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Agentschap
Hoger Onderwijs, Volwassenenonderwijs,
Kwalificaties & Studietoelagen

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Diploma use case and European Self-Sovereign- Identity Framework

Wednesday, February 24 2021

EBSI4be

Diploma use case and ESSIF

Agenda:

▶ Presentation of the use case

- ✗ Stakeholders and their roles
- ✗ Dataflow
- ✗ Goals
- ✗ Different aspects and business scenarios

▶ Implementation of the use case

- ✗ Complexity of the Belgian situation
- ✗ Management API and access to a wallet: non trivial questions
- ✗ Communication with the citizen
- ✗ Lack of buy-in
- ✗ Still open questions
- ✗ What is needed for next steps?

Presentation by:



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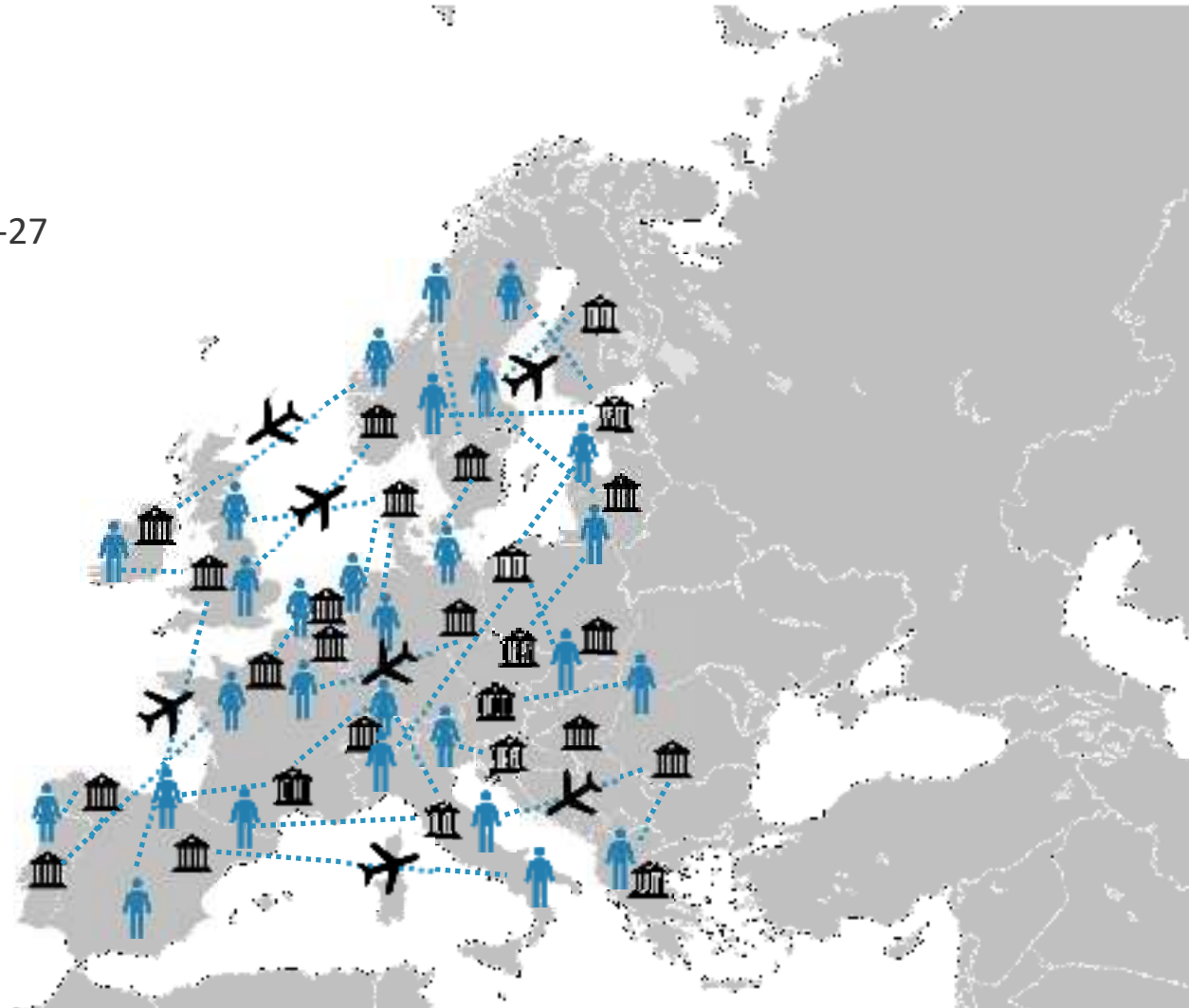
Agentschap voor Hoger Onderwijs,
Volwassenenonderwijs,
Kwalificaties en Studietoelagen

I. THE DIPLOMA USE CASE AND ESSIF

International student mobility in EU



2018: 1.3 million students from abroad were undertaking tertiary level studies across the EU-27 (Eurostat)



International student mobility in EU



2018: 302.000 graduated in the EU
(Eurostat)

Diploma's are needed to:

