent ID format.

**2. Actions:**

**To SA3, SA5, RAN2 and RAN3 group.**

**ACTION:** SA2 kindly asks SA3, RAN2 and RAN3 to take the above information for your future work.

**3. Date of Next TSG SA WG2 Meetings:**

TSG SA2 Meeting #166-Adhoc-e 20th Jan – 24th Jan, 2025 Online

TSG-SA2 Meeting #167 17th Feb – 21st Feb, 2025 Athens, GR

TSG-SA2 Meeting #168 7th Apr – 11th Apr, 2025 Goteborg, Sweden