CoE DSC

Exploring the value of EUID (eIDAS2) Legal Entity Wallet for Data Sharing Initiatives

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Meet our team

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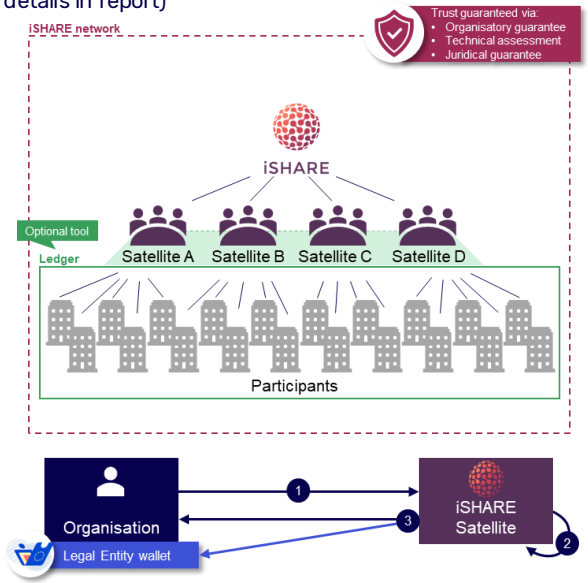
Use Case: The value of the Legal Entity Wallet (LEW)(eIDAS) for Data Sharing Initiatives (DSIs)

Visual: iSHARE DSI & possible EUDI Wallet use in iSHARE (high-level, more details in report)



Involved parties

iSHARE

Company Passport

Context summary

1. eIDAS2 introduces the European Digital Identity Wallet (EUDIW) to the EU, a digital wallet that offers high level of assurance IAA services for legal and natural persons, and the possibility to share verifiable credentials between them for digital trust
2. EU DSIs are releasing concepts & standards for digital trust that are now starting to incorporate the EUDIW - however, LEW developments lack behind, resulting in unclarities about e.g. mandating, adoption and DSI business value
3. This use case aims to explore the potential value and identify current barriers of the use of the EUDI LEW for DSIs
4. CoE-DSC worked closely together with eIDAS experts, the Company Passport initiative and the iSHARE foundation to:
   - Describe the current status of the EUDI LEW
   - Explore the impact of the EUDI LEW on iSHARE and its DVU use case - where the wallet could add value to existing trust infrastructure and what the current barriers are
   - Provide steps forward for iShare and Company Passport based on these outcomes
5. The developed exploration can be re-used as a blueprint for other DSIs, to facilitate adoption of the EUDIW
6. The next step is to explore the following topics:
   - Role of scheme aggregator
   - Service-based mandating
   - Sharing dynamic data via the EUDIW

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The investigated use case shows that the Legal Entity Wallet adds value for DSIs, but challenges remain

Learnings from the use case

There is value in the EUDI LEW for DSIs

1. To share DSI membership credentials for publication, identification, authentication & trust:	Implementation is relatively straightforward for iSHARE, as it in the same lines of thinking as its existing means
2. To share static data within a DSI for authentication & trust:	Implementation for data providers is expected to be relatively smooth*: 1) mandatory acceptance of personal wallet will require some to have already developed issuing capabilities; 2) suppliers are working on standardization
3. To share credentials allowing access to APIs of dynamic, streaming data while complying to certain criteria:	Requires more research as it could be of great benefit

DSIs should be mindful of remaining challenges when implementing the LEW and continue to offer their current solutions

- Specifications/standards of the LEW are still unclear
- Adoption needs an extra push if the LEW is not going to be mandatory (yet) and/or free
- The mandating of a person on behalf of a company remains challenging – service-based mandating should be the EU standard

There is a need for a new role of 'scheme aggregator' to overcome the identified hurdles

- To harmonize the content of credentials
- To harmonize the meaning of the credential and revocation

*Depending on data quality and availability

Interoperability insights: EUDIW facilitates DSIs internationally, but barriers exist and must be further explored

Addressed themes

Covered DSSC Building Blocks: Business model development, Data Space Intermediary, Data Interoperability, Data Sovereignty & Trust, Data value creation

Covered technologies (if applicable): Digital Wallets, APIs, Verifiable Credentials, Access Tokens

Covered regulatory aspects (if applicable): EU Digital Identity Regulation (formerly known as eIDAS 2.0)

Observed challenges for cross-domain data sharing

Observed barriers/challenges:

- Currently, there is no single pre-agreed specification/standard on e.g. the content of credentials and the meaning of credentials and revocation for the EUDIW. These are necessary for interoperability within and between DSIs and domains.
- There is no EU-level standard for mandating a person/machine to act on behalf of a company. Most EU countries use role-based mandating, whereas we believe service-based mandating – similar to the Dutch eHerkenning (eRecognition) would work best for DSIs

How those barriers can be addressed:

- There is a need for the role of scheme aggregator to facilitate standardization of EUDI LEW for DSIs – a follow-up CoE exploration will further define this role
- There is a need to further explore the topic of service-based mandating – a follow-up CoE exploration will dive into this topic

Key takeaways for DSIC on cross-domain interoperability:

General:

The use of similar credentials and processes for IAA with EU-wide legal recognition ensures cross-domain interoperability. DSI interoperability increases when the trust layer is separated from the actual usage of the DSI, e.g. EUDIW should store different credentials for the membership of iSHARE as for participation in its use cases. Additionally, the EUDIW can support DSIs beyond national boundaries, by offering an EU wide solution.

Implications for different stakeholder groups:

For DSIs: DSIs should consider to add the EUDIW as additional solution, while keeping the remaining challenges in mind

For SPs: SPs should be aware that the EUDIW is coming, and look into what this could mean for the offering of their services, e.g. they should be able to accept the EUDIW for the IAA processes of their services

For policy makers: Specifications/standardization of the EUDIW is needed. Service-based mandating should be considered as the EU standard.

Abbreviations: EUDIW – European Digital Identity Wallet, LEW – Legal Entity Wallet, IAA – Identification, Authentication, Authorisation, DSI – Data Sharing Initiative, SP – Service provider
For more information on eHerkenning see https://www.eherkenning.nl/en/what-is-eherkenning

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  - What is the EUDI wallet?
  - Example tax reporting: possible interplay between Natural Persons and Legal Entity Wallet
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  - What is iSHARE and how does it work? – Illustrated by the hands-on example of DVU
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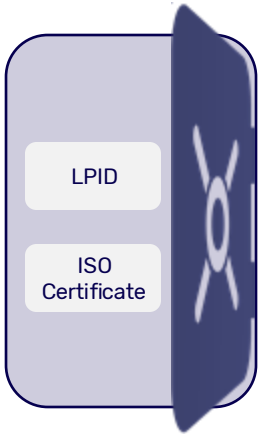
EU introduces two types of digital wallets – for natural persons and legal entities – to enable access to online services

The EU aims to provide natural persons and legal entities across the EU with a harmonised electronic identification means enabling authentication and the sharing of verifiable data linked to their identity

	Natural person wallet *Digital wallet to store personal and professional attributes*	Legal entity wallet (LEW) *Digital vault to store attributes on a company level*
Acting party	Individual acting by itself (personal use) or on behalf of a legal entity (professional use)	Individual/machine acting on behalf of a company (representative/delegated party)
Access	Natural person holding the wallet decides who can put information in and who to share it with	Authorized representative (e.g. owner, CEO) grants access to delegated persons/machines
Interface	Mobile phone application	Online server as digital vault to allow multi-user access
Attributes	Related to a natural persons, e.g. age, drivers license or received mandates from organisations	Related to an organisation, e.g. the Chamber of Commerce number, LPID or ISO certificate
Costs	Free for natural persons for non-professional purposes (article 5g)	Likely not to be free of charge*, as it solely has professional purposes
Acceptance	Mandatory acceptance by designated parties (article 5f)	Mandatory acceptance – however, seemingly less energy is going towards defining/implementing LEW