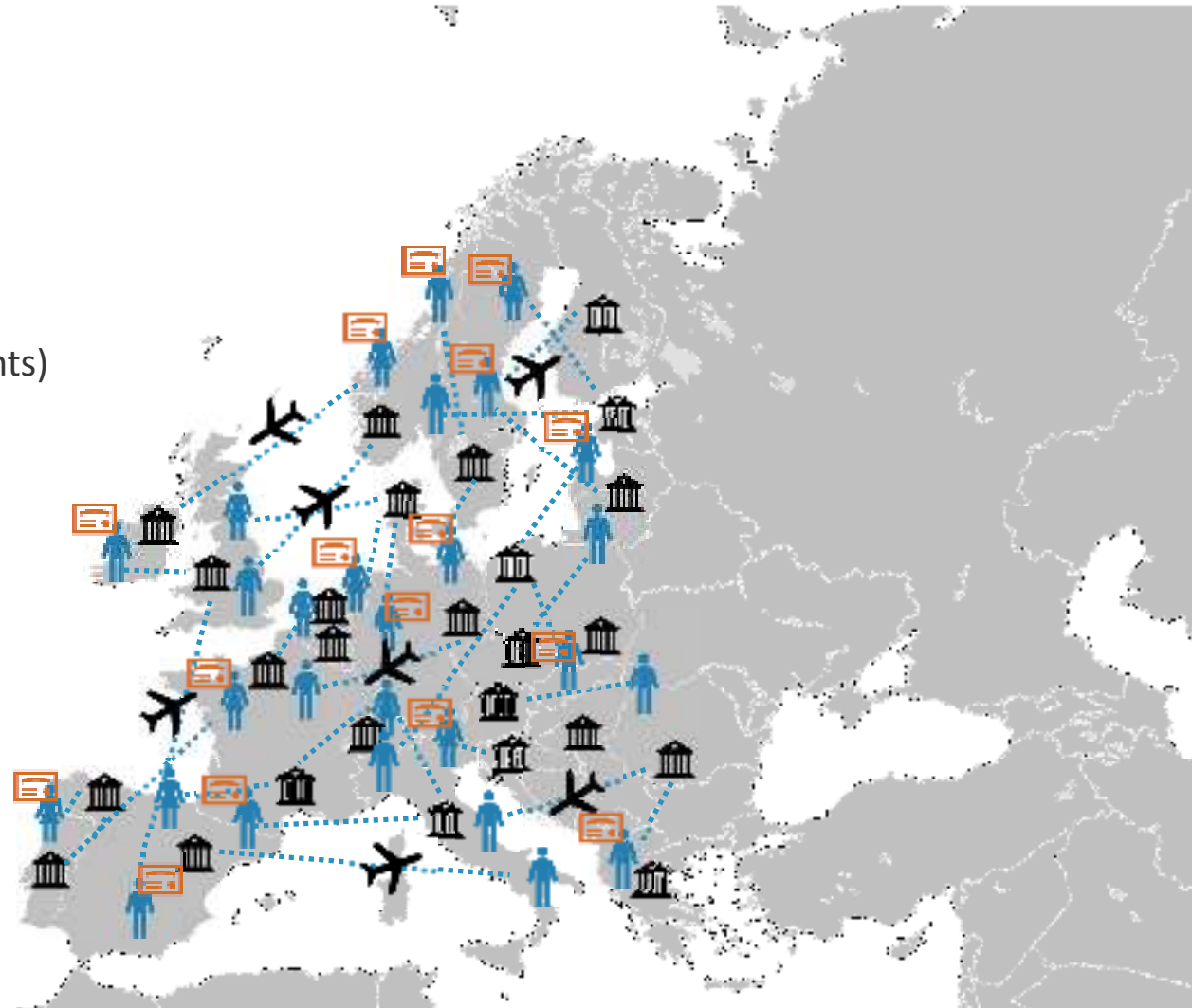
- Pursue further study (admission requirements)
- Apply for a job
- Recognition of foreign qualifications (ENIC-NARIC)
- ...

Authenticity?

Recognised institution that can be trusted?

Lost documents

**=> Need for an easy and automatic
exchange of diploma data**



Solution: EBSI Diploma use case and Self Sovereign Identity



Diplomas

Citizens gain digital control of their educational credentials, significantly reducing verification costs and improving trust in documents' authenticity.



Self-Sovereign Identity

EBSI is helping to implement a Self-Sovereign Identity model in Europe, allowing users to create and control their own identity across borders.

Eva just finished her Bachelor's degree at the University of Ghent (BE). She wants to subscribe in a Master's degree at the University of Rovira i Virgili (ES). To do so, she has to request the issuance of her Bachelor Diploma from the University of Ghent and then share the Bachelor Diploma with the University of Rovira i Virgili for verification.



Stakeholders and their roles



Student

Eva

[The user]

Request the issuance her Verifiable Attestation (Diploma).



University of Ghent

(Via Flemish Government)

[The issuer]

Verifies the request of Eva and issues a Verifiable Attestation (Diploma).



UNIVERSITAT ROVIRA I VIRGILI

University of Rovira i Virgili

[The verifier]

Verifies the Verifiable Presentation and accepts Eva's request.

