**3GPP TSG-SA5 Meeting #144-e *S5-224192***

**e-meeting, 27 June - 1 July 2022**

**Source: Ericsson**

**Title: Adding issue and solution to identifying non-blocking mode**

**Document for: Approval**

**Agenda Item: 7.5.2**

# 1 Decision/action requested

**Include the proposed changes in TR 28.826.**

# 2 References

[1] 3GPP TR 28.826: " Study on Nchf charging services phase 2 improvements and optimizations"

# 3 Rationale

For the CHF to be able to evaluate the non-blocking mode there is a need to add issue and solution to identifying non-blocking mode and report it to the CHF.

# 4 Detailed proposal

|  |
| --- |
| **First change** |

### 5.5.4 The key issues

The following key issues are identified:

- **Key Issue #5a**: Non-blocking mode disable/enable affect only specific rating group or all rating groups for a UE.

- **Key Issue #5b**: Identify the Network Functions to disable/enable non-blocking mode.

- **Key Issue #5c**: Determine of the interactions required to disable/enable non-blocking mode for the special user/service.

- **Key Issue #5d**: Determine if non-blocking mode is possible for a rating group.

|  |
| --- |
| **Second change** |

### 5.5.5 Solutions

#### 5.5.5.1 Solution #5.1: Dedicated non-blocking indicator at service start

The possible solution partially supports the potential requirements **REQ-3GPPCH-NB-01, REQ-3GPPCH-NB-02** and **Key Issue #5d** for the non-blocking mode reporting to CHF.



Figure 5.5.5.1-1: Message flow for dedicated non-blocking indicator

1. PCF sends the PCC rules to SMF with the "Service Data flow handling while requesting credit" to indicate SMF the Non-Blocking mode is adapted.

2. The service data flow are allowed to start while the SMF is waiting for the response to the quota request.

3. SMF sends the Charging Data Request to CHF for the quota request with the non-blocking mode indication when detect the non-blocking mode is usage for the service data flow.

The charging reporting from the SMF with the Non-blocking mode is per Rating Group. After the PDU session establishment, when any service date flow delivery with the non-blocking mode in the RG is detected (may be the first service data flow of the PDU session or the subsequent service data flows of the PDU session), the SMF should immediately report to the CHF with the non-blocking mode indication in the Charging Data Request [Initial] for first service data flow or in the Charging Data Request [Update] for the subsequent service data flow when detected with the non-blocking mode.

Editor’s Note: Whether the Unit Used in the charging data request [Initial] can indicate the NF is FFS.

|  |
| --- |
| **Third change** |

#### 5.5.5.x Solution #5.x: Dedicated non-blocking indicator before service start

The possible solution partially supports the potential requirements **REQ-3GPPCH-NB-01, REQ-3GPPCH-NB-02** and **Key Issue #5d** for the non-blocking mode reporting to CHF.



Figure 5.5.5.1-1: Message flow for dedicated non-blocking indicator

1. PCF sends the PCC rules to SMF with the sdfHandl set to true, indicating that the service data flow is allowed to start while the SMF is waiting for the response to the credit request i.e., non-blocking mode.

2. SMF sends the Charging Data Request to CHF for the quota request with a non-blocking indication for the rating group with the sdfHandl set to true.

3. The service data flow is allowed to start while the SMF is waiting for the response to the quota request.

The non-blocking charging reporting from the SMF is per rating group. After the PDU session establishment, when any service date flow delivery for a rating group with non-blocking (can be the first or the subsequent service data flows of the PDU session), the SMF should immediately report to the CHF with the non-blocking indication in the Charging Data Request [Initial] if it is the first service data flow or in the Charging Data Request [Update] for the subsequent service data flow.



|  |
| --- |
| **End of changes** |