# Trade Digitalisation - TradeTrust

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**Sectoral Transformation Group**
INFOCOMM MEDIA DEVELOPMENT AUTHORITY

**16th Bouncing Back PACER Dialogue**
**3 August 2021**

IMV INFOCOMM MEDIA DEVELOPMENT AUTHORITY

# Roles of IMDA

## DIGITAL CHAMPION

Drive digitalisation across industries

Supporting a digitally enabled workforce

## INDUSTRY DEVELOPER

Develop the digital tech and media industries as an engine of growth for Singapore

Foster a data ecosystem for the digital economy

## ENABLER

Master-planner for connectivity, digital infrastructure & standards

Prepare tech & media manpower, and segments of society to be digitally-ready
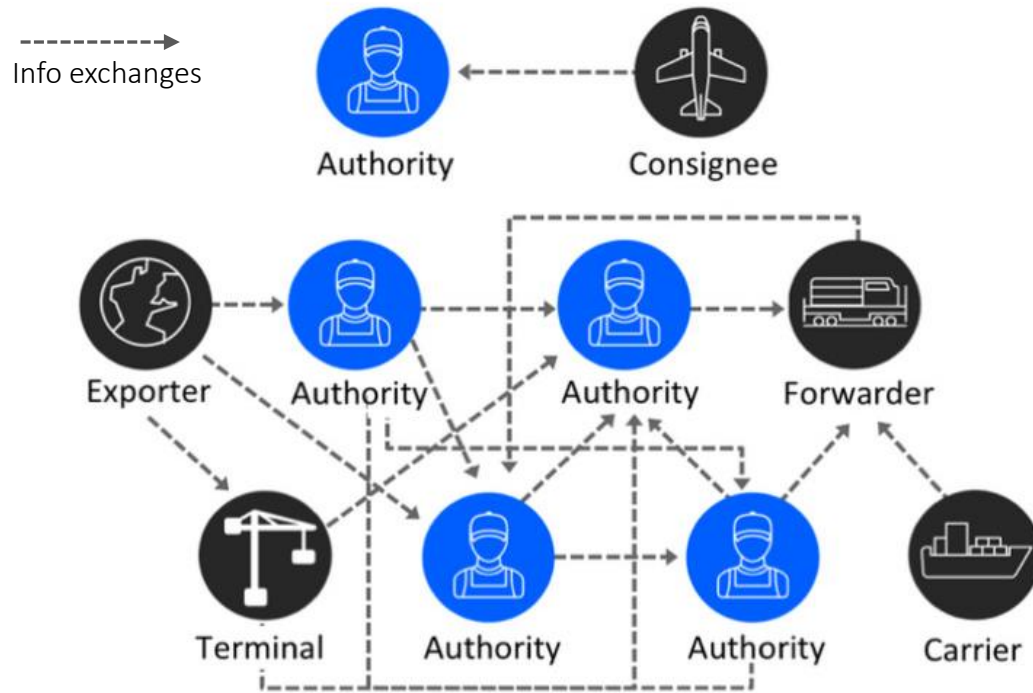
## REGULATOR & PROTECTOR

Ensure resilient telecom & broadcast networks

Govern market conduct and protect consumer interest through infocomm, media, postal and data protection regulation

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# Difficulties with Paper in Cross-Border Trade

## Current State

- - - - - - →
Info exchanges

Authority ← Consignee

Exporter → Authority → Authority → Forwarder

Terminal → Authority → Authority → Carrier
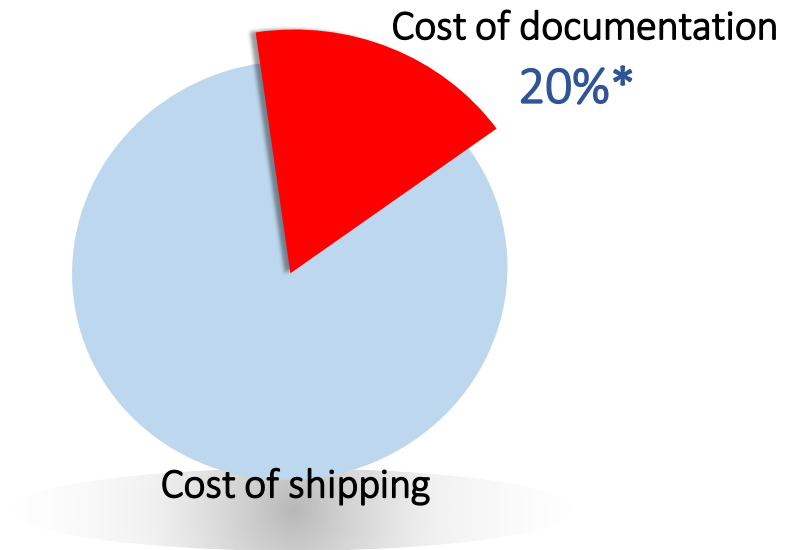
**Just 1 shipment involves**

