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Considered DLT model for depository data storing at a CSD

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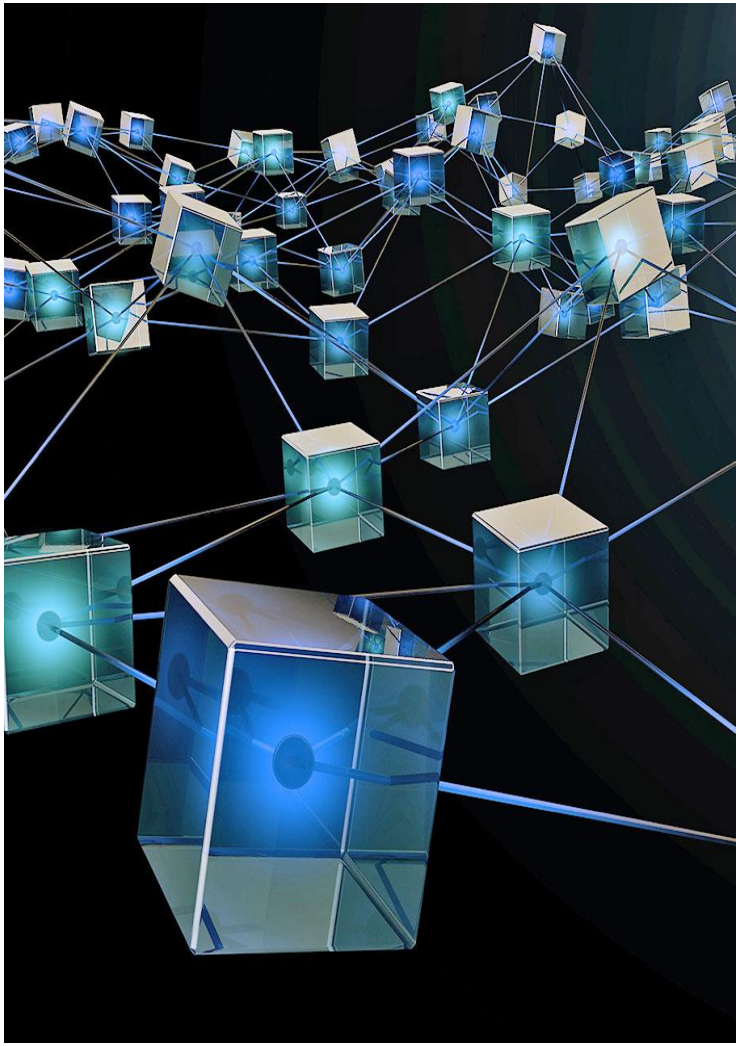
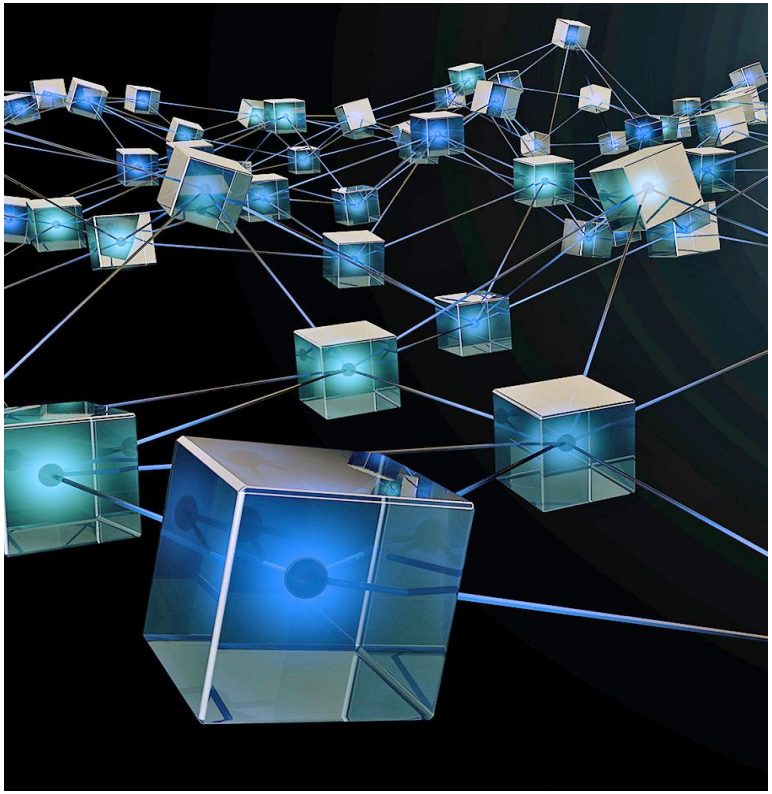
1. DLT Overview



