**3GPP TSG-SA5 Meeting #142-e *S5-222358***

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

**Source: Huawei**

**Title: pCR TR 28.925 Add issue on management reference model analysis in TS 32.101**

**Document for: approval**

**Agenda Item: 6.5.8**

# 1 Decision/action requested

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

# 2 References

[1] 3GPP draft TR 28.925: “Management and orchestration; Study on enhancement of service based management architecture v0.4.0”.

[2] SP-210136 "New Study on Enhancement of service based management architecture"

# 3 Rationale

SBMA concept provides the interaction paradigm between MnS producer and MnS Consumer without indicating the related entities. In real deployment scenairos, there are management functions provided by different suppliers. It’s necessary to study and show how SBMA concept could be utilized in the real deployment scenario.

So far the concept specified in SBMA contains MnS producer and MnS consumer, in real deployment, there may have interactions between the roles like communication service provider, communication service consumer, network equipment provider, network operator and so on. It’s useful to show how SBMA can apply to the interactions between different roles. Without the elaboration, the reader may lack of overall picture about how to use SBMA.

It proposes to add issue "Management reference model in TS 32.101 supported with management services defined in SBMA" to address the following objective in SP-210136.

* *Study on illustration of how management reference model in TS 32.101 can be supported with management services defined in SBMA specified in TS 28.533.*

# 4 Detailed proposal

It proposes to make the following changes to TR 28.925[1].

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| **1st Change** |

## 4.X Issue# X: Analysis of Management reference model in TS 32.101 and roles in SBMA

### 4.X.1 Description

In TS 32.101[3], Clause 5.1 illustrates themanagement reference model which shows the Operations Systems interfacing with other systems. An Operations System supports management interfaces to other systems.



Figure 1: Management reference model

A number of management interfaces in a PLMN are identified in figure 1, namely:

1) between the Network Elements (NEs) and the Element Manager (EM) of a single PLMN Organisation;

2) between the Element Manager (EM) and the Network Manager (NM) of a single PLMN Organisation;

NOTE: In certain cases the Element Manager functionality may reside in the NE in which case this interface is directly from NE to Network Manager). These management interfaces are given the reference name Itf-N and are the primary target for standardization.

3) between the Network Managers and the Enterprise Systems of a single PLMN Organisation;

4) between the Network Managers (NMs) of a single PLMN Organisation;

4a) between the Domain Managers (DMs) of a single PLMN Organisation.

5) between Enterprise Systems & Network Managers of different PLMN Organisations;

5a) between the Domain Managers (DMs) of different PLMN Organisations.

6) between Network Elements (NEs).

7) between the Network Management Layer Service (NMLS) and the Network Manager (NM).

IRPs may be implemented at interfaces 2, 3, 4, 5 and 7.

TS 28.533[X] introduces the Service Based Management Architecture (SBMA). The fundamental building block of the Service Based Management Architecture (SBMA) is the Management Service (MnS). A MnS is a set of offered capabilities for management and orchestration of network and services. An MnS producer offers its services via a standardized service interface composed of individually specified MnS components (MnS component type A, B, C).

Analysis:

1. In TS 32.101, there is clearly showing the entities and the corresponding interfaces in the management reference model.
2. In TS 28.533, the interaction of paradigm of MnS producer and MnS Consumer is defined without indicating the entities.
3. In a real 5G deployment situation, the interacting entities described in TS 32.101 are to be updated. It would be beneficial to know how different entities use the MnS for exchange information.

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| **entities in TS 32.101** | **Analysis on whether entities are applicable to SBMA** |
| **Enterprise Systems:** Information Systems that are used in the telecommunication organisation but are not directly or essentially related to the telecommunications aspects (Call Centre's, Fraud Detection and Prevention Systems, Invoicing etc). | Management functions of role CSP is newly introduced in 5G for providing management for communication services. |
| **Network Manager (NM):** provides a package of end-user functions with the responsibility for the management of a network, mainly as supported by the EM(s) but it may also involve direct access to the Network Elements. All communication with the network is based on open and well-standardized interfaces supporting management of multi-vendor and multi-technology Network Elements. | Corresponding to the management functions of role NOP. |
| **Domain Manager (DM):** provides element management functions and domain management functions for a sub-network. Inter-working domain managers provide multi vendor and multi technology network management functions.  **Element Manager (EM):** provides a package of end-user functions for management of a set of closely related types of network elements. These functions can be divided into two main categories: Element Management Functions and Sub-Network Management Functions. | Corresponding to the management functions of role NEP. |
| No corresponding entity | Management functions of role VISP is newly introduced in NFV for providing management for virtualization infrastructure. |
| **Network Element (NE):** a discrete telecommunications entity, which can be managed over a specific interface, e.g. the RNC. | Corresponding to NE |
| **No corresponding entity** | NF as defined in 23.501  **Network Function:** A 3GPP adopted or 3GPP defined processing function in a network, which has defined functional behaviour and 3GPP defined interfaces.  NOTE 1: A network function can be implemented either as a network element on a dedicated hardware, as a software instance running on a dedicated hardware, or as a virtualised function instantiated on an appropriate platform, e.g. on a cloud infrastructure. |

### 4.X.2 Potential solutions

In real deployment scenarios, there are following potential related functions need interoperable with each other in a multiple suppliers’ environment.

* Management functions provided by role CSP
* Management functions provided by role NOP
* Management functions provided by role NEP
* Management functions provided by role VISP
* NE
* NF

The interaction between management functions, NE and NF with using SBMA needs to be further elaborated.

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| **End of Changes** |