10 October 2023

SAVINGS BANK'S IDENTIFICATION SERVICE, SERVICE DESCRIPTION

Table of Contents

General 2
Key terms 2
Savings Bank's identification service 3
Functional description of the service 4
Service deployment 4
Testing the deployed service 5
Using the service 5
Continuity, incident management and processing irregular situations 10

10 October 2023

General

When online banking identifiers are used for identification in services other than those of the bank that provided the identifiers, requirements set for strong electronic identification apply to them. These requirements are defined in the Act on Strong Electronic Identification and Electronic Trust Services and the regulation issued by the Finnish Transport and Communications Agency (Traficom) based on it. The Finnish Transport and Communications Agency Traficom monitors compliance with the requirements.
The requirements set out in the act and in Traficom's regulation are in line with the EU regulation on strong electronic identification methods.

The service fulfils Traficom's regulation 72B/2022 on strong electronic identification.
Strong electronic identification and identification brokering services can be offered by service providers approved by Traficom. A list of approved service providers is available in a register maintained by Traficom.

Using the bank authentication service, other providers of identification services can transmit and receive strong electronic identification events made through Savings Bank's means of identification.

Key terms

Holder of the means of identification

A natural person who possesses the means of identification required for strong electronic identification, such as the Savings Bank code application.

Transaction service

A service in which the identification means holder is identified. The transaction service identifies the user either using the identification broker service or directly through the provider of the identification means. For example, the Social Insurance Institution of Finland and online shops are transaction services.

Identification brokering service

A service that transmits identification events based on strong electronic identification made through different identification means to transaction services.

Identification means provider

A party that offers a means for strong electronic identification.
The identification means provider holds information about the identity of the identification means holder.

Finnish Transport and Communications Agency (Traficom)

Is the supervising authority, ensuring that identification service providers comply with the obligations set for them.

Finnish Trust Network (FTN)

A network of identification service providers (identification means providers and identification brokering service providers) registered with Traficom, the goal of which is to ensure the safety of electronic identification in cooperation between the parties involved.

10 October 2023

Entity Statement

A signed JWT file containing e.g. a SIGNED JWKS URI address, where the Signed JWKS file can be retrieved, as well as the public signature keys of the JWKS file in question.

https://openid.net/specs/openid-connect-federation-1_0.html#section-3.1

Signed JWKS

A signed JWT file containing the JWK Set of the identification means provider. The JWT in question has been signed with a key inside the entity statement.

https://openid.net/specs/openid-connect-federation-1_0.html#section-4.1

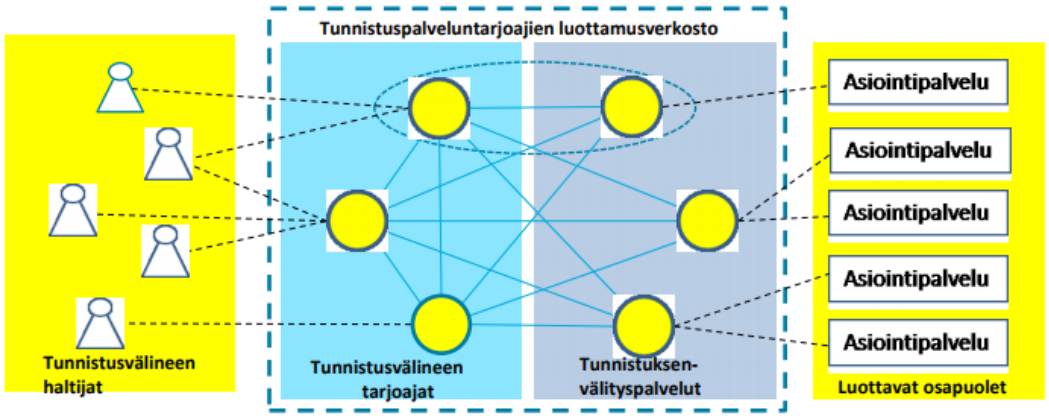


Figure 1. Trust network Source: Traficom

Tunnistuspalvelutarjoajien luottamusverkosto - Identification service providers' trust network
Asiointipalvelu - Transaction service
Tunnistusvälineen haltijat - Identification means holders
Tunnistusvälineen tarjoajat - Identification means providers
Tunnistuksenvälityspalvelut - Identification brokering services
Luottavat osapuolet - Trusting parties

Savings Bank's identification service

The identification service verifies the customer's identity for identification brokering services or transaction services.
Savings Bank's identification service is produced by Samlink Ltd.

