**3GPP TSG-SA5 Meeting #146Bis-e *S5-231094rev1***

**Electronic meeting, 16 - 19 January 2023**

**Source: MATRIXX Software**

**Title: pCR TR 32.847** **Final conclusion for Key Issue #3**

**Document for: Approval**

**Agenda Item: 7.5.1**

# 1 Decision/action requested

**This pCR is** **to provide final conclusion for Key Issue #3 by resolving the Editor's Note**

# 2 References

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

# 3 Rationale

This pCR is to to provide final conclusion for Key Issue #3 by resolving the Editor's Note:

 Editor’s Note: The final conclusion on solution(s) for a later release is ffs.

# 4 Detailed proposal

The following changes are proposed to be incorporated into TR 32.847 [1]

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| **First change** |

### 6.3.4 Evaluation

Both solutions #3.1 and #3.2 solve Key Issue #3.

Solutions #3.1 allows to support network slice usage converged charging based on total PDU sessions volume per S-NSSAI aggregation by NS Tenant CCS interacting UE CCS during with individual UE charging.

Pros:

- Same NF source (i.e. SMF) used for volume usage collection by both individual UE and aggregation

- Good level of accuracy of NS volume usage

- No need for a new NF in the signalling path for PDU session handling since it relies on existing individual UE PDU session charging with UE CCS.

- When NS volume limit is reached, new PDU sessions can be rejected.

- Approaching NS volume limit can be anticipated.

Cons:

- high level signalling between NS tenant CHFs interfacing many UE CHFs (based on each CCS can have multiple CHFs).

- NS tenant CCS has to maintain the actual NS total volume usage.

Solutions #3.2 allows to support network slice usage converged charging based on volume control by CCS based on performance collection for a S-NSSAI via CEF

Pros:

- NS tenant CCS interfacing limited number of entities (aggregation handled by MnS producers)

- No need for NS tenant CCS to maintain the actual NS total volume usage

Cons:

- Different sources used for volume usage collection (i.e. SMF for individual UE and UPFs for NS tenant) resulting in different nature of volume being counted.

- Risk of high mismatch between sum of individual UEs volume and NS total volume

- Risk of significant delay between when NS volume was actually consumed and when account and rating control is processed for this volume.

- No possibility for immediate stop by NS tenant CCS when NS volume crosses the limit.

The major drawback of the solution #3.2 is to be more in "offline charging" fashion by the lack of "online charging" control capabilities on actual usage which can be better achieved by solution #3.1.

Drawbacks of the solution #3.1 can be resolved under appropriate deployment options. When Communication Service Provider (CSP) and Network Slice Provider (NSP) are the same, deployments can choose to collocate Tenant CCS with UE CCS to simplify implementation. This deployment option is valid when the "Maximum Number of UEs" allowed to access the NS Tenant(s) S-NSSAI is not too high. For large deployments, the full solution#3.1 with separate UE CCS and NS Tenant CCS distributed architecture is more appropriate to enable multiple UE CCSs to interact with a particular NS Tenant CCS.

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| **Next change** |

### 6.3.5 Conclusions

It is concluded for Key Issue #3, to specify partial solution #3.1 in Rel-17 to cover the Combined UE CCS - Tenant CCS solution option for tenant specific S-NSSAI and Shared S-NSSAI for when the Communication Service Provider (CSP) and Network Slice Provider (NSP) are the same. The internal structure for this combined CCS will not be detailed.

It is concluded for Key Issue #3 to specify full solution #3.1, with interface between UE CCS and Tenant CCS specified based on SID conclusion, per conclusion for Key Issue #x in clause 6.x.5.

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| **End of change** |