R3 Corda.

Briefing for Hyperledger Technical Steering Committee

Corda. A Unique Approach To Distributed Ledgers.

Corda is a distributed ledger platform designed and built from the ground up to record, manage and synchronise agreements (legal contracts), designed for use by regulated financial institutions.

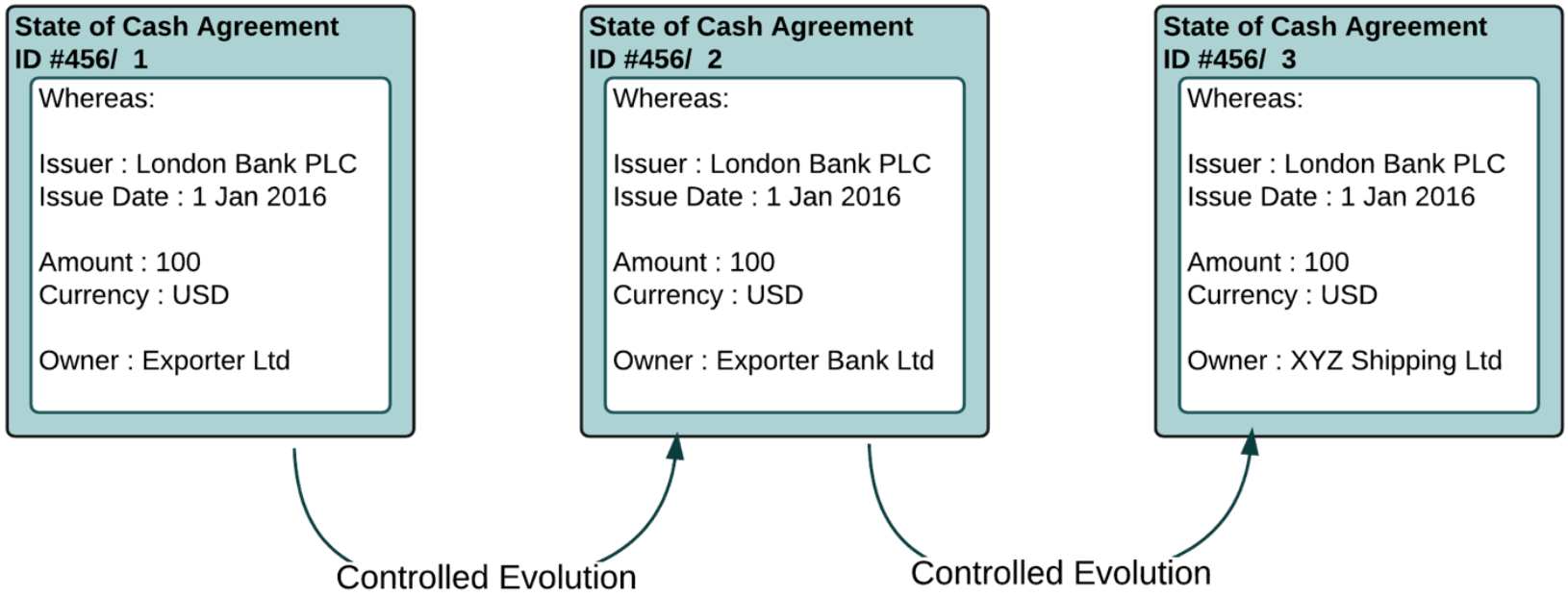
It is heavily inspired by and captures the benefits of blockchain systems, without the design choices that make blockchains inappropriate for many banking scenarios.

The question driving our thinking derives from a simple thought-experiment: what is the defining characteristic of blockchain platforms that is relevant and valuable to financial entities?

