**3GPP TSG-SA3 Meeting #104-e *draft\_S3-212851-r3***

**e-meeting, 16 - 27 August 2021** Merger of S3-212851 and S3-212934

**Source: Qualcomm Incorporated, MITRE, AT&T, Ericsson**

**Title: Conclusion on KI #3, KI #4 and KI #9 related to security for the Layer-3 UE-to-Network relay scenario**

**Document for: Approval**

**Agenda Item: 5.9**

# 1 Decision/action requested

***This contribution proposes to conclude the KI #3, KI #4 and KI #9 related to security for the Layer-3 UE-to-Network relay scenario.***

# 2 References

[1] TR 33.847 v0.6.0

# 3 Rationale

This contribution proposes to conclude the KI #3, KI #4 and KI #9 related to security for the Layer-3 UE-to-Network relay scenario.

# 4 Detailed proposal

It is proposed that SA3 approve the below pCR for inclusion in the TR [1].

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

## 7.3 Key Issue #3: Security of UE-to-Network Relay

There are two classes of solutions that address this KI, which are user-plane based solutions and control-plane based solutions. Both user-plane solutions and control-plane solutions have pros and cons.

The user-plane solutions require a new network function (AF) that manages the ProSe keys for the Remote UE and Relay UE and the Relay UE needs to interact with the AF during the PC5 link setup.

For the user-plane solution, the following is concluded for security in L3 U2N relay: ,

* the approach of using user plane for key management of security keys used for PC5 communication, between the Remote UE and the UE-to-network relay, is adopted as the basis for normative work.
* a new 5G PKMF function, internal to PLMN, is supporting the key management of security keys used for PC5 communication (between the Remote UE and the UE-to-network relay), which is accessed in the user plane, is adopted as the basis for normative work.
* the user-plane solutions including Solution #18 and Solution #29 are selected as the basis of normative work.

## 7.4 Key issue #4: Authorization in the UE-to-Network relay scenario

For the user-plane solution, based on the conclusions in KI #3, it is concluded that the user-plane solutions including Solution #18, Solution #21 and Solution #29 are selected as the basis of normative work.

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

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

## 7.9 Key Issue #9: Key management in 5G Proximity Services for UE-to-Network relay communication

For the user-plane solution, based on the conclusions in KI #3, it is concluded that the user-plane solutions including Solution #18, Solution #21 and Solution #29 are selected as the basis of normative work.

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