**3GPP TSG-CT WG1 Meeting #141eC1-232558**

**Online 17– 21 April 2023**

**Source: vivo**

**Title: PIN creation procedure**

**Spec: 3GPP TS 24.583 v0.0.0**

**Agenda item: 18.2.26**

**Document for: Agreement**

**1. Reason for Change**

After the PINE acquires the role of PEMC and receives the address of PIN server, the PEMC can trigger a creation of PIN towards PIN server.

Below are the possible scenarios when the PEMC request for the creation of PIN:

- No PIN elements or PEGC have established connection with PEMC;

- One or more PIN elements have established connection with PEMC via non-3GPP access. In this case the PEMC can trigger creation of PIN with these PIN elements in group.

The PIN creation procedure is specified in clause 8.5.2 of TS 23.542 v0.2.0

**2. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.583 v0.0.0.

\* \* \* First Change \* \* \* \*

#### 5.4.2.1 PIN creation procedure initiation by PEMC

The PINE is authorized to initiate a PIN create procedure initiation if:

a) the UE identifier or PIN client ID is available in the PINE;

b) the endpoint information of PIN server is available in the PINE;

c) the PINE has already registered to PIN server as a PEMC as specified in clause 5.3.2; and

d) the PINE has been authorized to communicate with the PIN server,

otherwise, the PINE is not authorized to perform the PIN create procedure initiation.

When the PEMC is on demand to create a PIN, if the PEMC is authorized to initiate a PIN create procedure initiation, then the PEMC shall generate an HTTP POST request according to procedures as specified in IETF RFC 7231 [X]. In the HTTP POST request, the PMAE-C:

a) shall set the Request-URI to the URI of the PIN server;

b) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

c) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-request> element in the <pinapp-info> root element:

1) shall include a <ue-id> element set to the UE identity of the PEMC (i.e. GPSI or identity token) or the PIN client ID of PEMC;

2) shall include a <security-credentials> element set to the security credentials resulting from a successful authorization for the PIN service;

3) may include a <pin-client-profile> element set to the PIN client profile(s) available in the PEMC;

4) may include a <ue-location> element set to the location of the PEMC;

5) may include a <pine-list> element set to the identifier(s) of the PINE(s) intending to be added into the PIN, which have already communicated with PEMC via 3GPP access or non-3GPP access. In case of no PINE is available to the PEMC, the <pine-list> element includes the identifier of PEMC itself; and

6) may include a <additional-pemc> element set to the identifier(s) of PEMC(s) that are allowed to manage the PIN, if any.

The PMAE-C shall send the generated HTTP POST request towards the PAE-S according to IETF RFC 7231 [X].

Upon reception of an HTTP POST request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

b) an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-request> element in the <pinapp-info> root element,

the PAE-S shall check whether the PINE is authorized to create a PIN.

#### 5.4.2.2 PIN creation procedure accepted by PIN server

If the PINE is authorized to be a PEMC of a PIN, PAE-S shall:

a) generate an HTTP 200 (OK) response according to IETF RFC 7231 [X]. In the HTTP 200 (OK) response message, the PAE-S:

1) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

2) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-accept> element in the <pinapp-info> root element:

i) shall include a <pin-id> element set to the assigned PIN ID of the newly created PIN;

ii) shall include a <valid-timer> element set to the valid expiration time of the newly created PIN;

iii) shall include a <pine-list> element set to the identifier(s) of the PINE(s) that are added into the PIN if the <pine-list> element is received from PEMC;

iv) may include a <pegc-id> element set to the identifier(s) of the PEGC(s) that are selected by the PIN server to act as the PEGC(s) for the PIN. In case of no appropriate PINE to act as a PEGC, the <pegc-id> element set to identifier of the PEMC (i.e. the PIN server indicates PEMC to be the PEGC);

v) may include a <pegc-address> element set to the assigned IP address or port number of the PEGC that is selected by the PIN server to act as the PEGC for the PIN; and

vi) may include a <access-control-info> element set to the access control information for the PEGC that is selected by the PIN server to act as the PEGC for the PIN; and

b) send the HTTP 200 (OK) response towards the PEAE-C.

#### 5.4.2.3 PIN creation procedure completion by PEMC

Upon reception of an HTTP 200 (OK) response message containing:

a) a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

b) an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-accept> element in the <pinapp-info> root element,

the PMAE-C:

a) shall consider the PIN creation procedure is accepted by the PIN server;

b) shall generate an HTTP POST request according to procedures as specified in IETF RFC 7231 [X] towards the PEGC and send the generated HTTP POST request towards the PGAE-C according to IETF RFC 7231 [X] if:

1) the <access-control-info> element is received from the PIN server; or

2) the access control info is decided by PEMC and available in the PEMC.

NOTE 1: In other conditions whether PEMC decides to notify the PEGC or not is left to UE implementation.

