**3GPP TSG-SA5 Meeting #140-e *S5-216579***

e-meeting, 15 - 24 November 2021 (revision of S5-216243)

**Source: China Mobile**

**Title:** **New SID Study on Management of Cloud Native Virtualized Network Functions**

**Document for: Approval**

**Agenda Item: 6.2**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: Study on Management of Cloud Native Virtualized Network Functions

Acronym: FS \_MGMT\_CNF

Unique identifier: XXXXXX

Potential target Release:Rel-18

# 1 Impacts

{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  |  | X |  |
| No | X | X | X |  | X |
| Don't know |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
|  | Feature |
|  | Building Block |
|  | *Work Task* |
| X | Study Item |

## 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
|  |  |  |  |

### 2.3 Other related Work Items and dependencies

{List here other Work Items which relate to the proposed one, such as a Work Item in an earlier Release if further enhancing the feature from the previous Release)}

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
|  |  | {optional free text}  |

# 3 Justification

There are many factors that drive virtualized network functions towards cloud-native. For example, 5G and edge computing now serve major enterprise customers, which face diverse requirements compared with individual users. In order to better meet customers’ requirements, network needs to improve its agility and flexibility. In addition, as more network functions will move onto cloud, we need to improve the resource utilization, product delivery speed and reduce management complexity.

The issue of cloud-native design rules being applied to the solution of communication technology has been extensively studied. ETSI GR NFV-IFA029 studies the potential impact on the NFV architecture of supporting VNFs which follow "cloud-native" design principles. The ETSI GR NFV-EVE019 analyzes and defines the types of VNF management functions, which can be generalized and provided as "common functions". And both of them have made some progress in the potential architecture options.

In addition, based on the current NFV architecture, ETSI IFA037 analyzes potential solutions aiming at supporting the 5G network capabilities and features, which can inspire us to provide recommendations for the enhancement of potential 3GPP management architecture.

Although the specific solutions have yet to be determined, it is expected that the 3GPP management system will be affected, for example, whether EM or NM can still manage this new type of cloud native VNF, how to upgrade the existing management system to meet the new management needs, and whether it is necessary to add a new management entity, etc.

Considering the benefits of cloud native being applied to NFV, it is necessary to study the management of virtualized network functions which follow "cloud-native" design principles and the potential impact on the existing 3GPP Management system.

# 4 Objective

The objectives of this study includes:

* Identify the use cases for the management of cloud-native virtualized network functions and their potential impacts on the 3GPP management system, taking into account the relevant use cases from ETSI NFV(such as the use cases related to VNF common management functions).
* Identify the potential requirements for the management of cloud-native virtualized network functions.
* Identify potential solution(s) for the management of cloud-native virtualized network functions(including PM,FM and CM).

# 5 Expected Output and Time scale

|  |
| --- |
| New specifications {One line per specification. Create/delete lines as needed} |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
| Internal TR  | 28.XXX | Study on Management of cloud native Virtualized Network functions | Dec.2022(SA#98) | Mar. 2023(SA#99) | Guangjing Cao, China Mobile, caoguangjing<at>chinamobile<dot>com |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
|  |  |  |  |
|  |  |  |  |

# 6 Work item Rapporteur(s)

China Mobile Guangjing Cao (caoguangjing@chinamobile.com)

# 7 Work item leadership

SA WG5.

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| China Mobile |
| Orange |
| ZTE |
| CATT |
| China Unicom |
| Huawei |
| AsiaInfo |