**3GPP TSG-SA3 Meeting #119 *draft\_S3-245259-r2***

**Orlando, US, 11th - 15th November 2024** revision of *S3-244674*

**Title: Draft LS on Multi-hop U2N Relay Architecture Aspects**

**Response to:**

**Release: Rel-19**

**Work Item: FS\_5G\_ProSe\_Ph3\_SEC**

**Source: Interdigital (to be SA3)**

**To: SA2**

**Cc: CT1**

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**Attachments:**

1. Overall description

SA3 has studied security solutions for the support of multi-hop UE-to-Network Relay communications (KI#1 of TR 33.743) and would like to request SA2 feedback on the following architectural aspects to assist SA3 in moving forward its conclusions.

**Q1:** **Intermediate Relay’s PKMF reachability via dedicated DNN for UE-to-Network Relay**

Some solutions propose that the Intermediate Relay plays the role of the UE-to-Network Relay during link establishment procedure with the Remote UE (or with a child Intermediate Relay). For that, the Intermediate Relay is assumed to be able to reach its HPLMN’s PKMF via the dedicated DNN for UE-to-Network Relay(after successful connection establishment with the UE-to-Network Relay). The same assumption applies for each Intermediate Relay in the path between the Remote UE and the UE-to-Network Relay. Can SA2 verify the assumption, i.e., whether an Intermediate Relay can use the dedicated DNN for UE-to-Network Relay to communicate with its HPLMN’s PKMF?

**Q2:** **Remote UE Report procedure support link establishment based on Model B discovery**

SA3 understands that for the support of Remote UE Report procedure to report the Remote UE User ID (aka, CP-PRUK ID or UP-PRUK ID in TS 33.503) of the Remote UE to the UE-to-Network Relay, the link modification procedure was enhanced for the link establishment based on Model A discovery (TS 23.304, clause 6.4.3.8.1). Will SA2 define a similar or different mechanism for the link establishment based on Model B discovery? SA3 kindly requests SA2 to take into account that the Remote UE User ID sent by the UE-to-Network Relay in the Remote UE Report message is received from the network (PKMF or AMF), as specified in TS 33.503, clause 6.3.3.

**Q3:** **Intermediate Relays and the UE-to-Network Relay belonging to the same PLMN in Model A and Model B discovery.**

SA3 discussed a possible simplification of the Model A and Model B discovery with the assumption that the intermediate Relays and the UE-to-Network Relaybelongto the same PLMN. This assumption is considered in particular to avoid the need for Remote UE to send or process multiple discovery messages trying different candidates PLMN security material. Can SA2 verify the assumption, i.e., whether it can be assumed for Model A and Model B discovery that the Intermediate Relays and the UE-to-Network Relay belongto the same PLMN?

Actions

**To SA2:**

**ACTION:** SA3 kindly asks SA2 to take the above information into account and provide answers to the questions.

3 Dates of next TSG SA WG 3 meetings

SA3#120 14 - 18 February 2025 Athens (Greece)

SA3#121 04 - 07 April 2025 Goteborg (Sweden)