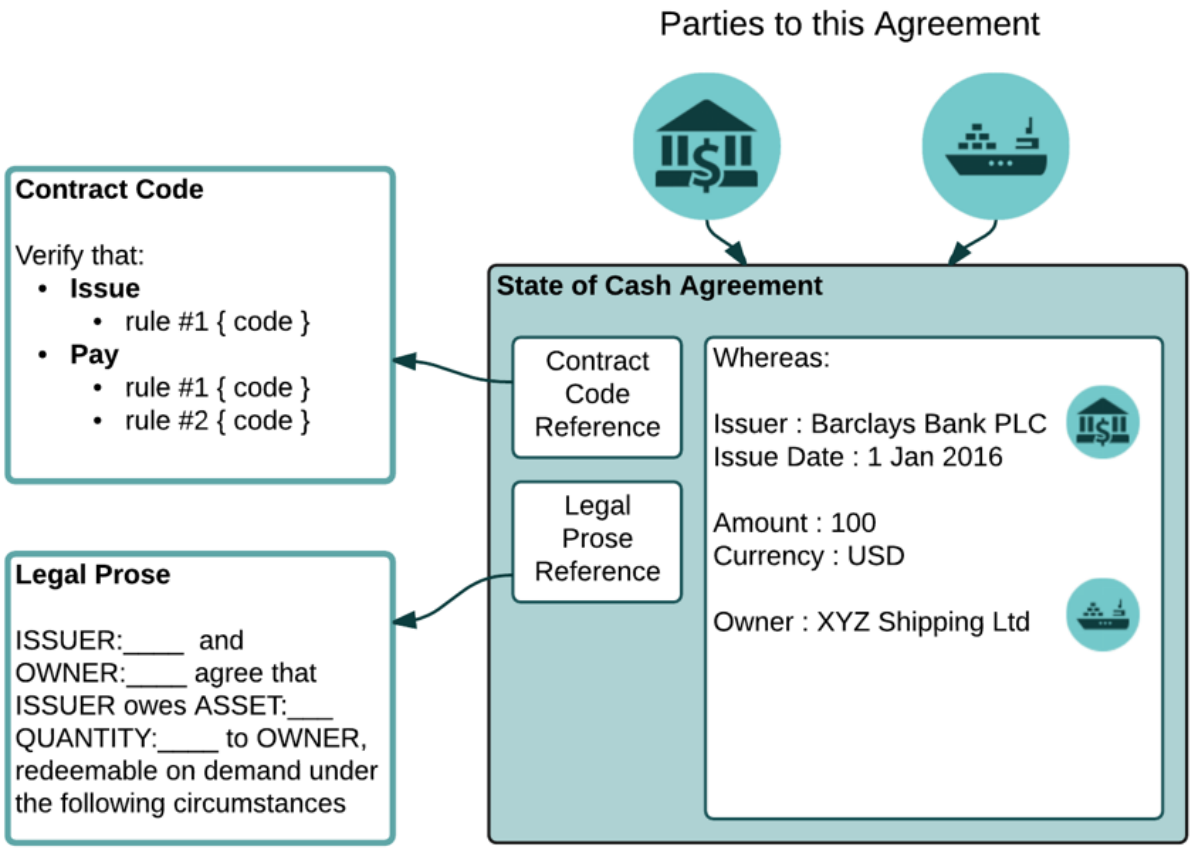
We will open source Corda on **November 30** under the Apache 2 License
Our intention is to submit Corda for consideration for incubation by the **Hyperledger Project**

Introductory Whitepaper: http://r3cev.com/s/corda-introductory-whitepaper-final.pdf