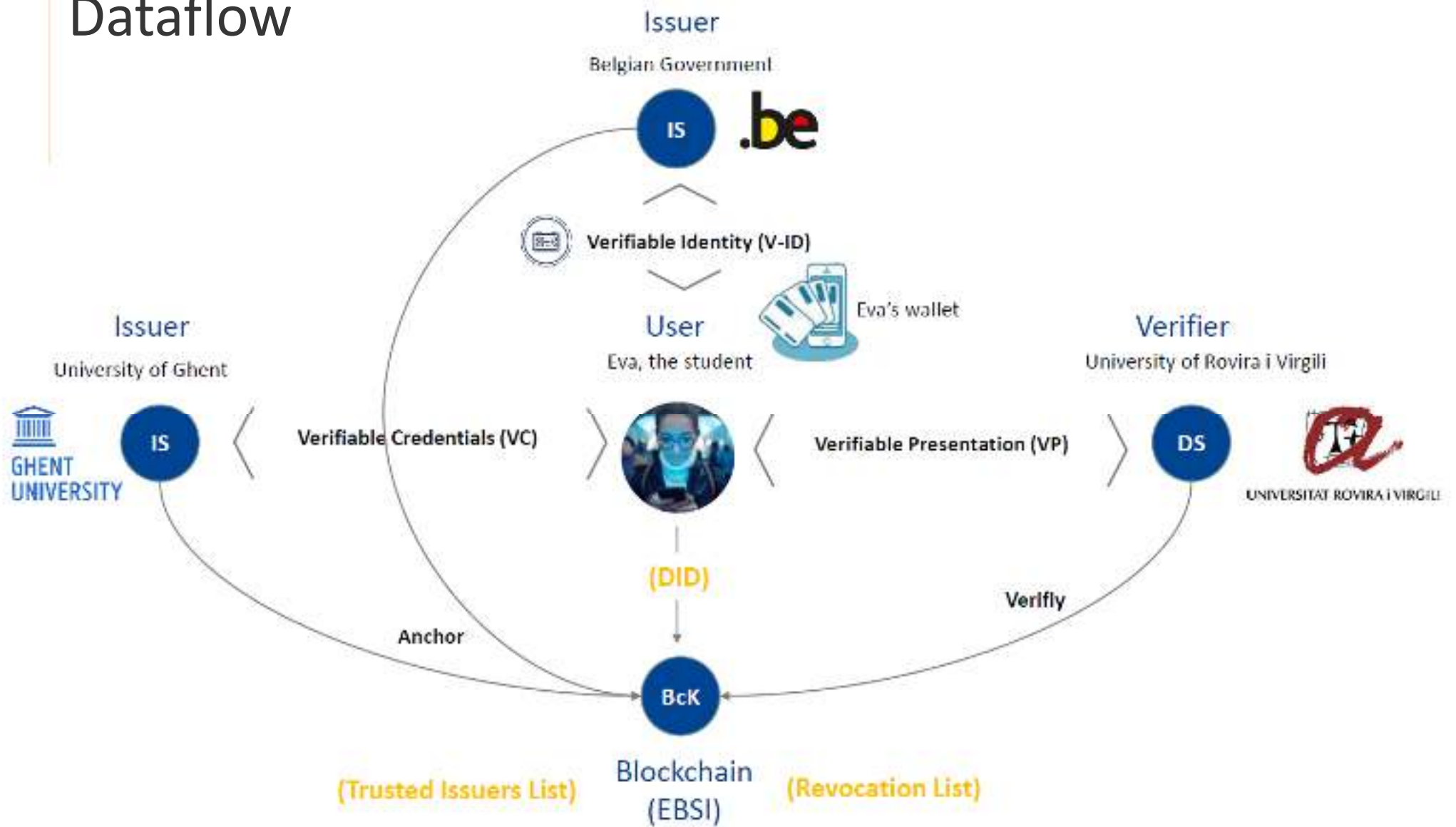


Belgian government

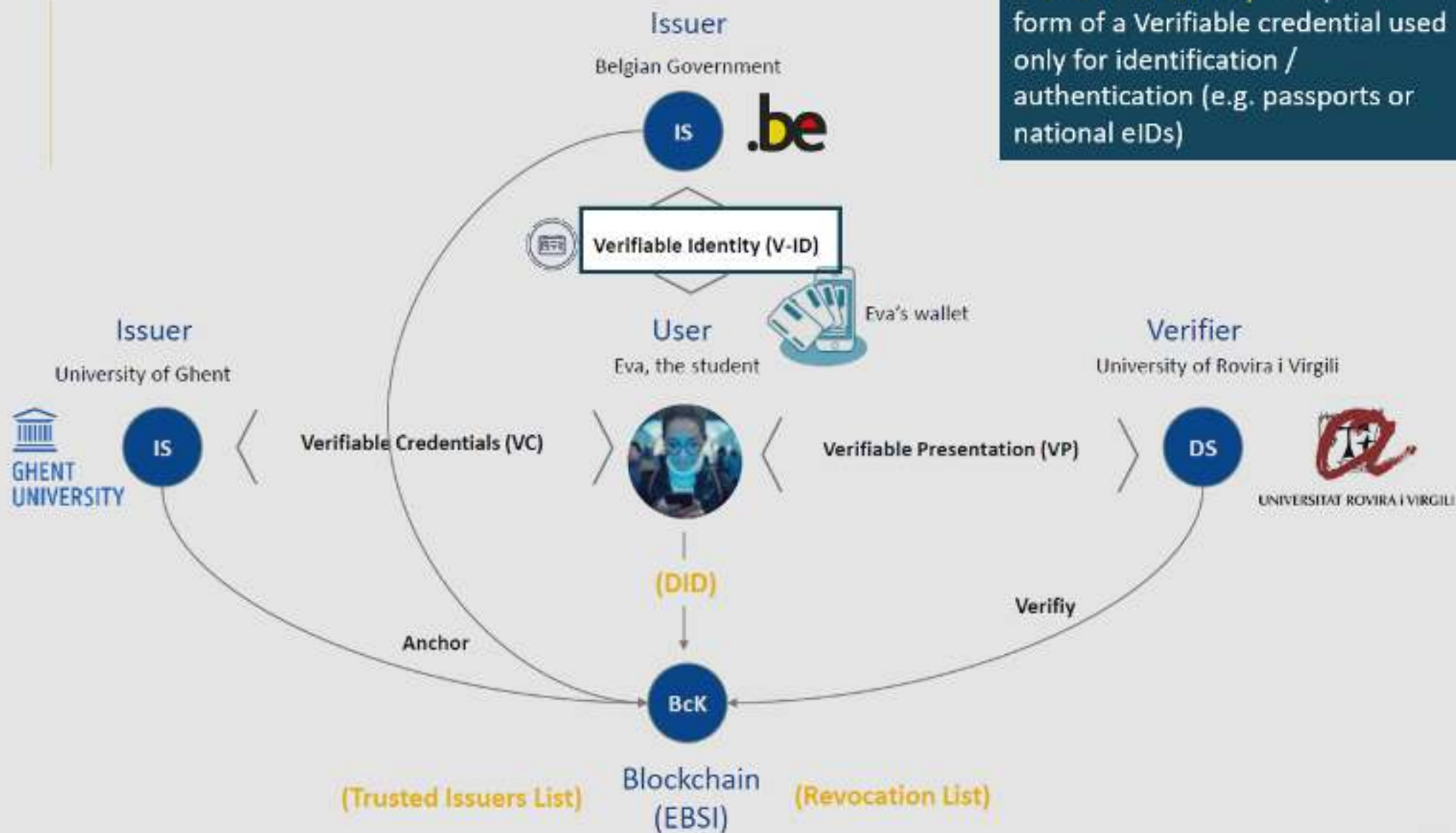
[Trusted Registration Authority / Trusted Identity Issuer]