See next slide for the timelines

See Appendix for details

*Note: to be determined by EU countries individually

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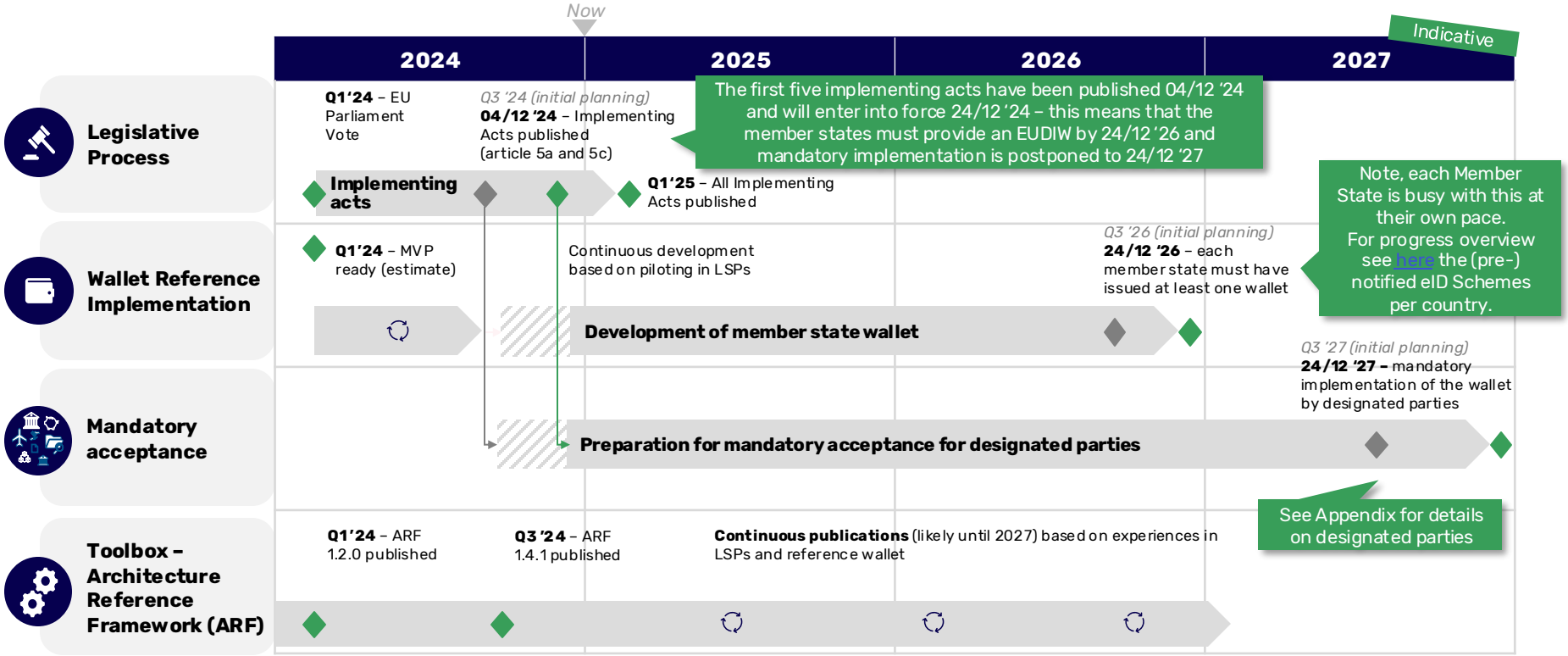
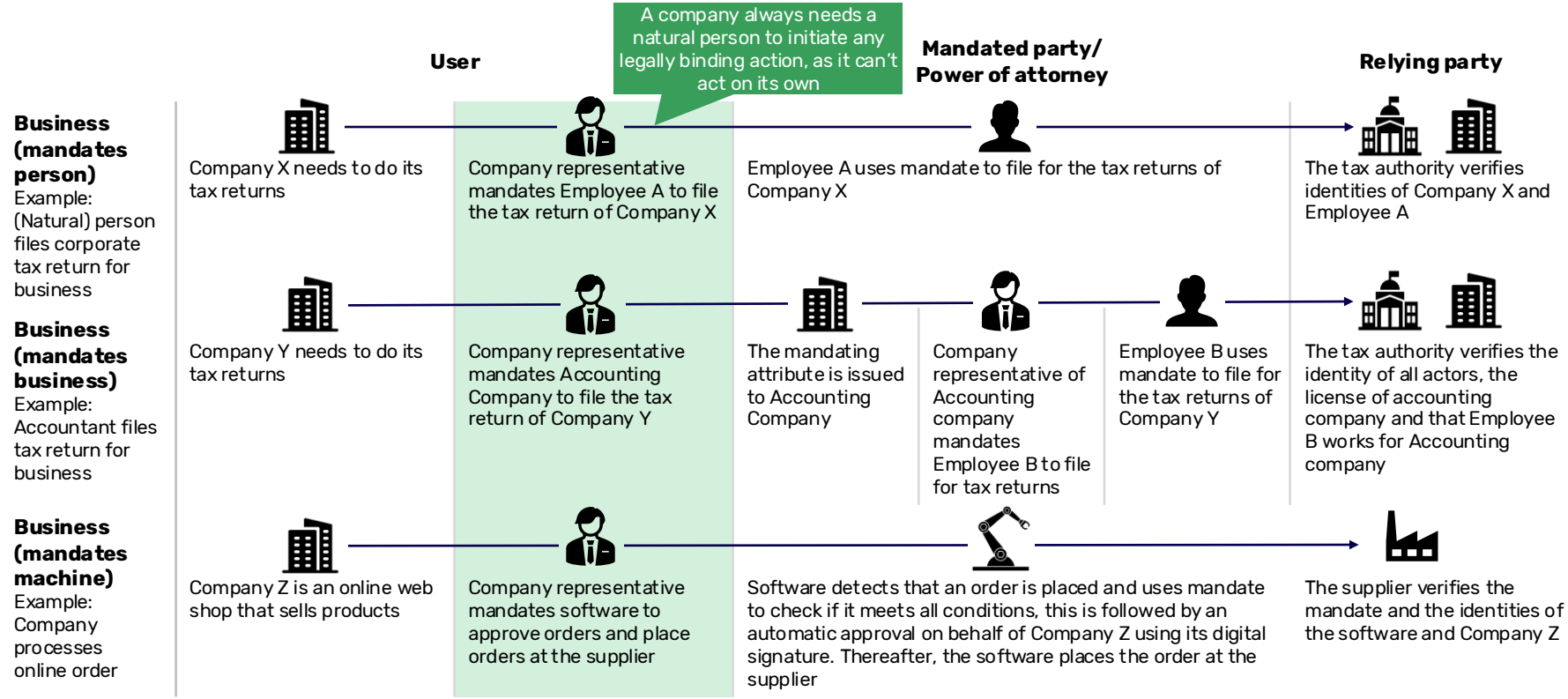
The implementing acts are being approved with some delay: more energy seems to be dedicated to the natural person wallet



Legend: Milestones | Activity

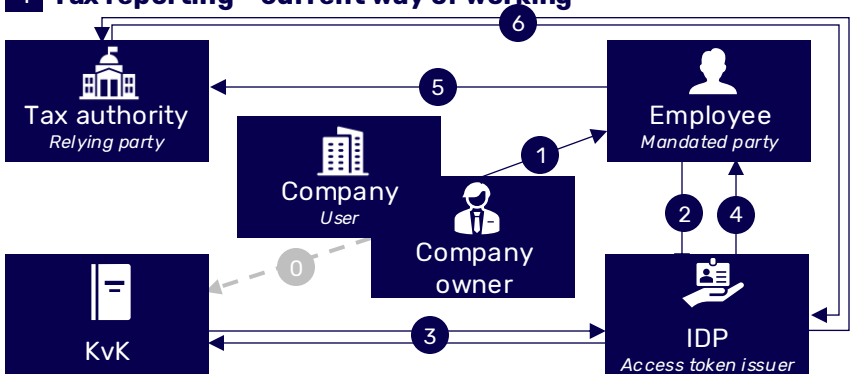
Sources: European Commission on eIDAS Regulation, Regulation amending eIDAS, INNOPAY analysis

The interplay between natural persons and legal entities is important, as companies can only act through humans

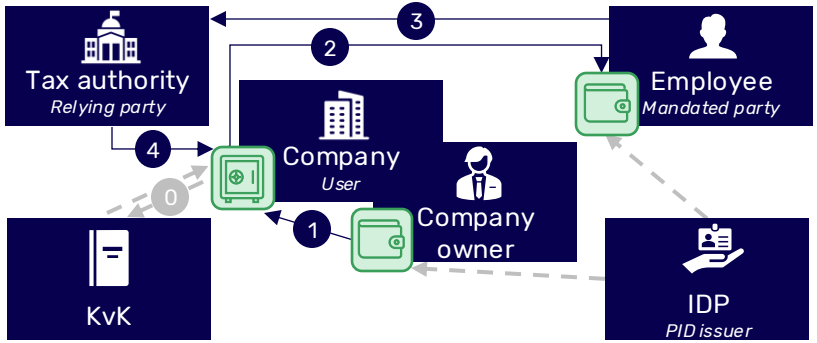


The importance of the interplay between EUDI natural persons wallet and LEW is demonstrated in the example of tax reporting

