**3GPP TSG-SA5 Meeting #144-e *S5-224239rev01***

e-meeting, 27 June - 1 July2022

**Source: China Telecom**

**Title: pCR 28864 KI1 KI2 update**

**Document for: Approval**

**Agenda Item: 6.7.6.1**

# 1 Decision/action requested

***The group is asked to discuss and agree on the proposal.***

# 2 References

# 3 Rationale

In the SA5#143e, comments are received on the potential solutions for KI#1 and KI#2 asking for more information on the management use cases related to the NRM enhancement.

# 4 Detailed proposal

For simplicity, we propose to provide the additional use case information to the KI description. This document proposes the following changes in TR 28.864.

Start of 1st Change

## 4.1 Key Issue #1: NWDAFFunction IOC enhancement to support Multiple NWDAF Deployment

### 4.1.1 Description

According to [2], in the case where multiple NWDAF instances are deployed, an NWDAF can act as Aggregator NWDAF, while the other NWDAFs may play the role that provides analytics information to this Aggregator NWDAF.

For the Aggregator NWDAF in multiple NWDAF deployment, it has the "analytics aggregation capability", with which the Aggregator NWDAF is able to perform some extra tasks comparing to the normal NWDAF (i.e., the NWDAF without "analytics aggregation capability"), such as:

- divide the area-of-interest and act as the service consumer to interact with the other NWDAF(s) supporting "analytics metadata provisioning capability" to request "Analytics Metadata Information" corresponding to multiple divided area-of-interests.

- aggregate the output analytics for the requested Analytics ID(s).

If the NWDAF with "analytics aggregation capability" is deployed, it is better for the operators to have the NWDAFs with "analytics metadata provisioning capability" deployed as well, so that these NWDAFs can work co-ordinately, and operator may get more performance benefit from this coordination.

Moreover, the NWDAFs with and without "analytics aggregation capability" behave differently. Comparing to the NWDAF without such capability, the NWDAF with "analytics aggregation capability" needs to perform the additional interactions with other NWDAFs and the additional aggregation operation, too. In the multiple NWDAF deployment scenario, the operator needs to monitor the performance related to the additional operations of a NWDAF with "analytics aggregation capability" and take the result as a necessary part of the performance of this NWDAF instance. However, for a NWDAF without "analytics aggregation capability", it is meaningless and even misleading to consider and monitor the performance related to those additional operations.

As a result, when multiple NWDAFs are deployed, the operator may want to distinguish the NWDAF instances based on these differences, so that the management can be performed accordingly.

However, the current NWDAFFunction IOC defined in [3] cannot reflect the differences on the NWDAF capability aspect.

In this Key Issue, the potential solution(s) is provided to enhances the NWDAFFunction IOC to support reflecting the differences on the NWDAF capability aspect in multiple NWDAF deployment.

Start of 2nd Change

## 4.2 Key Issue #2: NWDAFFunction IOC enhancement to support the logical decomposition of NWDAF

### 4.2.1 Description

As described in TS 23.288 [2], an NWDAF can be decomposed into Analytics logical function (AnLF) and Model Training logical function (MTLF). And an NWDAF can contain AnLF only, MTLF only, or both.

From the operator's point of view, the logical decomposition provides the operators with the flexibility to deploy three sub-types of NWDAF instances, i.e., NWDAF containing AnLF, NWDAF containing MTLF and NWDAF containing both AnLF and MTLF. NWDAFs containing different logical function supports different sets of service, for example, the "ML model provisioning service" is only provided by the NWDAF containing the MTLF, and the analytic related services are only provided by NWDAF containing AnLF.

The information of the logical decomposition provides necessary indication to the operators on how to monitor and consider the performance of a NWDAF instances. For example, it is necessary to monitor the performance related to the analytics if a NWDAF instance contains AnLF. However, if the operator knows that this NWDAF instance under observation also contains MTLF, the operator needs additionally monitor the performance related to the model training and take both parts of performance together into account.

From the operator's point of view, the NWDAF instances which train ML model only is different from the NWDAF instances which perform inference only. However, the NWDAFFunction IOC defined in [3] cannot reflect this difference. As a result, the performance related to the services or the functionalities of NWDAF instances containing different logical function cannot be provided correctly.

In this key issue, the potential solution(s) is provided to enhance the NWDAFFunction IOC to reflect the logical decomposition of NWDAF.

End of Change