

XIC12

BLOCKCHAIN FOR SUPPLY CHAIN AND LOGISTICS FORUM

www.blockchainsupplychain.io

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Energy and the Supply Chain



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Blockchain for Supply Chain

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May 21, 2018



1. ConsenSys Overview

2. Ecosystem

3. Supply Chain

ConsenSys Overview





ConsenSys Vision

ConsenSys is assembling the tools needed to build and scale a world where **distributed applications** and the Ethereum blockchain enable a new class of **frictionless, global commerce**.

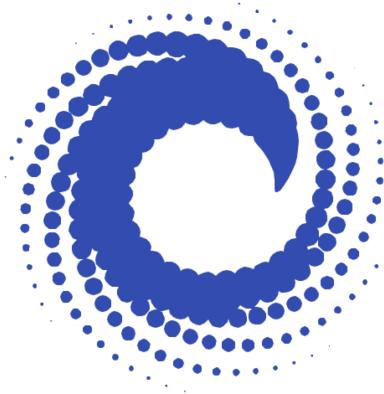
About ConsenSys

Solutions

Consult and deliver production ready blockchain solutions for organizations and governments

Infrastructure

Help grow the ecosystem by building and maintaining core developer tools and clients



Capital

Provides token services, crypto asset management and venture capital

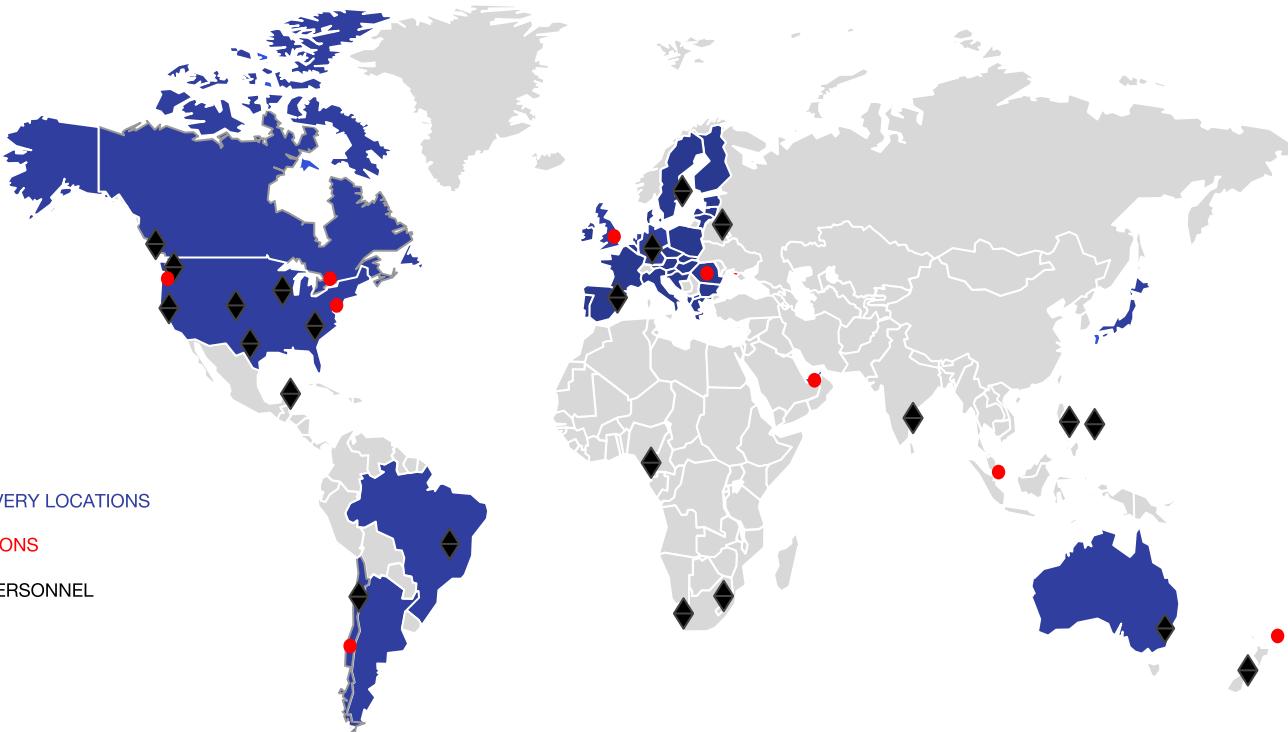
Products

Incubate new companies developing decentralized applications on the Ethereum blockchain