1 Tax reporting – current way of working



2 Tax reporting – use of EUDIW



Current way of working

Prerequisite: Company owner registered company at KVK and himself as owner

1. Company owner gives access token to employee to do taxes on behalf of the company
2. Employee logs into his IDP with his access token to authenticate on eHerkenning 3 (EH3) level
3. IDP checks the authorisation of the company owner to act on behalf of the company with KvK
4. IDP issues access key and PKI certificate
5. The employee files the tax report of the company to the tax authority with his EH3 credential
6. The tax authority checks the validity of EH3 credential with the IDP

Use of EUDIW

Prerequisites: Company owner & employee had their PID issued to their personal wallet by a (Q)TSP; Company director registers his company and ownership with KvK & KvK number is issued to Legal Entity Wallet (LEW)

1. Company owner changes access policy in LEW with the authorized representative credential in his wallet to mandate employee to do taxes on behalf of the company
2. LEW automatically issues mandating credential to employee's wallet
3. The employee files the tax report of the company to the tax authority signed with his identity ((Q)EAA eIDAS level substantial (=EH3) issued by (Q)TSP) & mandate rights (key))
4. The tax authority checks the validity of the mandate of this person with the company wallet (correct signatures, not revoked)

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CoE-DSC performed a collaborative exploration of the EUDI Legal Entity Wallet for the use in DSIs

Introduction to the parties involved in the use case

Company Passport is a not-for-profit collaboration aiming to increase the practical value of the EUDI LEW by adding certain standardized agreements on top, such as:

- Technical Standards
- Semantic Agreements
- Operational Agreements
- Legal and Compliance Agreements.

iSHARE Foundation is a community governed initiative that:

- brings a non-for-profit trust framework as a generic, opensource building block for various DSIs in NL and the EU.
- acts as a root of trust for data sharing credentials
- is one of the participants in the Company Passport initiative

DVU, an initiative by RVO, operates as a federated data space leveraging the iSHARE Trust Framework to ensure secure data sharing of energy consumption data for energy reduction in non-residential buildings.

Sources: https://www.companypassport.com/, https://ishare.eu/, https://www.platformduurzamehuisvesting.nl/dvu/

Company Passport aims to act as a layer on top of the EUDIW to facilitate and accelerate implementation

Company passport is a data sharing initiative that aims to act as a layer on top of the EUDIW that:

1. Brings together and harmonises taxonomy and acts as "scheme aggregator"

It's not a software solution but describes how compliant software solutions interact, which data schemas and taxonomies are used and under which legal terms and conditions (on top of the eIDAS2 regulations).

This reduces fragmentation, while enhancing trust and integration among different stakeholders.

2. Facilitates the process of making operational agreements between parties

By leveraging eIDAS2, Company Passport enables safe and seamless trade with other businesses, consumers and interactions with public parties, thereby accelerating businesses' digital transformation and reducing complexity in partnerships and transactions.

3. Works on marketing and design of customer journey

The trust framework aims to accelerate local and cross border use cases that benefit from eIDAS2 regulations and architecture. Current use cases:

1. Establishing a new company and opening a bank account;
2. Authorizing an employee within an organization;
3. KYC in context of starting a business and check-ins on a regular basis;
4. eInvoicing - real time taxation

In collaboration with:

KNB KVK ABN·AMRO Belastingdienst

iSHARE aims to improve conditions for data sharing for organisations through its Trust Framework

What is iSHARE?

iSHARE

iSHARE Foundation is a non-profit organisation that provides two solutions:

Focus

1. **Trust Framework for data rights holders**
2. Reference Software for other parties to build their own data space

iSHARE's Trust Framework offers a set of schemas, specifications and agreements addressing legal, functional, operational, and technical dimensions to which participants must adhere in sharing data - including participant conformance and data rights profiles

iSHARE's Trust Framework is designed to facilitate secure and standardized data sharing across different organizations by ensuring robust governance, interoperability, and trust among participants, catering to their diverse organisational data-sharing requirements

The role of iSHARE in data sharing is comparable to CBR in the example lending your car, as they're both trust enabling

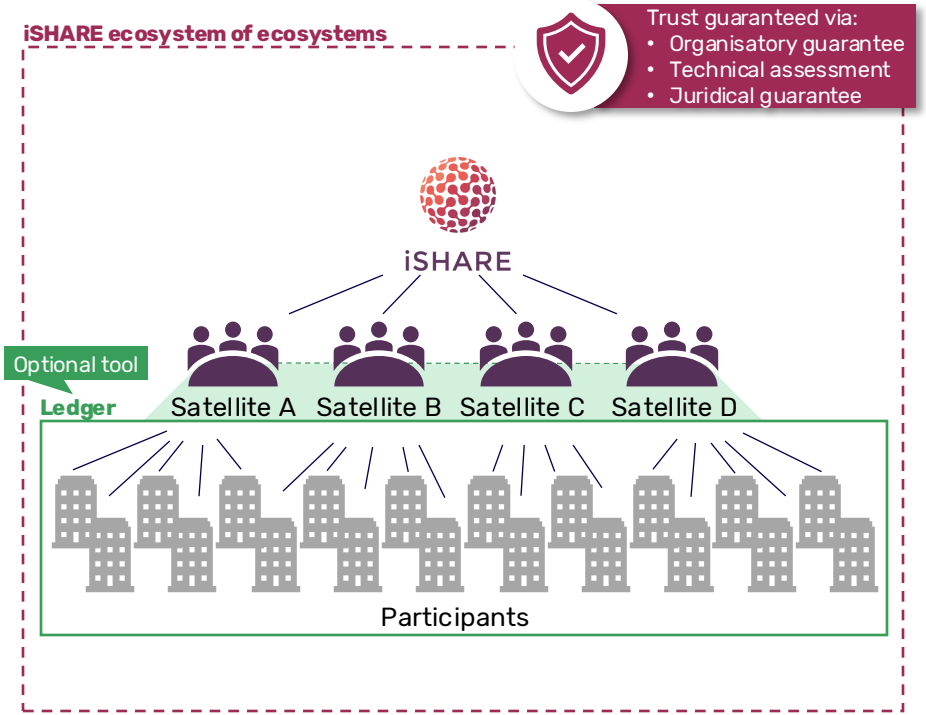
What is iSHARE? - Explained in parallel with the example of lending your car

Situation		Enabling trust		Limited access
Lending your car example	*Prior to giving access to your car, you need assurance that your friend can drive*			
You want to share your car with a friend	→	The drivers licence of your friend provides assurance, as this was issued by CBR, that is nationally trusted to adequately assess driving capabilities	→	You give access to that friend after issuing the key, with limitations of driving maximum of 100 kmph
iSHARE way-of-working	*Prior to giving access to your data, you need assurance that the business takes good care of it*			
Your business wants to share access to a data source to another business	→	The iSHARE adherence credential provides assurance, as this was issued by iSHARE, that assesses companies' trustworthiness legally, organisationally and technically	→	With that assurance you share the access keys with your defined usage limitations to the other business

iSHARE provides a trust guarantee, while giving Satellites the responsibility for registration and validation of participants

Simplified

How does iSHARE work?



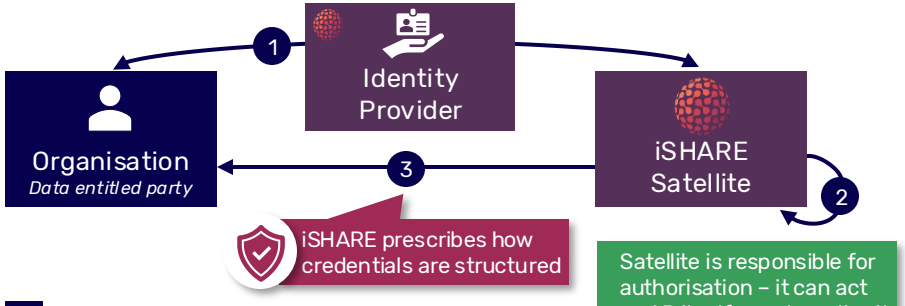
- iSHARE certifies certain legal entities to act as a Satellite to manage the operational processes of iSHARE and keep the data space functioning properly
- Satellites are responsible for the issuing of verifiable credentials to participants and authorizing the validity of these – therefore, they often act as authorisation registries
- Through these verifiable credentials, iSHARE guarantees that participants in the dataspace:
  1. Are who they say they are
  2. Are technically compliant to iSHARE
  3. Signed iSHARE agreements for the terms of data sharing
- Each Satellite is legally responsible for validation of their own participants in a uniform way defined by iSHARE and for issuing credentials – the Hyperledger is an optional support tool for registering those credentials, making participants discoverable
- Satellites check with each other if parties have been onboarded onto iSHARE already, as onboarding has to happen only once
- Registered participants can access each other's endpoints in order to discover other registered parties and their capabilities

iSHARE realizes trust through Identification, Authentication & Authorisation (IAA) in both onboarding and data transactions

