3GPP TSG-SA WG2#164 S2-2408739

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**Source: China Mobile, NEC, ZTE, China Telecom, CATT, Spreadtrum, vivo**

**Title: Update architectural assumptions – dedicated Ambient IoT core network**

**Document for: Approval**

**Agenda Item: 19.14**

**Work Item / Release: FS\_AmbientIoT / Rel-19**

*Abstract of the contribution: This contribution suggests adding one note about the dedicated ambient IoT core network into the architectural assumptions section due to security concerns.*

# 1. Text proposal

It is proposed to agree the following changes to TR 23.700-13:

>>>>BEGINNING OF CHANGES<<<<

# 4 Architectural Assumptions and Requirements

## 4.1 Architectural Assumptions

- The following traffic types for Ambient IoT Device are to be studied:

- DT: Device-terminated; and

- DO-DTT: Device-originated - device-terminated triggered.

NOTE 1: The DO-DTT additionally includes traffic from AIoT Devices, which is triggered by RAN/UE as reader, without CN sending traffic towards the AIoT Devices.

NOTE 2: The final decision for including DO-A (Device-originated - autonomous) in the study depends on RAN decision.

- The following two connectivity topologies as defined in TR 38.848 [7] are to be studied:

- Topology 1: BS <--> Ambient IoT Device;

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

- The communication spectrum is assumed to be licensed.

- Handover is not supported.

- RRC states are not supported by AIoT Devices (see TR 38.769 [8])

- No mobility (i.e. at least no cell selection/re-selection-like function) supported by AIoT Devices (see TR 38.769 [8])

Editor's note: The meaning of no mobility is to be clarified by RAN in TR 38.769 [8].

NOTE 3: Coordination with RAN is required to determine the Ambient IoT Device capabilities in relation to system level of functionality (considering e.g. traffic scenarios, connectivity topologies etc.).

NOTE 4: The security aspects for Ambient IoT requires coordination with SA WG3.

NOTE 5: The charging aspects for Ambient IoT will be studied by SA WG5.

NOTE 6: The NAS based Congestion control is not in the scope of this study.

NOTE 7: The AIoT feature allows a deployment with a dedicated Ambient IoT core network which supports to handle the ambient IoT devices without UICC via control plane .

## 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, power, 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<<<<