NOBID IdM solution for eIDAS 1.0 and EUDI Wallets

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NOBID
Nordic-Baltic e-ID project

Funded by the
Nordic Council
of Ministers

Borderless access
to digital services

Nordic-**B**altic e**ID** (NOBID) Cooperation

- Collaborative arena under the Nordic Council of Ministers for digitalisation (MR-DIGITAL)

- Supported by national ministries and agencies responsible for digitalisation and eID across the Nordic-Baltic region

- Consist of appointed experts from each country that takes part in different working groups and sub-projects

- Managed by Norwegian Digitalisation Agency

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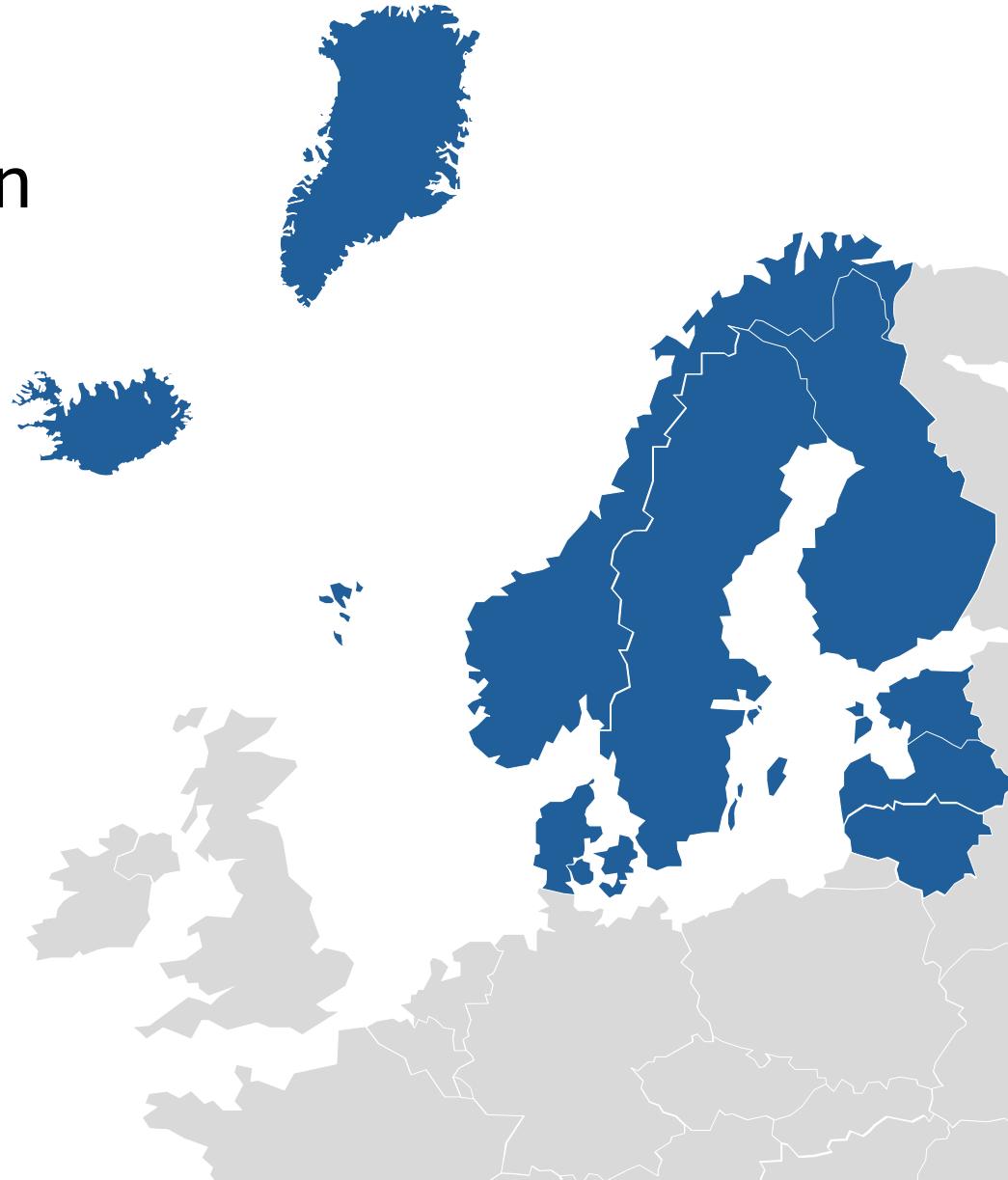
Main goal:

NCM Vision 2030

Make it possible for citizens in the region to use their eID from their home country to access digital services in another country in the region

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Identity matching

- A necessity for cross-border access to online services

- Something all EU/EEA countries need to solve in line with the eIDAS regulation

- Current national solutions to identity matching is a rarity, manual, demanding, and ill suited to match IDs on scale, and with high success rates

