**3GPP TSG-SA5 Meeting #133e *S5-205201rev1***

**e-meeting 12th - 21st October 2020**

**Source: Huawei, Telefónica S.A.**

**Title: Add use case of NPN provisioning by network slice of PLMN**

**Document for: Approval**

**Agenda Item: 6.4.1**

# 1 Decision/action requested

***Discuss and approve on the proposal.***

# 2 References

[1] TS 28.557 Management of non-public networks; Stage 1 and stage 2 v0.1.0

[2] TR 28.807 Study on management aspects of non-public networks v16.0.0

# 3 Rationale

It is proposed to add use case of NPN provisioning by network slice of PLMN in draft TS 28.557 [1] based on the corresponding content in TR 28.807 [2].

# 4 Detailed proposal

This document proposes the following changes in TS 28.557 [1].

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| **1st Change** |

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 28.530: "Concepts, use cases and requirements".

[3] 3GPP TS 23.501: "System architecture for the 5G System (5GS)".

[4] 3GPP TS 22.261: "Service requirements for the 5G system".

[5] 5G-ACIA White paper: "5G Non-Public Networks for Industrial Scenarios", July 31, 2019.

[6] 3GPP TS 23.003: "Numbering, addressing and identification".

[Y] 3GPP TS 28.541: "5G Network Resource Model (NRM); Stage 2 and stage 3".

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| **Next Change** |

## 5.1 Use cases

### 5.1.X PNI-NPN provisioning by network slice (NSaaS) of PLMN

A mobile network operator (playing the role of NPN-SP) decides to provision a PNI-NPN for use by a private company (playing the role of NPN-SC) in the form of a network slice of a PLMN. This network slice may include PLMN network functions / network function services for non-public use. Depending on NPN-SC, the slice can span one or more network domains, e.g.

* Network slice corresponding to a RAN-only network slice subnet.
* Network slice corresponding to CN-only network slice subnet.
* Network slice corresponding to a network slice subnet composed of RAN slice subnet + Transport network slice subnet + CN slice subnet.

In this scenario, the NPN-SC provides the NPN related SLA requirements to the NPN-SP. These requirements specify NPN related SLS (i.e. NPN desired performance and required functionality) together with other business related information (i.e. NPN lifetime, NPN slice charging / accounting, etc.). To fulfil the SLS of requested NPN, the NPN-SP decides to use network slicing.

The NPN-SP maps SLS of requested PNI-NPN into ServiceProfile attributes. For details on these attributes, see TS 28.541 [Y]. Based on these attributes, the NPN-SP determines to reuse an existing network slice instance or create a new network slice instance for the PNI-NPN. If an existing network slice instance can be reused, the operator may reconfigure the existing network slice instance.

In this use case, the NPN operator role is played by:

* The mobile network operator only. In such a case, the mobile network operator takes the entire responsibility of operating the network slice of the PLMN.
* The mobile network operator and the enterprise. According to business agreement between both parties, the mobile network operator can expose some management capabilities to the enterprise.

NOTE: The scope of the NPN operator in this use case does not include the management of private 5G network resources (i.e. on-premise physical equipment and on-premise NFVI).

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| **End of change** |