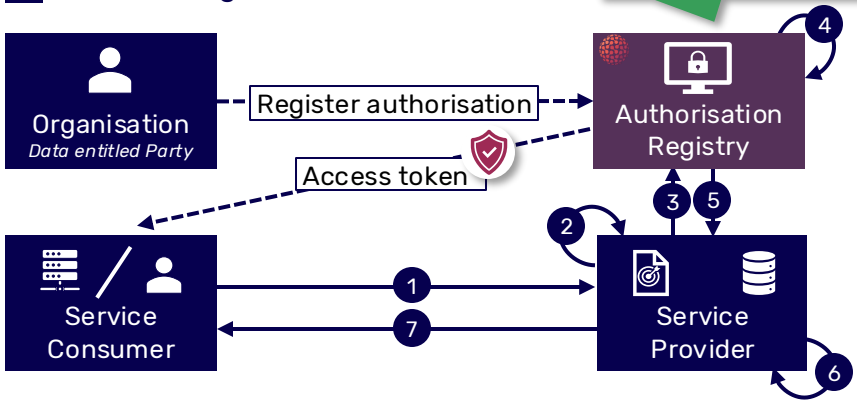
Simplified

IAA processes in iSHARE to realise trust via onboarding and data transactions

1 Onboarding process



2 Data exchange via authorisation



Onboarding process

1. An organisation registers itself to the Satellite via a certified Identity Provider (IDP) – through the IDP, the organisation's identity is authenticated and iSHARE's (and the Satellite's) terms and conditions are signed
2. Satellite checks whether the organisation has successfully registered and signed via the IDP
3. Satellite issues a verifiable credential to a party, proving that the party is trustworthy and has legal coverage

Data exchange via authorisation

For a party to access the data of the data entitled party, consent is required. This is given by the entitled party via an access token issued by an iSHARE Certified Authorisation Registry (AR).

1. Service Consumer (SC) sends data request with access token to Service Provider (SP)
2. SP authenticates SC and validates its iSHARE adherence
3. SP requests authorisation rights of the access token with AR
4. AR checks authorisation rights of SC's access token
5. AR provides evidence of authorisation rights to SP
6. SP checks SC's data request against its authorisation rights
7. SP provides the data service response

Hands on example of an iSHARE Data Space in practice - DVU

Hands on example in practice – DVU (Data Space for Energy Reduction in Non-Residential Buildings)

- DVU, an initiative by RVO, operates as a federated data space leveraging the iSHARE Trust Framework to ensure secure data sharing for energy
- DVU aims to facilitate the exchange of relevant energy consumption data among stakeholders, driving innovation and sustainable practices in the non-residential construction and building management sectors
- DVU allows the data entitled party of energy consumption data, which is the person that signed the energy contract with the grid operator, to share this with others - for instance when a person wants to make his/her office more sustainable
    - Note that the asset owner is not per definition the data entitled party, as he/she is not always the person that concluded a contract with the grid operator
- The iSHARE Trust Framework sets the standard for identification, authentication, and authorization. The usage policies and incorporation of a Hyperledger-based participant registry improve trustworthiness among the participants

Rijksdienst voor Ondernemend Nederland

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DVU example - real estate owner wishes to improve the sustainability of her building via a sustainability consultant (1/3)

Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

Simplified

1 Onboarding process

Legend:

iSHARE certified

Onboarding process – registering to DVU

Prerequisite: Asset owner onboards at its eHerkenning IDP and receives login credentials

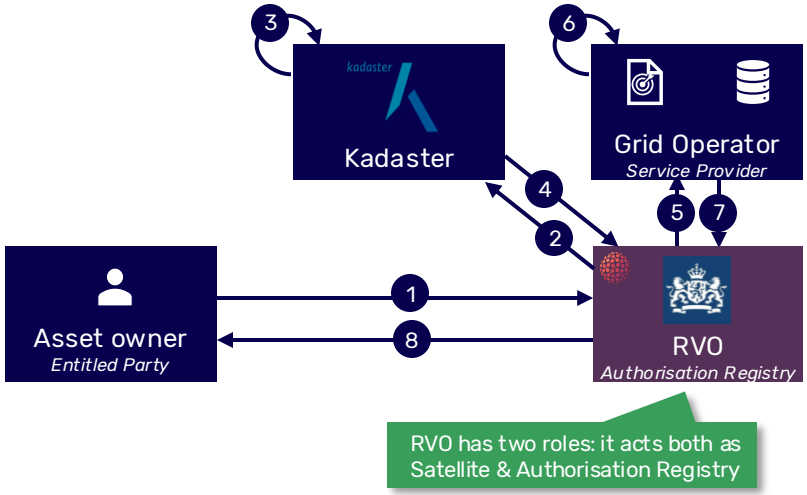
1. An asset owner requests to register to DVU with her company (thereby shares the company's EORI number, iSHARE conformance test report, signed Accession Agreement, and Qseal with RVO) and accepts the terms of DVU and iSHARE
2. Asset owner uses her login credentials to log into her eHerkenning IDP and to subsequently sign the DVU agreements
3. RVO checks whether the asset owner successfully logged in and signed the contract with her IDP and issues a verifiable credential, proofing the company's adherence to both iSHARE and DVU, for future logins to DVU and provides access to the DVU dashboard

DVU example - real estate owner wishes to improve the sustainability of her building via a sustainability consultant (2/3)

Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

Simplified

2 Registering a building to DVU



Legend:

iSHARE certified

Registering a building to DVU

After registering to DVU, the asset owner can add buildings that her company has concluded an energy contract for:

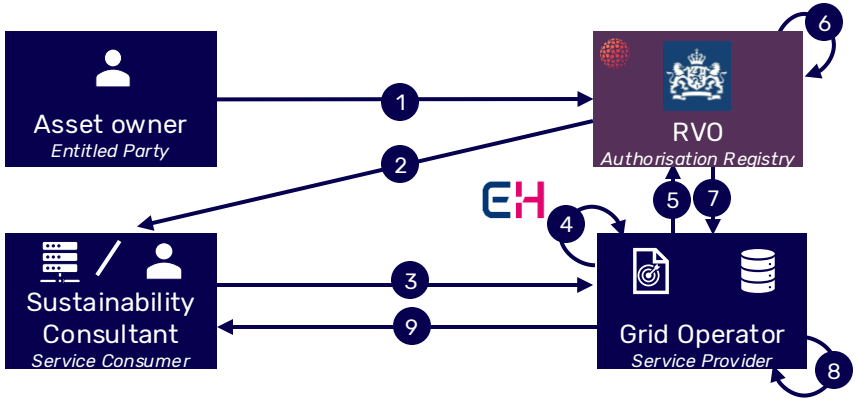
1. The asset owner requests to add a non-residential building in DVU
2. RVO checks the ownership of the asset with Kadaster
3. Kadaster authenticates the asset owner and checks her ownership
4. Kadaster shares the data rights of the asset owner with RVO
5. RVO checks the ownership of the energy contract with Grid Operator and requests the energy data
6. Grid Operator authenticates the asset owner's company and checks her data rights for the requested building
7. Grid Operator shares energy consumption data of the asset with RVO
8. The energy consumption data is added to the DVU dashboard

DVU example - real estate owner wishes to improve the sustainability of her building via a sustainability consultant (3/3)

Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

Simplified

3 Delegate data rights



Legend:

iSHARE certified

Delegate data rights

1. Asset owner registers delegation rights to Sustainability Consultant in DVU via RVO
2. Sustainability Consultant receives access token for the energy consumption data of the building of the asset owner
3. Sustainability consultant uses the access token to requests the energy consumption data at the Grid Operator
4. Sustainability Consultant is authenticated through eHerkenning
5. Grid Operator checks access token with RVO whether the requested data may be shared with Sustainability Consultant
6. RVO checks the rights of Sustainability Consultant's access token
7. RVO provides Sustainability Consultant's authorisation rights to Grid Operator
8. Grid Operator checks Sustainability Consultant's data request against his authorisation rights
9. Since Sustainability Consultant is authorized to access the requested data, Grid Operator provides the energy usage data of the building via the DVU dashboard

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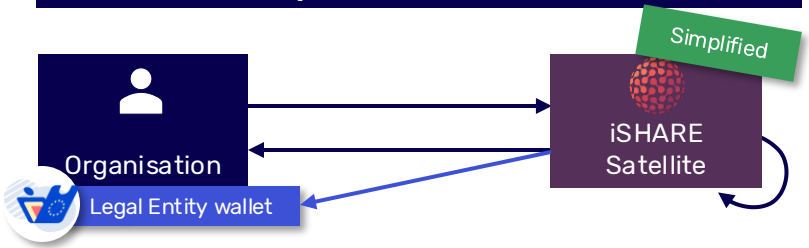
EUDIW adds value for iSHARE to share memberships credentials, but value remains limited until adoption is widespread

