**3GPP TSG-SA5 Meeting #143e** ***S5-223458rev2***

**9 May to 17 May 2022, E-meeting**

**Source: China Telecom**

**Title: Add potential solution for KI#3**

**Document for: Approval**

**Agenda Item: 6.5.6.2**

# 1 Decision/action requested

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

# 2 References

[1] 3GPP TS 28.864-010: " Study on Enhancement of the management aspects related to NWDAF".

# 3 Rationale

In the last meeting, the key issue #3 for performance management of the NWDAF on the interaction aspect (see TS 28.864 [1]) was proposed and approved. The interaction may include the requests, subscriptions, responses and notifications received and/or generated by NWDAF.

This pCR is to provide the pontential solution for KI # 3. The solution is to provide the performance metrics of the NWDAF based on the interaction between the NWDAF and NWDAF service consumer.

# 4 Detailed proposal

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| **Start of 1st Change** |

## 4.3 Key Issue #3: Performance Management of the NWDAF on the Interaction Aspect

### 4.3.2 Potential solutions

#### 4.3.2.1 Potential solution #1: number of subscriptions and/or requests

##### 4.3.2.1.1 Introduction

This solution is proposed on how to provide the performance metrics of the NWDAF based on the subscriptions and/or requests received by NWDAF. The proposed performance metrics are defined as the number of subscriptions and/or requests received by NWDAF.

The proposed solution can be a potential solution for the performance management of the NWDAF based on the interaction aspect.

##### 4.3.2.1.2 Description

This proposed performance measurements of the NWDAF are defined as the number of subscriptions and/or requests received by NWDAF.

Moreover, since different type of analytics and network slices may consume different resource (e.g., virtual CPU resource, virtual memory resource or virtual disk resource) of NWDAF, it is necessary to define the performance measurement of NWDAF based on the granularity of analytics or slice.

Therefore, this proposed performance measurements are also defined as the number of subscriptions and/or requests received by NWDAF based on the analytics ID or S-NSSAI. The analytics ID indentifies the requested analytics and the S-NSSAI identifies the network slice. The analytics ID and S-NSSAI can be obtained from the NWDAF service consumer (see TS 23.288 [2]).

The number of subscriptions received by NWDAF can be measured as follows:

* When the NWDAF receives the Nnwdaf\_AnalyticsSubscription\_Subscribe service operation (See TS 23.288 [2]) from the NWDAF service consumer, each accepted subscription is added to the relevant counter.

The number of requests received by NWDAF can be measured as follows:

* When the NWDAF receives the Nnwdaf\_AnalyticsInfo\_Request service operation (See TS 23.288 [2]) from the NWDAF service consumer, each accepted request is added to the relevant counter.

The number of subscriptions received by NWDAF based on the analytics ID(s) can be measured as follows:

* When the NWDAF receives the Nnwdaf\_AnalyticsSubscription\_Subscribe service operation (See TS 23.288 [2]) from the NWDAF service consumer, each accepted subscription is added to the relevant subcounter per analytics ID .

The number of subscriptions received by NWDAF based on the S-NSSAI can be measured as follows:

* When the NWDAF receives the Nnwdaf\_AnalyticsSubscription\_Subscribe service operation (See TS 23.288 [2]) from the NWDAF service consumer, each accepted subscription is added to the relevant subcounter per S-NSSAI.

The number of requests received by NWDAF based on the analytics ID(s) can be measured as follows:

* When the NWDAF receives the Nnwdaf\_AnalyticsInfo\_Request service operation (See TS 23.288 [2]) from the NWDAF service consumer, each accepted request is added to the relevant subcounter per analytics ID.

The number of requests received by NWDAF based on the S-NSSAI can be measured as follows:

* When the NWDAF receives the Nnwdaf\_AnalyticsInfo\_Request service operation (See TS 23.288 [2]) from the NWDAF service consumer, each accepted request is added to the relevant subcounter per S-NSSAI.

Editor’s note: The NWDAF can be decomposed into Analytics logical function (AnLF) and Model Training logical function (MTLF) (see KI #2). The potential solutions related to the NWDAF logical decomposition can be added after the solution for KI #2 approved.

#### 4.3.2.2 Potential solution #2: number of notifications and/or responses

##### 4.3.2.2.1 Introduction

This solution is proposed on how to provide the performance metrics of the NWDAF based on the notifications and/or responses generated by NWDAF. The proposed performance metrics are defined as the number of notifications and/or responses generated by NWDAF.

The proposed solution can be a potential solution for the performance management of the NWDAF based on the interaction aspect.

##### 4.3.2.2.2 Description

This proposed performance measurements of the NWDAF are defined as the number of notifications and/or responses generated by NWDAF.

Moreover, since different type of analytics and network slices may consume different resource (e.g., virtual CPU resource, virtual memory resource or virtual disk resource) of NWDAF, it is necessary to define the performance measurements of NWDAF based on the granularity of analytics or slice.

Therefore, this proposed performance measurements are also defined as the number of notifications and/or responses generated by NWDAF based on the analytics ID(s) or S-NSSAI. The analytics ID indentifies the requested analytics and the S-NSSAI identifies the network slice. The analytics ID(s) and S-NSSAI can be obtained from the NWDAF service consumer (see TS 23.288 [2]).

The number of notifications generated by NWDAF can be measured as follows:

* When the NWDAF generates the Nnwdaf\_AnalyticsSubscription\_Notify service operation to NWDAF service consumer (See TS 23.288 [2]), each generated notification is added to the relevant counter.

The number of responses generated by NWDAF can be measured as follows:

* When the NWDAF generates the Nnwdaf\_AnalyticsInfo\_Request Response service operation to NWDAF service consumer (See TS 23.288 [2]), each generated reponse is added to the relevant counter.

The number of notifications generated by NWDAF based on the analytics ID(s) can be measured as follows:

* When the NWDAF generates the Nnwdaf\_AnalyticsSubscription\_Notify service operation to NWDAF service consumer (See TS 23.288 [2]), each generated notification is added to the relevant subcounter per analytics ID.

The number of notifications generated by NWDAF based on the S-NSSAI can be measured as follows:

* When the NWDAF generates the Nnwdaf\_AnalyticsSubscription\_Notify service operation to NWDAF service consumer (See TS 23.288 [2]), each generated notification is added to the relevant subcounter per S-NSSAI.

The number of responses generated by NWDAF based on the analytics ID(s) can be measured as follows:

* When the NWDAF generates the Nnwdaf\_AnalyticsInfo\_Request Response service operation to NWDAF service consumer (See TS 23.288 [2]), each generated reponse is added to the relevant subcounter per analytics ID.

The number of responses generated by NWDAF based on the S-NSSAI can be measured as follows:

* When the NWDAF generates the Nnwdaf\_AnalyticsInfo\_Request Response service operation to NWDAF service consumer (See TS 23.288 [2]), each generated reponse is added to the relevant subcounter per S-NSSAI.

Editor’s note: The NWDAF can be decomposed into Analytics logical function (AnLF) and Model Training logical function (MTLF) (see KI #2). The potential solutions related to the NWDAF logical decomposition can be added after the solution for KI #2 approved.

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| **End of Modified Sections** |