- Distributed ledger technology (DLT) is a digital system for recording the transaction of data in which the transactions & their details are recorded and stored in multiple places at the same time.
- Unlike conventional databases, DLT has **no** central data store or administration functionality.
- In DLT, each node processes and verifies every item, thereby generating a record of each item and creating a consensus on its veracity.

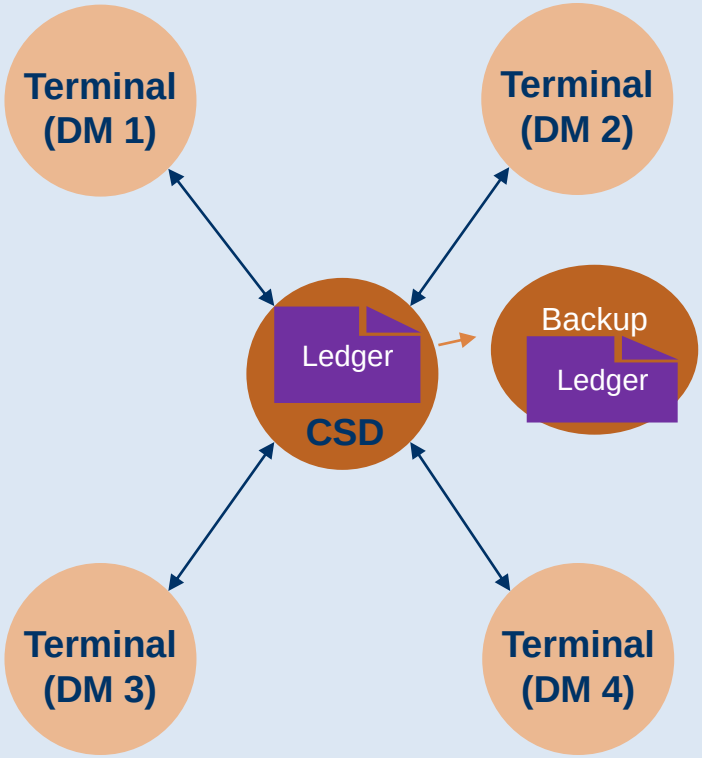
Key benefits of DLT



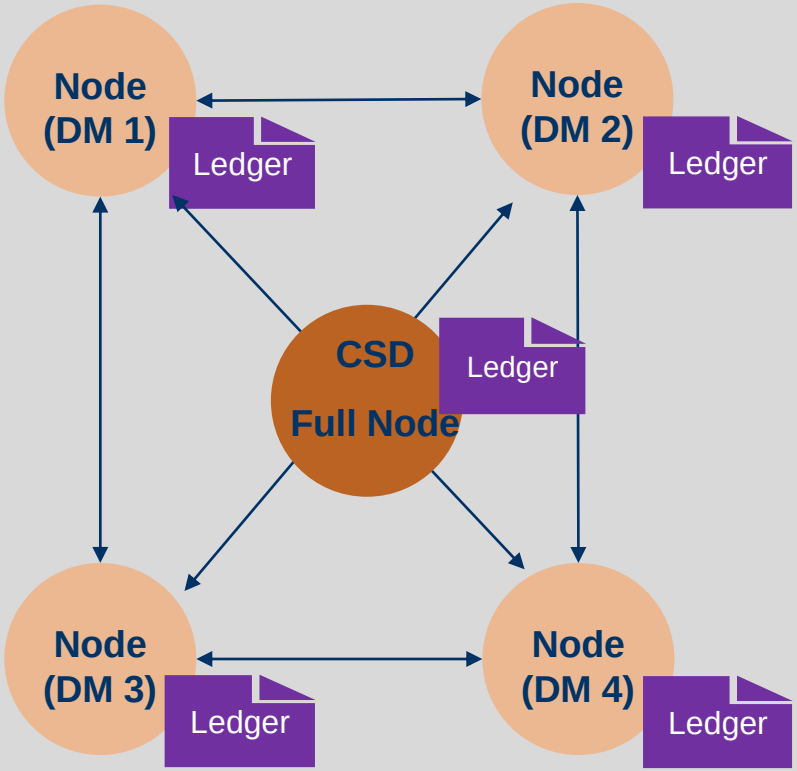
- Immutable records. Data is absolutely safe
- Simultaneously and very fast transaction speed