Possible EUDIW implementation for iSHARE



EUDIW can be used to store the iSHARE credential

- As a last step in the onboarding process, the Satellite issues an iSHARE credential to a party, proving that the party is trustworthy and has legal coverage
- The organisation can (re)use this for other iSHARE-based dataspaces, so it doesn't have to go through the onboarding process again

Possible use of Legal Entity wallet

The iSHARE credential could be issued to the company's legal entity wallet, and from here be issued to the personal wallet of a delegated representative of that company to be presented for functionality in other iSHARE-based dataspaces

Impact of EUDIW implementation on iSHARE

EUDIW could facilitate international adoption of iSHARE

- EUDIW can support adoption beyond the Dutch border, since it's an EU-wide solution, overcoming cross-border interoperability challenges

EUDIW enhances ease-of-use for relying parties, by making trust more fine-grained and automated decision making easier

- Currently, all participant information is stored in a single credential, held by iSHARE Satellites
- With the EUDIW, participants receive separate credentials for each ecosystem they onboard onto in their wallet and can easily present these for additional assurances – making trust more fine-grained

EUDIW is more self-sovereign and can replace the Hyperledger

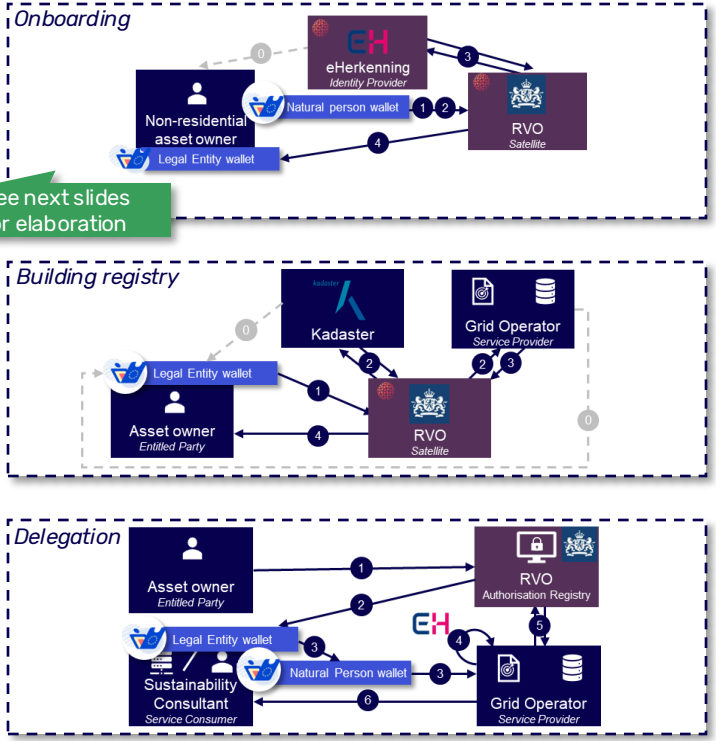
- Participants can store their own data, improving standardization and lowering maintenance, as the Hyperledger is custom software
- Credentials can be stored even more decentralized than as-is and participants can more consciously decide what data to share

However, added value is limited until EUDIW reaches full adoption

- Not all participants will instantly use EUDIW, so we expect a transition period where solutions will co-exist, undermining short-term value
- E.g. the Hyperledger remains necessary for iSHARE's functioning, until the wallet is fully adopted

The added value of the EUDIW for DSIs is enhanced when other parties issue credentials to share static data within a DSI

Possible EUDIW implementation and impact for iSHARE



The EUDIW can be used to store other credentials, ensuring interoperability

- Currently, you need custom integrations with APIs of parties like Stedin, Kadaster, Alliander, Nexis

Possible use of Legal Entity wallet

- If, in the DVU case, eHerkenning/Kadaster/Grid Operator issue credentials to the EUDIW, these credentials can be used in the process instead of connecting to their APIs
- By showing these credentials to RVO, a policy is generated, and an access token can be generated to someone else

The EUDIW can minimise necessary interaction with issuers, reducing dependency and costs

- If, in the DVU case, eHerkenning issues credentials to the EUDIW, the eHerkenning login process can be replaced by having the eHerkenning credential checked in the verification data registry for validity

The EUDIW can simplify necessary checks for service providers and authorisation registries

- If, in the DVU case, the EUDIW is implemented by all parties, RVO and the Grid Operator only need to perform a validity check on the delegation credential, instead of going through all checks of authentication, ownership, etc.

In the onboarding process, the EUDIW can reduce dependency and costs while increasing self-sovereignity

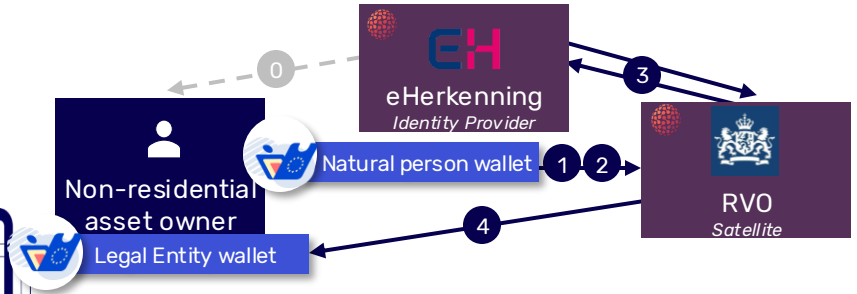
Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

1 Onboarding process – registering to DVU

See Appendix for detailed interaction flow

Possible EUDIW implementation for DVU

Simplified



The EUDIW can reduce dependency and costs by storing the eHerkenning credential

Possible use of Legal Entity wallet

Step 2 and 3 in the current situation could be eliminated with the use of the EUDIW: instead of going through the extensive eHerkenning login and signing processes, an eHerkenning credential, which is already stored in the personal wallet of the asset owner, can be presented to RVO to proof her identity

- Step 4 in the current situation could be eliminated with the use of the EUDIW: the check of RVO on the eHerkenning login and signature could be replaced by a credential validity check at eHerkenning

- With this, the necessary interaction with eHerkenning and checks for RVO are being minimized – reducing dependency and potential costs related to these interactions

The EUDIW allows parties to hold onto their own credentials

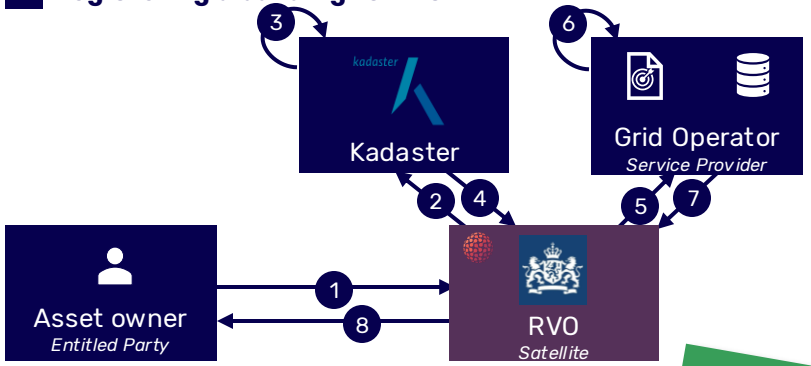
Possible use of Legal Entity wallet

The EUDIW could allow organisations to store the iSHARE and DVU token in their own LEW, instead of having the proof combined in a single signed JWT token that is held by RVO (current step 5 is replaced by EUDIW scenario step 4)

In the building registry process, the EUDIW can reduce and simplify necessary checks, while increasing self-sovereignty

Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

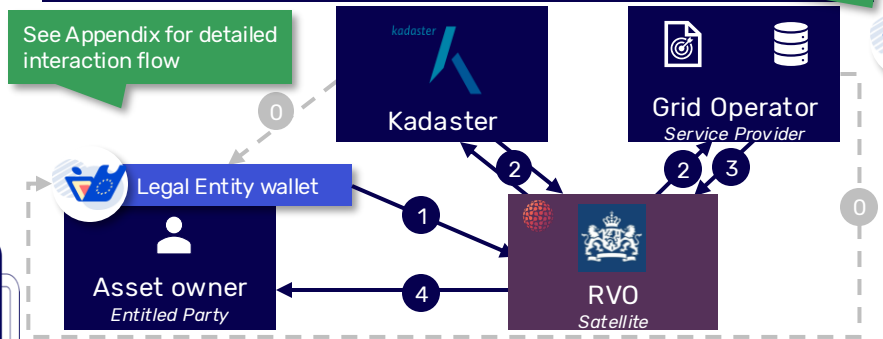
2 Registering a building to DVU



Possible EUDIW implementation for DVU

Simplified

See Appendix for detailed interaction flow



The EUDIW can simplify necessary checks of RVO, Kadaster and Grid Operator by storing the ownership & energy contract credential

