

Decentralized approaches to the management of transport data

With the Support of:



Under the Auspices of:



HELLENIC REPUBLIC
Ministry of Digital Governance



HELLENIC INSTITUTE FOR LOGISTICS MANAGEMENT



Decentralization

- *"Decentralization is the process of dispersing functions and power away from a central location or authority. In a decentralized architecture, it is difficult if not impossible to discern a particular center"*
Mally Anderson

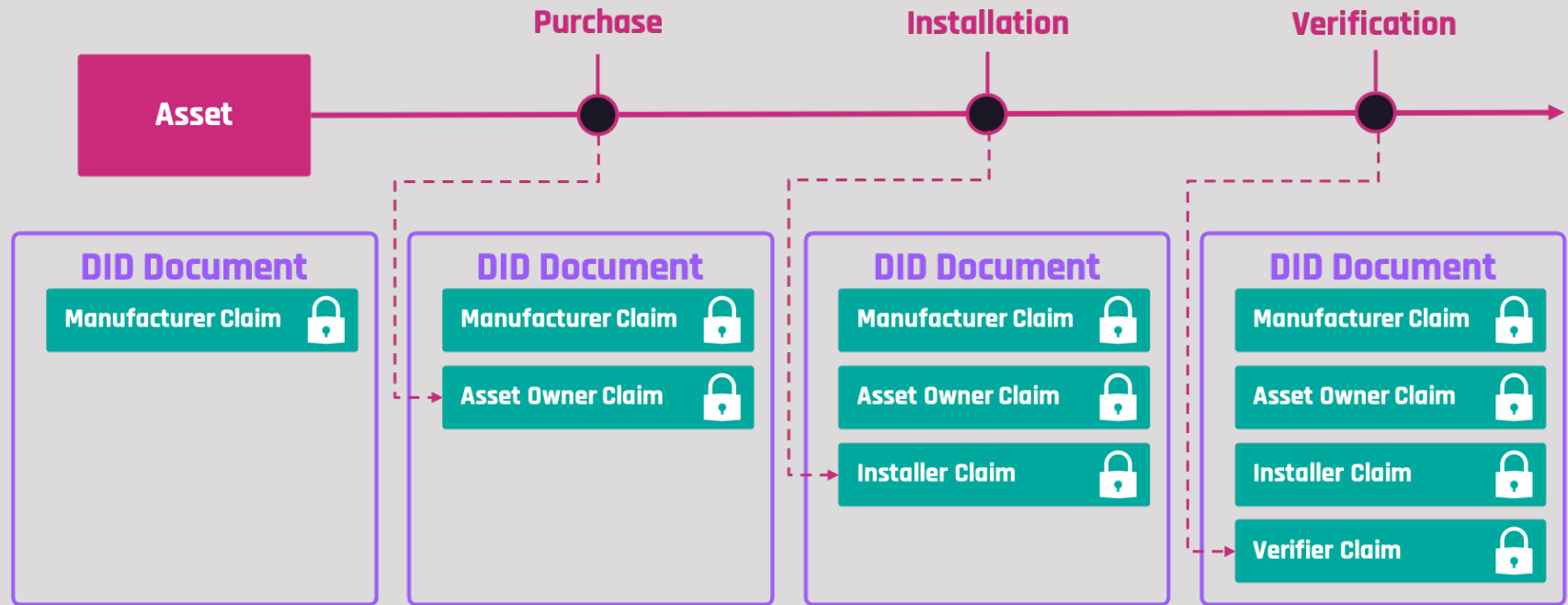
Blockchain Technology

- A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger. The decentralised database managed by multiple participants is known as Distributed Ledger Technology (DLT).
- **Properties of Blockchains**
 - Decentralized
 - Immutable
 - Consensus Mechanism

Decentralized Identifiers

- **Decentralized identifiers (DIDs)** enable verifiable, decentralized digital identity.
- A DID identifies any subject (e.g., a person, organization, thing, data model, abstract entity, etc.) that the controller of the DID decides that it identifies.
- In contrast to typical, federated identifiers, DIDs have been designed so that they may be **decoupled from centralized registries, identity providers, and certificate authorities.**
- The design enables the controller of a DID to **prove control** over it without requiring permission from any other party.
- DIDs are URIs that associate a DID subject with a **DID document** allowing trustable interactions associated with that subject.

