

# Enhancing EO Data with Distributed Ledger Technology

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- Background
- Our Original EO Blockchain Concept
- What We Learned
- Applying Those Learnings
- Future Opportunities We See
- How To Get Us There



ConsenSys is a **global blockchain technology company** building the infrastructure, applications, and practices that enable a **decentralized world**.

Founded in **2014**, ConsenSys has become a **pioneer in the blockchain ecosystem**.

- In partnership with Radiant.Earth, we built an application that:
  - Hashed the ownership and licensed status of commercial images
  - Made a user's NGO status widely referenceable by distributing it across all nodes
  - Recorded all EO data access requests on a shared Ethereum ledger
  - Minted a native token to incentivize end-user behavior

- Trust needs to scale across the industry
- Secure digital identities need to function across platforms
- The importance of mitigating GIGO potential
- Downstream value attribution is tricky
- Need higher TPS
- Utilize what tools already exist

# How Can We Apply These Learnings?



# INDUSTRY STANDARDS!

- **Identity related**

- End users
- Sensor IDs
- Asset metadata identifiers
- Insight deriving algorithms and processes
- Ground-segments

- **Encryption related**

- Up-link
- Down-link



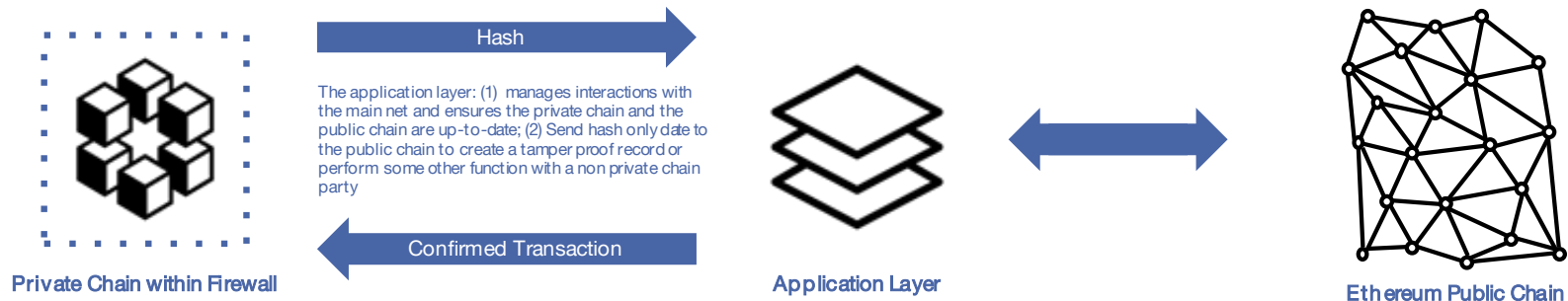
- Submitted two proposals to OGC Test-Bed 15
  - **“Quality of Service” Standard**
    - Web Processing Service endpoint for Geohazards Exploitation Platform
    - Co-authored with Terradue
  - **EO data provenance metadata standard**
    - Tested on Consensys product Treum