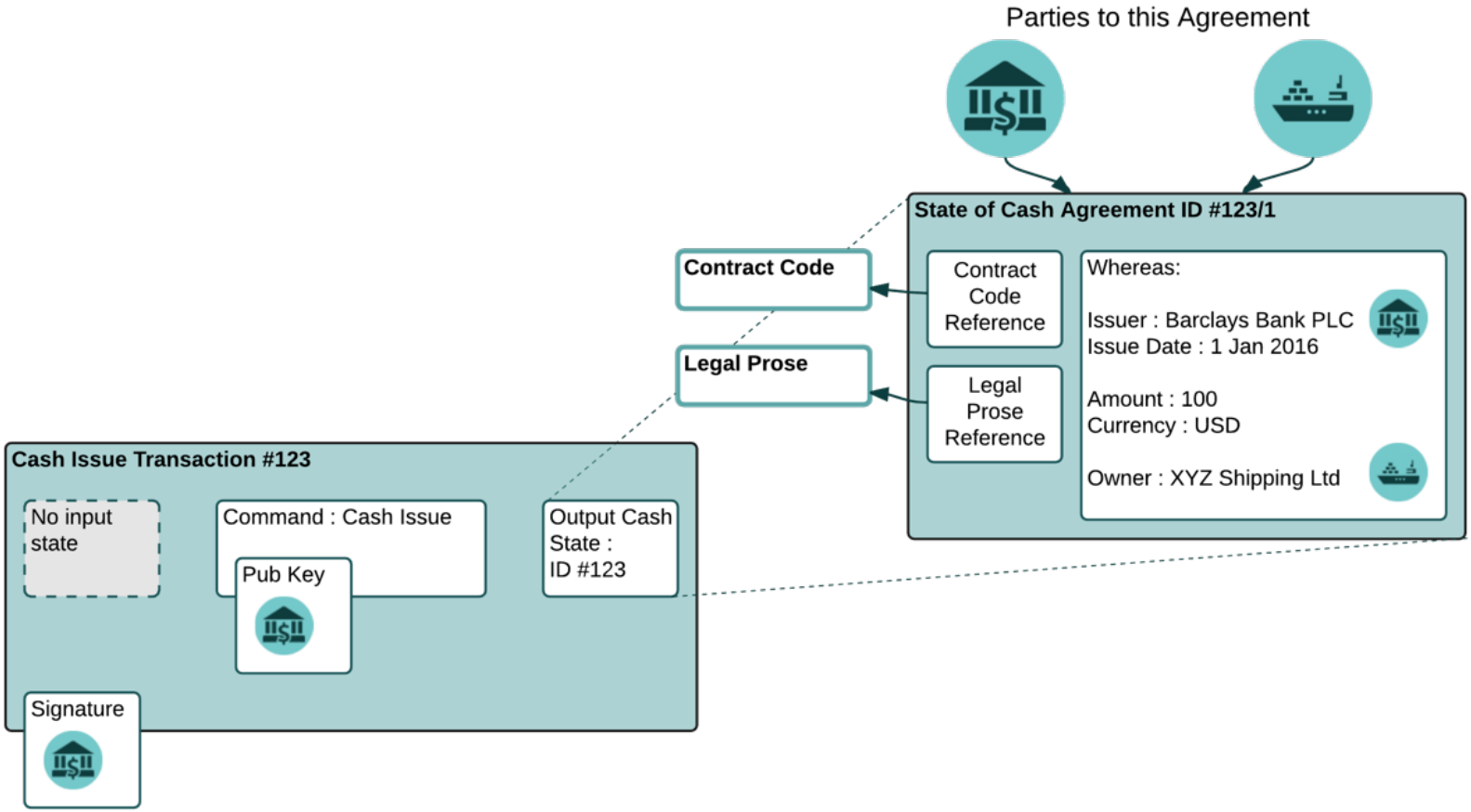
Corda controls the **evolution of agreements**.



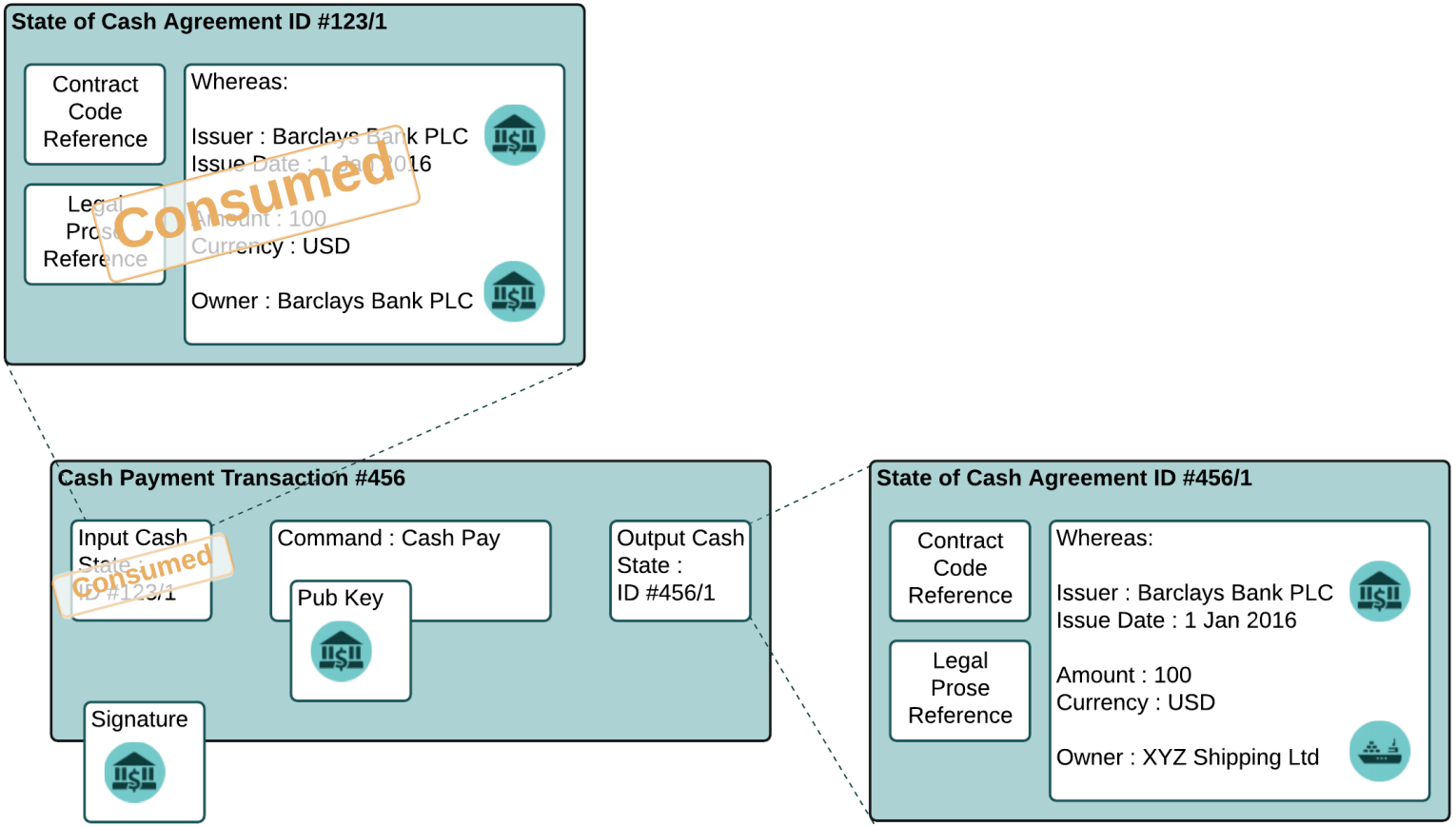
States represent agreements in Corda.