- **Many parties** across different sectors
- **Many exchanges** of information
- **Many silo systems**

### Inefficient

- Manual handling
- Vulnerable to fraud

### Fragmented Systems

- Costly connections
- No interoperability

Cost of documentation
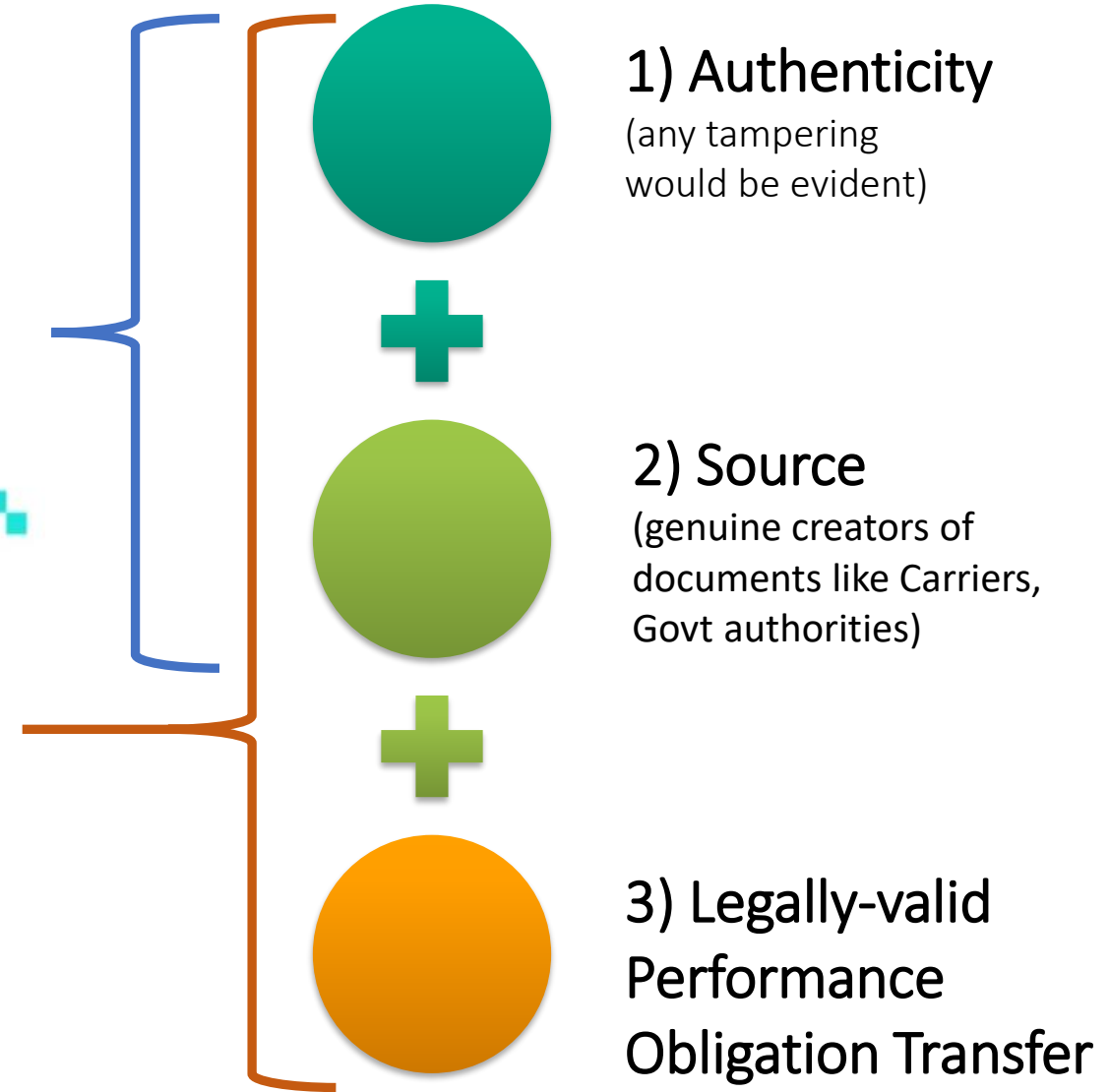**20%***

Cost of shipping

This inefficiency is **costly**

*Maersk and IBM's Paper Trail Research in 2014*

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# End-Result: TradeTrust Functions

