CESS

Cumulus Encrypted Storage System

CESS Course Week 1 - Episode 2

CESS Introduction

Blockchain Architecture &

Key Technologies

CESS Official Website

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CESS Blockchain Architecture

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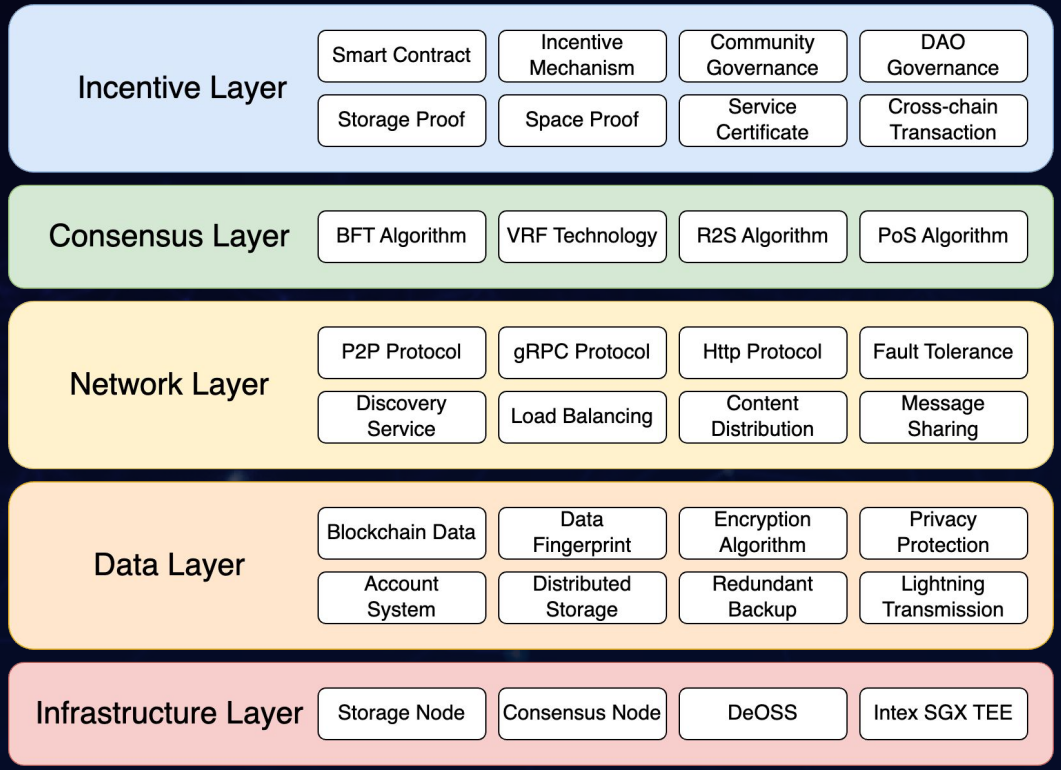

Industry Challenge - Data Vulnerability

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- Unexpected Node Failure
- Storage Miners Quit
- Hack Attempts

