**3GPP TSG-SA3 Meeting #124 S3-253559-r1**

**Wuhan, China, 13 – 17 October 2025**

**Source: Nokia,** **Huawei, HiSilicon, Xiaomi, OPPO, ZTE**

**Title: KI on authorization of intermediate UE**

**Document for: Approval**

**Agenda item: 5.2.11**

**Spec: 3GPP TR 33.714**

**Version: 0.0.1**

**Work Item: FS\_AIoT\_SEC\_Ph2**

**Comments**

This pCR proposes to resume the key issue on intermediate note authorization, which was suspended in release 19. This is a merger of S3-253171, S3-253212, S3-253340, S3-253373 and S3-253559.

\* \* \* First Change \* \* \* \*

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[a] 3GPP TR 23-700-13: "Study on Architecture Support of Ambient power-enabled Internet of Things".

[b] 3GPP TR 38.848: "Technical Specification Group Radio Access Network; Study on Ambient IoT (Internet of Things) in RAN".

[x] 3GPP TR 23700-30: "Study on Architecture support of Ambient power-enabled Internet of Things (AIoT); Phase 2".

[z] RP-251885: " New WID on Solutions for Ambient IoT (Internet of Things) in NR Phase 2".

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[x] <doctype> <#>[ ([up to and including]{yyyy[-mm]|V<a[.b[.c]]>}[onwards])]: "<Title>".

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5 Key issues

Editor’s Note: This clause contains all the key issues identified during the study.

5.X Key Issue #X: Authorization of intermediate UE for 5G Ambient IoT services

5.X.1 Key issue details

In TR 23.700-13 [a], Key Issues #1 and #3 describe the issues on the system architecture and procedure to support 5G Ambient IoT services, furthermore TR 23.700-30 [x], KI#1 describes the issues on the support AIoT services under the RRC-based option for UE Reader connectivity. TR 23.700-30 [x] KI#2 describes the issues on the system architecture to support DO-A (Device Oriented-Autonomous) capable Ambient IoT Devices in Topology 1 and Topology 2.

In the Topology 2 as defined in TR 38.848 [b], the UE acting as the intermediate node is responsible for transferring the information between AIoT device and 5GS. If the authorization of intermediate node is not supported, the attacker can play the role of intermediate node and arbitrarily deny 5G AIoT service.

Therefore, it is necessary to study how to authorize the UE for acting as the intermediate node.

NOTE: According to RAN SID[z], Device 1, 2b and C are all in the scope of this issue.

5.X.2 Security threats

If the 5GC cannot verify if the UE acting as an intermediate node is authorized, the attacker UE may impersonate the intermediate node. The attacker UE may then deny the 5G Ambient IoT services.

5.X.1 Potential security requirements

The 5GS shall be able to support the authorization of the AIoT capable UE as an intermediate node in 5G Ambient IoT services.

\* \* \* End of Changes \* \* \* \*