**3GPP TSG-SA3 Meeting #104-e *S3-214311***

**16 – 27 August 2021, Online**

**Source: CableLabs**

**Title: New KI for Authentication of PLMNs over Roaming Hub**

**Document for: Approval**

**Agenda Item: 5.17**

# 1 Decision/action requested

***It is requested to approve the pCR.***

# 2 References

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| [1] | 3GPP TR 33.875, “Study on enhanced security aspects of the 5G Service Based Architecture (SBA)”. |

# 3 Rationale

When two PLMNs establish a roaming relationship via a roaming hub (RH), it is anticipated that the TLS connection between the two PLMNs is also terminated at the RH. Therefore, the two PLMNs cannot authenticate each other mutually based on the TLS layer.

Therefore, further study is required on how to support mutual authentication of PLMNs over RH.

# 4 Detailed proposal

## 5.X Key issue #X: Authorization of RH by PLMN

### 5.4.1 Key issue details

This key issue is about how to perform mutual authentication of PLMNs over a RH.

When two PLMNs establish a roaming relationship via a roaming hub (RH), it is anticipated that the TLS connection for protecting roaming messages between the two PLMNs is also terminated at the RH. Therefore, the two PLMNs cannot authenticate each other mutually based on the TLS layer.

Therefore, further study is required on how to support mutual authentication of PLMNs over RH.

### 5.4.2 Security threats

If two PLMNs cannot mutually authenticate each other during roaming exchanges, one PLMN may be able to spoof another PLMN, resulting in roaming fraud.

### 5.4.3 Potential security requirements

The 5GS should provide a mechanism for two PLMN to mutually authenticate each other over an RH.