10 October 2023

The identification service is based on an OpenID Connect-based trust network protocol, and it is intended for electronic identification brokering service providers and transaction service producers.

Functional description of the service

This section describes how the authentication service is deployed and used.
Service deployment phases:
- entering into a service agreement with Savings Bank
- exchanging entity statement files via e-mail
- configuring the service with the systems of the identification brokering service or the transaction service

The identification service is used in accordance with the OpenID Connect standard as described below.

Service deployment

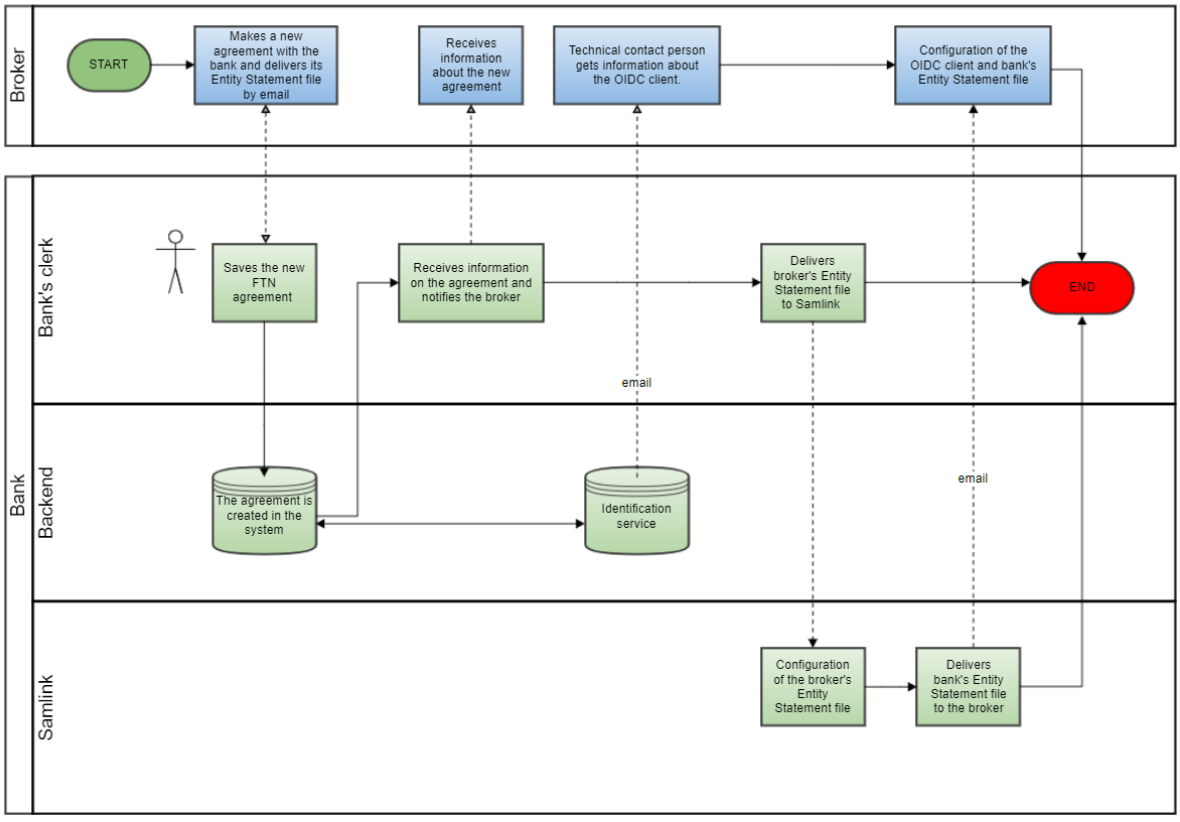


Figure 2. Service deployment

Entering into a service agreement with Savings Bank

In the first phase, a Savings Bank official identifies the other contracting party.
After the identification, an agreement is created in the Savings Bank system.
Next, the agreement is signed, after which it is sent to the other contracting party. The other contracting party is also provided with an authentication code for the exchange of keys.

