

Introducing Self-Sovereign Identity and Identity as Collateral in Decentralised Finance

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How can a Self-Sovereign Identity enable uncollateralised loans in decentralised lending protocols?

1. Background

Self-sovereign identity (SSI)

- A **persistent user-controlled identity** allowing **minimisation** and **transparency**.
- Credentials are **securely** stored in **claims** and validated through **attestations**.

Decentralised Finance (DeFi)

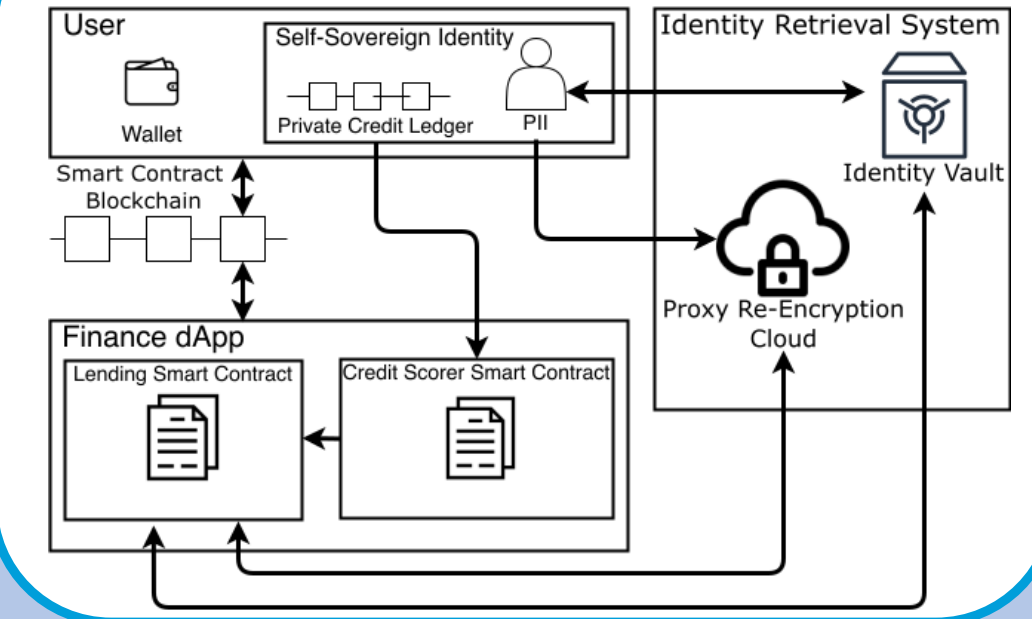
- Blockchain based financial system.
 - Smart contracts process **trustless** transactions between two agents.
- Uncollateralised lending requires **trust** between parties.
- Current unsecured lending has off-chain internal **risk assessment** and stores **identifiable information** akin to traditional finance.

2. Requirements

Uncollateralized decentralised lending **needs** two pillars:

Risk assessment for loan approval	Transparent	Tamperproof	Persistent	Minimised
Identifiable information in case of default	Secure	Controlled	Trusted	Minimised

3. System architecture



4. Conclusion & future work

- The private credit ledger is **transparent** and **tamperproof**. Through the SSI system this ledger is coupled to a **persistent** identity and can be shared in a **minimised** way.
- The identity retrieval system is cryptographically **secured** with embedded **access-control**, enabling **minimisation**. The identity collateral is **trusted** through attestations.

Future work requires implementation of a proof of concept using this architecture.