# SCALING SOLUTIONS!

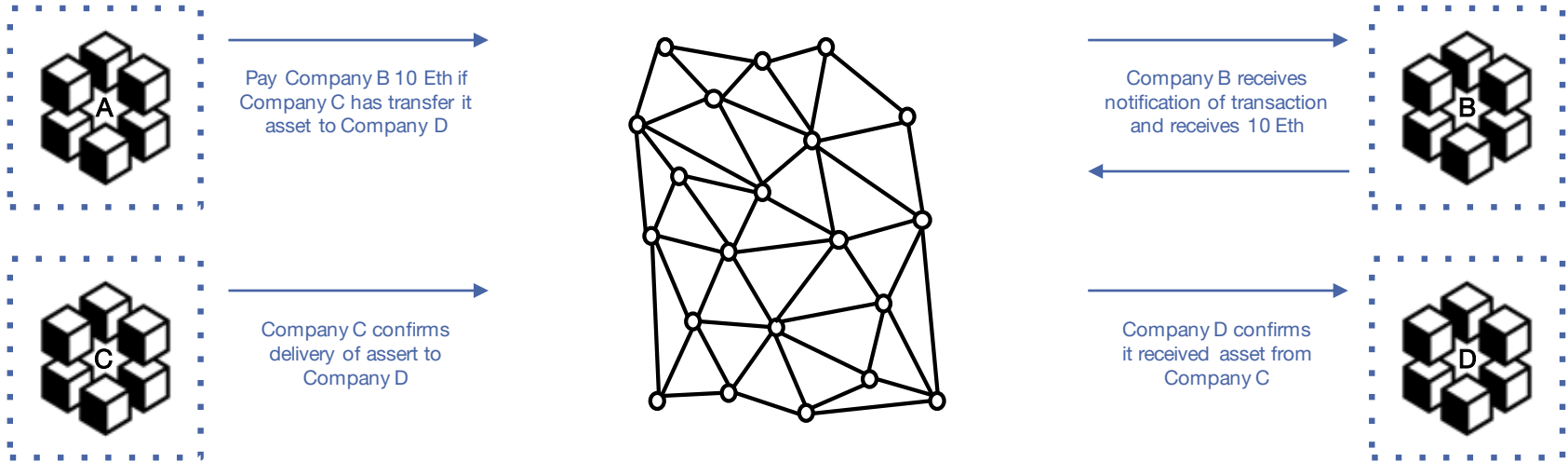
# Private chains secured by public chains

With Ethereum, you can create a system of two or more chains, where one chain is public permissionless and the others are private or public permissioned and are **anchored** on the public permissionless chain.

**Kaleido**, a platform for creating enterprise blockchains, has created a repeatable framework for automatically writing periodic snapshots of private chains to the Ethereum public chain.



# Hybrid Chains: Multiple private chains can interact via the public chain



Using the hybrid model, multiple private chains can interact and trade with each other while controlling their own data.

# START BUILDING!

# Tools and Products



Public Network

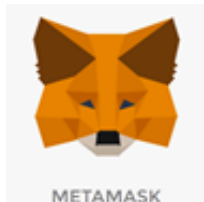
Enables enterprises to easily build and scale applications without the need to set up their own nodes or wallets.

**12 billion daily code requests**



Developer tools to facilitate the creation and testing of enterprise blockchains.

**>500,000 downloads**



Browser extension enabling enterprises to interact with blockchain and decentralised applications.

**1.3 million downloads**



**Hyperledger Besu**

**KALEIDO**

## Protocol Engineering

The largest protocol engineering team in the Ethereum ecosystem with more than 50 developers.

**Partnerships: Microsoft, Truffle, Infura & Kaleido**

Open source Ethereum client in Java. Designed for enterprise and mainnet applications

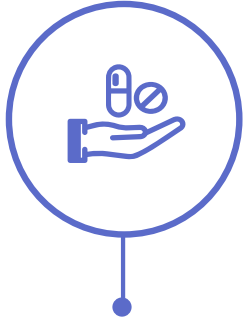
**Protocol implementation on public and private high-speed networks**

SaaS full stack platform that develops, operates, scales and governs enterprise level private blockchains at scale, at a fraction of the cost.

**Partnership with Amazon**



### Pharma



Counterfeit drugs

Tracking of data for clinical trials

Compliance reporting concerns

Administrative records

### Education



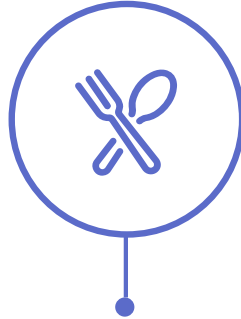
Certification fraud

Diploma validation lag time

Grade & Credits mgt

Administrative records

### Food



Food recalls

Food illnesses

Inventory management

Administrative records

### Autos



Car valuation

Auto parts tracking

Working capital mgt

Recalls

### Earth Observation



EO Image Metadata

EO Hard Asset tracking

Access Management

Multi-Platform Integration

**A tamper proof asset tracking system for all participants to instantly trust and reliably validate asset ownership, chain of custody, proof of origin did not exist. This is why Treum was created.**

# Future Opportunities We See

# Thank You!

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