- The roll-out if National identity wallets (EUDIW) will not solve cross-border access in the absence of harmonized concepts for solving identity matching

- What data to share and match on needs to be harmonised between the countries

NOBID Identity Matching Project (a project in NOBID)

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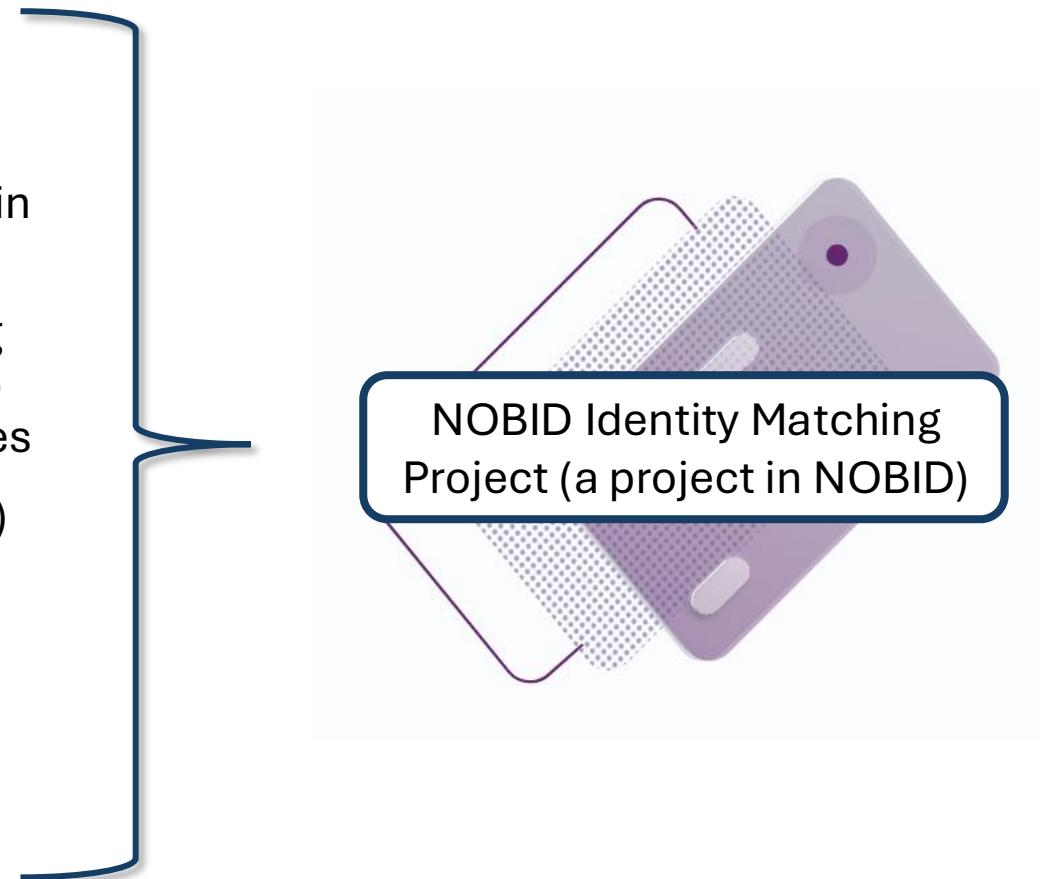
Who identity matching is relevant for

- All users who have been registered in another EU/EEA country and who need to access a service in that country for whatever reason
    - Seasonal workers, former foreign workers, commuters, students, pensioners, entrepreneurs
    - Public and private service providers

- Automatic solutions for IdM will make life easier for users, and save time and resource for individuals and institutions