Verifies Eva's identity and issues Verifiable Identity credentials

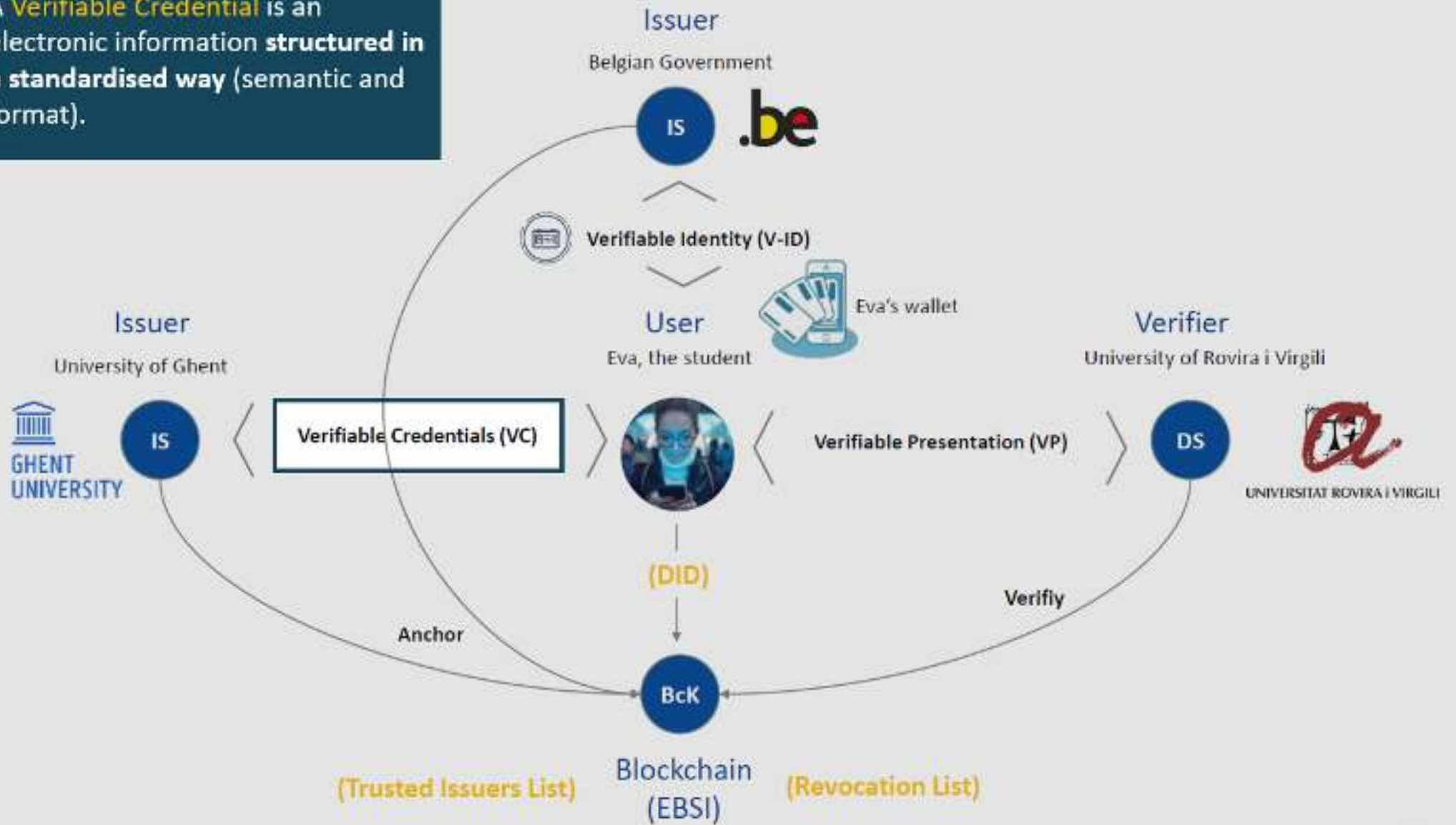
Dataflow

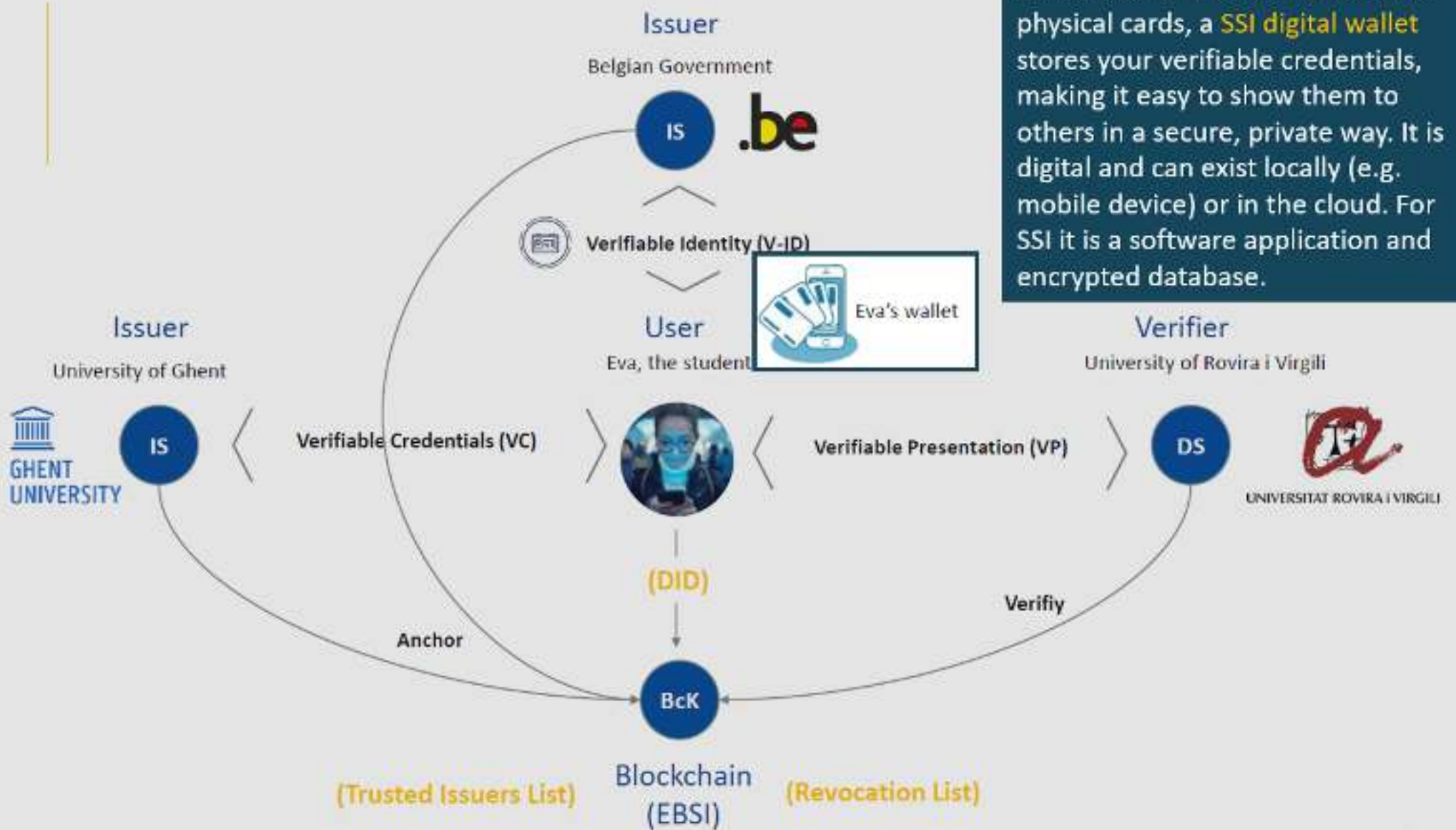


A **Verifiable Identity** is a special form of a Verifiable credential used