**3GPP TSG-SA5 Meeting #148e *S5-233379rev1***

Electronic meeting, Online, 17-25 April 2023

**Source: MATRIXX Software**

**Title: pCR 28.203 Introduce** **triggers**

**Document for: Approval**

**Agenda Item: 7.4.1**

# 1 Decision/action requested

**This pCR is to introduce triggers.**

# 2 References

[1] 3GPP TR 32.847 "Study on Charging Aspects for Network Slicing Phase 2"

[2] 3GPP TS 28.203 "Charging management; Network Slice Admission Control charging in the 5G System (5GS); Stage 2".

# 3 Rationale

This pCR is to introduce triggers.

# 4 Detailed proposal

The following changes are proposed to be incorporated into TS 28.203 [2]:

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| **First change** |

####  5.2.1.2 Applicable triggers in the NSACF

##### 5.2.1.2.1 General

When a charging event is issued towards the CHF, it includes details of charging information such as S-NSSAI.

The charging session is per S-NSSAI.

Each trigger condition (i.e. chargeable event) defined for the Network Slice Admission Control converged charging functionality with the associated behaviour when they are met, is specified this document, and the basic trigger mechanism is specified in the 3GPP TS 32.290 [x].

A Charging Data Request [Initial] is invoked by the NSACF towards the CHF when one of the trigger for "initial" is met for a S-NSSAI, and no charging session exists for this S-NSSAI.

A Charging Data Request [Termination] is invoked by the NSACF towards the CHF when the last trigger for "termination" is met for the S-NSSAI.

A Charging Data Request [Update] is invoked by the NSACF towards the CHF, when any trigger which is not a trigger for "termination" is met or a trigger for "termination" which is not the last one is met, and the charging session exists for the S-NSSAI.

Upon the first Charging Data Response [Initial], the NSACF is optionally provided with NSACF charging profile overriding the default triggers configured in the Charging Characteristics described in Annex A.

The triggers remain active until they are updated or disabled by NSACF charging profile supplied by subsequent Charging Data Response [Initial/Update/Termination/Event] from the CHF.

Table 5.2.1.2.1.1 summarizes the set of default trigger conditions which shall be supported by the NSACF when charging is active for the corresponding NSACF functionality, with the associated Charging Data Request message sent from NSACF towards the CHF.

Table 5.2.1.2.1.1: Default trigger conditions in NSACF

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| Trigger Conditions | Trigger level | Default category | CHF allowed to change category | CHF allowed to enable and disable | Message when "immediate reporting" category |
| --- | --- | --- | --- | --- | --- |
| **Number of UEs** |
| Nb of UEs threshold reached for initial  | - | Immediate | Not Applicable | Yes | SCUR: Charging Data Request [Initial] or Charging Data Request [Update] |
| Nb of UEs threshold crossed upwards | - | Immediate | Not Applicable | Yes | IEC, PEC: Charging Data Request [Event]SCUR: Charging Data Request [Update] |
| Nb of UEs threshold crossed downwards | - | Immediate | Not Applicable | Yes | IEC, PEC: Charging Data Request [Event]SCUR: Charging Data Request [Update] |
| Nb of UEs threshold reached for termination | - | Immediate | Not Applicable | Yes | SCUR: Charging Data Request [Termination] or Charging Data Request [Update] |
| Number of UEs Quota limit reached | - | Immediate | Not Applicable | Yes | Charging Data Request [Update] with a possible request quota |
| **Number of PDU Sessions** |
| Nb of PDUs threshold reached for initial  | - | Immediate | Not Applicable | Yes | SCUR: Charging Data Request [Initial] or Charging Data Request [Update] |
| Nb of PDUs threshold crossed upwards | - | Immediate | Not Applicable | Yes | IEC, PEC: Charging Data Request [Event]SCUR: Charging Data Request [Update] |
| Nb of PDUs threshold crossed downwards | - | Immediate | Not Applicable | Yes | IEC, PEC: Charging Data Request [Event]SCUR: Charging Data Request [Update] |
| Nb of PDUs threshold reached for termination | - | Immediate | Not Applicable | Yes | SCUR: Charging Data Request [Termination] or Charging Data Request [Update] |
| Number of PDUs Quota limit reached | - | Immediate | Not Applicable | Yes | Charging Data Request [Update] with a possible request quota |
|  |
| Network slice termination | - | Immediate | Not Applicable | Not Applicable | IEC, PEC: Charging Data Request [Event]SCUR: Charging Data Request [Termination]  |

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| **Next change** |

#### 5.2.1.x Quota management

CHF converged charging quota management functionality is supported in Network Slice Admission Control converged charging, enabling gradual control of number of UEs and number of PDU sessions per S-NSSAI.

The NSACF is configured with maximum numbers for UEs and PDU sessions per S-NSSAI, referred-to as "NSACF max number of UEs" and "NSACF max number of PDU sessions" respectively. The CCS, based on internal criteria, determines maximum numbers for UEs and PDU sessions per S-NSSAI referred-to as "CCS max number of UEs" and "CCS max number of PDU sessions" respectively.

"CCS max number of UEs" and "CCS max number of PDU sessions" cannot exceed the configured respective "NSACF max number of UEs" and "NSACF max number of PDU sessions".

Intermediate quota allocation of number of UEs and PDU sessions, referred-to "Number of UEs Quota limit" and "Number of PDU sessions Quota limit" is performed by CHF to NSACF for the S-NSSAI, within these "CCS max number of UEs" and "CCS max number of PDU sessions" limits,

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| **End of changes** |