Education

Educate developers and entrepreneurs about Ethereum through training programs

We are 800+ blockchain experts, entrepreneurs, computer scientists, designers, engineers, consultants, and business leaders across 6 continents



Ecosystem Development

Drive development of ecosystem through alliances, partnerships, consortia, etc.



**Enterprise
Ethereum Alliance**



**Blockchain for
Social Impact**



**Decentralized
Identity Foundation**



**Accounting
Blockchain Coalition**

Infrastructure

As a full-stack blockchain company, ConsenSys develops core Ethereum infrastructure and **foundational tools** to foster broader ecosystem growth

Blockchain	Infrastructure	Dev Tools	Core Components
 ethereum PegaSys Kaleido	 INFURA	 TRUFFLE  Nethereum  BTC Relay	 Alethio  Metamask  uport

Applications / Products

ConsenSys incubates 40+ ventures addressing needs of many industry verticals

Financial Services



AIRSWAP



VARIABL

TruSet



OMEGA ONE

BALANCE

Supply Chain



VIANT

Energy & Natural Resources



Government & Education



Fathom



Advertising



CAT



Entertainment



Other



Linnia

Ecosystem



CONSENSYS



Ethereum Ethereum Alliance

EEA: Ethereum for Enterprises



The EEA is a member-led industry organization with the goal of empowering the use of Ethereum blockchain technology as an open standard for the betterment of all industries, focused on needs of enterprises.

500+ Members in 12 Months and Growing



EEA: Standards



- Driving the development and adoption of an open **standard** for the betterment of **all industries**, focused on **needs of enterprises**
- Building **confidence** in the blockchain-based products

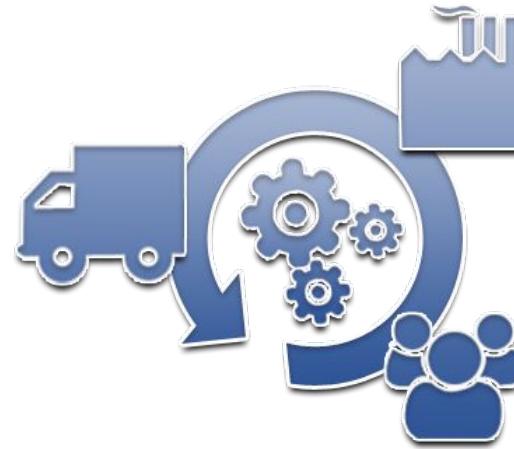


The image shows a snippet of the Enterprise Ethereum Alliance website. At the top left is the EEA logo. To its right is a call-to-action button: "Download the Enterprise Ethereum Client Specification & Stack". Below this text is a subdescription: "The first, open, standards-based specification to accelerate the adoption and deployment of Enterprise Ethereum solutions worldwide." On the right side of the snippet, there are four circular icons with corresponding text labels: "Global Developer Community" (with a people icon), "Interoperability" (with a star badge icon), "Multiple Vendors of Choice" (with a network graph icon), and "Testing & Certification" (with a globe and arrow icon). The background of the snippet is a dark blue color with a subtle network pattern.

EEA: Supply Chain WG



Focus on solving pain points existing
in supply chain with current
blockchain solutions via **ideation**,
creation, and **collaboration** with the
most innovative and forward looking
companies



EEA: Energy Working Group



Round table that brings together leading and most innovative companies in the energy industry to:

1. **Jointly define, design, and develop industry-specific standards** for the wider adoption of Ethereum blockchain.
2. **Build applications/ tools** that would allow the energy industry to become more **efficient, sustainable and profitable**.
3. Develop recommendations for the **regulatory framework** that would allow seamless, wide adoption of Ethereum blockchain technology within Energy industry.

