**3GPP TSG-SA5 Meeting #142-e *S5-222303***

**e-meeting, 4-12 April 2022**

**Source: China Mobile**

**Title: Add concepts and background of FS\_5GLAN\_Mgt**

**Document for: Approval**

**Agenda Item: 6.5.11**

# Decision/action requested

***The group is asked to discuss and endorse the proposal in section 3***

# 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".

[4] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

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| **1st Change** |

# 4 Concepts and background

## 4.1 General description

As defined in TS 23.501 [2], A 5G Virtual Network (VN) group consists of a set of UEs using private communication for 5G LAN-type services. The service requirements for 5G LAN-type service are specified in TS 22.261 [3].

 5G VN Group is a set of UEs using private communication for 5G LAN-type service.

## 4.2 User plane architecture to support 5G LAN-type Services

There are two types of user plane architecture to allow 5G LAN-type services:

- 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. Figure 4.2-2 depicts the non-roaming user plane architecture to support 5G LAN-type service using local switch.



Figure 4.2-1: Local-switch based user plane architecture in non-roaming scenario

- 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 a reference point between two UPFs for direct routing of traffic between different PDU Sessions without using N6. It has a per 5G VN group granularity.. Figure 4.2-2 depicts the non-roaming user plane architecture to support 5G LAN-type service using N19 tunnel.



Figure 4.2-2: N19-based user plane architecture in non-roaming scenario

## 4.3 5G VN group management

5G System supports management of 5G VN Group identification and membership (i.e. definition of 5G VN group identifiers and membership) and 5G VN Group data (i.e. definition of 5G VN group data). The 5G VN Group management can be configured by a network administrator or can be managed dynamically by AF.

A 5G VN group is characterized by the following:

- 5G VN group identities: External Group ID and Internal Group ID are used to identify the 5G VN group.

- 5G VN group membership: The 5G VN group members are uniquely identified by GPSI. The group as described in clause 5.2.3.3.1 of TS 23.502 [4] is applicable to 5G LAN-type services.

- 5G VN group data. The 5G VN group data may include the following parameters: PDU session type, DNN, S-NSSAI and Application descriptor, Information related with secondary authentication / authorization (e.g. to enable IP address assignment by the DN-AAA).

 The Information related with secondary authentication / authorization corresponds to the procedures described in clause 5.6.6; it allows e.g. the AF to provide DN-AAA server addressing information and possibly to request the SMF to get the UE IP address from the DN-AAA server.

In order to support dynamic management of 5G VN Group identification and membership, the NEF exposes a set of services to manage (e.g. add/delete/modify) 5G VN groups and 5G VN members. The NEF also exposes services to dynamically manage 5G VN group data.

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| **End of Change** |