Once the agreement has been made, the key exchange process is activated for the exchange of the public keys required for OpenID Connect messaging.

Exchanging OpenID Connect signature and encryption keys

The exchange of keys is based on public JWKS files that contain the public signature and encryption keys of both parties. The JWKS files are in JWT format and are signed with an identification brokering service's / bank's entity statement file.

The entity statement file of the identification brokering service or transaction service is handed over to Savings Bank in connection with the conclusion of the agreement. Savings Bank sends its own entity statement by e-mail to the identification brokering service. A Savings Bank employee identifies a representative of an identification brokering service or transaction service.

Configuring the service in identification brokering service and transaction service systems

The identification brokering service or transaction service receives OpenID Connect configuration data related to the use of the identification service via secure email, similarly to the keys stated in the previous section.

This data includes an OpenID Connect Client ID, the URIs used in the authentication process and the unsigned JWKS URI containing Savings Bank's public keys. Broker should use the signed JWKS URI defined in the bank's entity statement.

This data is configured in the identification brokering service or transaction service system. The system must follow the OpenID Connection standard in the authentication process.

Testing the deployed service

The identification brokering service or transaction service which deploys the service obtains instructions on how to test the identification service via secure email received when entering into an agreement.

Using the service

The progress of the OpenID Connect authentication process is described below.

10 October 2023

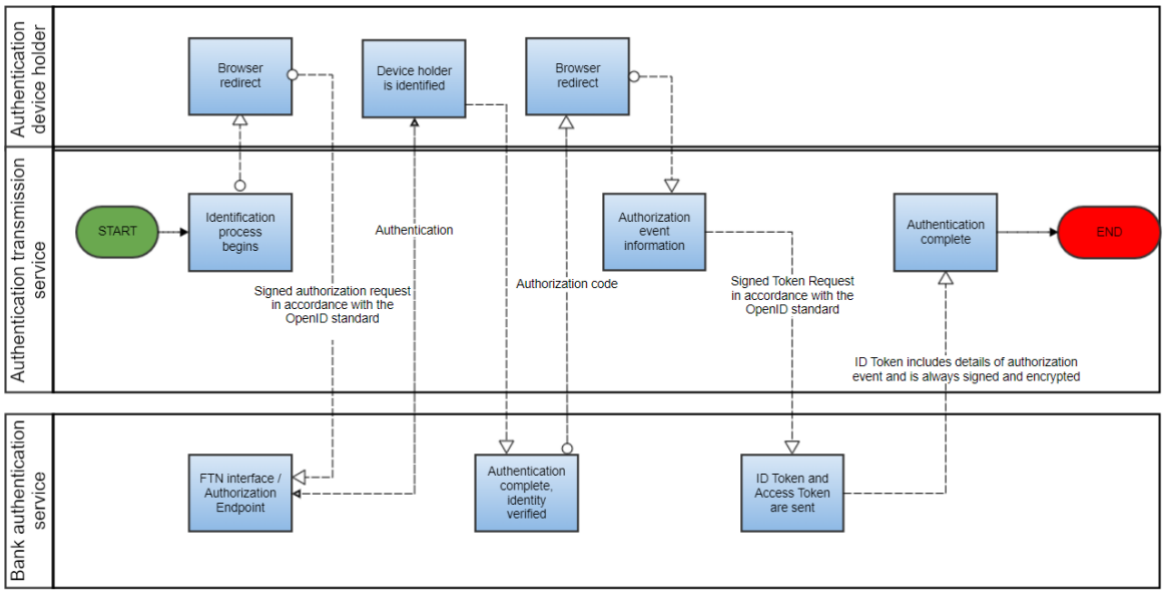


Figure 3. Authentication

Service messages and the data they contain

The OpenID Connect standard adds an identity authentication layer on top of the OAuth 2.0 protocol. OAuth 2.0 offers services related to authorisations. The OpenID Connect authentication process is carried out through a simple HTTPS REST interface. A full description of the OpenID Connect protocol is available on the following website: https://openid.net/connect/

In its recommendation, Traficom defines how the OpenID Connect standard applies to trust networks. Traficom's document defines the trust network's OpenID Connect profile and the encryption algorithms and keys used in messaging.