Supply Chain

How often do we get a chance
to **re-design fundamentals?**

Disruption

Marketplace

There is exponential growth in demand for provenance informed products.

E.g. Conflict free Gold, Diamond and Electronics

Buyers

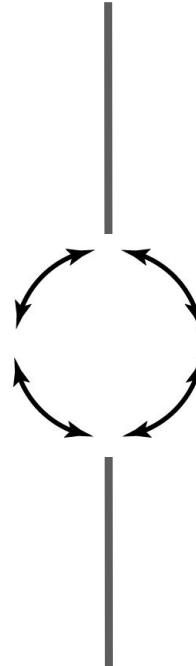
Conscious buyers are seeking more granular information to form their own provenance opinions beyond a mere label of assurance from a central certifying body

Regulators

Reliably, continuously and expediently track, audit and report on provenance of key natural resources

Sellers

Sellers are looking to unlock value, increase trust and command premium for their special product lineage



Why blockchain-based is better

*In traditional supply chains there are many actors with **their own versions** of the **truth** and all have their own **databases** that contain certain information, so the **traceability of the whole process is not existent** now.*



*Viant is a
blockchain-based
platform for modeling
business processes,
tracking assets and
building the supply
chains of the future*



VIANT

Global Impact Across Industries

Healthcare



Certifications



Land Title



Assets

Oil & Gas

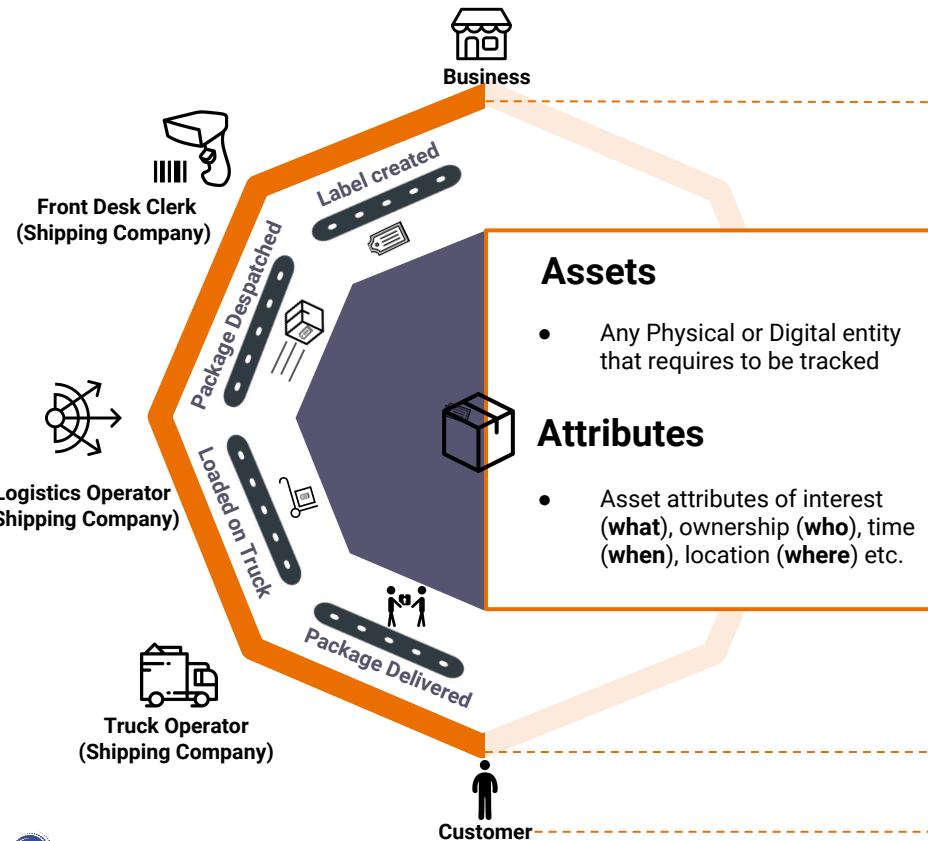


Vehicles



Enterprises can model a variety of assets and business processes to track on the blockchain with our supply chain application

