**3GPP TSG-SA5 Meeting #145-e *S5-225525rev1***

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

**Source: China Mobile**

**Title: pCR TR 28.833 Add potential solutions for topic 3**

**Document for: Approval**

**Agenda Item: 6.8.4.3**

# Decision/action requested

***The group is asked to discuss and endorse the proposal in section 4***

# 2 References

[1] SP-220324 " New Study on Management Aspects of 5GLAN "

[2] 3GPP TS 23.552: "Management and orchestration;5G performance measurements".

[3] 3GPP TS 23.502: "Procedures for the 5G System (5GS); Stage 2"

# 3 Rationale

This contribution proposes to add potential solutions for topic 3.

# 4 Detailed proposal

It proposes to make the following changes.

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| **1st Change** |

# 5 Topics

## 5.3 Topic 3: for 5G VN group performance measurement management

### 5.3.1 Use case

The performance of 5G LAN-type services need to be monitored in 5G VN group level by the operator since it is relevant to whether the end users can use the service of 5G LAN and scale up/down a 5G VN based on capacity for efficient consumption of network resources.

The performance measurement of 5G LAN-type services may include measurement of 5G VN group status, the number of subscribers in 5G VN groups, the duration of 5G VN group communication which information can be gathered from NEF/UDM/SMF/UPF/PCF supporting 5G LAN-type services.

Therefore, the 3GPP management system needs to support the request for 5G VN group performance measurement management as it impacts the end user experience, and the optimization may be required according to the performance.

### 5.3.2 Potential requirements

**REQ-LAN-PMM-01** The 3GPP management system shall have the capability to measure 5G LAN-type services performance (e.g. UE throughput, Performance measurements for NEF/UDM/SMF/UPF/PCF) to be assured in 5G VN group level.

### 5.3.3 Key Issues

#### 5.3.3.1 Description

TS 28.552 describes the performance measurements for AMF, SMF, UPF, UDM, PCF and NEF.

Some performance measurements can be meaningful to be provided to a 5G VN group communication, for example:

* Performance measurement for SMF: Number of successful PDU session creations,
* Performance measurement for UPF: Number of incoming GTP data packets on the N3 interface, from (R)AN to UPF,
* Performance measurement for NEF: Number of application trigger requests accepted for delivery.

According to the use case described in clause 5.3.1, the following issue should be investigated in this study.

Key issue#Y: Which performance measurements are feasible to be provided by 3GPP management system for a 5G VN group communication?

### 5.3.4 Solutions

#### 5.3.4.1 Description

Performance indicators at 5G VN group level can be derived from the performance measurements via the corresponding performance management service consumed by a 5G LAN-type service. External Group ID and Internal Group ID are used to identify the 5G VN group. The UDM allocates the Internal Group ID for a newly created 5G VN Group and maps the External Group ID from OAM to Internal Group ID. The performance indicators are split into subcounters per Internal Group ID for 5G VN group.

In case a performance measurement is defined for more than one sub-counter, it is convenient to use *Filter* to define the performance measurement of interest (see TS 23.552[2]). Therefore, a new *Filter* value Internal Group ID is added.

#### 5.3.4.2 Performance measurement for SMF

Performance measurements for SMF include the mean number of PDU sessions, the max number of PDU sessions, number of PDU session creation requests, number of successful PDU session creations, number of failed PDU session creations, PDU session modifications, number of released PDU sessions, number of PDU session creation requests in HR roaming scenario, number of successful PDU session creations in HR roaming scenario, number of failed PDU session creations in HR roaming scenario, mean time of PDU session establishment, and max time of PDU session establishment.

For example, number of successful PDU session creations is the number of PDU sessions that are associated with a 5G VN group and successfully created by the SMF. On transmission by the SMF to AMF of Nsmf\_PDUSession\_CreateSMContext Response that indicates a successful PDU session creation (see TS 23.502 [3]). Each PDU session successfully created is added to the relevant subcounter per Internal Group ID.

Editor’s note: Whether the measurement method is given for each performance indicator is FFS.

#### 5.3.4.3 Performance measurement for SMF

Performance measurements for UPF include number of incoming and outgoing GTP data packets, number of octets of incoming and outgoing GTP data packets, Data volume of incoming and outgoing GTP data packets per QoS level, incoming and outgoing GTP Data Packet Loss, round-trip GTP Data Packet Delay, and number of incoming GTP data packets out-of-order on the N3 interface, from (R)AN to UPF.

For example, number of incoming GTP data packets on the N3 interface, from (R)AN to UPF is the number of GTP data PDUs associated with a 5G VN group on the N3 interface which have been accepted and processed by the GTP-U protocol entity in UPF on the N3 interface. The measurement can be split into subcounters per Internal Group ID.

Editor’s note: Whether the measurement method is given for each performance indicator is FFS.

#### 5.3.4.4 Performance measurement for SMF

Performance measurements for NEF include number of application trigger requests, number of application trigger requests accepted for delivery, number of application trigger requests rejected for delivery and number of application trigger delivery reports.

For the number of application trigger requests accepted for delivery, transmission of Nnef\_Trigger\_Delivery response by the NEF to AF indicating the application trigger request associated with a 5G VN group has been accepted for delivery to the UE (see TS 23.502 [7]). Each response increments the relevant subcounter per Internal Group ID by1.

Editor’s note: Whether the measurement method is given for each performance indicator is FFS.

### 5.3.5 Evalution

### 5.3.6 Conclusion

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| **End of Change** |