Possible use of Legal Entity wallet

Step 2, 3, 5 and 6 in the current situation could be simplified with the use of the EUDIW: instead of going through extensive authentication and ownership checks, RVO only needs to perform a validity check of the ownership and energy contract credentials, which are already issued by Kadaster and the Grid Operator to the LEW of the asset owner

The EUDIW allows parties to hold onto their own credentials

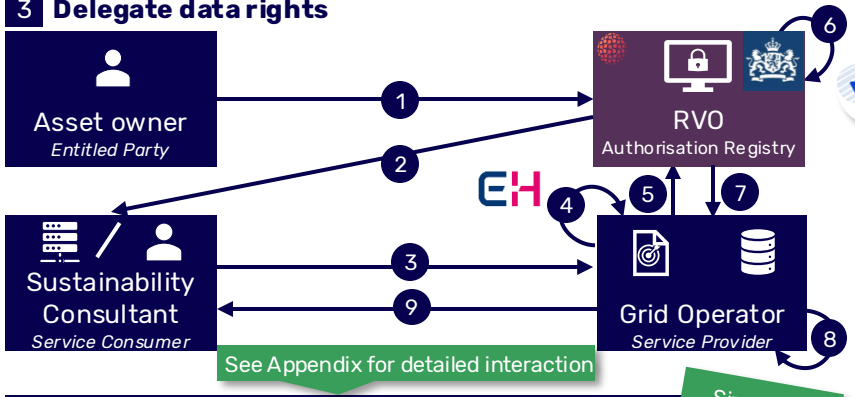
Possible use of Legal Entity wallet

The EUDIW could allow organisations to store their proof of ownership of an asset and of an energy contract in their own LEW, instead of having this reside at Kadaster and the Grid Operator, giving them more self-sovereignty

In the delegation of data rights, the EUDIW can simplify necessary checks and reduce dependency on issuers

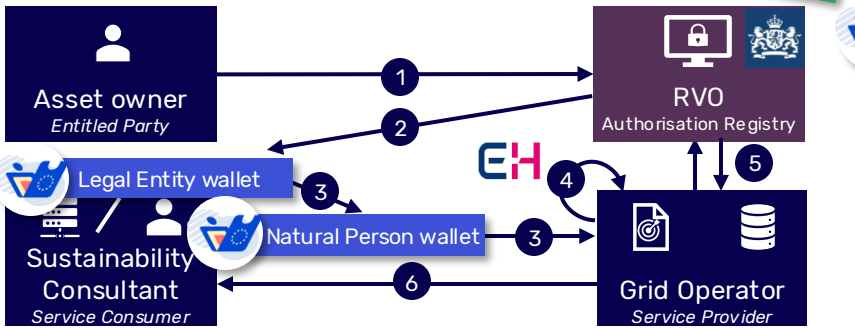
Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

3 Delegate data rights



Possible EUDIW implementation for DVU

Simplified



The EUDIW can reduce and simplify necessary checks of RVO and Grid Operator by storing the delegation credential

Possible use of Legal Entity wallet

Step 5, 6 and 7 in the current situation could be simplified with the use of the EUDIW: instead of going through extensive authentication and ownership checks, RVO and the Grid Operator only need to perform a validity check of the delegation credential, which is already issued by RVO to the LEW of the Sustainability Consultant

- This reduces the burden of these checks for RVO and the Grid Operator

The EUDIW can minimise necessary interaction with eHerkenning by storing the eHerkenning credential

Possible use of Legal Entity wallet

Step 4 in the current situation could be simplified with the use of the EUDIW: instead of going through the eHerkenning login process, an eHerkenning credential, which is already stored in the personal wallet of the asset owner, can be presented to the Grid Operator to proof her identity

- With this, the necessary interaction with eHerkenning is being minimized – reducing dependency and related potential costs

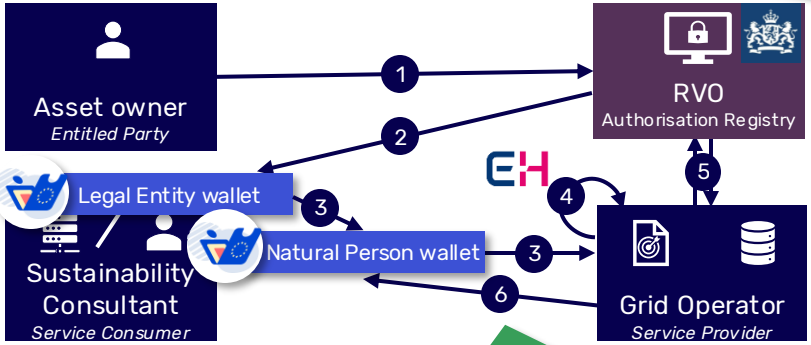
Besides static data, the EUDIW has potential to facilitate data sharing of dynamic data via API access

Example DVU – Grid Operator issues credential to Sustainability Consultant, giving him/her access to dynamic energy data

3 Delegate data rights

Possible EUDIW implementation for DVU

Simplified



The Grid Operator could issue a credential to the natural person wallet of the Sustainability Consultant to provide access to dynamic energy data, replacing the DVU dashboard login process (incl. all described checks)

Via the EUDIW issuers can possibly facilitate data sharing of dynamic data

- Issuers can share credentials allowing access to APIs of dynamic, streaming data while complying to certain criteria

Possible use of Legal Entity wallet

- In the example of DVU, the Grid Operator could issue such a credential to the Sustainability Consultant's personal wallet to allow access to an API to the dynamic energy data of the building, that can be accessed as long as the Sustainability Consultant complies to certain criteria (e.g. as long as he is working on the project on behalf of the Consulting company hired by the asset owner)

- The possibility of issuing credentials to access APIs was identified during the collaborative exploration of this use case and seems to have significant value potential for DSIs - it deserves and requires further exploration.

- CoE-DSC aims to further explore this topic in 2025

EUDIW implementation is relatively straightforward for iSHARE - but to maximize its potential, iSHARE depends on data providers

EUDIW implementation is relatively straightforward for DSIs

iSHARE is likely to implement the EUDIW as an **additional option** to use its DSI, next to its current solution

The EUDIW has **the same lines of thinking** as DSIs like iSHARE

Both initiatives focus on and try to maximize **self-sovereignty and data decentralization** in a similar way through IAA

To use EUDIWs full potential, DSIs depend on data providers

Data providers need to develop issuing capabilities to offer EUDIW solutions to DSI users – it's an **adoption question of data providers**

EUDIW implementation is expected to **relatively smooth*** for data providers

*Depending on data quality and availability

Mandatory acceptance of the natural persons wallet will require some to have **already developed the necessary issuing capabilities**

Suppliers are already **working on standardized solutions**

DSIs should be mindful of remaining LEW challenges when deciding to implement, and offer it only as an additional solution

DSIs should be aware of the remaining challenges of the Legal Entity Wallet when considering its implementation:

Specifications/standards of the LEW are still unclear

- Currently, there are no specifications/standards about e.g. the content of credentials and the meaning of credentials and revocation
- Specifications and standards of the LEW are necessary for ensuring interoperability
- EU describes both the Natural Persons Wallet & LEW, however, the wording and energy in eIDAS 2.0 indicates that priority is given to Natural Persons Wallet and that the development of the LEW is likely to lack behind (see Appendix)
- It is therefore expected that the EU will not solve this issue (any time soon) unless a change of direction is made

The LEW needs an extra adoption push from DSIs if it is not going to be mandatory and/or free

- Again, because of the wording and energy in eIDAS 2.0, it's expected that it will be too soon for the EC to have the LEW mandatorily implemented by designated parties (see Appendix)
- The EUDIW is not mandated to be free-of-charge for professional use by the EC - since the LEW will be used solely for professional means, it is expected not to be free, unless decided otherwise by the EU member states*
- We expect adoption to be challenging if it's not driven by the EU by making its acceptance mandatory and its use free of charge

The mandating of a person on behalf of a company remains challenging – service-based mandating should be the EU standard

- There is no EU standard for mandating a person on behalf of a company
- There are two types of mandating: service- and role-based
- Service-based mandating allows a company to give mandates to specific persons for specific services – this minimizes risk for companies, as the mandate will be better specified and leaves less room for misuse of the mandate
- Therefore, we believe service-based mandating fits DSIs best and thus should be the EU standard

*Note: EU member states can individually decide whether LEW will be paid for by the government or commercial players can choose a pricing/business model

The role of scheme aggregator can overcome the identified interoperability challenges of the EUDI LEW for DSIs

A scheme aggregator can help overcome the challenges of the EUDI LEW for DSIs

- The structure and meaning of the credentials is not standardised
- Offering various, non-standardized company credentials raises the issue of interoperability and limits digital trust
- Therefore, we see a role for a scheme aggregator in supporting standardized company credentials for using EUDI LEW in DSIs and beyond

What can a scheme aggregator do?