Identity Matching– architectural pathways (Norway) – eIDAS 1.0

Host country
receiving eID

Home Country
issuing and sending eID

User

Relying Party

eID Hub | eIDAS connector

eIDAS Proxy | eID provider

ID Bindings Service

ID Matching Service

In person

Digital

Registration process

Population register

Population Register

ved ingen match/ ufullstendig match

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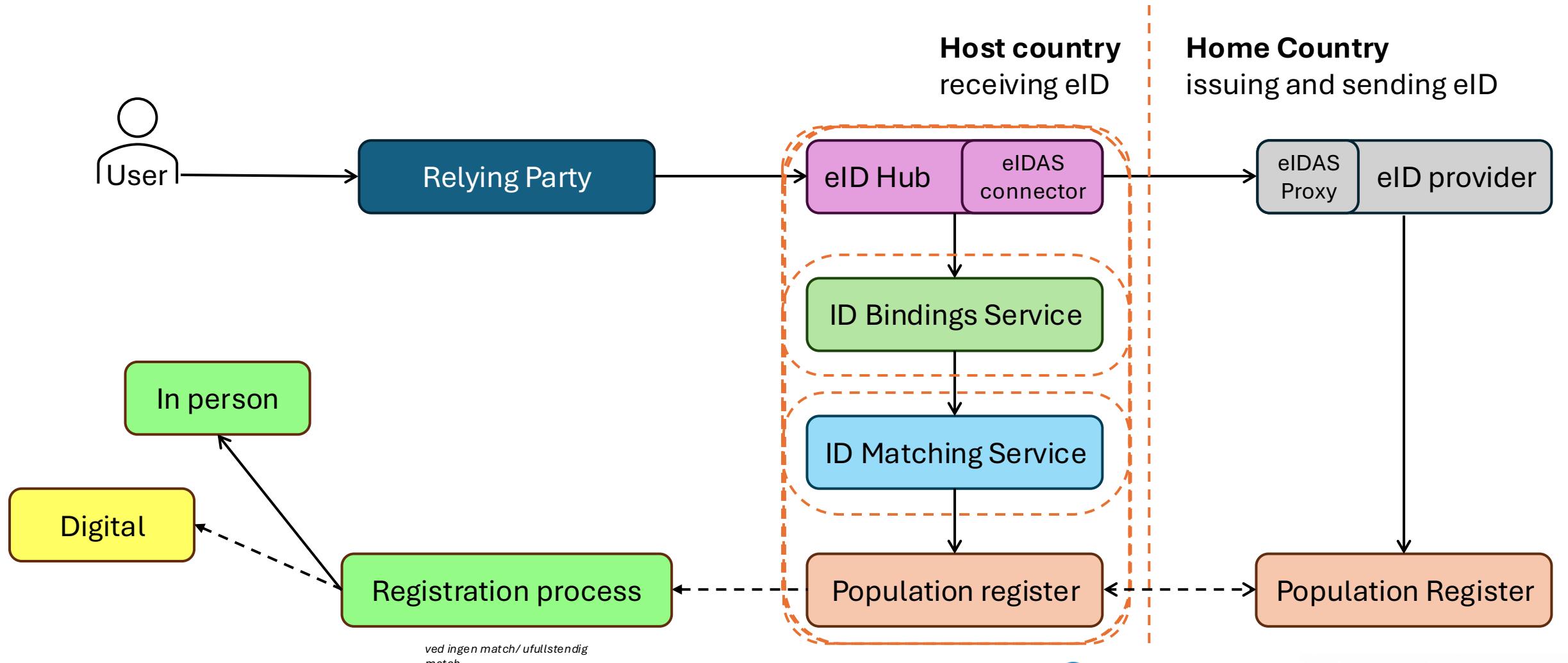
Select the country for your electronic ID

Sweden

Search for country here...

Demo Country CA

Austria

Belgium

Bulgaria

Swede logging in to Norwegian service

Selects international log in

Authenticates with Swedish Bank ID

Existing binding between the users Swedish and Norwegian ID is found

No pre-existing binding is found, ID-matching must be done

Binding created

User gets access to the service

Finds a match on personal identity number/PID

ID-Matching service search the pop.registry for the user

User must enter a registration process

No match, partial match, or multiple matches is found

NOBID Identity Matching project

- Initiated Jan 2025

- Include digitalisation and population registry authorities

- Established to deliver real IdM solutions that the countries can adopt and reuse.

- Scope include both eIDAS 1.0 and eIDAS 2.0

- IdM Prototype delivered, working solution between Norway´s test population register, Norwegian eID hub, Sweden connect, and Norwegian pension portal.

- Plan to expand testing, and move towards piloting with additional countries, use cases, and RP

