**3GPP TSG-SA5 Meeting #144-e *S5-224304rev01***

**e-meeting, 27 June - 1 July 2022**

**Source: Microsoft, China Mobile**

**Title: pCR 28.834 Add concepts and background**

**Document for: Approval**

**Agenda Item: 6.8.5.1**

# 1 Decision/action requested

***The group is asked to discuss and approve.***

# 2 References

[1] 3GPP TR 28.834-010 “Study on Management of Cloud Native Virtualized Network Functions”.

# 3 Rationale

This contribution proposes to add text for clause 4t Concepts and Background.

# 4 Detailed proposal

It proposes to make the following changes to TR 28.834.

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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"

[x1] NGMN Cloud Native Enabling Future Telco Platforms v5.2. 17. May 2021

[x2] ETSI GR NFV-IFA029: “Report on the Enhancements of the NFV architecture towards cloud-native and Paas”

[x3] ETSI GR NFV-EVE019: “Report on VNF generic OAM functions”

[x4] ETSI GR NFV-IFA037: “Report on further NFV support for 5G”

[x5] ETSI GS NFV-IFA040: “Requirements for service interfaces and object models for OS container management and orchestration specification”

[x6] ETSI GS NFV-EVE 011 “Specification of the Classification of Cloud Native VNF implementations”

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**example:** text used to clarify abstract rules by applying them literally.

**De-facto standards:** The existing widely used solutions that without being declared/developed as standards are considered standard solutions for cloud-native applications, including Kubernetes/Docker, Helm Charts, etc.

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

<symbol> <Explanation>

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

<ABBREVIATION> <Expansion>

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| **2nd Change** |

# 4 Concepts and background

*Editor's note: this clause will contain concepts and background of relevant studies in other SDOs or industry parties.*

Cloud native VNFs are defined in various standardization bodies and industry forums, including ETSI and CNFC.

In [x1] transformation toward cloud-native in the main domains of the telecommunication infrastructure is analysed as an important driver for internal optimization, cost saving, and enablement of vertical solutions.

Clause 6.2 of ETSI GS NFV-EVE 011 [x6] describes a set of characteristics which relate to cloud-native virtualized network functions (VNFs) including: redundancy – resiliency, fault monitoring and failure detection, scaling in/out, decomposition, automated instantiation and configuration, load balancing, and automated resource management.

Potential impact of providing "PaaS"-type capabilities and supporting VNFs which follow cloud-native design principles on the NFV architecture is studied in [x2]. Annex A in [x2] also provides a comprehensive overview of the cloud-native related industry initiatives.

Requirements on the list of services offered by architectural elements providing the container management related functions described in [x2] are specified in [x5].

In [x3] the types of VNF management functions which can be generalized and provided as “generic OAM functions” are analysed and defined. Possible solutions for realizing such generic functions are also described.

In [x4] NFV architectural capabilities and features are profiled based on their utility in addressing the 5G network capabilities and features and enhancements to NFV architectural framework are recommended to further support 5G network characteristics.

This study focuses on use cases related to management of cloud-native VNFs based on ETSI NFV-MANO and based on de-facto standards when ETSI NFV-MANO is not deployed. In addition, considering the impact on the 3GPP management system has been preliminarily foreseen in the existing work in [x2] and [x3], this document also includes describing the potential use cases and solutions of using the “generic OAM functions” to manage cloud-native VNFs.

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| **End of Changes** |