**3GPP TSG-SA5 Meeting #145e *S5-225XXX***

**15 Aug to 24 Aug 2022, E-meeting**

**Source: China Telecom**

**Title: New key issue for the performance measurement of the NWDAF related on analytics result generation**

**Document for: Approval**

**Agenda Item: 6.7.6.2**

# 1 Decision/action requested

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

# 2 References

[1] 3GPP TS 23.288: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

# 3 Rationale

In TS 23.288 [1], the services for analytics exposure has been defined for the NWDAF. The consumers of analytics services may indicate to the NWDAF the latest time that they expect to receive the analytics result provided by the NWDAF. This latest time should not be set to a value less than the Supported Analytics Delay (i.e., the latest time that the analytics result provided by the NWDAF can be generated) of the selected NWDAF, otherwise, the consumers may receive error responses or error notifications. The latest time described above is relative time interval as the gap with respect to analytics request /subscription (e.g., "in 10 minutes").

Based on the description above, the consumers of analytics services may have requirements on the delay of analytics result generated by NWDAF. The delay of analytics result generated by NWDAF indicates the time consumption of NWDAF generating analytics result. It is an important information which can be used to describe the performance of NWDAF. From the perspective of management, monitoring this information is a specific and unique requirement which is particularly important for NWDAF. For example, this information is related to resource allocated to the NWDAF as well as the implementation of the NWDAF instance. With this information, it is much easier for the operators to find the optimum resource allocation scheme or the optimum value of the Supported Analytics Delay.

As a result, studying the delay of analytics result generated by NWDAF is in the scope of this study item. And in this contribution, we propose to investigate the delay of NWDAF generating analytics result.

# 4 Detailed proposal

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| **Start of 1st Change** |

## 4.X Key Issue #X: Performance measurement of the NWDAF based on the delay of analytics result generation

### 4.X.1 Description

In TS 23.288 [2], the services for analytics exposure has been defined for the NWDAF. The consumers of analytics services may have requirements on the delay of analytics result generated by NWDAF. From the perspective of management, the performance of NWDAF can be reflected by the results corresponding to these services. The delay of analytics result generated by NWDAF indicates the time consumption of NWDAF generating analytics result. It is an important information which can be used to describe the performance of NWDAF.

The services provided by NWDAF are mainly used to aid other NFs, including other NWDAFs. And the time consumption of the NWDAF providing services is one of the factors that the operators may be interested in. Taking the NWDAF instance which providing analytic service as an example, the time that the NWDAF instance used to generate the analytic result will be directly related to resource allocated to the NWDAF as well as the implementation of the NWDAF instance. If different NWDAF instances are assigned with similar workload, by observing and comparing the time consumption of analytic result generation, it is much easier for the operators to find the optimum resource allocation scheme or to locate the factor which contributes most to the time consumption for certain type of service or workload assigned to the NWDAF.

More specifically, by observing the time consumption, the operator can also collect information on whether it is beneficial to make a NWDAF instance collocated with the other NF instance and with which NF is better. And by observing the time consumption, the operator can also collect information on whether it is beneficial to adjust the value of the Supported Analytics Delay (i.e., the latest time that the analytics result provided by the NWDAF can be generated).

In this key issue, the potential solution(s) is provided on the performance measurements of the NWDAF related to the delay of NWDAF generating the result of analytics services.

4.X.2      Potential solutions

4.X.2.1 Potential solution #1: time consumption of NWDAF generating analytics result

4.X.2.1.1 Introduction

This solution is proposed on how to provide the performance measurement of the NWDAF based on the delay of analytics result generation. In this solution, the proposed performance measurements are defined as the time consumption of NWDAF generating analytics result.

The proposed solution can be a potential solution for the performance measurement of the NWDAF related to the delay of NWDAF generating the result of analytics services.

4.X.2.1.2 Description

These proposed performance measurements of the NWDAF are defined as the time consumption of the NWDAF providing analytics result.

The time consumption of the NWDAF providing analytics result can be measured as follows:

- The time when the NWDAF receives the Nnwdaf\_AnalyticsSubscription\_Subscribe service operation (See TS 23.288 [2]) from the NWDAF service consumer, minus time when the NWDAF provides the corresponding service result to the NWDAF service consumer,

- or the time when the NWDAF receives the Nnwdaf\_AnalyticsInfo\_Request service operation (See TS 23.288 [2]) from the NWDAF service consumer, minus time when the NWDAF provides the corresponding service result to the NWDAF service consumer.

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| **End of Modified Sections** |