**3GPP TSG-SA5 Meeting #143-e *S5-223111***

e-meeting, 9 - 17 May 2022

**Source: Ericsson**

**Title: Solution for roaming charging profile**

**Document for: Approval**

**Agenda Item: 7.5.3**

# 1 Decision/action requested

**Include the proposed changes in TR 28.827.**

# 2 References

[1] 3GPP TR 28.827: "Study on 5G charging for additional roaming scenarios and actors"

# 3 Rationale

Correcting solution 1.4 and adding a new solution where the roaming charging profile is provisioned in VPLMN.

# 4 Detailed proposal

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| **First change** |

#### 7.1.4.4 Solution #1.4: Roaming Charging Profile exchanged between HPLMN and VPLMN

##### 7.1.4.4.1 General

A possible solution for **REQ-CH\_VMNO-05**, Roaming Charging Profile negotiation enhancement for 5G data connectivity charging provided to the home MNO by the visited MNO.

##### 7.1.4.4.2 Reference architecture

The reference architecture would be the same as in clause 4.2.2 of TS 32.255 [4].

##### 7.1.4.4.3 Message flows

The message flows about roaming charging profile negotiation for 5G data connectivity charging are present in the figure 5.2.2.12.2.1, PDU session establishment, of TS 32.255 [4].

The “Roaming charging profile” may only be set or changed at PDU session establishment or PDU session transfer from a different VPLMN.

In the case of roaming home routed it may be set, changed, applied, and transferred in the following order:

1. Default set by V-SMF and transferred to V-CHF

2. Changed by V-CHF and transferred to V-SMF

3. Transferred from V-SMF to H-SMF

4. Transferred from H-SMF to H-CHF

5. Changed by H-CHF and transferred to H-SMF

6. Applied in H-SMF and transferred to V-SMF

7. Applied in V-SMF and transferred to V-CHF

In case of roaming local breakout scenario, the H-SMF will be replaced by V-SMF, and may be done in the following order:

1. Default set by V-SMF and transferred to V-CHF

2. Changed by V-CHF and transferred to V-SMF

3. Transferred from V-SMF to H-CHF

4. Changed by H-CHF and transferred to V-SMF

5. Applied in V-SMF and transferred to V-CHF

Support for “Roaming changing profile” exchange is done by transferring it during the PDU session establishment.

Editor’s note: the trigger for step 7 above in the roaming home routed scenario as well as step 5 in the roaming local breakout scenario is FFS.

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| **Second change** |

#### 7.1.4.x Solution #1.x: Roaming Charging Profile provisioned in VPLMN

##### 7.1.4.x.1 General

A possible solution for **REQ-CH\_VMNO-05**, Roaming Charging Profile negotiation enhancement for 5G data connectivity charging provided to the home MNO by the visited MNO.

##### 7.1.4.x.2 Reference architecture

The reference architecture would be the same as in clause 4.2.2 of TS 32.255 [4].

##### 7.1.4.x.3 Message flows

The negotiation of how the roaming charging profile should be configured is done as part of the roaming agreement between the VPLMN and HPLMN and can be pre-provisioned in the V-CHF or V-SMF, without any need to transfer it between the HPLMN and VPLMN. The roaming charging profile can be applied based on the HPLMN of the UE.

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| **End of changes** |