only for identification / authentication (e.g. passports or national eIDs)



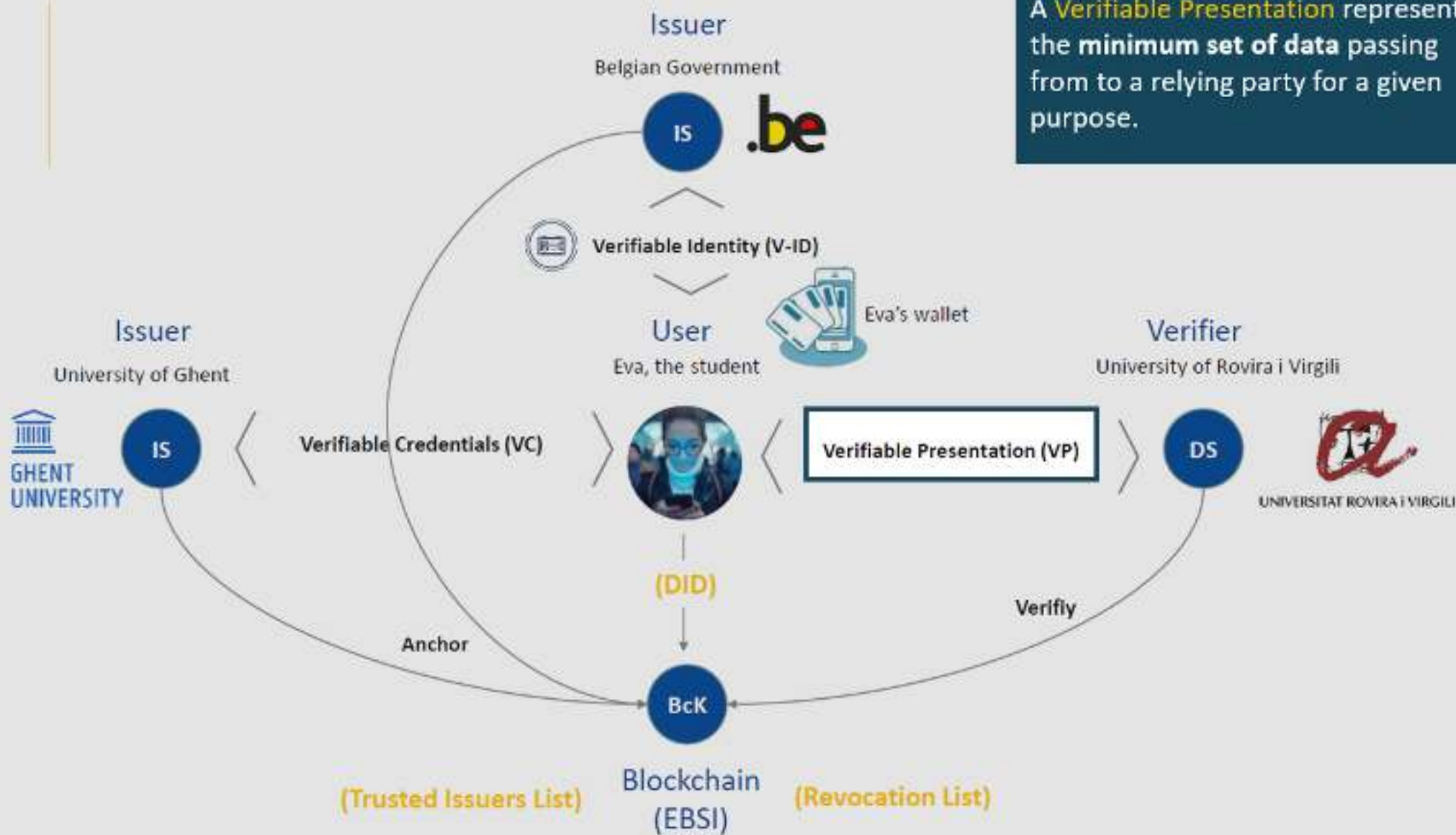
A **Verifiable Credential** is an electronic information **structured in a standardised way** (semantic and format).