 In the HTTP POST request, the PMAE-C:

1) shall set the Request-URI to the URI corresponding to the PEGC;

2) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

3) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-request> element in the <pinapp-info> root element:

i) shall include a <pin-id> element set to the assigned PIN ID of the newly created PIN;

ii) may include a <access-control-info> element set to the access control information for the PEGC;

iii) may include a <pin-member-indication> element set to indicate that the PIN element is made the member of the newly created PIN identified by the PIN ID; and

iv) may include a <pegc-address> element set to the assigned IP address or port number of the PEGC;

v) may include a <pegc-id> element set to the identifier(s) of the PEGC(s) that are selected by the PIN server to act as the PEGC(s) for the PIN; and

NOTE 2: In case of PEMC acts as the PEGC of the PIN, step b) is not needed.

c) may generate a series of HTTP POST request messages according to procedures as specified in IETF RFC 7231 [X] towards the PINE(s) in the <pine-list> element accordingly and send the generated HTTP POST request towards the PEAE-C(s) accordingly as specified in IETF RFC 7231 [X]. In each HTTP POST request, the PMAE-C:

1) shall set the Request-URI to the URI corresponding to the specific PINE;

2) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

3) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-request> element in the <pinapp-info> root element:

i) shall include a <pin-id> element set to the assigned PIN ID of the newly created PIN;

ii) may include a <access-control-info> element set to the access control information for the specific PINE;

iii) may include a <pin-member-indication> element set to indicate that the PIN element is made the member of the newly created PIN identified by the PIN ID; and

iv) may include a <pegc-address> element set to the assigned IP address or port number of the PEGC;

v) may include a <pegc-id> element set to the identifier(s) of the PEGC(s) that are selected by the PIN server to act as the PEGC(s) for the PIN; and

Upon reception of an HTTP POST request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

b) an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-request> element in the <pinapp-info> root element,

the PGAE-C:

a) shall consider the PEGC has been successfully added into the PIN and acts as the PEGC of the PIN identified by the <pin-id> element; and

b) shall perform either of the following to response to PMAE-C:

1) generate an HTTP 200 (OK) response according to IETF RFC 7231 [X]. In the HTTP 200 (OK) response message, the PGAE-C:

i) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

ii) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-accept> element in the <pinapp-info> root element; or

2) generate an HTTP 200 (OK) response according to IETF RFC 7231 [X]. In the HTTP 200 (OK) response message, the PGAE-C:

i) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

ii) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-reject> element in the <pinapp-info> root element:

A) shall include a <cause> element set to an appropriate cause for PIN creation notification failure.

Upon reception of an HTTP POST request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

b) an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-request> element in the <pinapp-info> root element,

the PEAE-C:

a) shall consider the PINE has been successfully added to the PIN; and

b) shall perform either of the following to respond to PMAE-C:

1) generate an HTTP 200 (OK) response according to IETF RFC 7231 [X]. In the HTTP 200 (OK) response message, the PEAE-C:

i) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

ii) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-accept> element in the <pinapp-info> root element; or

2) generate an HTTP 200 (OK) response according to IETF RFC 7231 [X]. In the HTTP 200 (OK) response message, the PEAE-C:

i) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

ii) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-reject> element in the <pinapp-info> root element:

A) shall include a <cause> element set to an appropriate cause for PIN creation notification failure.

Upon reception of an HTTP 200 (OK) response message containing:

a) a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

b) an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-accept> element in the <pinapp-info> root element,

the PMAE-C shall consider the PIN peer(s) that send the message are accepted to be added into the PIN.

Upon reception of an HTTP 200 (OK) response message containing:

a) a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

b) an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-notification-reject> element in the <pinapp-info> root element,

the PMAE-C shall consider the PIN peer(s) that send the message are not accepted to be added into the PIN.

The PIN is then created by the PEMC within the accepted PIN peer(s).

#### 5.4.2.4 PIN creation procedure not accepted by PIN server

If the PINE is not authorized to be a PEMC of a PIN, PAE-S shall:

a) generate an HTTP 200 (OK) response according to IETF RFC 7231 [X]. In the HTTP 200 (OK) response message, the PAE-S:

1) shall include a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

2) shall include an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-reject> element in the <pinapp-info> root element:

i) shall include a <cause> element set to an appropriate cause for PIN creation failure; and

b) send the HTTP 200 (OK) response towards the PEAE-C.

Upon reception of an HTTP 200 (OK) response message containing:

a) a Content-Type header field set to "application/vnd.3gpp.pinapp-info+xml"; and

b) an application/vnd.3gpp.pinapp-info+xml MIME body with a <pin-creation-reject> element in the <pinapp-info> root element,

the PMAE-C shall consider the PIN creation procedure is rejected by the PIN server.

\* \* \* End of Changes \* \* \* \*