2. Conventional vs. distributed ledger storing

Conventional ledger (centralized)



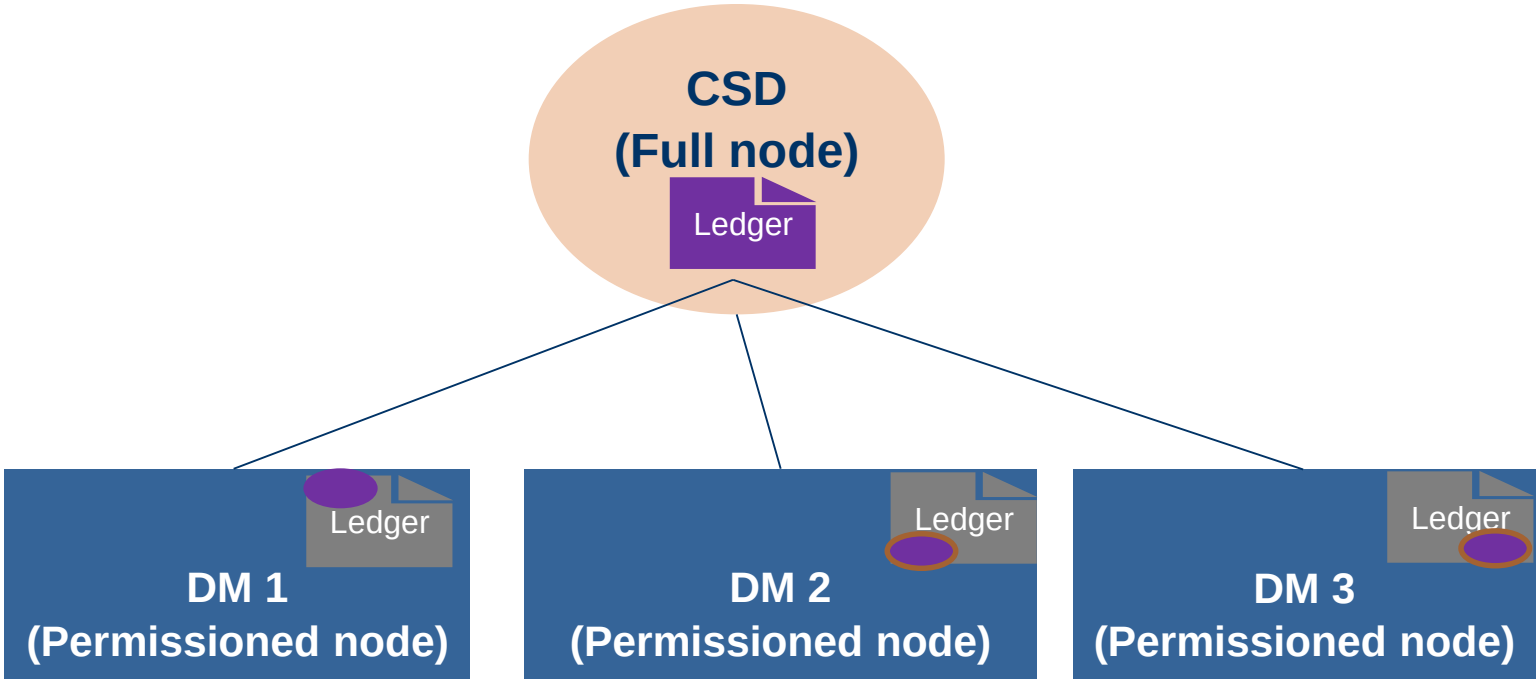
Distributed ledger (decentralized)