Facilitating harmonisation

1 **Make agreements** on:

a. Structure of the payload

b. Meaning of:
- the payload
- revocation by an issuer

For a specific domain (i.e. the domain of describing legal entities)

2 Create and maintain **Governance**

To be able to play this role, a party must have right to play and be trusted by the ecosystem

The governance structure typically should include representatives of issuers and verifiers

3 Provide **Accreditation**

Of organisations issuing and accepting the credentials in adherence to the agreements, including:

- Onboarding
- Compliance management

Facilitating Adoption

4 Stimulate **Adoption**

Of the LEW in general and/or specifically of the scheme, by:

- Creating awareness
- Stimulating use by issuers, relying parties and holders
- Performing use-cases
- Sharing best practices

Company Passport can add value on top of the Legal Entity Wallet as scheme aggregator for specific contexts

What can CP do as a scheme aggregator do for specific contexts?

1 **Make agreements** on:

a. Structure of the **payload**

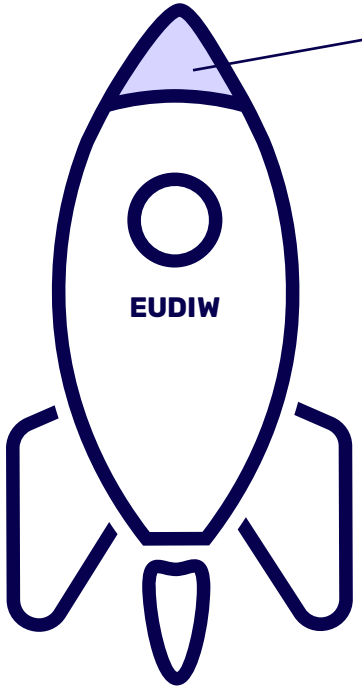
b. Meaning of:
- the payload
- revocation by an issuer

For a specific context, e.g. companies (as illustrated on the right), for use in multiple domains

2 **Governance** of a specific domain - e.g. if BV is used correctly

3 **Accreditation** e.g. to proof adherence to certain regulation

4 **Adoption** in specific use cases



Payload

1 Structure

- What needs to be in it?

KvK/EORI # | **Company name** | **Legal form** | **Names of directors**

- How?

Legal form → BV, NV, ...

2 Meaning

- Of payload: What does a ''director' mean?
- Of revocation: For what reason?

Content

- Introduction to EUDI wallets (LEW focus):
  - What is the EUDI wallet?
  - Example tax reporting: possible interplay between Natural Persons and Legal Entity Wallet
- Introduction to Data Sharing Initiatives (DSIs)
  - What is Company Passport?
  - What is iSHARE and how does it work? – Illustrated by the hands-on example of DVU
- Potential value of EUDI Legal Entity wallets for DSIs & foreseen design possibilities
  - Possible design and potential impact of EUDI Legal Entity Wallet for iSHARE and DVU Data Space
  - Possible role for Company Passport
- Next steps

As next steps, CoE will further explore the topics of scheme aggregator, service-based mandating and dynamic data

Scheme aggregator

The role and value of the **scheme aggregator** should be further explored, incl.:

- Role definition
- The payload
- Revocation
- What party/parties can fulfil the role(s)

Service-based mandating

Service-based mandating is a necessity for proper functioning of wallets for DSIs – it should be explored how this can be created EU-wide to facilitate interoperability within and between DSIs

Sharing dynamic data

The use of the EUDIW to **access dynamic data** is a new concept, but could be very valuable to DSIs – this topic should be further explored

Appendix

EC makes no clear distinction between legal entity and personal wallet - wording indicates more energy is directed to the latter

While eIDAS addresses both natural persons & legal entities, the emphasis on the prior is more textually pronounced, e.g.:

Recital 8 - This section discusses the need for the EUDIW to provide secure and user-friendly access to services for natural persons, emphasizing the importance of individual users.

Recital 62 - This recital elaborates on the purpose of the EUDIW, stating that it should facilitate access to services for both natural persons and legal entities. However, it emphasizes that the wallet should empower individuals to manage their identity and personal data effectively. The wording here suggests a stronger emphasis on the user experience for natural persons, as it discusses the importance of providing individuals with a secure and user-friendly means to access public and private services. The mention of "individuals" in this context further underscores the priority given to natural persons.

Article 3 - Definitions in this article often refer to "users" in a context that implies natural persons. The term "natural person" is frequently mentioned, while references to legal entities are less detailed.

Article 5f describes the mandatory acceptance of the EUDIW – because of the emphasis on the natural persons wallet, we expect the legal entity wallet not to be mandatorily accepted (yet)

Article 5f - This article discusses the EUDIW: it outlines the functionalities and requirements for the wallet, emphasizing that it should allow users to store and manage their electronic identification and attributes. The language used in this article tends to prioritize the needs and experiences of natural persons. For instance, it mentions that the wallet should enable users to "present their identity attributes" and "prove their identity" in various contexts, which is particularly relevant for individual users. The article also highlights user control and consent, which are critical for personal data management, again pointing towards a focus on natural persons.

Article 6 - This article outlines the requirements for the issuance of the EUDIW. It indicates that the wallet must allow users to store and manage their identity attributes, which primarily cater to individual needs, such as accessing services or proving identity.

Annex I - The technical specifications and functionalities outlined here tend to focus on individual user experiences and needs, with less emphasis on the specific requirements for legal entities.

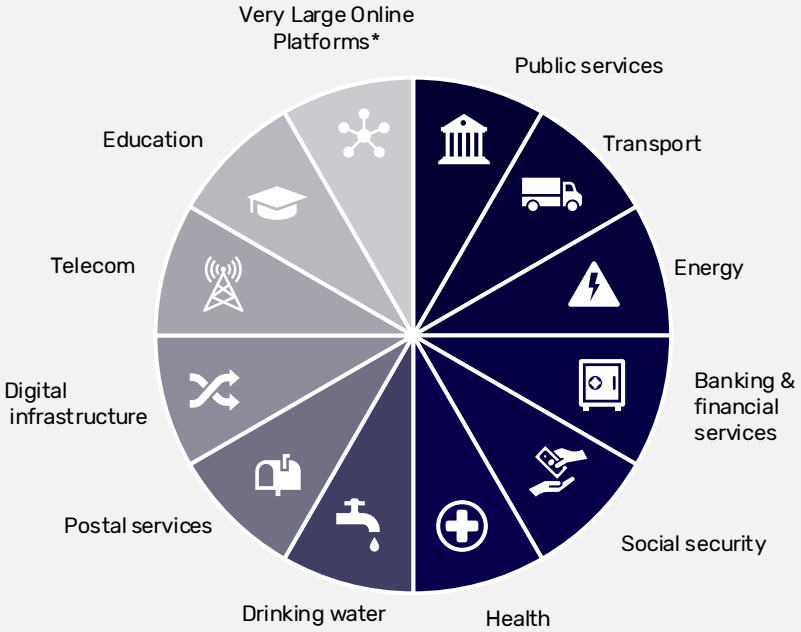
Sources: European Commission on eIDAS Regulation, Regulation amending eIDAS, INNOPAY analysis

EC specifies mandatory acceptance for EDIW by private service providers (designated parties) in 12 service areas

Indicative

2024	2025	2026	2027

Mandatory acceptance



Q4 '27 – mandatory implementation of the wallet by designated parties

Sources: European Commission on eIDAS Regulation, Regulation amending eIDAS, INNOPAY analysis; **Note**: *platforms defined under EU Digital Services Act (DSA)

DVU example - real estate owner wishes to improve the sustainability of her building via a sustainability consultant (1/3)

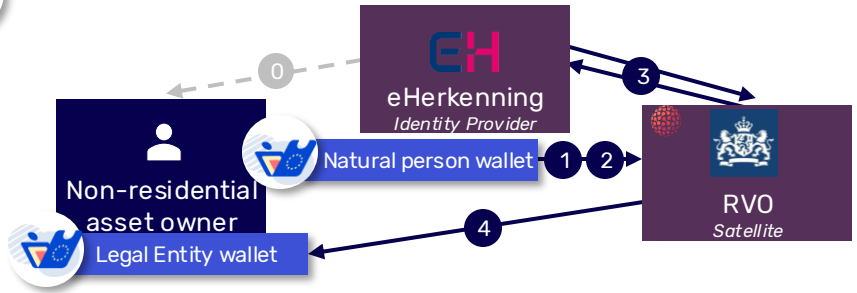
Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

