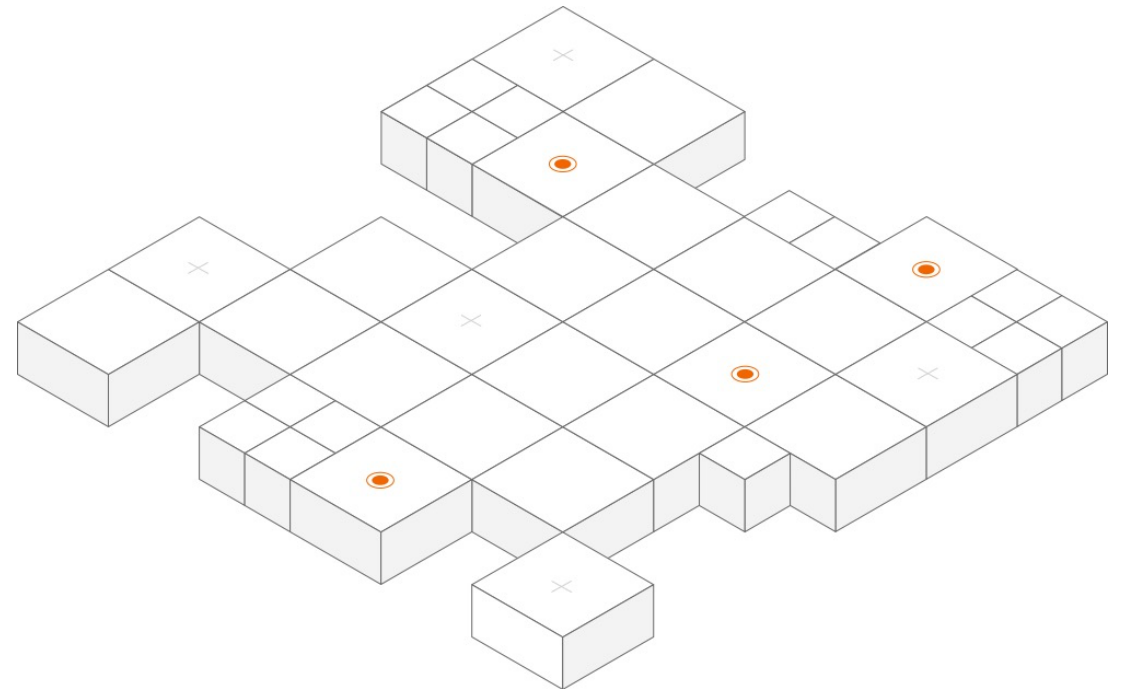
