**3GPP TSG SA WG5 Meeting #156 S5-244816d1**

**Maastricht, The Netherlands 19 - 23 August 2024** *revision of S5-243826*

**Source: China Telecom**

**Title: Add a potential solution on measuring the number of failed roaming analytics service subscriptions**

**Document for: Approval**

**Agenda Item: 6.19.18**

# 1 Decision/action requested

***For agreement and approval***

# 2 References

[1] 3GPP TR 28.877-000: "Study on Enhancement of the management aspects related to Network Data Analytics Functions (NWDAF) Phase 2".

[2] 3GPP TS 23.288-i40: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

# 3 Rationale

It is agreed in SA5#155 that the potential solutions with respect to the following requirements needs to be studied [1]:

**REQ-NWDAF-RE-AE-04:**The 3GPP management system should have the capability to measure the number of failed and successful roaming analytics service subscriptions.

As described in TS 23.288 [2] subclause 4.3 and 6.1.5, analytics may be exchanged between PLMNs (i.e. HPLMN and VPLMN).



Considering the scenario of analytics exposure from VPLMN to HPLMN, failed roaming analytics service subscriptions may be caused in two cases:

1. Upon receiving an analytics information request/subscription from a service consumer NF in HPLMN, the H-RE-NWDAF may reject the subscription.
2. If the subscription is accepted by the H-RE-NWDAF, the H-RE-NWDAF sends a roaming analytics subscribe to the V-RE-NWDAF in VPLMN. The V-RE-NWDAF may also reject the subscription.

The measurement on the number of failed roaming analytics service subscriptions in the second case is missing.

Similarly, considering the scenario of analytics exposure from HPLMN to VPLMN, failed roaming analytics service subscriptions may be caused in two cases:

1. Upon receiving an analytics information request/subscription from a service consumer NF in VPLMN, the V-RE-NWDAF may reject the subscription.
2. If the subscription is accepted by the V-RE-NWDAF, the V-RE-NWDAF sends a roaming analytics subscribe to the H-RE-NWDAF in HPLMN. The H-RE-NWDAF may also reject the subscription.

The measurement on the number of failed roaming analytics service subscriptions in the second case is missing.

# 4 Detailed proposals

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| **1st Change** |

4.1.3 Potential solutions

#### 4.1.3.X Potential solution #X: Number of failed roaming analytics service subscriptions caused by some specific cases

4.1.3.X.1 Introduction

A failed roaming analytics service subscription related to the NWDAF with Roaming Exchange Capability (RE-NWDAF) may happen in 4 cases described below.

Considering the scenario of analytics exposure from VPLMN to HPLMN, a failed roaming analytics service subscriptions may happen in two cases:

**Case 1-1:** Upon receiving an analytics information request/subscription from a service consumer NF in HPLMN, the H-RE-NWDAF may reject the subscription.

**Case 1-2:** If the subscription is accepted by the H-RE-NWDAF, the H-RE-NWDAF sends a roaming analytics subscribe to the V-RE-NWDAF in VPLMN. The V-RE-NWDAF may also reject the subscription.

Similarly, considering the scenario of analytics exposure from HPLMN to VPLMN, a failed roaming analytics service subscriptions may happen in other two cases:

**Case 2-1:** Upon receiving an analytics information request/subscription from a service consumer NF in VPLMN, the V-RE-NWDAF may reject the subscription.

**Case 2-2:** If the subscription is accepted by the V-RE-NWDAF, the V-RE-NWDAF sends a roaming analytics subscribe to the H-RE-NWDAF in HPLMN. The H-RE-NWDAF may also reject the subscription.

This potential solution is proposed to provide the number of failed roaming analytics service subscription related to the NWDAF with Roaming Exchange Capability (RE-NWDAF) caused by Case 1-2 anc Case 2-2. It is proposed to meet the requirement of **REQ-NWDAF-RE-AE-04.**

NOTE: Case 1-1 and Case 2-1 are covered by potential solution in clause 4.1.3.6.

4.1.3.X.2 Description

In the scenario where analytics are exposed from the VPLMN to the HPLMN, when the subscription is accepted by the H-RE-NWDAF, the H-RE-NWDAF will send a roaming analytics subscription to the V-RE-NWDAF in VPLMN. However, due to the reasons explained in TS 23.288 [2] subclause 6.1.5.3, the V-RE-NWDAF may reject this subscription.

In this scenario, the number of failed roaming analytics service subscriptions can be provided as:

**Number of failed roaming analytics service subscriptions of V-RE-NWDAF analytics exposure from VPLMN to HPLMN**: it measures the number of roaming analytics service subscriptions rejected by the V-RE-NWDAF. If the roaming analytics subscribe is rejected by the V-RE-NWDAF, each rejected subscription is added to the corresponding counter.

In the scenario where analytics are exposed from the HPLMN to the VPLMN, when the subscription is accepted by the V-RE-NWDAF, the V-RE-NWDAF will send a roaming analytics subscription to the H-RE-NWDAF in HPLMN. However, due the reasons explained in TS 23.288 [2] subclause 6.1.5.2, the H-RE-NWDAF may reject the subscription.

In this scenario, the number of failed roaming analytics service subscriptions can be provided as:

**Number of failed roaming analytics service subscriptions of H-RE-NWDAF analytics exposure from HPLMN to VPLMN**: it measures the number of roaming analytics service subscriptions rejected by the H-RE-NWDAF. If the roaming analytics subscribe is rejected by the H-RE-NWDAF, each rejected subscription is added to the corresponding counter.

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| **End of Changes** |