Simplified

1 Onboarding process – registering to DVU

0. Prerequisite: Asset owner onboards at her eHerkenning identity provider (IDP) and receives login credentials
1. Asset owner shares the following data to be admitted to iSHARE with RVO: EORI Number of her company, successful test report of iSHARE conformance, signed Accession Agreement, Qseal
2. Asset owner uses her login credentials to log into her eHerkenning IDP and to subsequently sign the DVU agreements
3. IDP shares eHerkenning credential with RVO (proof of company, proof of person, proof that someone has the right mandate)
4. RVO checks successful log in and signed agreements
5. RVO gives asset owner access to the DVU dashboard and issues a signed JWT verifiable credential (held by RVO). This credential proofs that the asset owner is successfully checked for iSHARE and DVU

Possible use of Legal Entity wallet



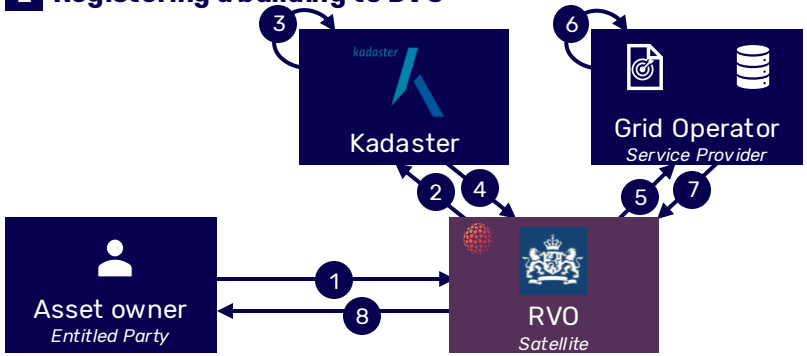
0. Prerequisite: Asset owner onboards at her eHerkenning IDP
1. Asset owner shares the data to be admitted to iSHARE (see current process on the left)
2. Asset owner presents her eHerkenning credential from her personal wallet to RVO and uses it to sign the DVU agreements
3. RVO checks validity of credential with eHerkenning
4. RVO issues iSHARE and DVU credential to LEW

DVU example - real estate owner wishes to improve the sustainability of her building via a sustainability consultant (2/3)

Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

Simplified

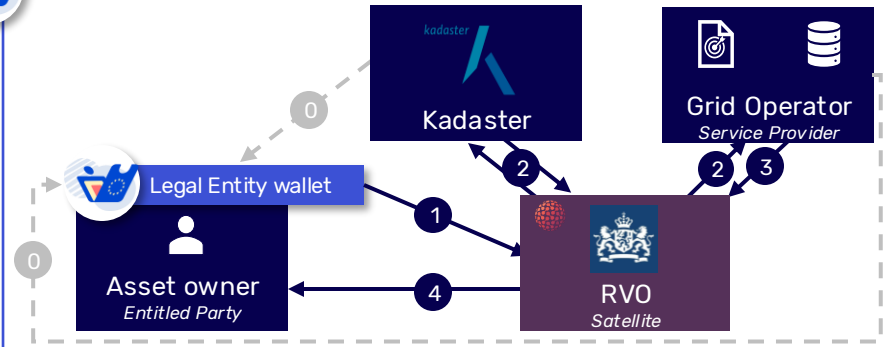
2 Registering a building to DVU



After the asset owner registers/logs into DVU via IDP, she can add the buildings she has concluded an energy contract for:

1. Asset owner requests RVO to add a non-residential building in DVU
2. RVO checks the ownership of the asset with Kadaster
3. Kadaster authenticates the asset owner and checks her ownership
4. Kadaster shares the data rights of the asset owner with RVO
5. RVO checks the ownership of the energy contract with Grid Operator and requests the energy data
6. Grid Operator authenticates the asset owner's company and checks her data rights for the requested building
7. Grid Operator shares energy consumption data of the asset with RVO
8. The energy consumption data is added to the DVU dashboard

Possible use of Legal Entity wallet



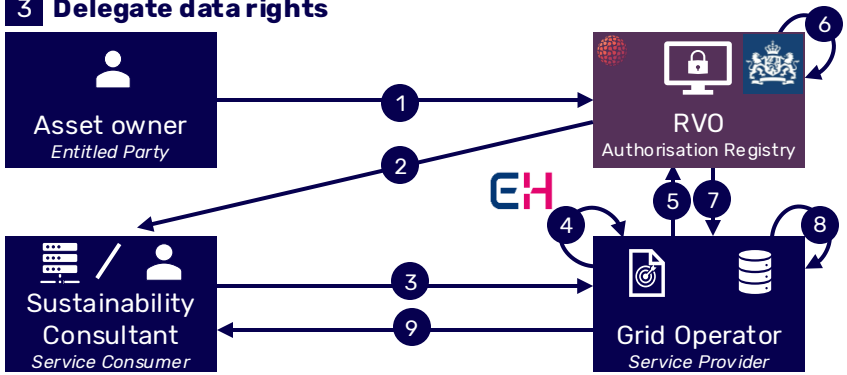
0. Prerequisite: Kadaster & Grid Operator issue credentials of ownership to the legal entity wallet and the eHerkenning credential in natural persons wallet is used to login to DVU
1. Asset owner requests RVO to add a non-residential building and presents the ownership credential of the building and energy contract of the building from the wallet to RVO to proof her mandate to access the data
2. RVO checks the validity of the credential of the building with Kadaster and the one of the energy contract with the Grid Operator
3. Grid Operator shares energy consumption data of the asset with RVO
4. The energy consumption data is added to the DVU dashboard

DVU example - real estate owner wishes to improve the sustainability of her building via a sustainability consultant (3/3)

Example DVU – a non-residential asset owner shares data of the energy usage of her building with a sustainability consultant

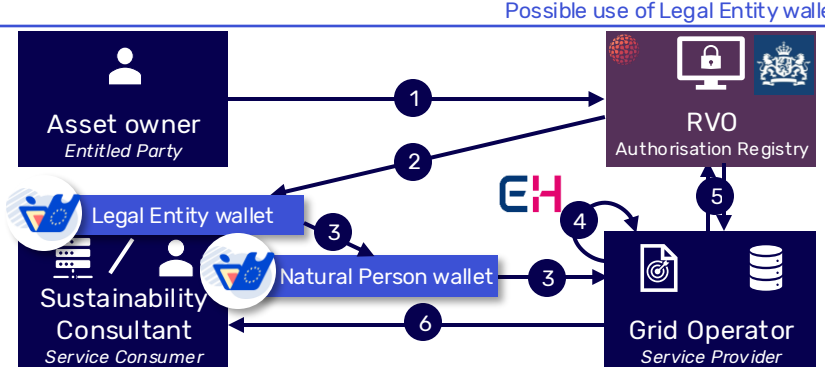
Simplified

3 Delegate data rights



1. Asset owner registers delegation rights to Sustainability Consultant in DVU via iSHARE Certified Authorisation Registry (AR)
2. Sustainability Consultant receives access token for the energy consumption data of the building of the asset owner
3. Sustainability consultant uses the access token to requests the energy consumption data at the Grid Operator
4. Sustainability Consultant is authenticated through eHerkenning
5. a. Grid Operator checks Sustainability Consultant's iSHARE adherence with RVO
   b. Grid Operator checks access token with AR whether the requested data may be shared with Sustainability Consultant
6. AR checks the rights of Sustainability Consultant's access token
7. AR provides Sustainability Consultant's authorisation rights to Grid Operator
8. Grid Operator checks Consultant's data request against its authorisation rights
9. Since Sustainability Consultant is authorized to access the requested data, Grid Operator provides the energy usage data of the building via the DVU dashboard

Possible use of Legal Entity wallet



1. Asset owner registers delegation rights to Sustainability Consultant in DVU via iSHARE Certified AR
2. Sustainability Consultant receives delegation token for the energy consumption data of the building of the asset owner in his LEW
3. Sustainability consultant retrieves delegation token from his LEW and shows this together with his eHerkenning token in his personal wallet to the Grid Operator to requests the energy consumption data
4. Grid Operator checks the validity of the eHerkenning credential of the Sustainability Consultant
5. Grid Operator checks the validity of the delegation credential of the Sustainability Consultant with AR
6. Grid Operator provides the energy usage data of the building via the DVU dashboard