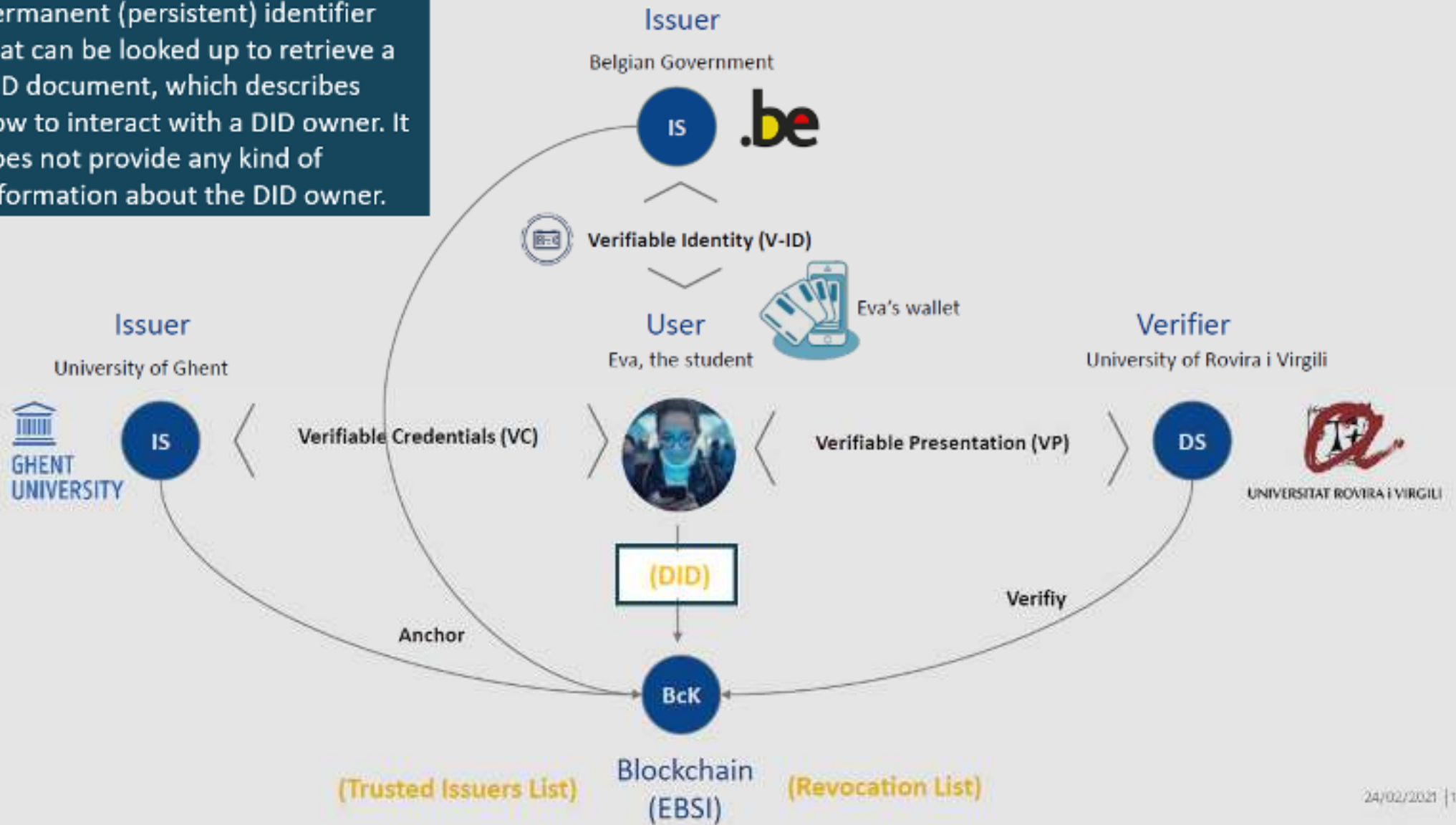


Like a leather wallet with different physical cards, a **SSI digital wallet** stores your verifiable credentials, making it easy to show them to others in a secure, private way. It is digital and can exist locally (e.g. mobile device) or in the cloud. For SSI it is a software application and encrypted database.

A **Verifiable Presentation** represents the **minimum set of data** passing from to a relying party for a given purpose.



A **Decentralised Identity (DID)** is permanent (persistent) identifier that can be looked up to retrieve a DID document, which describes how to interact with a DID owner. It does not provide any kind of information about the DID owner.



