**3GPP TSG-SA5 Meeting #145eS5-225245**

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

**Source: Huawei**

**Title: Add use case for NF creation as cloud native VNF**

**Document for: Approval**

**Agenda Item: 6.8.5.1**

# 1 Decision/action requested

***For approval***

# 2 References

[1] 3GPP TR 28.834 V0.2.0 Study on Management of Cloud Native Virtualized Network Functions

# 3 Rationale

When creating a NF as a cloud native VNF, one of the recommdataion from ETSI NFV IFA029 is to instantiate a VNF based on container technologies.

The use case begins when the 3GPP management system decides to deploy a NF as a containerised VNF.

# 4 Detailed proposal

In 1st change, it is proposed to add related references in clause 2 of TR 28.834 V0.2.0 [1].

In 2nd change, it is proposed to add a new use case (Use cases# X: NF creation as a cloud native VNF) in new clause 5.x of TR 28.834 V0.2.0 [1], which includes description and requirements.

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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. ETSI GR NFV-EVE019: "Report on VNF generic OAM functions".
3. ETSI GR NFV-IFA 029: "Report on the Enhancements of the NFV architecture towards  
   Cloud-native and PaaS".
4. ETSI GS NFV-IFA 008 V4.3.1 (2022-05) : "Network Functions Virtualisation (NFV) Release 4; Management and Orchestration; Ve-Vnfm reference point - Interface and Information Model Specification".
5. ETSI GS NFV-IFA 011 V4.3.1 (2022-06) : "Network Functions Virtualisation (NFV) Release 4; Management and Orchestration; VNF Descriptor and Packaging Specification".

[x] ETSI GS NFV-IFA 040 V4.3.1 (2022-05) : "Network Functions Virtualisation (NFV) Release 4; Management and Orchestration; Requirements for service interfaces and object model for OS container management and orchestration specification".

[y] ETSI GS NFV-IFA013 V4.3.1 (2022-06) "Network Function Virtualization (NFV); Management and Orchestration; Os-Ma-nfvo Reference Point - Interface and Information Model Specification".

[z] 3GPP TS 28.526: "Life Cycle Management (LCM) for mobile networks that include virtualized network functions; Procedures".

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| **2nd change** |

## 5.X Use cases# X: NF creation as a cloud native VNF

### 5.X.1 Description

As described in clause 5.3.1 in ETSI NFV IFA029 [3], Container as a Service (CaaS) is widely applied in the industry for improving the efficiency of enterprise DevOps activities, and it has the characteristics of both PaaS and Cloud-native. One of the recommdataion from ETSI NFV IFA029 [3] is to introduce the support of container management in ETSI NFV MANO, such as introduce of support of MCIOP ( Managed Container Infrastructure Object Package) and CISM ( Container Infrastructure Service Management).

The use case begins when the 3GPP management system decides to deploy a NF as a containerised VNF.

The 3GPP management system requests to interact with ETSI NFV MANO for instantiation the VNF (See in ETSI GR NFV-IFA 008 V4.3.1 [4] and ETSI NFV-IFA013 V4.3.1 [y]). NFV MANO inspects the relevant VNF Descriptor (as defined in ETSI GR NFV-IFA 011 V4.3.1 [5]) to get the required containerised resoucse information.

NFV MANO will request CISM for containerised resource creation ( as defined in ETSI GR NFV-IFA 040 V4.3.1 [x]). When the VNF instance has been created, NFV MANO sends a notification to the 3GPP management system to notify the VNF has been instantiated.

### 5.x.2 Issues

TS 28.526 [z] describes the procedures to be used by the 3GPP management system to request instantiation of a VNF. However, TS 28.526 [z] is not compatible with 5G/SBMA architecture and only contains reference of the release 2 specifications from ETSI NFV which do not support containerized VNF LCM.

### 5.X.3 Requirements

REQ-NF-Creation-1: The 3GPP management system shall have a capability to interact with ETSI NFV MANO for creation of NF as a containerised VNF.

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| **End of changes** |