CESS Solution - PoDR²

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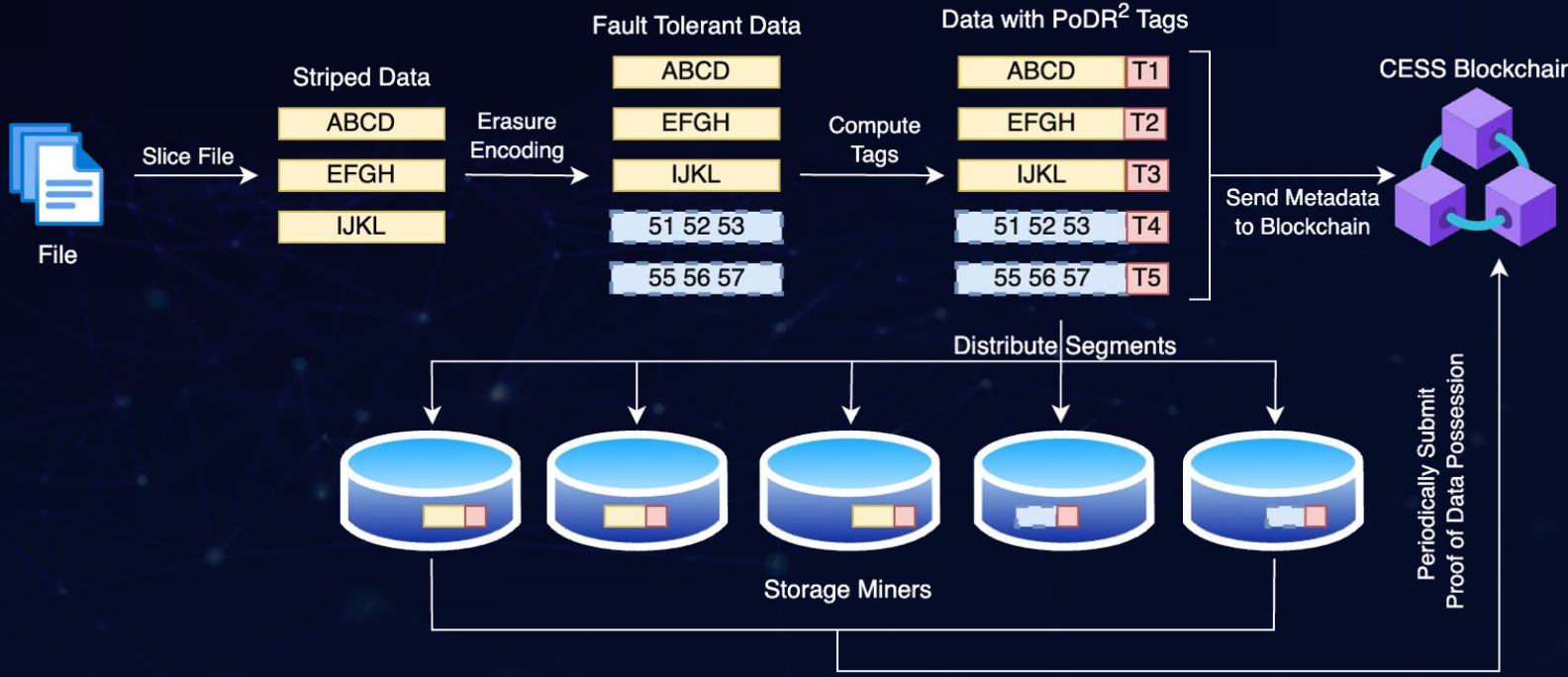
Proof of Data Reduplication & Recovery



Industry Challenge - Ownership Rights

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- No way to determine creator of the data
- Cyber Piracy
- Negative impact on Content Creators

CESS Solution - MDRC

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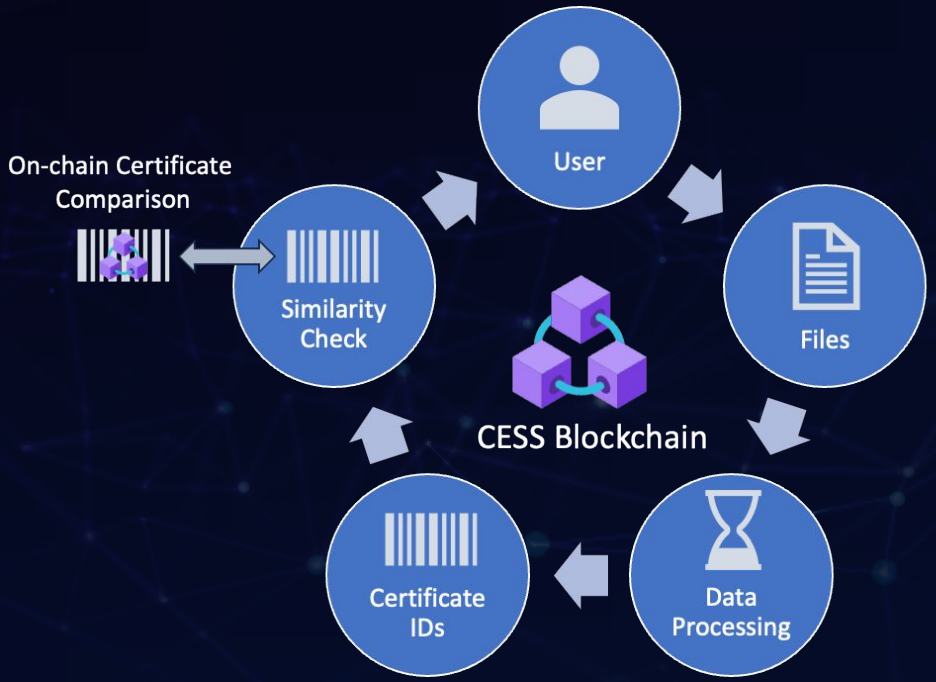

- Multiformat data fingerprint extraction
- Data fingerprints stored on the blockchain through smart contracts
- SimHash data similarity check algorithm
- Data rights confirmation and data blood relationship map

Industry Challenge - Poor Economics Model

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- Low Transaction Per Second
- High Transaction Fees
- Lack of Average Miner Incentives

CESS Solution

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Random Rotational Selection (R^2S) Consensus Mechanism

Open Participation

All nodes have equal opportunities to become candidate consensus nodes

Energy Efficient

Low computational requirements for consensus nodes

On-duty Nodes

Selection of 11 nodes as on-duty consensus nodes every two weeks - VRF

Credit Rating

Nodes with poor performance are replaced and credit ratings gets lower

Trusted Execution Environment (TEE)

Credible process. Generates file tags, space holder files, and $PoDR^2$ Proof Verification.