ID-Matching in the Nordic-Baltic region
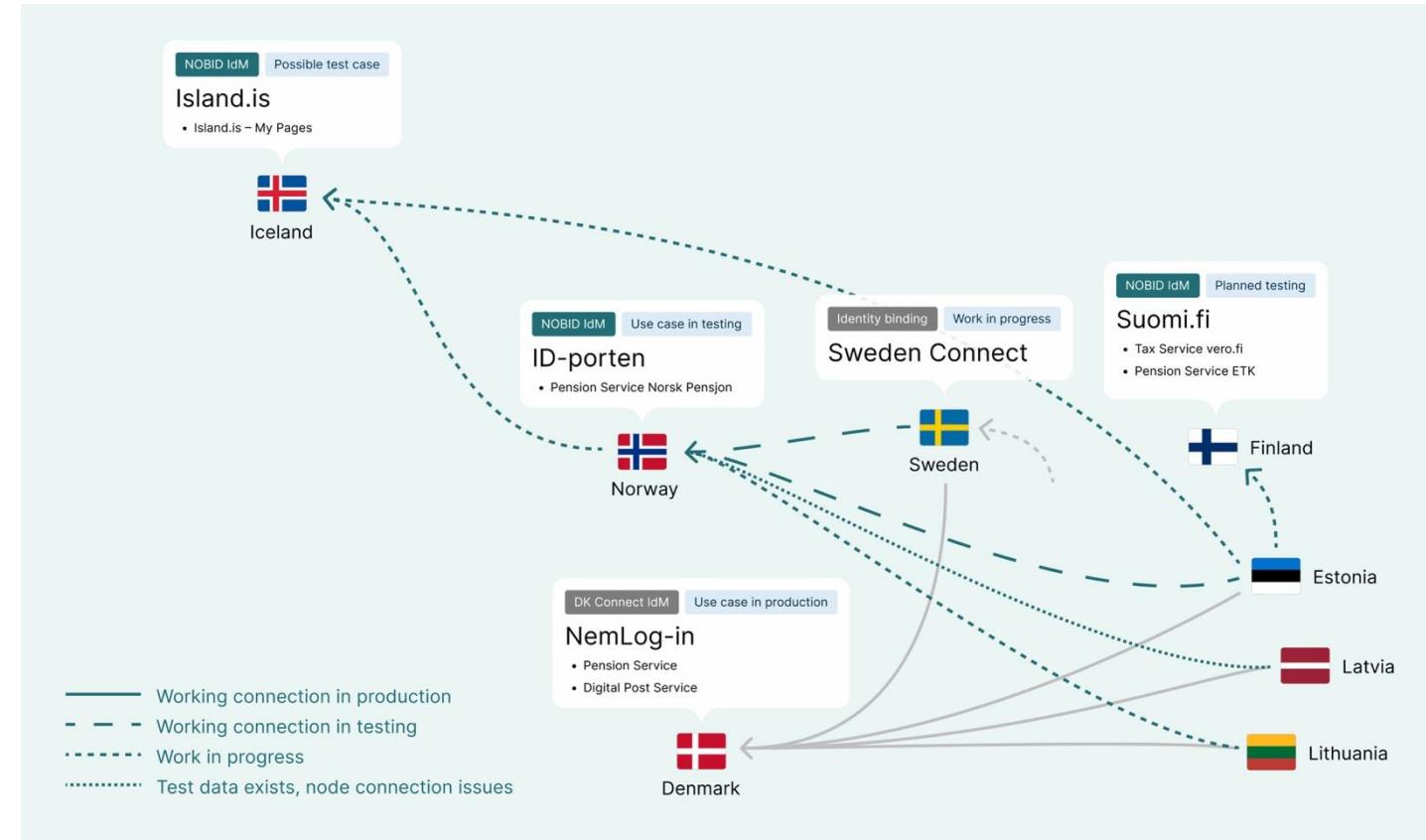
NOBID IdM — **Possible test case**
Island.is
- Island.is – My Pages

NOBID IdM — **Use case in testing**
ID-porten
- Pension Service Norsk Pensjon

Identity binding — **Work in progress**
Sweden Connect

NOBID IdM — **Planned testing**
Suomi.fi
- Tax Service vero.fi
- Pension Service ETK

DK Connect IdM — **Use case in production**
NemLog-in
- Pension Service
- Digital Post Service

Iceland
Norway
Sweden
Finland
Estonia
Latvia
Lithuania
Denmark

— Working connection in production
– – Working connection in testing
···· Work in progress
······ Test data exists, node connection issues

The ID matching process is an administrative process that usually is done once, the first time the user logs on to a digital service in the host country

Host country | **Home country**

eID Hub (Host country)
- Relying Party
- OpenID Provider
- eIDAS connector

eID Hub (Home country)
- eIDAS proxy
- OpenID Provider

User — OIDC → Relying Party — OIDC → OpenID Provider — 1. eIDAS API → eIDAS connector — SAML → eIDAS proxy — OIDC → OpenID Provider

Alternative user initiated matching and binding

2. OIDC

Binding
- Self-service ID Binding Portal — OIDC --→ ID binding Provider — 3. lookup → ID Binding Register
- ID binding Provider — 9. record binding → ID Binding Register

4. OIDC

Matching

ID Binding and Matching Flow
1. Initiate user authentication by home country eID provider through eIDAS network
2. Request host country ID using OIDC auth request (with PAR)
3. Lookup already bound identity with home country ID (PID)
4. if 7 fails, the user may choose to match IDs. Matching is initiated with a OIDC auth request (with PAR)
5. Apply country specific search client
6. Search register with home country ID attributes and return potential host country IDs
7. Find host country ID by applying fully automated matching rule (configurable)
8. if 7 fails, initiate optional interactive matching strategy
9. Record ID binding on successful matching

