**3GPP TSG-SA5 Meeting #145-e *S5-225513Rev01***

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

**Source: China Telecom**

**Title: pCR Adding use case for KI#4**

**Document for: Approval, Information, Discussion**

**Agenda Item: 6.7.6.2**

# 1 Decision/action requested

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

# 2 References

# 3 Rationale

During the rapporteur call#144.1, comment was received about the lack of discussion of the quality of the input data. As the input data of the analytic services and model training services can be collected by the NWDAF, we think that by monitoring the data collection performed by the NWDAF, it is possible to estimate the quality of the data collected in a period before the they are used for model training or analytics, and these services will benefit from it.

This use case is related the performance of the NWDAF data collection, and we propose to add it to the description of Key Issue #4.

# 4 Detailed proposal

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| **Start of Change** |

## 4.4 Key Issue #4: Performance Measurement for NWDAF Data Collection

### 4.4.1 Description

The Data Collection feature permits NWDAF to retrieve data from various data sources (e.g., NF such as AMF, SMF, PCF, UDM and AF; OAM), as a basis of the computation of network analytics [2].

The retrieval of data has impacts on the performance of both the data source and NWDAF. For the data source, all the data required by NWDAF needs to be generated or prepared accordingly before they are retrieved by NWDAF. And for the NWDAF, it needs to distinguish every piece of data received from different data sources and of data received from the same data source but for different network analytic purposes.

The operator may notice that the data collection is the major task of one NWDAF instance, therefore, less computation resource can be allocated to that NWDAF instance, and more storage and network resources may be allocated if necessary. Or on the extreme cases, a new NWDAF instance needs to be provided or we may find out that deploying a DCCF is the optimum solution. For making a decision, the measurement data is needed, such as how many data is collected by a NWDAF instance or by all NWDAF instances related to some areas of interests, so that the operator could have the understanding and estimation of the working load and working status of the NWDAF instance.

Moreover, it is also beneficial to have the granular measurement of data collection, such as measuring the data collected from different type of data sources. This measurement may provide information about if it is possible to optimize the deployment of NWDAF. For example, the NWDAF instance may be geographically deployed closer to its major data source to reduce the latency and save network resources.

In the other case, the monitoring of data collection will help improve the other services provided by NWDAF. For example, for model training, the training data are expected to be collected periodically. However, in practical, not all of the data are collected successfully, some of them can be missing which is probably caused the malfunctioning of the data source or network transmission issue. The more the data is missing the worse the degradation of the quality of the training data will be. And it will bring negative effect to the model training, such as a slow converging rate. Similar situation may also happen to input data of analytic services and analytic results.

By monitoring the periodical notification which is used for data collection expected and actually received by the NWDAF, it is possible to estimate the quality of the data collected in a period which will indicate whether the data collected in this period is able to reflect the network correctly and sufficiently and whether some additional data cleansing or data augmentation are needed before the they are used for model training or analytics.

In this key issue, the potential solutions are provided to define the new performance measurement reflecting the data collection performed by NWDAF to fulfil the following potential requirements:

**REQ-NWDAF\_COUNT-1** the 3GPP management systemshall have a capability to allow an authorized consumer to configure the NWDAF to monitoring the data collection actions initiated by the NWDAF and the corresponding result, respectively. And the monitoring shall be able to distinguish the data collection from different type of data sources.

**REQ-NWDAF\_COUNT-2** the 3GPP management systemshall have a capability to allow an authorized consumer to configure the NWDAF to monitoring the periodical notification which is used for data collection expected and received by the NWDAF, respectively.

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| **End of Change** |