SSI eIDAS bridge

ISA² Innovative Public Services Action

What is Self-Soverein Identity (SSI)?

SSI is an emerging concept where citizens can regain ownership on their identity data. It's user-centric and enhances privacy, as enables sharing identity data with just those who need to validate it, without relying on any central authority.

SSI is based on the use of Decentralised Identifiers (DIDs) and Verifiable Credentials (VC), in combination with blockchain/distributed ledger technologies.

What are Decentralised Identifiers (DIDs)?

DIDs are a new type of identifier for decentralised identity, created and managed by its owner. They are globally unique, and can be looked up to retrieve at any time the associated DID Document, which describes how to interact with the DID owner (mostly cryptographic keys and service endpoints).

DIDs are just identifiers, they don't provide any kind of information about the DID owner. This is what Verifiable Credentials do.

What are Verifiable Credentials (VCs)?

VCs contain claims about a DID owner made by an issuer. They are cryptographically protected, and include the owner and issuer DIDs. This makes possible to verify, not only the credential's integrity and authenticity from an issuer's perspective, but also the holder to proof ownership of a credential.

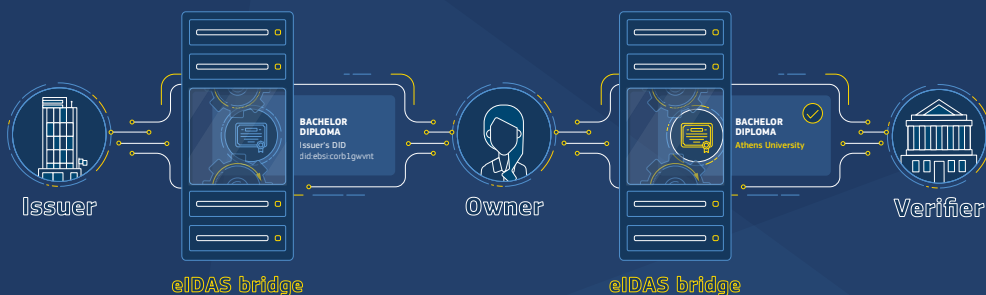## How blockchain/distributed ledgers make SSI possible?

Blockchains have the ability to create a tamper-proof and distributed sequence of events. This allows any DID owner to update and keep track of the changes in the DID document, as well as a VC issuer to revoke the validity of verifiable credentials, without the need of any central authority.

The eIDAS regulation: a trust framework for SSI

DID owners can proof claims about themselves, but how trustworthy are VCs for a verifier, if the only thing known about the issuer is a DID? eIDAS is the EU regulation on electronic identification and trust services for electronic transactions in the European Single Market, and ensures legal validity of electronic documents and cross border trust services, such as electronic signatures and seals, which is exactly what can make VCs trustworthy.

The SSI eIDAS bridge

The European Commission developed the SSI eIDAS bridge, an ISA² funded initiative, to promote eIDAS as a trust framework for the SSI ecosystem. It assists a VC issuer in the signing process, and helps the verifier to automate the identification of the of the organization behind the issuer's DID. Simply by "crossing" the eIDAS Bridge, a Verifiable Credential can be proven trustworthy in the EU.

Issuer   Owner   Verifier

eIDAS bridge   eIDAS bridge

BACHELOR DIPLOMA
Issuer's DID
did:ebsi:corb1gwvnt

BACHELOR DIPLOMA
Athens University

The ISA² programme

The eIDAS bridge is an Innovative Public Services action funded by the ISA² programme. Visit the project deliverables following this link!

https://joinup.ec.europa.eu/collection/ssi-eidas-bridge

EBSI & the CEF Digital programme

The eIDAS Bridge is now part of the European Self Sovereign Identity Framework (ESSIF), one of the European Blockchain Services Infrastructure (EBSI) foundational use cases. Visit the the EBSI page to discover more!

https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/EBSI