Industry Challenge - No Private Data Sharing

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- Lack of Support for Private Data
- No Encryption Mechanism
- Data Leaks

CESS Solution

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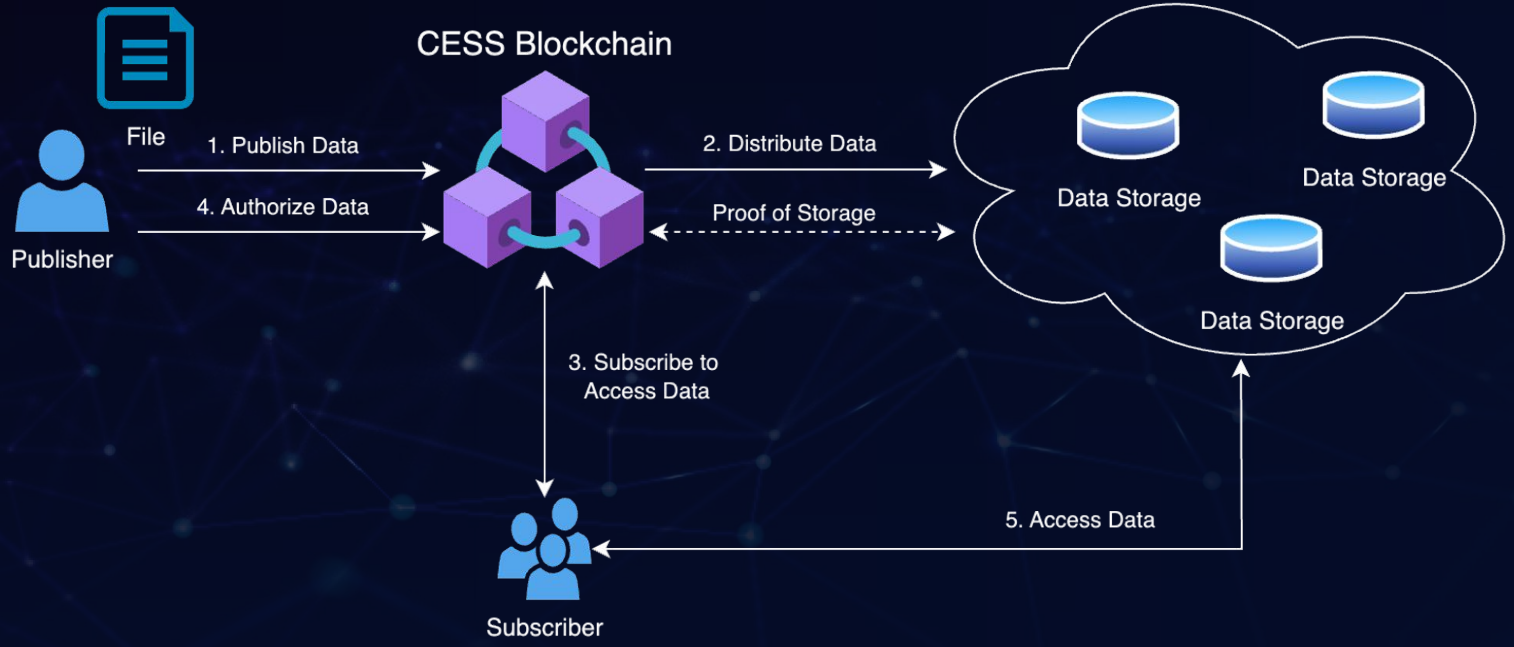
Proxy Re-encryption



Industry Challenge

Inefficient use of Storage Space

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- No Cloud Pooling Functionality
- Wastage of Resources

Smart Space Management System

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Aggregates Storage Space

Flexibly Allocates Storage Nodes

Like Cloud Storage

Horizontally Scalable

CESS Users Roles

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- **Community Members:** Participate in CESS events, enegage with community members, holds CESS tokens, DAO proposal voting and project governance.
- **Users:** Uses dApps, stores files on DeOSS.
- **Developers:** Uses CESS SDKs and APIs to build dApps.
- **Storage Miners:** Users run storage nodes to provide storage space.
- **Consensus Miners:** Users run CESS blockchain nodes to secure the network and blockchain consensus process.

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End