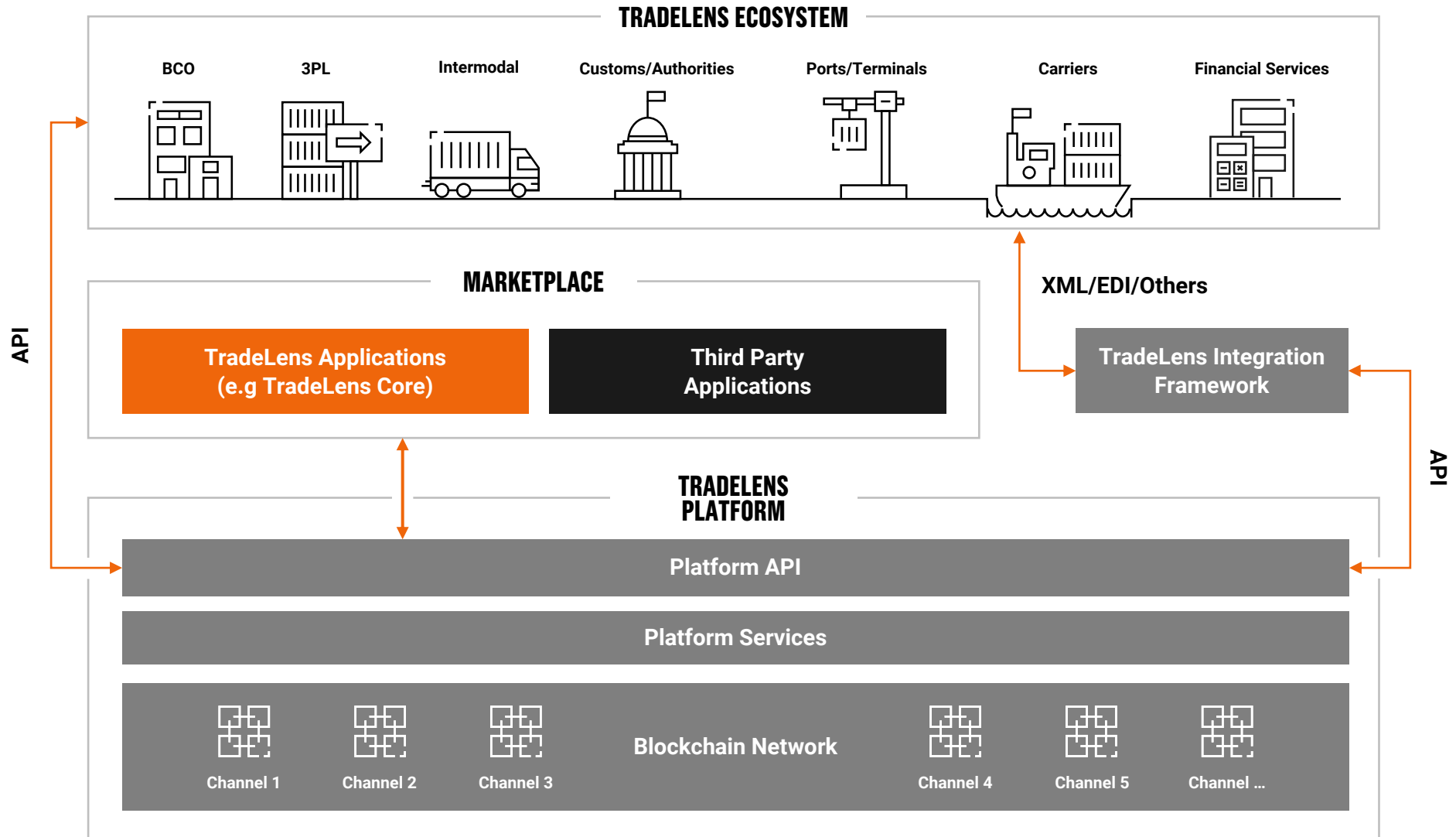