DM: Depository member/participant

3. Considered DLT model for depository data storing at a CSD

Model 1: fully decentralized dada storing



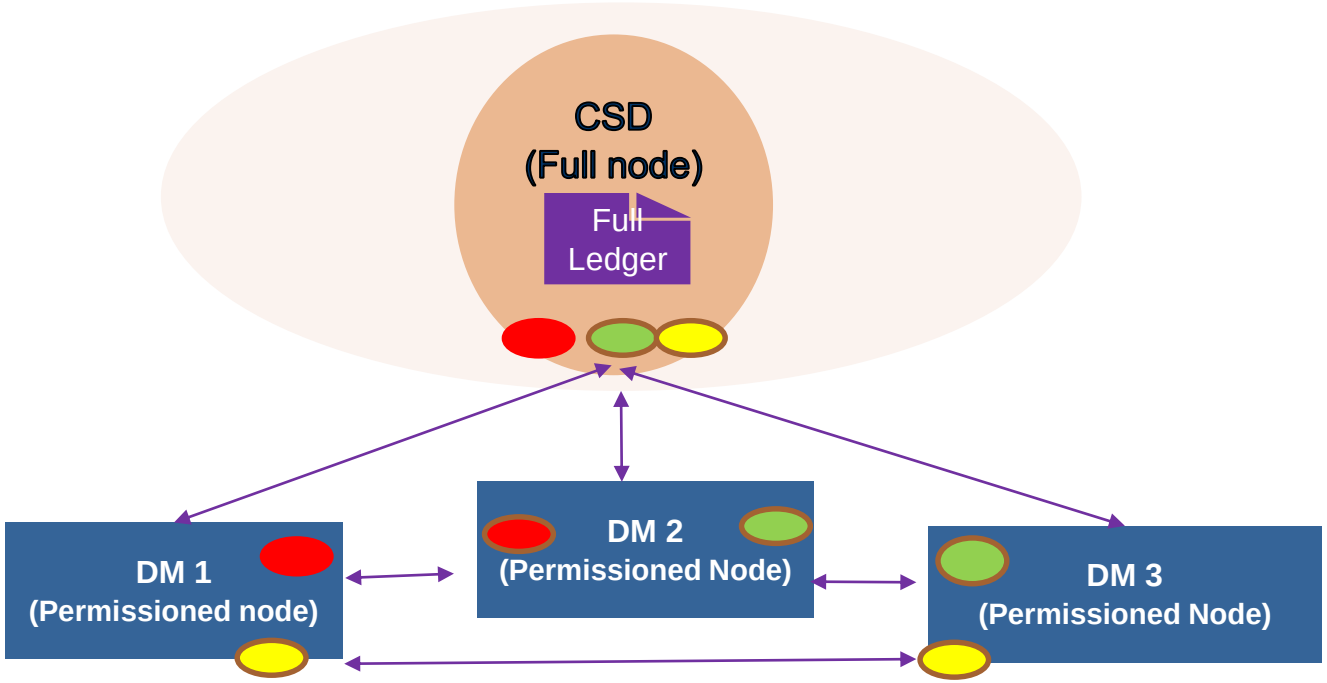
- Full node will record and can access all depository data of the market (the full ledger).
- Permissioned node will store all depository data, but can **only** access certain data, which are related to its transactions and permissioned by the CSD.

Note:
- Purple zone: accessible
- Gray zone: not accessible

"Alike to Hyperledger Fabric model"

3. Considered DLT model for depository data storing at a CSD

Model 2: limited decentralized data storing



- A Buy/Sell transaction will be verified and recorded, stored in 2 related DMs and the CSD computer **(only 3 nodes).**
- **Only** CSD as full node will record, store all transactions of the market (full ledger).
- A DM will **only** store its own ledger, which **only** records its related transactions.