The OpenID Connect authentication process consists of three phases:

1. An authorisation request to start the authentication process
2. Authentication of the identification means holder
3. A token request to obtain authentication data

The following sections describe the authorisation and token request messages sent in the first and third phases.

OIDC authorisation request

An HTTPS REST authorisation request message in accordance with the OpenID Connect protocol is sent to the authorisation endpoint:

https://tunnistus.saastopankki.fi/oxauth/restv1/authorize

Säästöpankki

10 October 2023

The identification brokering service or transaction service redirects the identification means holder's browser to open the page in accordance with the authorisation endpoint using the parameters given. When this URI is opened, the identification means holder's authentication process starts.

Once the authentication process has been completed successfully between the identification means holder and the identification service, the identification service redirects the identification means holder's browser to the redirect URI of the identification brokering service or transaction service.
This redirection invitation includes the authorisation code granted by the identification service as a parameter. Using this code, the identification brokering service or transaction service can retrieve claims from the identification service using the token request described in the following section.

The authentication request is always signed with the private keys of the identification brokering service or transaction service.

AUTHENTICATION REQUEST PARAMETERS	
request	Message signature. The signature contains two objects: JWTClaimsSet and JWSHeader. The signature is made using private keys that correspond to the public keys of the JWKS URI given when entering into the trust network's identification service agreement.
ui_locales	The language requested from the service.
ftn_spname	The name of the identification service provider or transaction service.
scope	The OpenID Connect scope defined by Traficom for the trust network (= openid + ftn_hetu).
acr_values	Traficom-defined Level of Assurance Regulation for the Trust Network (http://ftn.ficora.fi/2017/loa2)
response_type	The OIDC authorisation flow defined by Traficom for the trust network (= code).
redirect_uri	The redirect URI returned to after a successful authentication. This must correspond to the URI used when one enters into an agreement with the trust network's identification service.
prompt	This defines whether the identification means holder requires re-authentication or re-authorisation. If the setting is 'login', re-authentication is required.
client_id	The OIDC Client ID which the identification service provider or transaction service receives via secure email after entering into the trust network's identification service agreement.
nonce	A character set which combines the session and authorisation request to prevent any replay attacks.
state	A value that connects a request and response together.

Säästöpankki

10 October 2023

Example of an authorisation request:

https://tunnistus.saastopankki.fi/oxauth/restv1/authorize?request=eyJraWQiOiIxIiwidHlwIjoiSldUIiwiYWxnIjoiUlMyNTYifQ.eyJpc3MiOiJAIUYzNjEuNDU4MC4xMDZELjA1NzEhMDAwMSE5M0JGLkY1OEUhMDAwOCE3OEUzLjQ3MzYuMTlDNC5BRUYwIiwicmVzcG9uc2VfdHlwZSI6ImNvZGUiLCJub25jZSI6IkpuTXRLZGtSLVlTd3pZVnRtVzNkSUtKZnAtMUgtLTRvbldoNHZLNGRRbTQiLCJjbGllbnRfaWQiOiJAIUYzNjEuNDU4MC4xMDZELjA1NzEhMDAwMSE5M0JGLkY1OEUhMDAwOCE3OEUzLjQ3MzYuMTlDNC5BRUYwIiwiYXVkIjoiaHR0cHM6XC9cL2ktc3AtaWRwLnNhbWluZXQuZmkiLCJ1aV9sb2NhbGVzIjoiW2ZpXSIsImZ0bl9zcG5hbWUiOiIiLCJzY29wZSI6Im9wZW5pZCBmdG5faGV0dSIsImFjcl92YWx1ZXMiOiJbaHR0cDpcL1wvZnRuLmZpY29yYS5maVwvMjAxN1wvbG9hMl0iLCJyZWRpcmVjdF91cmkiOiJodHRwczpcL1wvaS1taXNjLnNhbWluZXQuZmlcL2dsdXUtYnJva2VyLWNsaWVudFwvdG9rZW4iLCJzdGF0ZSI6IldwdGZaUlBfd3g2Z0VSSWZtaFpxa1AtN0RDSTFBV3RRTjZzaW1zMXk0WlEiLCJleHAiOjE1NDI2MTg5ODMsInByb21wdCI6ImxvZ2luIn0.uqOEJZ49cOCnwU0paQfBjOQvdx7zLmivcm1-9rKztHNbF9GH-PbSOlMPZX2z3SQjIa6dADJRI8WAk37-QQPX6_q9wHwOasCtrUIK00_6LQW8fRdi92JKGe76lLuZZK9XSantsXdE0td_czzRqJYpgV79SbYqoz8hf17SyS_JlMJTNQuloDO5T2m12qTQRiI2gSR2UAjKBJNFGka49Zo5DscMpWReaeiJ4-jBuV0cGbR1DVBssSZjQ6SEp6W8TL3Nh8ELZePrr5Dwn9NeL8DbjTKulZF10vAM8q1AUKsionmU3MU5DvEM4ER-zq6ocNlCX58IaK4myPYAqYm9NTA1vw&ui_locales=fi&ftn_spname=&scope=openid+ftn_hetu&acr_values=http%3A%2F%2Fftn.ficora.fi%2F2017%2Floa2&response_type=code&redirect_uri=https%3A%2F%2Fi-misc.saminet.fi%2Fgluu-broker-client%2Ftoken&state=WptfZRP_wx6gERIfmhZqkP-7DCI1AWtQN6sims1y4ZQ&nonce=JnMtKdkR-YSwzYVtmW3dIKJfp-1H--4onWh4vK4dQm4&prompt=login&client_id=%40%21F361.4580.106D.0571%210001%2193BF.F58E%210008%2178E3.4736.19C4.AEF0