# THE TRADELENS PLATFORM



# SOLUTION ARCHITECTURE



# PERMISSIONED DATA

At the heart of the platform is a sophisticated permissions-based system that allows parties to view, edit and use data.

TradeLens permissions are determined through a combination of the organization's role and the data type. The TradeLens platform then permits access to data according to the permission matrix.

The full Data Sharing Specification is available [here](#)

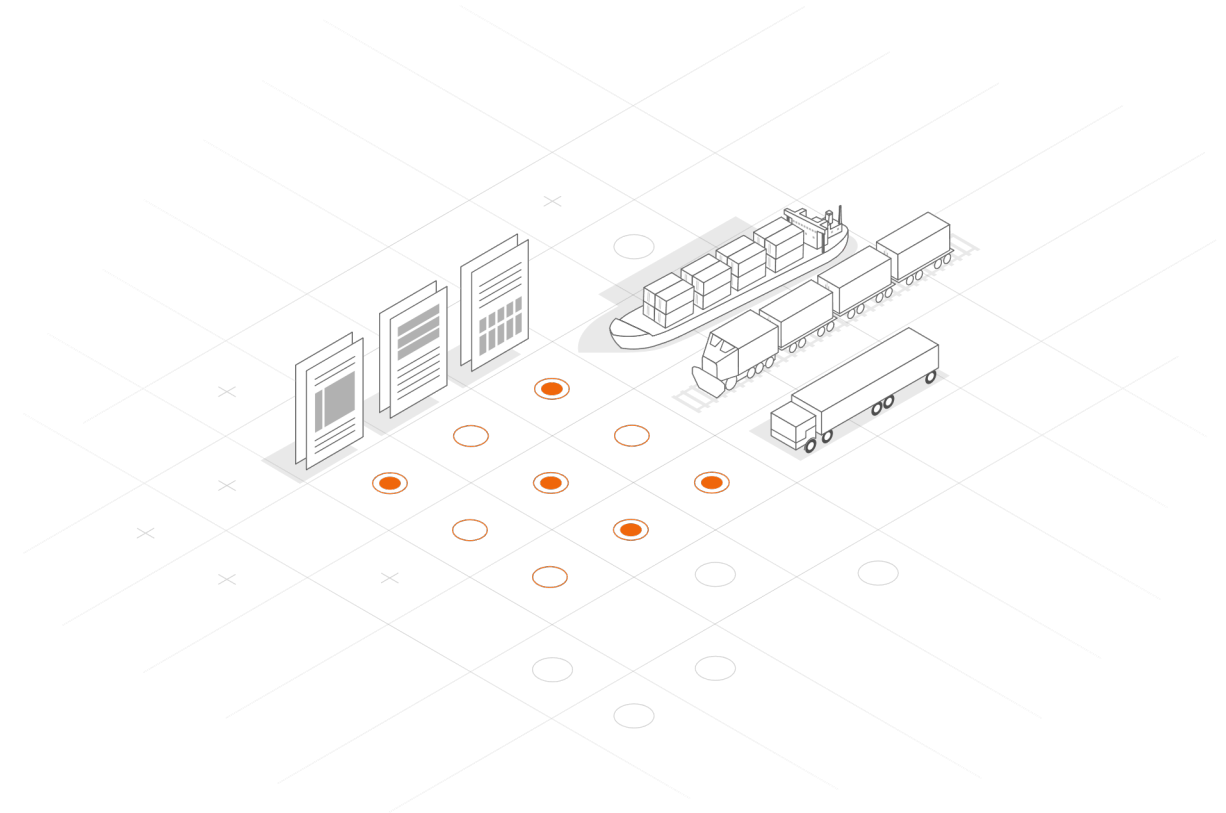
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## + Strict and secure

A strict and highly secure permissions structure is in place that ensures only the necessary parties are able to see specific types of information related to a shipment.

## + Permission matrix

TradeLens permissions are determined through a combination of the organization's role and the data type. The TradeLens platform then permits access to data according to a unified permission matrix.



# DATA SHARING

TradeLens permissions are determined through a combination of the organization’s role and the data type. The TradeLens platform then permits access to data according to the permission matrix.

The full Data Sharing Specification is available [here](#)

	Transport Service Buyer	Consignor	Consignee	Origin 3PL Agent	Destination 3PL Agent	Export Customs Broker	Import Customs Broker	Request Party	Import Authority	Transport Service Provider	Origin Marine Terminal	• • •
<b>Events</b>												
Planned stuffing start	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
Planned stuffing completed	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
Actual loaded on truck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
Estimated gate out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Actual gate in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
• • •												
<b>Documents</b>												
Booking Confirmation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
Shipping Instructions	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Bill of Lading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
Sea Waybill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
House Bill of Lading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
• • •												

Participant has an obligation to provide (publish) the data, where relevant/applicable