- ID Matching Provider — 5. search → Country Specific Client — 6. search → Population Register
- 7. automatic match
- 8. self-service match

Solution Architecture

The diagram represent our goal, not the current state of the NOBID ID matching solution

NOBID
*The Nordic-Baltic eID project*

Nordic Council of Ministers

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NOBID PID-profile
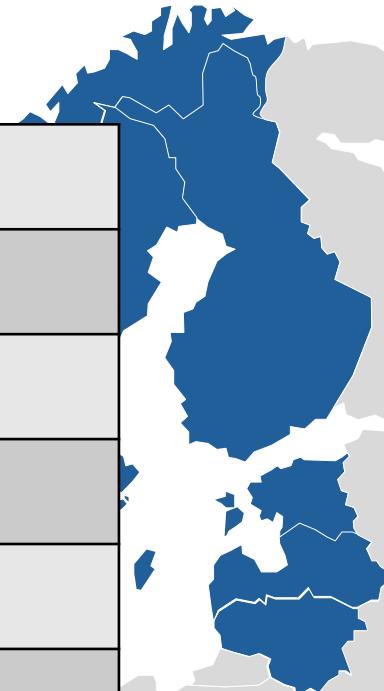
	"NOBID" attribute	eIDAS 1.0 Attribute	eIDAS 2.0 Attribute
✓	**National Identity Number**	**PersonIdentifier***	**personal_administrative_number**
✓	Family Name	FamilyName*	family_name*
✓	First Name	FirstName*	given_name*
✓	Date of Birth	DateofBirth*	birth_date*
✓	Nationality	Nationality	Nationality*
✓	Place of Birth	PlaceofBirth	Birth_place*

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IdM Demo
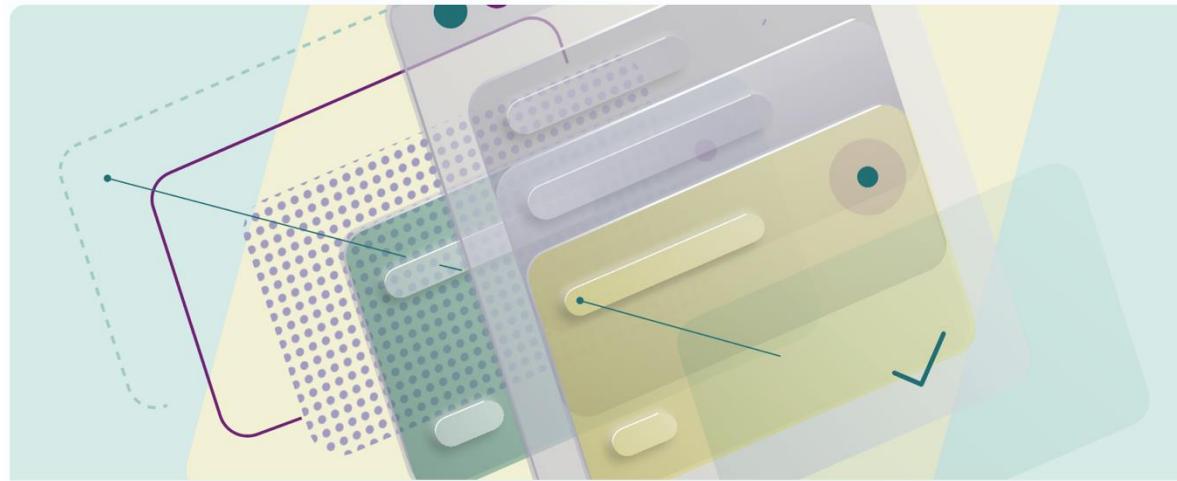
ID matching sandbox

Try our ID matching service as a Swedish user matching with the Norwegian population register. This will give you insight into how the identity data is used in various matching scenarios, for both eIDAS 1.0 and eIDAS 2.0.

