**3GPP TSG-WG SA2 Meeting #170 *S2-250xxxx***

**Goteborg, SE, 25th Aug – 29th Aug, 2025 (revision of S2-250xxxx)**

**Source: Huawei, HiSilicon**

**Title: Architectural Assumptions and Requirements**

**Document for: Approval**

**Agenda Item: 20.5.1**

**Work Item / Release: FS\_AmbientIoT\_Ph2\_ARC / Rel-20**

*Abstract: Architectural Assumptions for TR 23.700-30 for FS\_AmbientIoT\_Ph2\_ARC.*

# 1. Introduction/Discussion

The following are Architectural Assumptions and Requirements for TR 23.700-30 based on the Rel-19 TR 23-700-13 scope and SID in SP-250834.

# 2. Text Proposal

It is proposed to capture the following changes vs. TR 23.700-30.

\* \* \* \* First change (all new) \* \* \* \*

## 4.1 Architectural Assumptions

Common assumptions:

- Architecture support for Ambient power-enabled Internet of Things defined in TS 23.369 [x] is the baseline architecture.

NOTE x: Any additional security aspects for Ambient IoT requires coordination with SA WG3.

NOTE x: Any additional charging aspects for Ambient IoT will be studied by SA WG5.

Assumptions for support of AIoT services in Topology 2:

- Rel-19 Ambient IoT Devices are not aware of whether Topology 1 or Topology 2 is in use, and will operates the same in both topologies and there is no impact from the support of Topology 2 on Rel-19 Ambient IoT Devices.

- The following topology as defined in TR 38.848 [7] is assumed:

- Topology 2: BS <--> intermediate node <--> Ambient IoT Device: Only a UE can act as an intermediate node which is under the network control

- The UE acting as an intermediate node (Reader) is using the RRC based-option from the conclusion in TR 23.700-13 [a].

Assumptions for support of DO-A Capable AIoT Devices:

- The following traffic types for Ambient IoT Device are assumed:

- DT: Device-terminated, as defined in Rel-19;

- DO-DTT: Device-originated - device-terminated triggered, as defined in Rel-19, and

- DO-A: Device-originated – autonomous.

- Handover is not supported.

- AIoT Device power saving for DT/DO-DTT traffic needs to be considered.

- In topology 1 both Direct and Indirect Connectivity paths will be supported.

- The architecture for Rel-19 AIoT Devices in Topology 2 is the baseline for supporting DO-A capable devices in topology 2.

## 4.2 Architectural Requirements

The following architectural requirements are applicable to this study:

- Support for AIoT Services needs to adhere to the nature of the AIoT Devices (e.g. ultra-low complexity, need for power saving, cost and resource-constrained).

- Support of the security aspects needs to consider the nature of the AIoT Devices (e.g. ultra-low complexity power, cost and resource-constrained) while addressing e.g. confidentiality, integrity, etc.

\* \* \* \* End of changes \* \* \* \*