Goals Diploma use case

- ▶ Share and authenticate diplomas across national borders in Europe (and eventually beyond)
- ▶ Facilitate Self Sovereign Identity for EBSI and Users
- ▶ Align with other European Educational initiatives
- ▶ Set up clear governance architecture based on international QA standards and a clear set of ground rules
- ▶ Enable trust in a new ecosystem that will encourage future use by member states

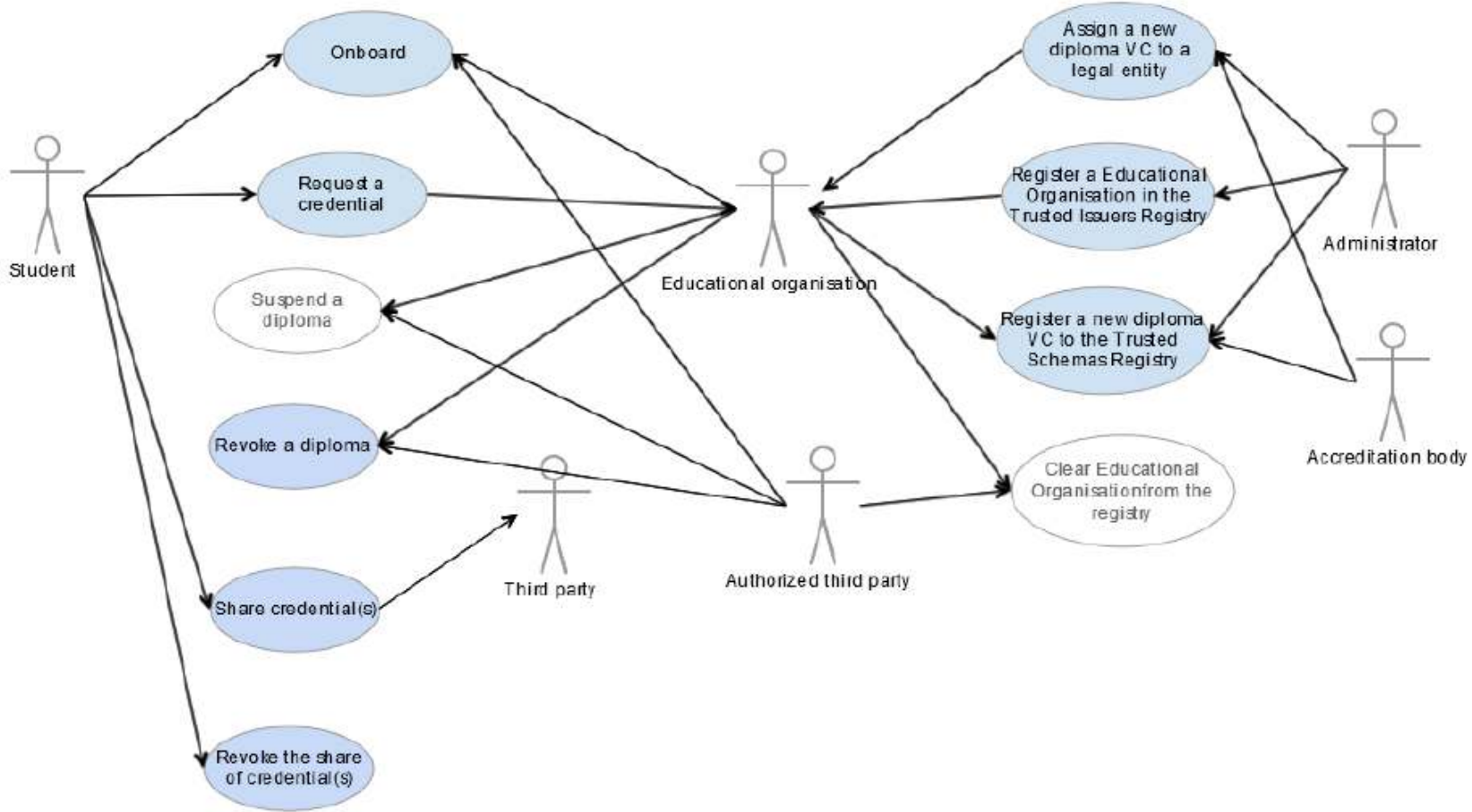
Goals ESSIF

- ▶ Empower citizen in management of their data via SSI
- ▶ Stimulate the SSI-transformation of public services
- ▶ Facilitate cross-border interaction with SSI
- ▶ Integrate/align with existing building blocks such as eIDAS, e-delivery, one only with SSI
- ▶ Conceptualize and build an identity layer in the new European Blockchain Services Infrastructure supporting the current use cases

Principles of GDPR Compliance

- ▶ Citizens own and control their identity (identities)
- ▶ Citizens own and control their data
- ▶ Any action must be initiated by the citizen
- ▶ Any further provided credential must be accepted by the citizen
- ▶ No personal data will be on-chain

Different aspects of use case



Business Scenarios Diploma use case

Enable the Use Case

Register a Schema
Registration in the trusted accreditation registry (TAR)
Authorize an educational organization – registration in the Trusted Issuers Registry (TIR)

Onboard

Student onboards on ESSIF with national eID
Education institution onboards on ESSIF

Issue

Request of on accredited credential
Request of a non-accredited credential
Student requests, and Educational institution issues and the student accepts and stores a recognition statement

Share

Share a credential

Revoke/suspend

Educational Institution revokes a credential
Educational institution suspends a credential
Revocation authority revokes an accreditation
A QAA is removed from the trusted

Consent/Mandates

Student Enrolls in Institution, and agrees to accept any credentials the institutions issues while they are a student
Student gives mandate to a natural person to request a credential on their behalf
A natural person (e.g. Student) revokes a mandate previously given to an authorized third party

Enabling access to other educational services/portals

Student logs into educational institution software system using ESSIF ID and enrolment ID issuers registry

Business Scenarios Diploma use case

Priority 1



Enable the Use Case	Onboard	Issue	Share
<p>Register a Schema Registration in the trusted accreditation registry (TAR) Authorize an educational organization – registration in the Trusted Issuers Registry (TIR)</p>	<p>Student onboards on ESSIF with national eID Education institution onboards on ESSIF</p>	<p>Request of on accredited credential Request of a non-accredited credential Student requests, and Educational institution issues and the student accepts and stores a recognition statement</p>	<p>Share a credential</p>

Revoke/suspend

- Educational Institution revokes a credential
- Educational institution suspends a credential
- Revocation authority revokes an accreditation
- A QAA is removed from the trusted