Go to sandbox
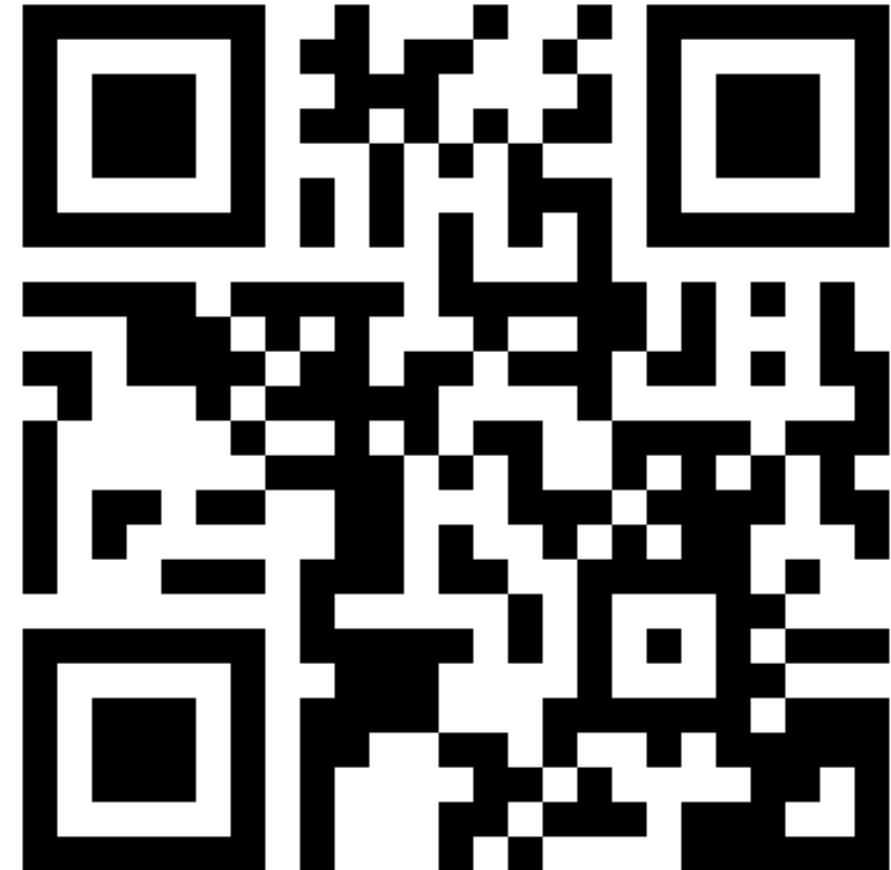
@Nobid.id

ID matching sandbox

How to achieve a constructive matching result

You'll need a test user with

- a digital ID from one country (the home country)
- a corresponding record in the population register of the country you want to access (the host country)

> ℹ️ To facilitate the exploration of various ID matching scenarios, we have prepared a set of Swedish test users that will match in Norway as host country, but you are free to explore outside these boundaries.

Select host country

Host countries whose population registers are currently available for ID matching in the sandbox.

🇳🇴 **Norway / Folkeregisteret (Tenor)** →

Host country: Norway

A common use case for Norway as host country is foreign workers, especially from Sweden and Poland, logging in to access employment records or tax information.

Select eIDAS version

The matching can be done through both eIDAS 1.0 and 2.0. The processes are somewhat different, so feel free to test both.

⚯   **Sandbox using eIDAS 1.0** →

👛   **Sandbox using eIDAS 2.0** →

Or try an end-user demo

See how the matching process may look and work for an end-user trying to access a service in a host country with their home country ID.

👤   **End-user demo: Log in to the fictional online bank KanBank** →

Norway's first choice for fake online banking

Kanbank is a fake relying party used to demonstrate how cross -border ID matching could work.

Become a customer

Home mortgage

Block card

Car loan

Pension

Investments

Security

Do you have questions about the ID wallet?

The ID wallet is introduced in Norway. It collects your digital credentials and can be used to log into online banking and a wide array of official

Choose an alternative

ID-porten
Norwegian identity hub

EU eID (eIDAS 1)
Login with home country ID

EUDI Wallet (eIDAS 2)
Present PID or Borderless ID

Back

ID-porten

Select country

Select the country for your electronic ID

Select country from the list

Cancel   Next

ID-porten

ID-porten is a common log in solution to online public services.

Important links

> Help to log in

> Security and privacy

> How to obtain an electronic ID

Contact

+47 800 30 300

brukerstotte@digdir.no

ID-porten

Select country

Select the country for your electronic ID

Select country from the list

Search for country here...

Netherlands

Poland

Portugal

Romania

Slovakia

Spain

Sweden

ID-porten

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Contact

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> How to obtain an electronic ID

ID-porten

Select country

Select the country for your electronic ID

🇸🇪 ⌄ | Sweden

Cancel   Next

ID-porten

ID-porten is a common log in solution to online public services.

Important links

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Redirecting to the Member State Specific Connector of the Service Provider country.

eidas

Välj e-legitimeringstjänst

Följande e-legitimationer kan användas.

| | F | Freja+ |

| | | Sweden Connect Referens-IdP |

| | BankID | BankID |

Varför stöds inte min e-legitimation? ▼

Sweden Connect

Sweden Connect Referens-IdP

Sveriges internationella nod för e-legitimering begär att du legitimerar dig. Välj vilken person du legitimerar dig som i listan nedan.

