**3GPP TSG-SA5 Meeting #145-e *S5-225299***

**e-meeting, 15 - 24 August 2022**

**Source: Ericsson**

**Title: Adding solutions in clause 7.1 for VPLMN wholesale charging of HPLMN**

**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"

[2] 3GPP TS 23.540: "5G System: Technical realization of Service Based Short Message Service "

[3] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

# 3 Rationale

Adding solutions in clause 7.1 for VPLMN wholesale charging of HPLMN of 5G connection and mobility, and SMS based on CDR generation in VPLMN. The current handling of SBI-based SMS is specified in TS 23.540 [2] and it reuses the SMS-SC as specified in TS 23.040 [3]. For MT SMS the SMS-SC interaction with the SMS-GMSC and for MO SMS it interacts with the SMS-IWMSC both still referring to the TS 32.040 [3] for the interaction.

# 4 Detailed proposal

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| **First change** |

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501:"System Architecture for the 5G System".

[3] GSMA TD.201: "Common Billing and Charging Processes ".

[4] 3GPP TS 32.255:" Charging management;5G Data connectivity domain charging; stage 2".

[5] 3GPP TS 32.256:" Charging management; 5G connection and mobility domain charging; Stage 2".

[6] 3GPP TS 23.502: "Procedures for the 5G System (5GS)".

[7] GSMA WA.51: "5G SA Implementation Guidelines".

[8] 3GPP TS 32.274: " Charging management; Short Message Service (SMS) charging".

[9] 3GPP TS 32.256: "Charging management; 5G connection and mobility domain charging; Stage 2".

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| **Second change** |

#### 7.1.4.y Solution #1.y: Nchf to VPLMN for wholesale of SMS

##### 7.1.4.y.1 General

A possible solution for key issue #1c covering requirements REQ-CH\_VMNO-06 and REQ-CH\_VMNO-07, wholesale charging for SMS provided to the home MNO by the visited MNO. In this case there is also charging information generated in the home MNO for retail purposes.

##### 7.1.4.y.2 Reference architecture



Figure 7.1.4.y.2-1: Roaming SMS scenario in service-based interface representation



Figure 7.1.4.y.2-2: Roaming SMS scenario in reference point representation

##### 7.1.4.y.3 Message flows

The flows for SMS charging would be the same as in TS 32.274 [8], with the change for the converged charging the SMSF and CHF would be in VPLMN, the SMS-SC and OCS/CDF would be in HPLMN..

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| **End of changes** |