3GPP TSG-SA WG2#164 S2-2408739

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

**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: A dedicated Ambient IoT core network can be deployed by the operator to handle the traffic produced by ambient IoT devices without UICC if control plane based architecture is used to support AIoT.

## 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<<<<