Ronald Borg (195903133279)

----- Välj person att legitimera dig som -----
Mohamed Al Samed (199008199391)
Ulla Alm (198611062384)
Agda Andersson (188803099368)
Gunbritt Bodén (192011189228)
✓ Ronald Borg (195903133279)
Tryggve Bäckström (197802031877)
Nina Greger (197309069289)
Clarence Hammarström (198907028412)
Beatrice Invandro (195509132386)
Åke Jansson (191704109279)
Oskar Johansson (199008252398)
Magdalena Karlgren (194606109108)

Sweden Connect

Sweden Connect Referens-IdP

Sveriges internationella nod för e-legitimering begär att du legitimerar dig. Välj vilken person du legitimerar dig som i listan nedan.

Ronald Borg (195903133279)

Fler val >>

Ange tillitsnivå för legitimeringen:

http://id.elegnamnden.se/loa/1.0/eidas-nf-low

Legitimera

Vad är Sweden Connect referens-IdP?
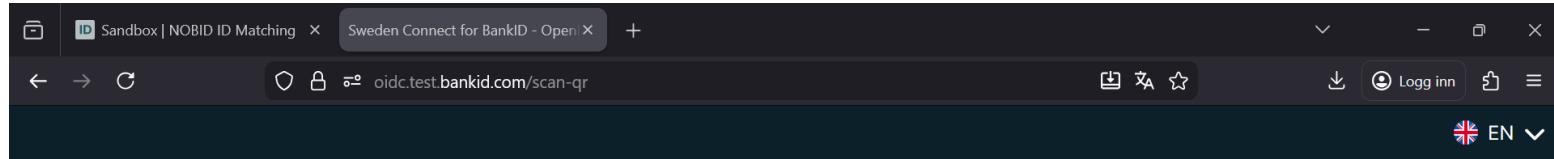
Sweden Connect

Identify with BankID

Start the BankID app and scan the QR code.

Open BankID on this device instead

Cancel

Sweden
Connect

←

Identify with BankID

Cancel
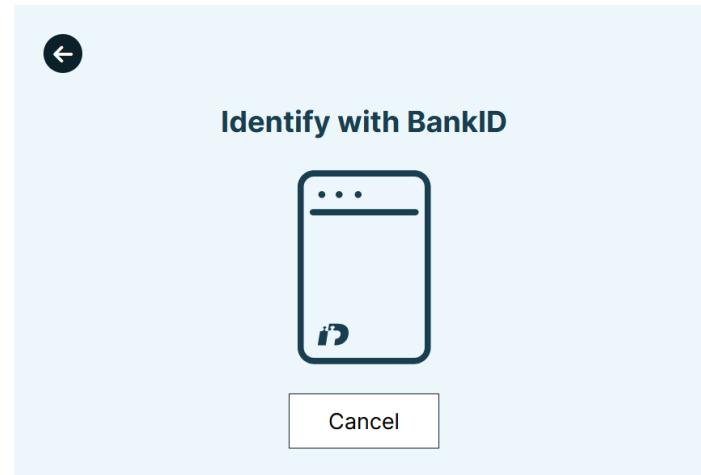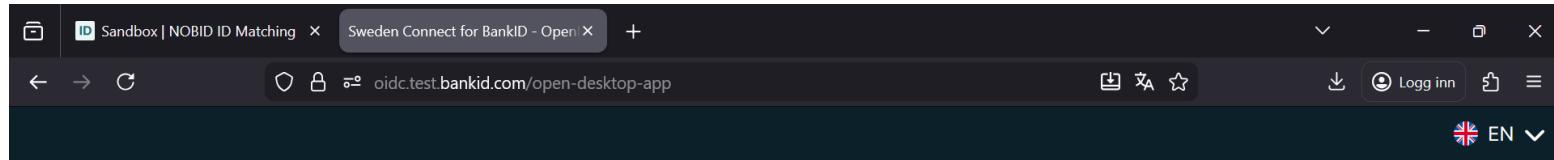
English

Verifiera din identitet

Jag godkänner att följande information används för säker legitimering.

Ronald Borg

1959-03-13

Internationell ID:
SE/NO/195903133279

Jag godkänner

Avbryt

das.swedenconnect.se/eidas-ps/consent

Redirecting to the Member State Specific Connector of the Service Provider country.

Start   >   Host country: Norway   >   eIDAS 1.0

ID matching step 2 of 3
ID attributes

✓ **Home country ID verified!**
Now search the National Population Register to see if, and how, it exists in the registry.

Home country ID 🇸🇪	Host country population register 🇳🇴
Home identifier (eidas_identifier) SE/NO/195903133279	-
First name (eidas_firstname) Ronald	-
Last name (eidas_lastname) Borg	-
Date of birth (eidas_date_of_birth) 1959-03-13	-

🔍 Search for match in registry

Start > Host country: Norway > eIDAS 1.0

ID matching step 2 of 3
ID attributes

✅ **Home country ID verified!**
Now search the National Population Register to see if, and how, it exists in the registry.

