**3GPP TSG-SA3 Meeting #100-e *S3-201701***

**e-meeting, 17-28 August 2020**

**Source: Intel, Huawei, HiSilicon, Apple, Samsung, CATT**

**Title: Key Issue: Security Requirements for EDGE-1 Interface**

**Document for: Approval**

**Agenda Item: 5.9**

1 Decision/action requested

***It is proposed to approve the Key Issue in TR 33.839.***

2 References

[1] 3GPP TR 23.558: "Architecture for enabling Edge Applications".

3 Rationale

TS 23.558 [1] defines the functional architecture and information flows to support Architecture for enabling Edge Applications. As per TS 23.558 [1], it is SA3 responsibility to define the security aspects of Architecture for enabling EDGE Application and for reference points Edge-1 , Edge-2, Edge-3, Edge-4, Edge-5, Edge-6, Edge-7, Edge-8, Edge-9.



Figure 1- Edge Architecture

This contribution addresses the Security Requirements for EDGE-1 in SA3 Edge Security TR 33.839.

4 Detailed proposal

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

X.Y Security Requirements for EDGE-1 Interface

### X.Y.1 Key Issue Details

As per [XX], EDGE-1 reference point enables interactions between the Edge Enabler Server and the Edge Enabler Client. EDGE-1 reference point supports registration and de-registration of the Edge Enabler Client to the Edge Enabler Server, retrieval and provisioning of Edge Application Server configuration information; and discovery of Edge Application Servers available in the Edge Data Network.

Edge Enabler server provides functionalities to Edge Enabler client over EDGE-1 reference point such as provisioning of configuration information to Edge enabler client and support the functionalities of application context transfer.

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. The Edge Data Network is a local Data Network. Edge Application Server(s) and the Edge Enabler Server are contained within the EDN.

The UE is initially provisioned with the configurations required to connect to the Edge Data Network. Upon initial provisioning, the Edge Enabler Client of the UE registers with the selected Edge Enabler Server(s) from the list of provisioned Edge Enabler Server(s). Edge Enabler Client consumes service offered by the Edge Enabler Server, e.g. discovering Edge Application Servers in an area of interest. The procedure enables initialization or update of the Edge Enabler Client context information at the Edge Enabler Server. The Edge Enabler Client sends Edge Enabler Client registration request to the Edge Enabler Server. Edge Application Server discovery enables Edge Enabler Clients to obtain information about available Edge Application Servers of interest. The identification of the Edge Application Servers is based on matching query filters or Application Client Profiles provided in the request.

### X.Y.2 Security Threats

When Registration, Discovery , Deregistration is used without authorization, malicious Edge enabler client receive a list of Services and topology structure withing Edge Data Network from Edge Enabler Server discovery response message. Received information can reveal Edge Data Network’s topology (e.g. URI, IP address, number of Edge Application Servers, Application Server Functionalities, API type, protocols). Malicious Edge Enabler Client may use this information to launch attacks on Edge Data Network or use this information for competitive reasons.

### X.Y.3 Potential Security Requirements

* Edge Enabler Server shall be able to provide mutual authentication with Edge Enabler Client over EDGE-1 Interface.
* Edge Enabler Server shall be able to determine whether Edge Enabling client is authorized to access Edge Enabling Server’s services.

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