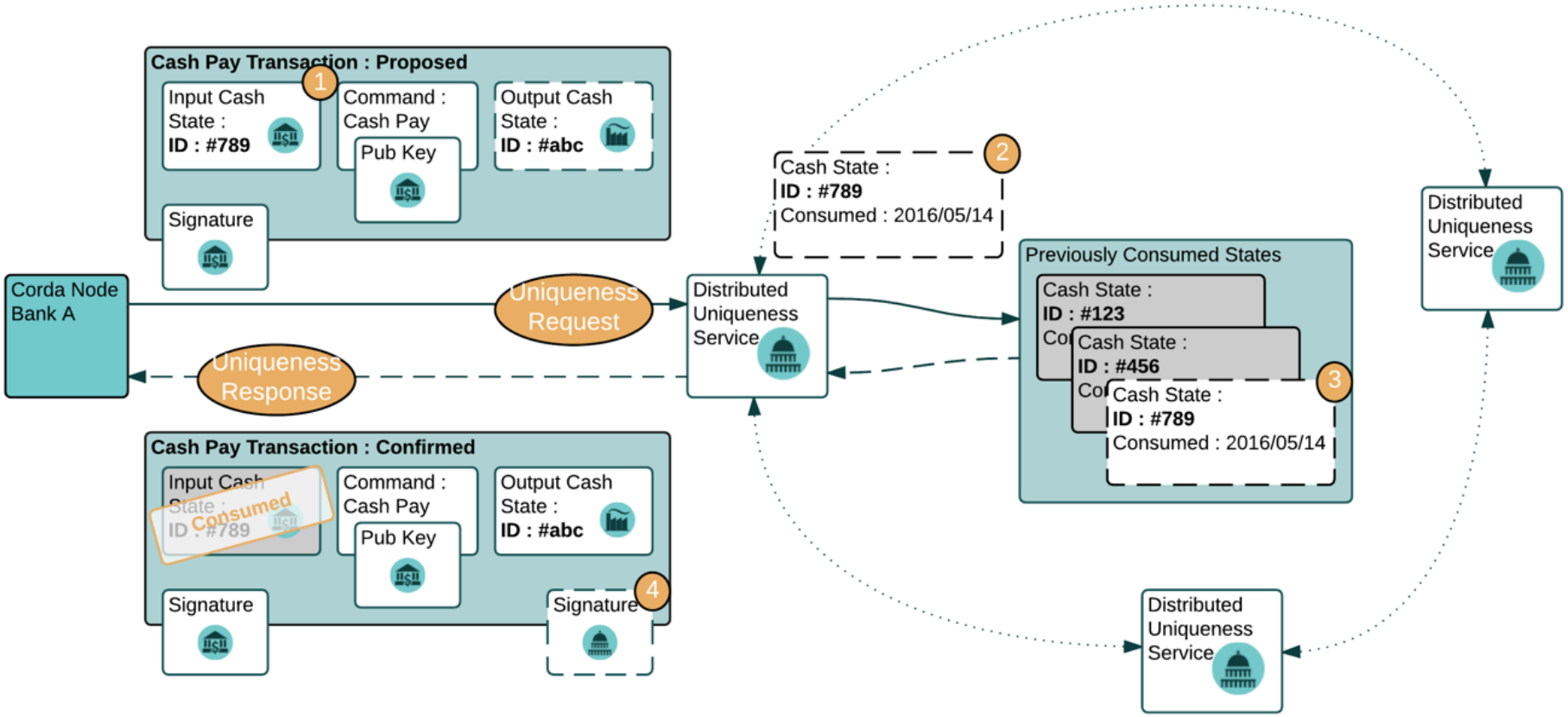
Example. Cash issuance.



