**3GPP TSG-SA3 Meeting #108e-AdHoc *draft\_S3-222811-r1***

**e-meeting, 10 - 14 October 2022**

**Source: Nokia, Nokia Shanghai Bell**

**Title: KI7 Sol17 EN resolution**

**Document for: Approval**

**Agenda Item: 5.24**

# 1 Decision/action requested

***EN resolution in solution 17.***

# 2 References

[1] 3GPP TR 33.875

# 3 Rationale

Editor's Note: it is ffs how to solve the case that one operator uses token-based authorization and its roaming partner uses static authorization.

*Needs to be resolved. The following text is added:*

*The solution assumes that discovery is used by both PLMNs according to the standard. Thus, both PLMNs understand the oAuth2Required indication that is specified in 29.510 and can be used during discovery.*

Editor's Note: it is ffs how to configure the NF profile one-by-one, especially when the authorization of one PLMN is changed.

*Needs to be resolved. The following text is added:*

*How to configure the NF profile is out of scope of this solution.*

Editor's Note: Further evaluation is FFS.

*Needs to be resolved. It is proposed to delete this EN. Unclear what further evaluation would be needed.*

# 4 Detailed proposal

\*\*\*\* START OF CHANGES

6.17 Solution #17: Authorization mechanism negotiation using existing methods

6.17.1 Introduction

This solution addresses Key Issue #7 "Authorization mechanism negotiation". It is proposed to use the two NRFs for the authorization mechanism negotiation.

6.17.2 Solution details

The solution assumes that discovery is used by both PLMNs according to the standard. Thus, both PLMNs understand the oAuth2Required indication that is specified in 29.510 and can be used during discovery.

From the oAuth2Required indication, the vNRF can imply, whether OAuth2.0 or static authorization is to be used within one PLMN. This covers the use case, where within one PLMN maybe not yet all NFs use OAuth2.0.

For inter-PLMN stage 3 (TS 29.510 Table 6.1.6.2.3-1) introduced with "oauth2Required" one option to handle the authorization method setting by the hNRF. Another type for NFService, the "perPlmnOauth2ReqList", includes the Oauth2-based authorization requirement supported by the NF Service Instance per PLMN of the NF Service Consumer.

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| --- | --- | --- | --- | --- |
| oauth2Required | boolean | O | 0..1 | It indicates whether the NF Service Instance requires Oauth2-based  authorization.  Absence of this IE means that the NF Service Producer has not provided any indication about its usage of Oauth2 for authorization. |
| perPlmnOauth2ReqList | PlmnOauth2 | O | 0..1 | When present, this IE shall include the Oauth2-based authorization requirement supported by the NF Service Instance per PLMN of the NF Service Consumer.  This IE may be included when the Oauth2.0 authorization requirement supported by the NF Service Instance for different PLMN is different. When the requester PLMN Id is available in perPlmnOauth2ReqList IE, this IE shall override the oauth2Required IE. If the requester PLMN ID is not present in perPlmnOauth2ReqList IE, then the value of oauth2Required IE shall be applicable if available. |

**Table 6.17.2-1: The IEs oauth2Required and perPlmnOauth2ReqList, part of TS 29.510 Table 6.1.6.2.3-1**

In addition, stage 3 has specified for inter-PLMN usage the type PlmnOauth2 (see clause 6.1.6.2.102 3GPP TS 29.510 [6]. If the optional attribute "oaut2NotRequiredPlmnIdList" is used, the pre-configured information by HPLMN how to apply static authorization with a specific roaming partner is used.

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| --- | --- | --- | --- | --- |
| oauth2RequiredPlmnIdList | array(PlmnId) | O | 1..N | It shall indicate the consumer PLMN ID list for which NF Service Instance requires Oauth2-based authorization.  (See NOTE 1) |
| oauth2NotRequiredPlmnIdList | array(PlmnId) | O | 1..N | It shall indicate the consumer PLMN ID list for which NF Service Instance does not require Oauth2-based authorization.  (See NOTE 1) |
| NOTE 1:   The same PLMN Id shall not be present in both oauth2RequiredPlmnIdList and oauth2NotRequiredPlmnIdList. | | | | |

GSMA has further provided the following recommendations given in NG.113 [8], clause 7.6.3.4:

"If using authorization using OAuth2 access token it is recommended that both VPMN and HPMN support oauth2Required IE as specified in 3GPP Release 16 TS 29.510 [16]. If the HPMN wants to use authorization using Oauth2 only for some VPMNs then HPMN must support perPlmnOauth2ReqList IE as specified in 3GPP Release 17 TS 29.510 [16]."

How to configure the NF profile is out of scope of this solution.

6.17.3 Evaluation

Several means to allow a PLMN's hNRF to provide to the requesting vNRF information on the authorization method used exist in the current specification TS 29.510 [6]. If in the array(PlmanId) of hPLMN NRF a roaming partner is on the "oauth2NotRequiredPlmnIdList", static authorization can be used with this roaming partner. When operators follow the recommendations given in NG.113 [8], the key issue seems to be covered sufficiently by using the existing methods.

\*\*\*\* END OF CHANGES