**3GPP TSG-SA3 Meeting #108e *draft\_S3-221854-r1***

**e-meeting, 22 - 26 August 2022**

**Source: Nokia, Nokia Shanghai Bell**

**Title: KI3 EN resolution in sol12**

**Document for: Approval**

**Agenda Item: 5.24**

# 1 Decision/action requested

***Resolution of editor’s note in solution 12.***

# 2 References

[1] 3GPP TR 33.875

# 3 Rationale

*As resolution of*

Editor’s Note: It is ffs how the solution works in case of notification target reselection as described in clause 6.3.1.0 of TS 23.501.

*It is proposed to update the solution to add in step5:*

If NF\_C is part of a NF Set (or NF Service Set), then another NF of the same set can be reselected, if CCA of NF\_C or its certificate includes the NF Set Id (or NF Service Set Id). One potential use case is that NF\_C is not reachable.

# 4 Detailed proposal

\*\*\*\*\*\*\*\*\*\*\*\*\* START OF CHANGES

6.12 Solution #12: Authorization of notification endpoint in “Subscribe-Notify” scenarios

6.12.1 Introduction

This solution addresses key issue #3: Service access authorization in the “Subscribe-Notify” scenarios by including “notification URI” in the token request.

This solution proposes to include “notification URI” and CCA of the NF which owns the “notification URI” at the access token request. The NRF verifies whether the notification URI is authorized to receive the service/notification that is requested in the access token request.

6.12.2 Solution details

During access token request process, NF Service Consumer include "notification URI" in Nnrf\_Access Token\_Get Request when operation semantics of the requested service type is "Subscribe/Notify". NRF may verify whether the notification URI in the access token request match the corresponding information in the public key certificate of the NF Service Consumer or those in the NF profile of the NF Service Consumer. In addition, when "notification URI"(s) are included in the access token request, NRF may verify whether the "notification URI"(s) locate its location(s) with the same address(es) which are indicated by its own FQDN or IP address as registered in NRF. The NRF checks whether the NF Service Consumer is authorized to access the requested service(s).

When the NF Service Consumer is authorized, the NRF shall then generate an access token with appropriate claims which may include “notification URI” as requested by NF Service Consumer.



**Figure 6.12.2.-1: Access token request for "Subscribe-Notify" NF Service illustration 1**

A NF Service Consumer (NF\_A) may request to subscribe to NF Service offered by a NF Service Producer (NF\_B) on behalf of NF\_C according to the Service Request from NF\_C (e.g. Figure 4.15.3.2.2-1: Nudm\_EventExposure\_Subscribe, Unsubscribe and Notify operation in TS23.502).

The Figure 6.12.2-2 describe the solution to verify the service request from NF\_A including Notification URI of NF\_C.



**Figure 6.12.2-2: Access token request for "Subscribe-Notify" NF Service illustration 2**

Step 0. The NF\_C sends a Service Request to the NF\_A for notification service on an event with an access token including notification URI and CCA of the NF\_C.

Step 1. The NF\_A decides to subscribe a service of the NF\_B associated to the Service Request received at step 0 and sends an Access Token Request to the NRF for a Service Request toward the NF\_B including notification URI and CCA of the NF\_C.

Step 2. The NRF verifies whether the NF\_A is authorized and whether the NF\_C identified by the appended CCA is a valid Network Function and authorized to receive the requested NF Service from the NF\_B. NRF may verify whether the notification URI in the access token request match the corresponding information in the public key certificate of the NF\_C of the CCA of the NF\_C, or those in the NF profile of the NF\_C.

Step 3. Upon successful verification, the NRF publishes an access token for a Service Request of the NF\_A toward the NF\_B. The access token includes notification URI of the NF\_C in the claims as requested in step 2.

Step 4. The NF\_A sends a Service Request for a notification service toward NF\_B including the access token received at step 3 and CCA of the NF\_A.

Step 5. The NF\_B verifies the access token and CCA of the NF\_A. During the verification, the NF\_B can check whether notification URI in the Service Request are included in the access token. If the verification is successful, the NF\_B may respond the NF\_A and provide the NF\_C with the notification service as requested by the NF\_A. In case of notification target reselection as described in clause 6.3.1.0 of TS 23.501, binding can be used to indicate suitable NFs other than NF\_C.

6.12.3 Evaluation

TBD.

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