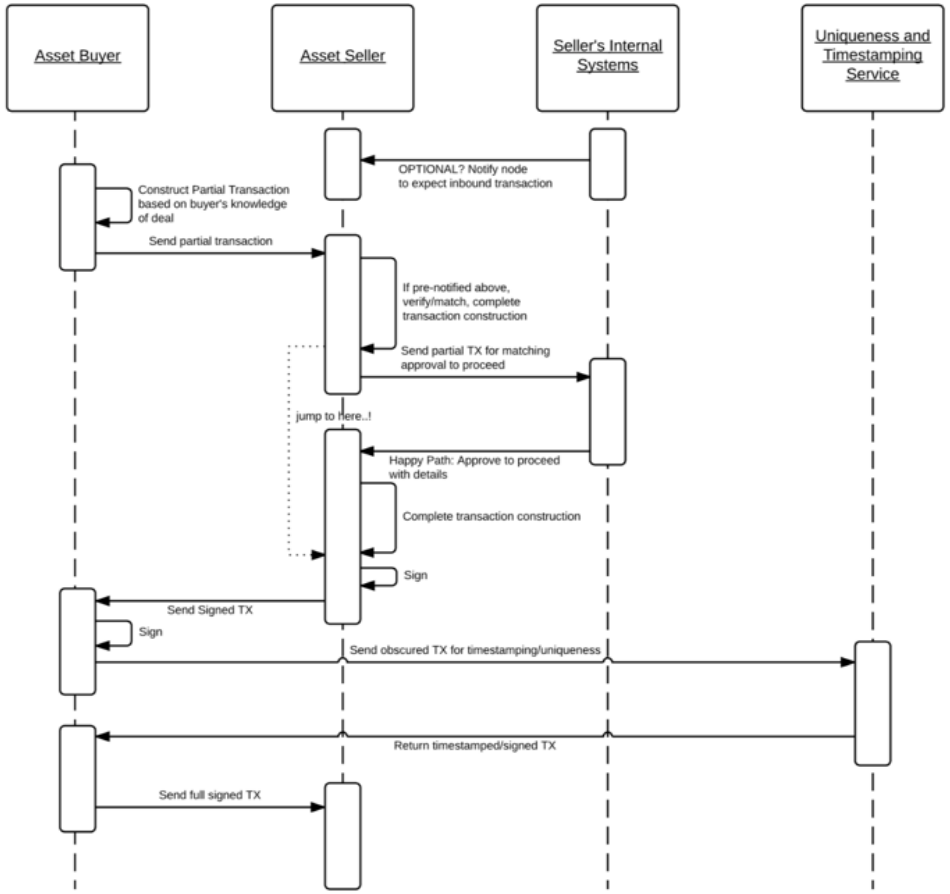
Example. Cash payment.