Consent/Mandates

- Student Enrolls in Institution, and agrees to accept any credentials the institutions issues while they are a student
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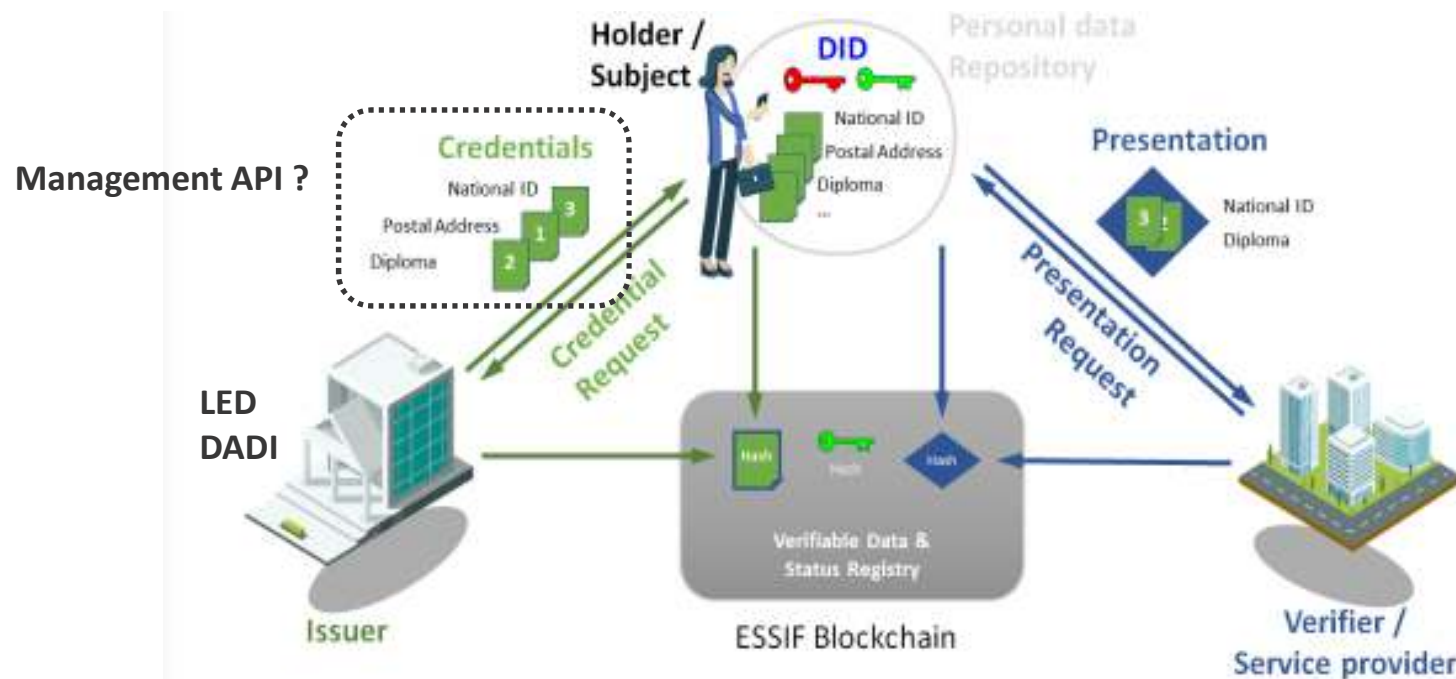
- Student logs into educational institution software system using ESSIF ID and enrolment ID issuers registry

II. IMPLEMENTING THE USE CASE IN THE BELGIAN CONTEXT

Complexity of the Belgian situation

- ▶ Difference competence levels
 - For identity: Federal level
 - For education: Community level
- ▶ For education:
 - 3 Communities
 - 2 authentic sources of diplomas (LED//DADI) managed by ARES and AHOVOKS
 - Higher Education Institutions
- ▶ Potential role of the regional integrators (Magda//BCED) ?
- ▶ Support from all levels
 - Citizen
 - HE institutions
 - Administrations
 - Ministers

Management API and access to a wallet : non trivial questions



Communication with the citizen

- ▶ Necessity to implement a communication strategy to inform the citizen about the service
 - Collaboration with the HE institutions is necessary
 - Who is doing what ?
 - What media ?
 - What resources ?
- ▶ What link with the personal numerical spaces developed by the administrations (regions, communities, federal level)
 - Where to give access to the keys ?
 - Who is in charge ?
 - Same strategy in the two Communities ?
- ▶ What add-value for the citizen ?
 - How to question the needs ?
 - How to answer to the needs in the diploma use-case

Lack of buy-in

- ▶ Too many different European initiatives on higher education and block chains
 - Feeling of redundancy and confusion
 - Loss of time
 - Too theoretical
- ▶ Too far from the pragmatic questions
 - Time
 - Human resources
 - Funding
 - Planification
 - Perimeter (voluntary basis, all member states, ...)

Still open questions

- ▶ The citizen is at the centre of the management to give access to his/her information → cultural change → pedagogical issues
 - Simplification
 - Basic numerical competences
- ▶ He/she will be in charge to keep the keys
 - no helpdesk ?
 - what will be the real use by the citizen ?
- ▶ Development and management of the API system at the European Level?
- ▶ What are the responsibilities of the different stakeholders ?
 - Communication about available wallets ?
 - Where are the limits of responsibilities of administrations ?
 - How to create an effective communication with alumnis ?
 - Where are the scope of responsibilities of EBSI for technical aspects ?
- ▶ What budget and human resources ?
 - National
 - National + European

What is needed for next steps ?

▀ At the European level

- To clarify the perimeter
- To communicate on the obligations and rights of the member states
- To study the potential availability of resources

▀ At the Communities level

- To politically push the project
- To dedicate specific human resources

▀ At the HE institutions level

- To reinforce the link with alumnis

Planning

▸ By the end 2022:

→ EBSI4BE/Belblock <https://ebsi4be.eu/>:

× Help us answering the questions about technical and user based needs

× Capacity building and awareness raising

→ Communicate and have political support

→ Clear go on the project

Thank you for your attention!

Questions?

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