**3GPP TSG-SA3 Meeting #102bis-e *S3-211035r2***

**e-meeting, 1- 5 March 2021**

**Source: Apple**

**Title: New key issue on EEC ID privacy protection**

**Document for: Approval**

**Agenda Item: 2.8**

1 Decision/action requested

***It is proposed to add a new key issue in MEC TR 33.839.***

2 References

[1] 3GPP TS 23.558: "Architecture for enabling Edge Applications (EA)"

3 Rationale

This pCR proposes to add a new key issue on EEC ID privacy protection.

4 Detailed proposal

**\*\*\*\*START OF CHANGES \*\*\***

5.X Key issue #X: Security protection of EEC ID

5.X.1 Key Issue Details

Per TR 23.558 [2], EEC ID is defined as the following:

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### 7.2.2 Edge Enabler Client ID (EECID)

The EECID is a globally unique value that identifies the EECs.

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EEC ID is also used in many basic procedures defined in SA6, for example, “service provisioning request”, “Service provisioning subscription request”, “EEC registration request”, etc. In those procedures in the edge enabler layer, which is above 3GPP layer, EEC ID comes with both UE identifier (could be GPSI or others) and UE location. For example, in the service provisioning request as excerpted below:

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8.3.3.3.2 Service provisioning request

Table 8.3.3.3.2-1 describes the information elements for service provisioning request from the EEC to the ECS.

**Table 8.3.3.3.2-1: Service provisioning request**

|  |  |  |
| --- | --- | --- |
| **Information element** | **Status** | **Description** |
| EEC ID | M | Unique identifier of the EEC. |
| Security credentials | M | Security credentials resulting from a successful authorization for the edge computing service. |
| AC Profile(s) | O | Information about services the EEC wants to connect to, as described in Table 8.2.2-1. |
| UE Identifier | O | The identifier of the UE (i.e. GPSI or identity token) |
| Connectivity information | O | List of connectivity information for the UE, e.g. PLMN ID, SSID. |
| UE location | O | The location information of the UE. The UE location is described as clause 7.3.2. |

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Edge Enabler Client performs the functionalities like configuration information retrieval from the edge enabler server and discovering of the edge application servers available in Edge Data Network. There could be multiple Edge Enabler Client in one UE, but since the EEC ID is globally unique, given one EEC ID, the attacker can identify one specific UE.

Confidentiality protection required in Key Issue #6 for EDGE-1 and EDGE-4 interfaces may remedy some of the privacy threats described in this Key Issue. Other privacy threats on UE and server side need to be taken into consideration. For example, EEC ID may be used in the authentication procedure, and might be sent to the server side. If the server side (EAS/EES/ECS) has the mapping relationship between EEC ID with UE ID, the activities of EEC ID can be taken as the UE activities, which is taken as an privacy leakage.

5.1.2 Security Threats

Without protection of EEC ID, the attacker could identify one specific UE and further monitor more activities triggered by this EEC/UE, which leads to the following security risks:

- Traceability attack

- Privacy leakage

5.1.3 Potential Security Requirements

5G system shall provide a mechanism to protect the Edge Enabler Client ID against the traceability attack and the privacy leakage.

**\*\*\*\*END OF CHANGES \*\*\***