Home country ID 🇸🇪	Host country population register 🇳🇴
Home identifier (eidas_identifier) SE/NO/195903133279	-
First name (eidas_firstname) Ronald	-
Last name (eidas_lastname) Borg	-
Date of birth (eidas_date_of_birth) 1959-03-13	-

🔍 **Search for match in registry**

ID matching step 3 of 3

Results

✅ **Unequivocal identity match**
Host country identifier: 130359 12345

Home country ID 🇸🇪	Host country population register 🇳🇴
-	Host identifier (foedselsEllerDNummer) **13035912345**
✓ Home identifier (eidas_identifier) **SE/NO/195903133279**	Home identifier (identifikasjonsnummer) **SWE-590313-3279**
✓ First name (eidas_firstname) **Ronald**	First name (fornavn) **Ronald**
✓ Last name (eidas_lastname) **Borg**	Last name (etternavn) **Borg**
✓ Date of birth (eidas_date_of_birth) **1959-03-13**	Date of birth (foedselsdato) **1959-03-13**

⌄ Show all data fetched from register

ℹ️ In a real-world scenario, users would not see the specific data used for identity matching. If the match is successful, they would simply be redirected to the service they wanted to access. However, informing users that a search and match is performed in the register can help promote transparency.

Home country ID 🇸🇪		Host country population register 🇳🇴	
	-	Host identifier (foedselsEllerDNummer) 13035912345	
✅	Home identifier (eidas_identifier) SE/NO/195903133279	Home identifier (identifikasjonsnummer) SWE-590313-3279	
✅	First name (eidas_firstname) Ronald	First name (fornavn) Ronald	
✅	Last name (eidas_lastname) Borg	Last name (etternavn) Borg	
✅	Date of birth (eidas_date_of_birth) 1959-03-13	Date of birth (foedselsdato) 1959-03-13	

⌄ Show all data fetched from register

> ℹ️ In a real-world scenario, users would not see the specific data used for identity matching. If the match is successful, they would simply be redirected to the service they wanted to access. However, informing users that a search and match is performed in the register can help promote transparency.

Continue to service

Brukskonto
8080 78 14253

38,641.64 NOK

Sparekonto
8080 75 58722

1,360,052.12 NOK

Open a new account   →

Welcome Ronald Borg!

Norwegian Administrative Number	130359 12345
Home country	Sweden
Foreign identifier	195903133279

Transfer

Payment

Funds and stocks

Credit card

Security

Other functionalities; Scenarios – NOBID ID-matching Sandbox

Matching outcomes

1. Unequivocal identity match

2. Qualified match

3. Potential match

4. Multiple match

5. No match

eIDAS 2.0

1. Download iGrant Data Wallet
2. Add test PID to your wallet
3. Authenticate with selected PID

Identify with

PID
Personal Identification Data

Scan to present

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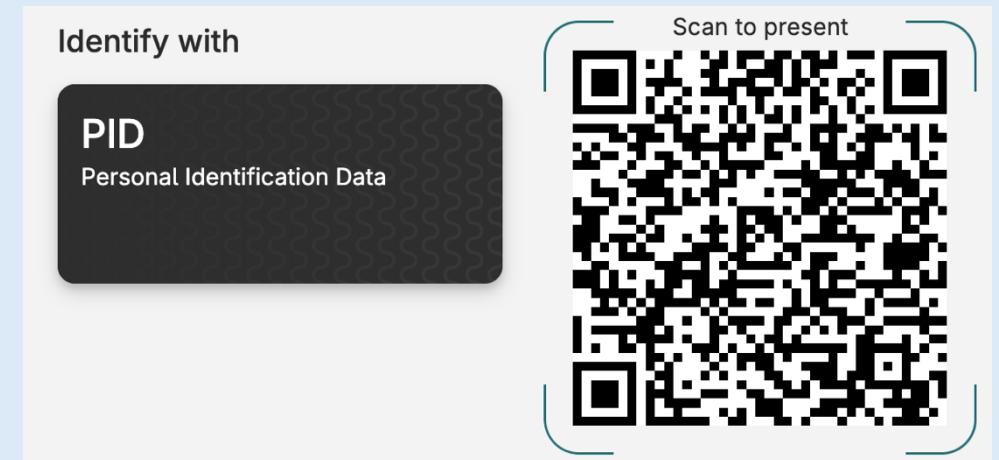
Thank you!

Visit our web page for more info, or contact us @

- Digdir.no/internasjonalt-arbeid/nobid/6667

- Nils Inge Brurberg; nils.inge.brurberg@digdir.no

- Petter Tolnes Ingebrigtsen; petter.tolnes.Ingebrigtsen@digdir.no

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