PRIViLEDGE addresses four concrete applications of cryptographic schemes and protocols for privacy and security, on blockchains and distributed ledgers.

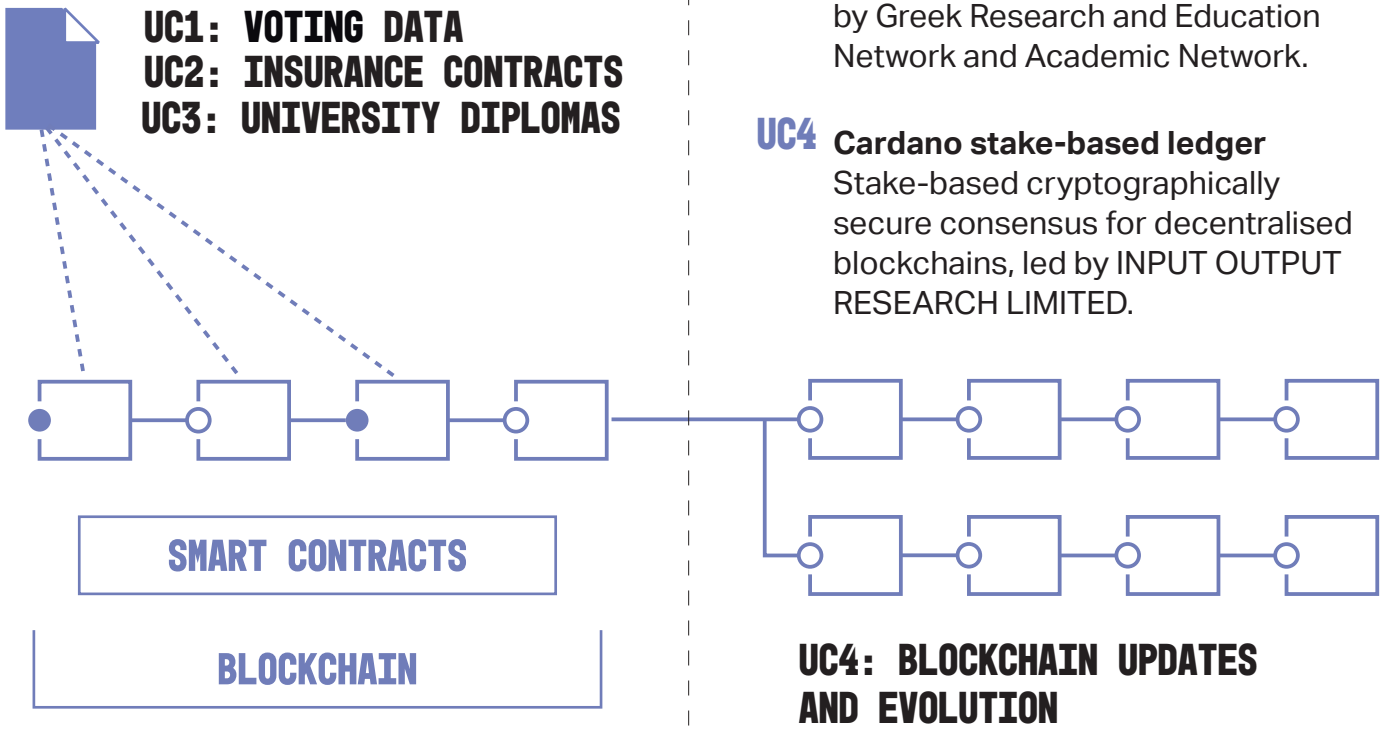
The selected use cases are diverse and represent the principal application domains of DLT. This ensures wide reach and impact of the techniques developed in PRIViLEDGE beyond the immediate scope of the project.

UC1 **Verifiable online voting with ledgers**
Verifiable online voting with a secret ballot in Estonia, led by Smartmatic-Cybernetica Centre of Excellence for Internet Voting OÜ.

UC2 **Distributed ledger for insurance**
Private transactions for DLT solutions in the insurance industry, led by Guardtime.

UC3 **University diploma record ledger**
Authenticated blockchain record for Greek university diplomas, developed by Greek Research and Education Network and Academic Network.

UC4 **Cardano stake-based ledger**
Stake-based cryptographically secure consensus for decentralised blockchains, led by INPUT OUTPUT RESEARCH LIMITED.



Use cases 1-3 use the immutability of DLT for storing data. Use case 4 enhances DLT with mechanisms for consistent updates.

PRIVILEDGE

PRIVACY ENHANCING CRYPTOGRAPHY IN DISTRIBUTED LEDGERS

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement NO 780477.

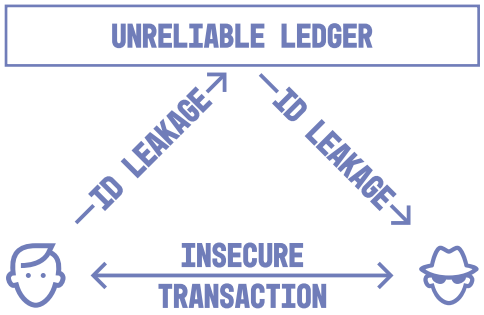
Why PRIViLEDGE?

The currently deployed DLTs do not address privacy. Indeed, the very idea of a public ledger that stores a verifiable record of transactions at first appears inherently incompatible with the privacy requirements of many potential applications, which use sensitive data such as trade secrets and personal information.

What does PRIViLEDGE do?

PRIViLEDGE develops and realises cryptographic protocols supporting privacy, anonymity, and efficient decentralised consensus for DLTs.

BEFORE PRIVILEDGE



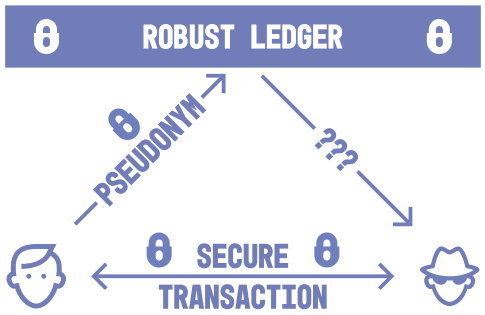
How does PRIViLEDGE achieve this?

6 toolkits and 4 use cases

- Anonymous authentication for Hyperledger Fabric
- Flexible consensus for Hyperledger Fabric
- Post-quantum secure protocols for ledgers
- Zero-knowledge proofs for ledgers
- Ledger-oriented secure two/multi-party computation protocols
- Privacy-preserving data storage for ledgers

More on the use cases on the other side.

AFTER PRIVILEDGE



PRIViLEDGE enhances DLT by improving user anonymity, ledger robustness, and data privacy for the transactions stored on the ledger.

PROJECT CONSORTIUM

Guardtime AS
Estonia, Mirjam Kert

IBM Research GMBH
Switzerland, Björn Tackmann

The University of Edinburgh
United Kingdom, Aggelos Kiayias

Eindhoven University of Technology
The Netherlands, Berry Schoenmakers

University of Salerno
Italy, Ivan Visconti

Smartmatic-Cybernetica Centre of Excellence for Internet Voting OÜ
Estonia, Sven Heiberg

Greek Research and Education Network
Greece, Panos Louridas

Academic Network
Greece, Nikos Voutsinas

INPUT OUTPUT RESEARCH LIMITED
Cyprus, Mirjam Wester

CONTACTS

Project Coordinator
Mirjam Kert, Mirjam.Kert@guardtime.com

Webpage: www.priviledge-project.eu
Follow us on Twitter: @PRIViLEDGE_EU