"R3 Corda alike model"

Pros and Cons between 2 models

Model 1: fully decentralized data storing

Pros:

- Data is 100% immutable, absolutely safe

Cons:

- Concern about unauthorized data access or access key hacking (depository data of other member is also stored in every node)
- Difficult to convince regulators that data privacy is being protected

Model 2: limited decentralized data storing

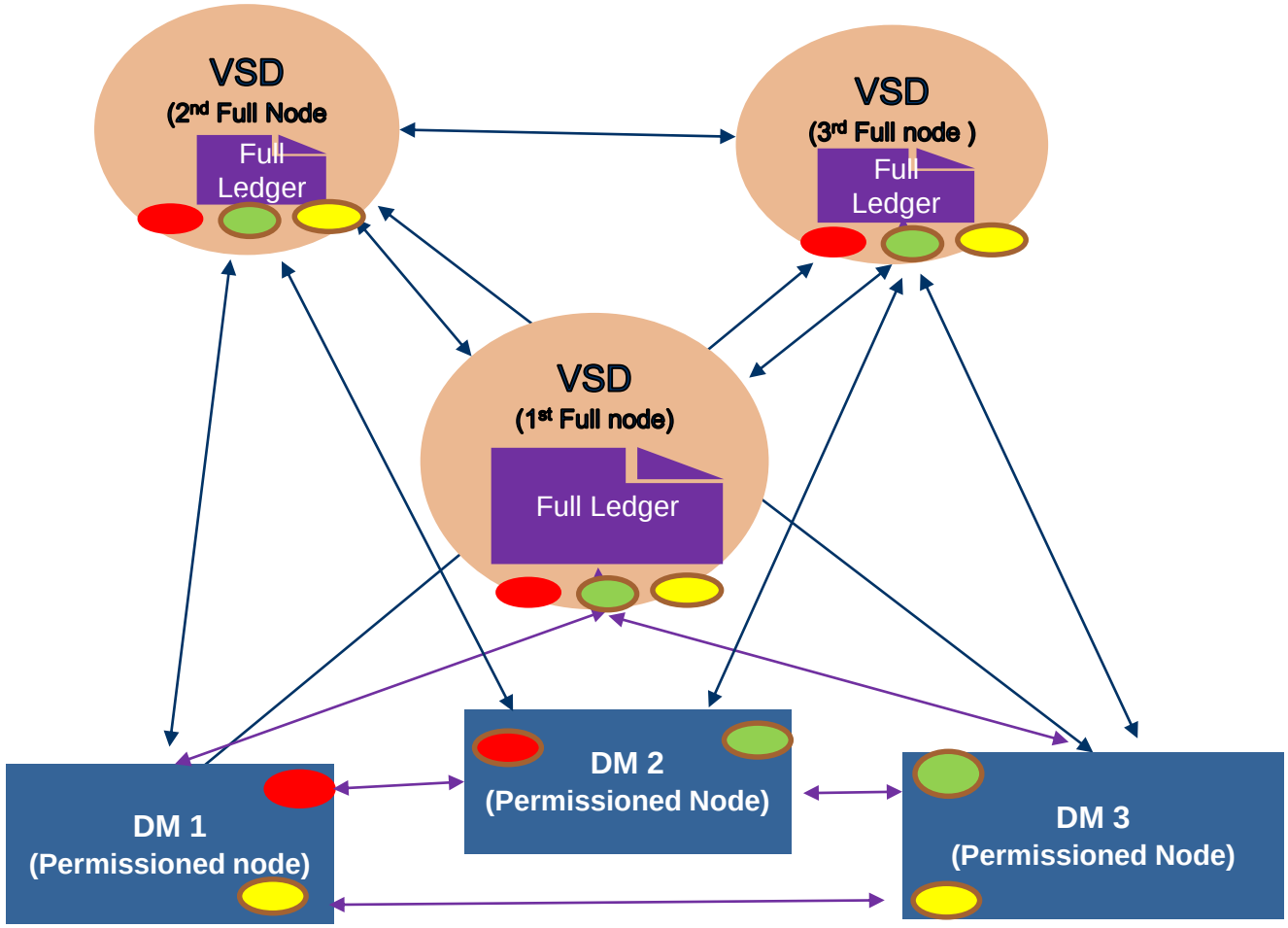
Pros:

- Data privacy is protected. Full ledger is stored in CSD computer only. A DM stores only its related transaction data.
- High processing performance.
- No need to convince regulators on data privacy.

Cons:

- Theoretically, data is not fully immutable (01 transaction is recorded only in 3 nodes).
- Threat of losing data (only 01 full node).

VSD's considered DLT model for data storing



Comment and Q&A

We need your comments and questions

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