Participant has read access (can subscribe) to the data

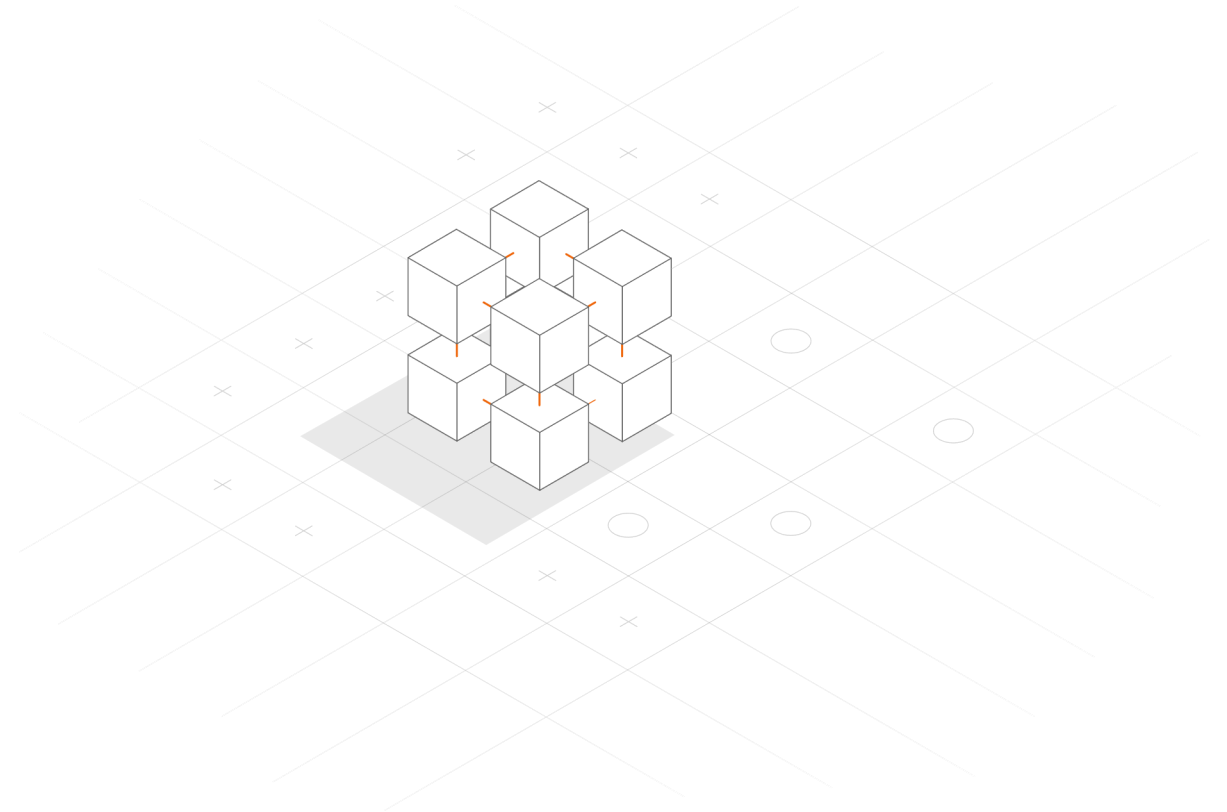
Participant has no access to the data

# BLOCKCHAIN-ENABLED

The TradeLens blockchain is a shared, immutable ledger that records transactions and tracks tangible and intangible assets. Virtually anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved.

While the power of TradeLens comes from its members, blockchain enables secure distribution and storage of vital information at the heart of the platform.

TradeLens uses the IBM Blockchain Platform which is based on Hyperledger Fabric, an open-source permissioned blockchain where the peer members ("Trust Anchors") are known to the network based on cryptographic identities.



## How the TradeLens blockchain connects the ecosystem:

- + **Tamper-proof recording and non-repudiation for all data submitted to the solution.**
- + **Verifiability of data against the recorded proof of submission on the blockchain.**
- + **Recoverability of the solution from the data recorded on the blockchain.**
- + **Provenance and Auditability. All transactions are signed and dated on the ledger.**
- + **Privacy of data to ensure that it is only shared with relevant organizations.**