Supply Chain Platform



Business Processes

- Progression of assets through various steps of a business process(es) is recorded on chain for lookbacks and evidence of trail
- Smart contracts enforce the business process(es) on chain curbing rogue actions

Business Actions

- User or machine initiated action that allows assets to progress from one process state to the next
- User actions unrelated to process state required for performing administrative and corrective functions

Actors

- Users that interact with the asset to perform process actions and transform the asset from one state to next
- Users that have ownership or custody of the asset
- Users that participate in audit, review and attestation of the asset to validate history

Role Permissions

- A class of users performing similar actions or functions are grouped into Roles
- Permissions to perform business actions are assigned by roles
- The web interface and smart contracts enforce the permissions preventing rogue users from tampering

Functional Stack

	Modeler	Smart Builder	Tracker
User Persona	Analyst / Consultant / Process SME	System Administrator	Customer / Manufacturer/ Producer
SDLC Phase	Requirements / Design	Deployment	Production
Functionality	<p>Provides a mechanism to define</p> <ul style="list-style-type: none">• Asset attributes• Valid states• Rules for state transitions• Permissions	<p>Provides a mechanism to deploy</p> <ul style="list-style-type: none">• Asset factory contracts• State transition engine• User, Role and Organization contracts	<p>Provides a mechanism to</p> <ul style="list-style-type: none">• Search assets• Create assets• Record state transitions• View asset lineage
Scope	A user interface to generate configuration files	A collection of scripts to generate and deploy smart contracts based on configuration	A user interface to the asset provenance on the blockchain
Storage	Off-chain	Off-chain >> on-chain	On-chain

Production-grade Applications

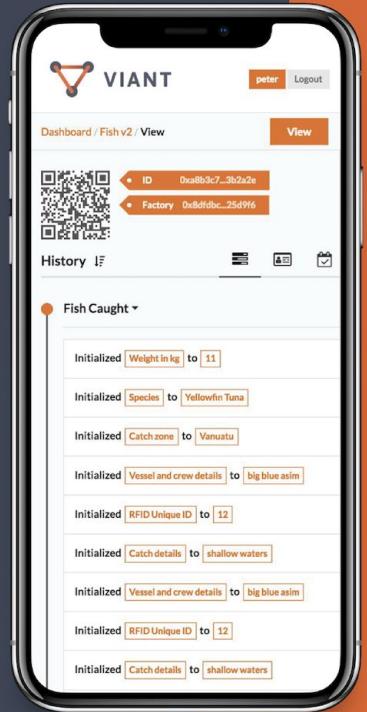
1. Bait to Plate

BETA CASE STUDY



Bait to Plate

Tuna traceability with the World Wide Fund for Nature (WWF)



