**3GPP TSG-SA5 Meeting #146Bis-e *S5-231128***

Electronic meeting, 16 - 19 January 2023

**Source: Ericsson**

**Title: Correcting solutions in clause 7.2 dual CHF information**

**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 the solutions #2.13, #2.14 and #2.15 since they all solve the same key issues and cover the same requirements, and extending the solutions to not only cover SMF.

# 4 Detailed proposal

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| **First change** |

#### 7.2.4.13 Solution #2.13: V-CHF selected charging information for reporting to H-CHF

##### 7.2.4.13.1 General

A possible solution for key issues #2a, #2b, #2f, #2g, #2h, and #2i, covering requirements REQ-CH\_CVTOH-01, REQ-CH\_CVTOH-02, REQ-CH\_CVTOH-03, REQ-CH\_CVTOH-04, REQ-CH\_CVTOH-05, and REQ-CH\_CVTOH-06, retail charging for 5G data connectivity provided, 5G connection and mobility, and SMS usage to the home MNO’s users by the visited MNO, in the case of local breakout.

There is a single charging session between NF (e.g., V-SMF) and V-CHF, where V-CHF is responsible for selecting the charging information to H-CHF.

There is a one-to-one relationship between the PDU session and the charging session towards the V-CHF.

##### 7.2.4.13.2 Reference architecture

The reference architecture would be the same as in solution #2.1 clause 7.2.4.1.

##### 7.2.4.13.3 Message flows

The message flows would be the same as in solution #2.1 clause 7.2.4.1.

V-CHF is responsible for distinguishing the charging information to be sent to H-CHF.

1. The NF (CTF) sends charging data request to V-CHF with the charging information

2. V-CHF determines the charging information for its own use e.g., for recording in a CDR

3. V-CHF determines the charging information for H-CHF based on the trigger and internal configuration

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| **Second change** |

#### 7.2.4.14 Solution #2.14: NF (CTF) selected charging information for reporting to H-CHF, dual charging information

##### 7.2.4.14.1 General

A possible solution for key issue #2a, #2b, #2f, #2g, #2h, and #2i, covering requirements REQ-CH\_CVTOH-01, REQ-CH\_CVTOH-02, REQ-CH\_CVTOH-03, REQ-CH\_CVTOH-04, REQ-CH\_CVTOH-05, and REQ-CH\_CVTOH-06, retail charging for 5G data connectivity provided, 5G connection and mobility, and SMS usage to the home MNO’s users by the visited MNO, in the case of local breakout.

There is a single charging session between NF (e.g., V-SMF) and V-CHF, where NF is responsible for selecting the charging information to both V-CHF and H-CHF.

There is a one-to-one relationship between the PDU session and the charging session towards the V-CHF.

##### 7.2.4.14.2 Reference architecture

The reference architecture would be the same as in solution #2.1 clause 7.2.4.1.

##### 7.2.4.14.3 Message flows

The message flows would be the same as in solution #2.1 clause 7.2.4.1.

NF (CTF) is responsible for distinguishing the charging information to be sent to H-CHF and V-CHF, and V-CHF forwards the charging information from NF (CTF) to H-CHF.

1. The NF (CTF) sends one charging data request to V-CHF with the two sets of charging information one for the V-CHF and one for H-CHF, indicating which set is for which CHF

2. Based on the indication, V-CHF handles its own charging information

3. Based on the indication, V-CHF forwards the charging information to H-CHF

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| **Second change** |

#### 7.2.4.15 Solution #2.15: NF (CTF) selected charging information for reporting to H-CHF, dual information elements

##### 7.2.4.15.1 General

A possible solution for key issue #2a, #2b, #2f, #2g, #2h, and #2i, covering requirements REQ-CH\_CVTOH-01, REQ-CH\_CVTOH-02, REQ-CH\_CVTOH-03, REQ-CH\_CVTOH-04, REQ-CH\_CVTOH-05, and REQ-CH\_CVTOH-06, retail charging for 5G data connectivity provided, 5G connection and mobility, and SMS usage to the home MNO’s users by the visited MNO, in the case of local breakout.

There is a single charging session between NF (e.g., V-SMF) and V-CHF, where NF is responsible for selecting the charging information to both V-CHF and H-CHF.

There is a one-to-one relationship between the PDU session and the charging session towards the V-CHF.

##### 7.2.4.15.2 Reference architecture

The reference architecture would be the same as in solution #2.1 clause 7.2.4.1.

##### 7.2.4.15.3 Message flows

The message flows would be the same as in solution #2.1 clause 7.2.4.1.

Similarly, to solution #2.14 clause 7.2.4.14, the V-SMF is responsible for distinguishing the charging information to be sent to H-CHF and V-CHF. and V-CHF forwards the charging information from V-SMF to H-CHF. The difference is that instead of having two complete sets of charging information in this case the would be two instances of the information elements. One example could be to have it on the Multiple Unit usage see table 7.2.4.15.3-1.

Table 7.2.4.15.3-1: Structure of Roaming QBC Information

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| Multiple Unit Usage (Group2 for V-CHF) |
| Rating Group |
| Used Unit Containerr |
| Target Indication: V-CHF |
| Multiple Unit Usage (Group2 for H-CHF) |
| Rating Group |
| Requested Unit |
| Used Unit Container |
| Target Indication: H-CHF |

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| **End of changes** |