OIDC token request

The identification brokering service or transaction service sends a token request message in accordance with the OpenID Connect protocol to the token endpoint as a direct HTTPS REST message:

https://tunnistus.saastopankki.fi/oxauth/restv1/token

The message includes the authorisation code received in response to the authorisation request as a parameter, and the ID token and access token are received as a response.

The messages are sent in accordance with the JSON Web Token standard (IETF RFC 7519). JWT defines the JSON data transfer method between two parties.

The ID token is a signed and encrypted base64-coded JSON Web Encryption (JWE) message which includes claims of the identification means holder.

Structure of the signed and encrypted ID token:

JOSE HEADER	JWE ENCRYPTED KEY	INITIALIZATION VECTOR	CIPHERTEXT	AUTHENTICATION TAG

Each element is separated by a dot and is base64-coded.
JOSE stands for Javascript Object Signing and Encryption and refers to the IETF working group which defines secure data transfers in the JWT standard.

JOSE HEADER includes data related to the message signature and encryption.

JWE ENCRYPTED KEY includes an encrypted symmetrical key for decoding the content of the actual message.

INITIALISATION VECTOR is a random set of numbers required by certain encryption algorithms used.

CIPHERTEXT includes the content of the encrypted message.

AUTHENTICATION TAG is a value which is created during the encryption process and ensures the integrity of data.

The received ID token must always be validated in accordance with the OpenID Connect specification.

The authorisation request is always signed with the private keys of the identification brokering service or transaction service.

The response to the token request will always be signed using the private keys of the identification service and encrypted using the public keys of the identification brokering service or transaction service.

TOKEN REQUEST PARAMETERS	
grant_type	Token type (= authorisation code).
code	Previously received authorisation code in response to an authorisation request.
redirect_uri	The redirect URI returned to after a successful token request. This must correspond to the URI used when entering into the trust network's identification service agreement and when carrying out the authorisation request.

PARAMETERS OF A RECEIVED ID TOKEN (ID token content, payload)	
iss	Issuer identifier.
sub	A unique identifier which connects the issuer and end user (subject identifier).
aud	The party for which this ID code was created (audience). The OIDC Client ID of the identification brokering service or transaction service.
exp	The time when the ID token expires.
iat	The time when the ID token was created.
auth_time	The time when the identification means holder was authenticated.

nonce	A character set which combines the session and ID token to prevent any replay attacks.
acr	The level of assurance defined by Traficom for the trust network (= loa2).
amr	Authentication method.
+ CLAIMS	Claims defined in the token request's scope parameter (ftn_scope in the trust network).

Continuity, incident management and processing irregular situations

The service operates 24/7, apart from planned service breaks that will be announced on Savings Bank's website.

If you encounter any problems, please contact Samlink at tekninentuki@samlink.fi