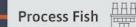
FISHER



REGULATOR



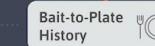
PROCESSOR



DISTRIBUTOR/
RETAILER



CONSUMER



BLOCKCHAIN
PROCESS

CAUGHT



APPROVED



LANDED



RECEIVED



PROCESSED



PACKED



SOLD



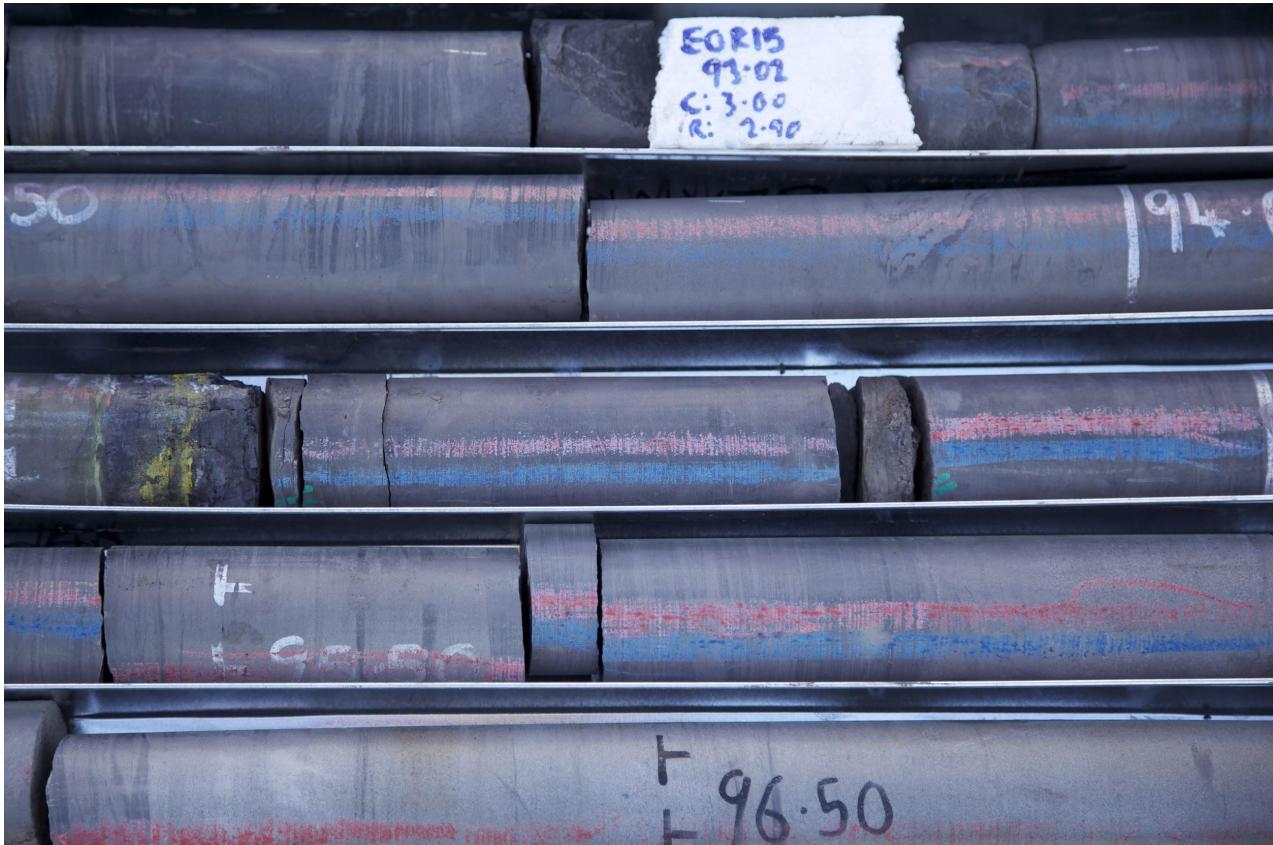
The World Wildlife Fund for Nature participated in the Beta program to translate their Yellowfin tune idea into a solution on Viant.



2. Wellbore Rock Samples Tracking

O&G: Wellbore Rocks Tracking

?



O&G: Wellbore Rocks Tracking

Drilling is expensive.

Extremely high value rock
and fluid samples,
impossible to replace.



O&G: Wellbore Rocks Tracking

- Samples pass through many custodians, almost all of them vendors
- Currently all processes are manual via emails and spreadsheets
- Human error can lead to regulatory fines
- Lack of transparency to the business unit
- Lack of efficiency in finding right data about samples when you need it



O&G: Wellbore Rocks Tracking

- ConsenSys built an Ethereum blockchain-based real-time sample tracking system that captures an auditable history of custodianship and an immutable record of associated analysis requests and reports
- This decentralized system allows the natural resource company, its analysis and storage vendors, and regulatory agencies to share a single source of truth in real-time
- This role based system simplifies data capture and includes additional provenance data about samples for operational ease, improved decision making and timely compliance



Companies use blockchain to document and track valuable data, replacing email and spreadsheet data logs with a **single ledger**, improving **resource tracking**, **delivery tracking** and other supply chain **efficiencies**



Thank you

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