**3GPP TSG-SA3 Meeting #119e *S3-250054r1***

**emeeting, 13 - 17 January 2025**

**Source: Apple**

**Title: Adding evaluation to solution#3**

**Document for: Approval**

**Agenda Item: 5.9**

# 1 Decision/action requested

***Approve the pCR to TR 33.713***

# References

1. TR 33.713 v0.5.0

# 3 Rationale

This contribution proposes evaluation to solution#3.

# 4 Detailed proposal

\*\*\* Start of 1st Change \*\*\*

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## 6.3 Solution #3: Authorization of Intermediate UE for AIoT services

### 6.3.1 Introduction

The solution addresses the security requirement of KI#2: Authorization for 5G Ambient IoT services. Specifically, this solution proposes a method to authorize the UE as Intermediate UE in AF-initiated AIoT service procedure. The AMF/AIoT NF select the UE based on the information provided by AF, e.g., location information or external UE ID, and then interact with the UDM to obtain the selected UE’s subscription data and check whether it is allowed to act as Intermediate UE for AIoT secvice. Only after the UE is successfully authorized as intermediate UE, the network will then perform subsequent AIoT service procedure.

### 6.3.2 Solution details

Depicted in Figure 6.3.2-1 is the authorization procedure of Intermediate UE for AIoT Services.



**Figure** **6.3.2-1: Authorization of Intermediate UE for AIoT service**

1. The UE performs the registration procedure as specified in TS 23.502 [x] with the enhancement to indicate its AIoT Intermediate node capability, and is authorized as an intermediate UE during the registration procedure.
2. The AF sends the AIoT Service Request to the AMF/AIoT NF via the NEF, including the AIoT device ID, seivice type (e.g., Inventory, Command), location information, external UE ID (GPSI).
3. The AMF/AIoT NF selects the Intermediate UE based on the information provided by AF, e.g., location information and/or GPSI, etc.

NOTE 1: The selection of Intermediate UE is up to SA2 WG decision.

NOTE 2: Whether the AMF/AIoT NF need to select an Intermediate UE or a Reader is up to SA WG2 decision.

1. The AMF/AIoT NF sends the UE Authorization Request to the UDM with the info of the selected UE.
2. The UDM checks whether the selected UE is allowed to act as Intermediate UE against the UE's subscription data for AIoT service.

NOTE 3: The relevant subscription data could be configured offline in the UDM, or provided and updated in the UDM based on the AF-initiated AIoT service requests.

1. The UDM returns the UE Authorization Response to the AMF/AIoT NF.
2. The AMF/AIoT NF sends the AIoT Service Request to the Intermediate UE, including the AIoT device ID, service type, authorized result.
3. The inventory/Command procedure is carried out.

Editor’s Note: Whether the Intermediate UE is authorized during the registration or after the Intermediate UE selection is FFS.

Editor’s Note: Which entity performs the Intermediate UE authorization should be aligned with the AIoT system designed by SA2, which is FFS.

### 6.3.3 Evaluation

This solution assumes UDM or AIOT NF would authorize all the UE claiming to support AIoT Intermediate UE capability as the Intermediate UE.

The AMF and AIoT NF functionality was not seperated explicitly, therefore it is assumed AIoT NF may be colocated with AMF.

~~Editor’s Note: Further evaluation is FFS.~~

\*\*\* End of 2nd Change \*\*\*