Decentralized Identifiers



Decentralized Identifiers

DID Document

Manufacturer Claim



Asset Owner Claim



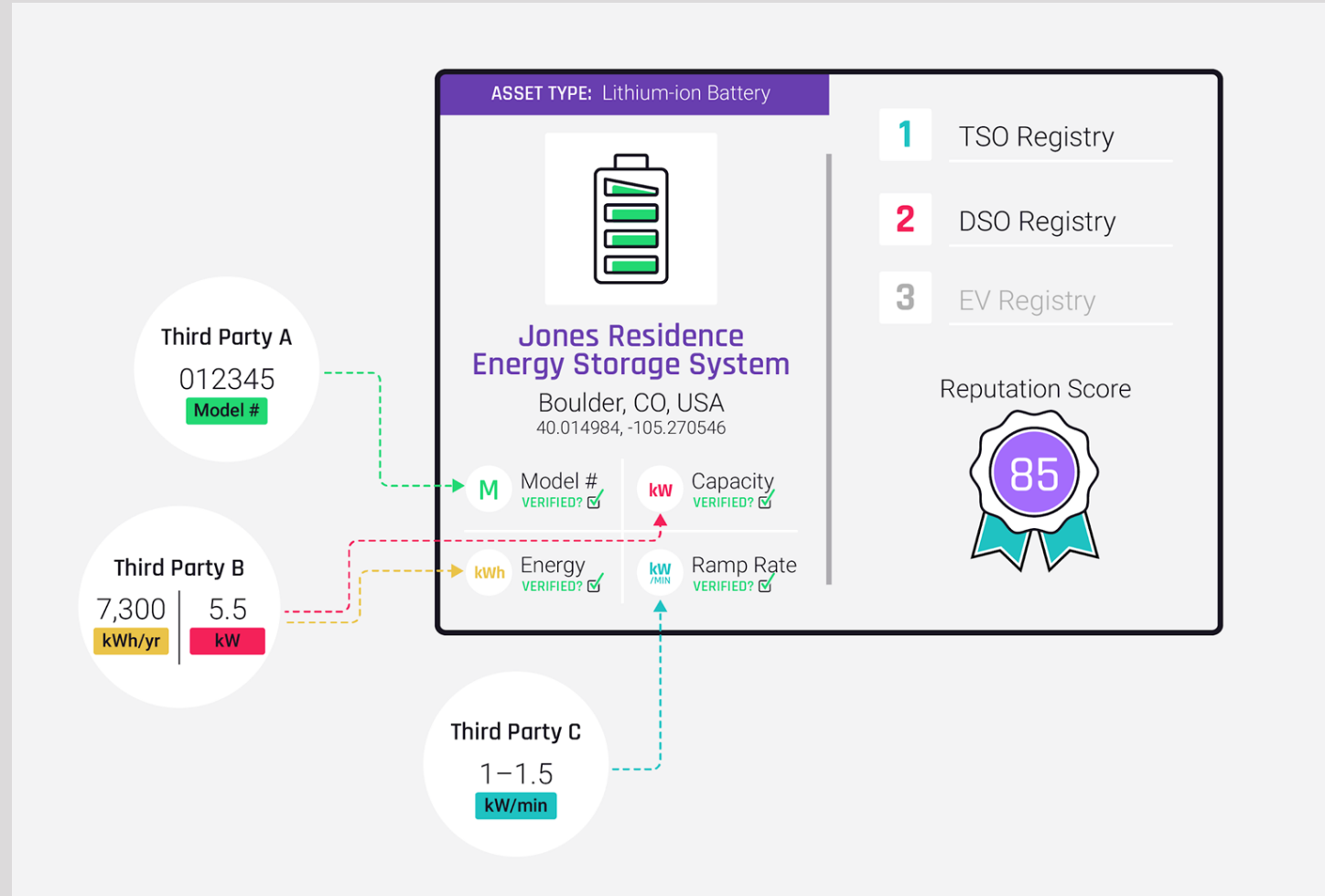
Installer Claim



Verifier Claim



DIDs and Digital Passports



Decentralized Identifiers

- **Increase visibility** of customer-sited assets — dynamically
- **Scale** to large numbers of customers and assets
- **Mitigate risks** of data breach or other data privacy problems
- **Avoid single points of failure**
- Allow management to **focus** on one standard platform
- Employ open standards / protocols to **prevent data silos**
- **Avoid replication** in data records or processes
- **Avoid potential negative perceptions** of one organization owning personal data

DIDs and Data Management

- DIDs offer a trusted and secure manner of managing transport data
- Indicative Use Cases
 - Trusted transport data exchange between parties
 - Data marketplaces
 - EV as flexibility assets for TSO and DSO markets
 - Elia and 50Hz
 - Energy asset registries
 - dena (German Energy Agency)

GDPR and the Blockchain

- **Art. 17 GDPR Right to erasure ("right to be forgotten")**
"The data subject shall have the right to obtain from the controller the erasure of personal data concerning him or her without undue delay and the controller shall have the obligation to erase personal data without undue delay"
- Efficient use of **verifiable claims** together with a combination of **on-chain and off-chain storage** allow blockchain-based solutions to be **GDPR-compliant**



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"Intelligent Transport Systems in Greece: Latest developments"

Thank you!

Any questions?



energy web

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