**3GPP TSG-SA5 Meeting #145-e *S5-225529rev1***

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

**Source: China Mobile**

**Title: pCR TR 28.833 Add general description of solution 2 of FS\_5GLAN\_Mgt**

**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 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 22.261: "Service requirements for next generation new services and markets; Stage 1".

# 3 Rationale

This contribution proposes to add potential solutions for TR 28.833.

# 4 Detailed proposal

It proposes to make the following changes.

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| **1st Change** |

# 5 Topics

## 5.2 Topic 2: PDU Session management

### 5.2.1 Use case

The session management is applicable to 5G LAN-type services with clarification and enhancement. For example, SMF may support PDU Sessions for a 5G VN group, which offers a virtual data network capable of supporting 5G LAN-type service over the 5G system. The whole PDU sessions belong to the 5G VN group need to select the same SMF based on network configuration. But how to configure to select the same SMF based on network configuration has not defined yet. The 3GPP management system should have the capability to manage the PDU Session for providing 5G LAN-type services, including:

- A UE gets access to 5G LAN-type services via a PDU Session of IP PDU Session type or Ethernet PDU Session type.

- A PDU Session provides access to one and only one 5G VN group.

- A dedicated SMF is responsible for all the PDU Sessions for communication of a certain 5G VN group.

- A PDU Session provides unicast, broadcast and multicast communication for the DNN and S-NSSAI associated to a 5G VN group.

### 5.2.2 Potential requirements

**REQ-LAN-PDU-01** The 3GPP management system should have the capability to manage the PDU Session for providing 5G LAN-type services.

### 5.2.3 Key Issues

#### 5.2.3.1 Description

This key issue is for investigating how to support the 5G LAN-type service considering REQ-LAN-PDU-01. This investigation covers the following:

- which types of PDU session shall be supported for 5G LAN-type services by 5G network.

- identification and classification of the PDU sessions for communication of a certain 5G VN group;

- determination of which and how NF in the 5G system are suitable to perform and maintain the related information of the PDU session management to support 5G LAN-type service;

- How management configuration(s) can keep the same SMF selected during PDU session establishment for a 5G VN group.

### 5.2.4 Solutions

#### 5.2.4.2 General description

As the defined architecture in Clause 4, in order to support the unicast communication between two UEs within a 5G VN, or between a UE and a device on the DN, SMF may adopted the three traffic forwarding way as follow:

- N6-based, where the UL/DL traffic for the 5G VN communication is forwarded to/from the DN;

- N19-based, where the UL/DL traffic for the 5G VN group communication is forwarded between PSA UPFs of different PDU sessions via N19. N19 is based on a shared User Plane tunnel connecting PSA UPFs of a single 5G VN group.

- Local switch, where traffic is locally forwarded by a single UPF if this UPF is the common PSA UPF of different PDU Sessions for the same 5G VN group.

Therefore, the the SMF handles the user plane paths of the 5G VN group, including:

- The SMF may prefer to select a single PSA UPF for as many PDU sessions (targeting the same 5G VN group) as possible, in order to implement local switch on the UPF.

- (if needed) Establishing N19 tunnels between PSA UPFs to support N19-based traffic forwarding.

- For Ethernet PDU Session, the SMF may instruct the UPF(s) to classify frames based on VLAN tags, and to add and remove VLAN tags, on frames received and sent on N6 or N19 or internal interface ("5G VN internal"), as described in clause 5.6.10.2 of TS 23.501[X].

NOTE 2: For handling VLAN tags for traffic on N6, TSP ID could also be used as described in clause 6.2.2.6 of TS 23.503 [45].

The 3GPP management system should have the capability to manage the PDU Session for providing 5G LAN-type services which means the OAM can directly allocate the configuration to the network functions, the configuration can include adding the correspondence between the 5G VN group ID and the SMF that can support the 5G LAN service allocating in the NRM of the SMF/AMF/NRF/UDM and/or stored in the NSMF/NSSMF.

The configuration for 5G LAN-type services can based on the DNN/SNSSAI and the service area of the UE, registered on the NRM of network functions to associate with a 5G VN group.

The correspondence can be: selecting the appropriate SMF and UPF according to the IP address of the SMF supporting the 5G VN group, the DNN/SNSSAI and the service area of the UE.

Editor's note: It is FFS whether there are impacts to for unicast, broadcast and multicast communication for the DNN and S-NSSAI of a PDU session associated to a 5G VN group.

### 5.2.5 Evalution

### 5.2.6 Conclusion

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| **End of Change** |