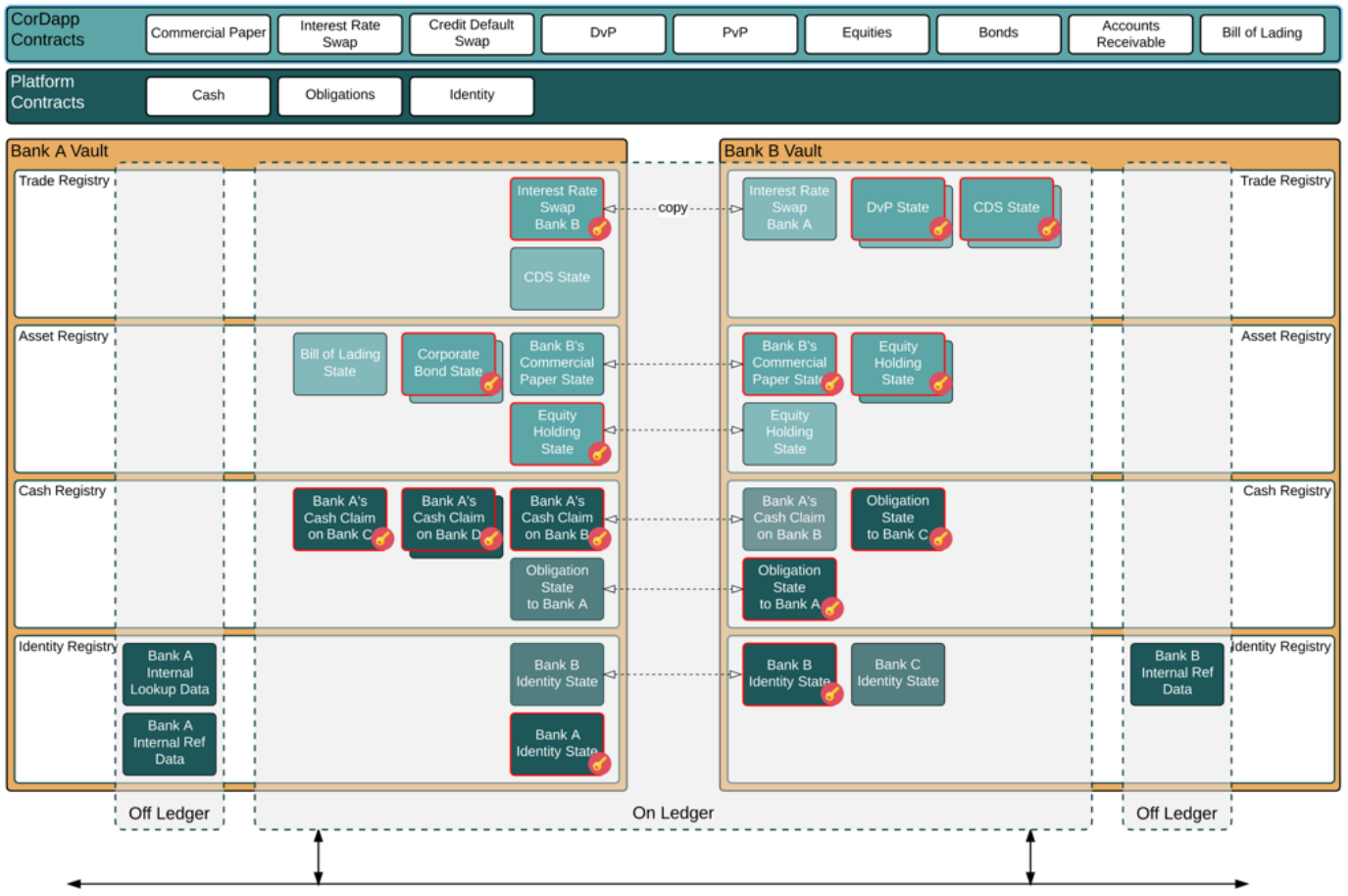
Consensus. "Double spend" prevention.



Flows. Enabling decentralised choreography.



The Vault. Enabling consistent data.



Corda. Summary

Data model.

The data model allows for arbitrary object graphs to be stored in the ledger. These graphs are called **states** and are the atomic unit of data.

Data is shared on a **need-to-know** basis. Nodes provide the dependency graph of a transaction they are sending to another node on demand, but there is no global broadcast of all transactions.

States can declare a relational mapping and can be queried using SQL.

States can declare scheduled events.

Transactions.

Transactions may execute in parallel, on different nodes, without either node being aware of the other's transactions.

Transaction-building protocols called "flows" enable complex inter-firm workflows to be modelled as blocking code.

New transaction types can be defined using JVM bytecode.

Network.

Nodes are arranged in an authenticated peer to peer network. All communication is direct.

Events on the ledger are exposed via an embedded JMS compatible message broker.

Consensus.

There is no block chain: transaction races are deconflicted using pluggable notaries.

A single Corda network may contain multiple notaries that provide their guarantees using a variety of different algorithms.

- ***Corda will be open-sourced on November 30***
- ***We will submit a proposal to the TSC for consideration of Corda for incubation***