# NETWORK TOPOLOGY

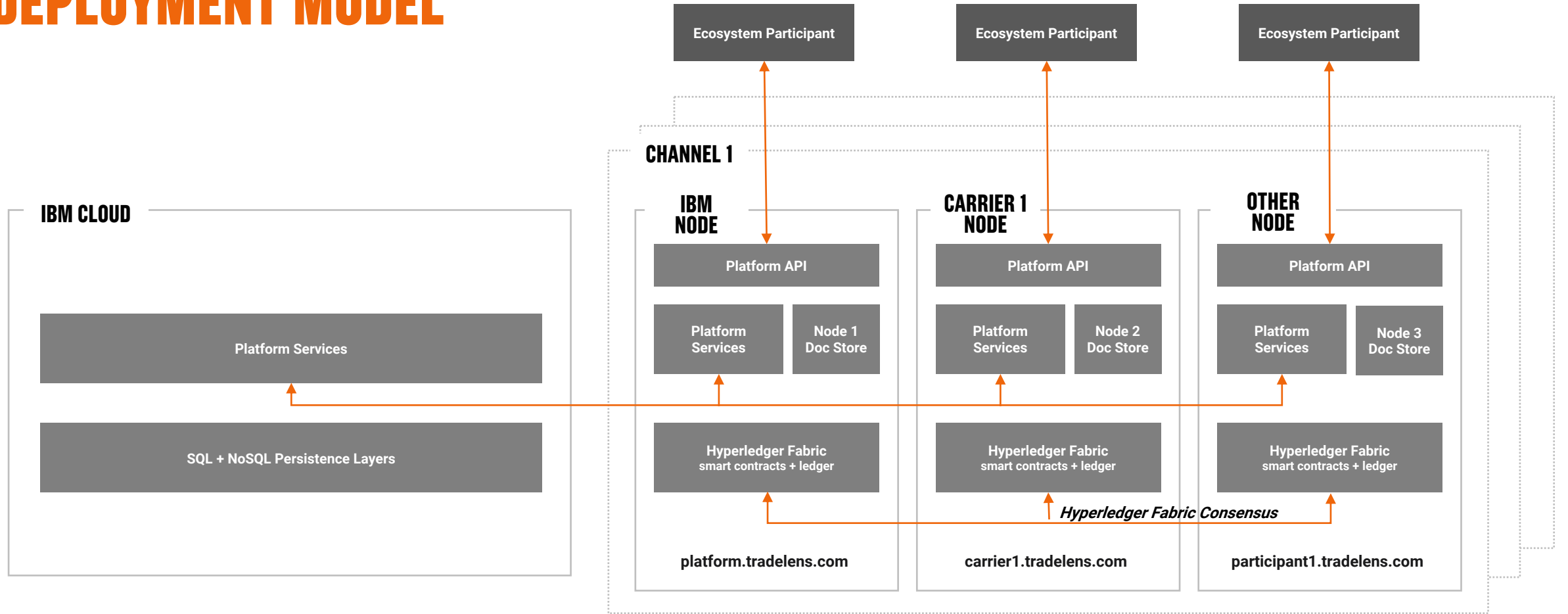
## THE BLOCKCHAIN NETWORK TOPOLOGY WILL ENSURE SEGREGATION ACROSS OCEAN CARRIERS

- + TradeLens and participating ocean carriers will each host and manage a blockchain node
- + Each node includes the blockchain platform components as well as dedicated blockchain-managed document storage for that node
- + A channel will be established for each participating ocean carrier
- + Sensitive information including documents are distributed only to those nodes participating in a channel; this means that none of a carrier's customer information will be distributed to other carriers
- + Documents are stored on a single node only and are accessed at runtime by other nodes on a channel as permissions allow

	OCEAN CARRIER 1 CHANNEL	OCEAN CARRIER 2 CHANNEL	OCEAN CARRIER 3 CHANNEL	CHANNEL...
<b>TRADELENS</b>				
TRADELENS NODE	●	●	●	●
<b>CARRIERS</b>				
OCEAN CARRIER 1 NODE	●			
OCEAN CARRIER 2 NODE		●		
OCEAN CARRIER 3 NODE			●	
NODE...				●

Dots designate node participation in a channel

# DEPLOYMENT MODEL



**CLOUD PLATFORM COMPONENTS**  
Storage of Events

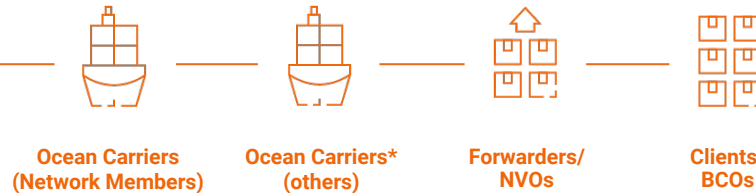
**BLOCKCHAIN PLATFORM COMPONENTS**  
Storage of Documents, Party Data

# ECOSYSTEM DATA

## Foundational data

The data and documents to track and manage shipments end-to-end

- + More than half of global container shipping volume committed
- + Vast number of trade lanes covered



## Enrichment data

Supplements foundational data, in near real-time and direct from the source

- + Rapidly growing network
- + Extensive port/terminal coverage



TRADELENS



**+1.5B**

**EVENTS TRACKED**  
(SINCE LAUNCH)

**+13M**

**DOCUMENTS PUBLISHED**  
(SINCE LAUNCH)

**+30M**

**CONTAINERS PROCESSED**  
(SINCE LAUNCH)

These figures are estimated to double with the recent addition of major ocean carriers to the ecosystem

\* Ocean carriers who are not Network Members can provide data as requested by their customers