**Normal Documents**

**Transferable Documents**
(e.g. Bills of Lading)

**1) Authenticity**
(any tampering
would be evident)

**+**

**2) Source**
(genuine creators of
documents like Carriers,
Govt authorities)

**+**

**3) Legally-valid**
**Performance**
**Obligation Transfer**

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# The TradeTrust Framework

**TradeTrust is NOT a platform. It SUPPORTS Platforms and Systems to achieve the 3 functionalities ACROSS Platforms and Systems. The technical methods are implemented in open-source software that has been contributed to the community**

Finance

Insurance

Logistics

...

**Commercial Applications/Platforms/Ecosystems**

**Domain Specific Standards Development**

**Cross-domain Interoperable Framework**

**Technical Infrastructure**

**National Single Window (NTP)**
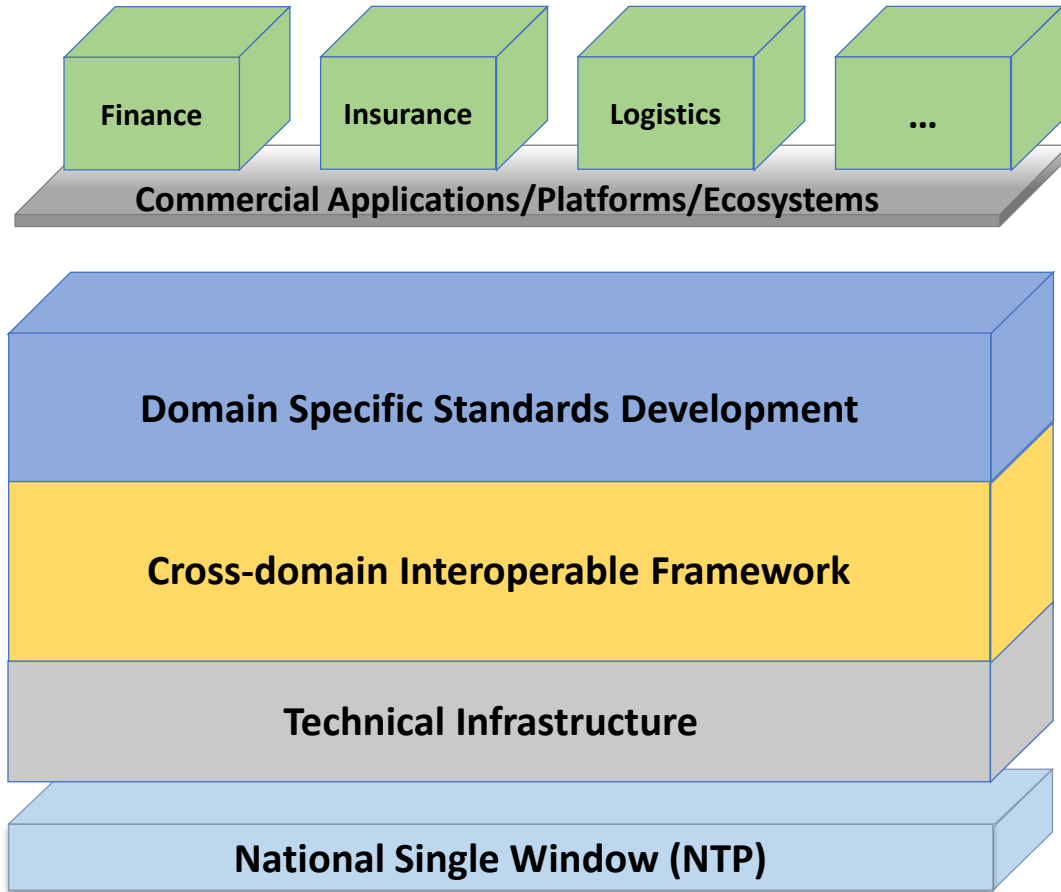
## Business-led

- **Digital Ecosystems Co-Development**
- **Enterprise Adoption & Digitalisation**

## Govt-led

### TradeTrust Framework

**Cross-border Recognition**

United Nations UNCITRAL

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

(Standards, Semantics, Legal)

- To legally recognise cross-border digital documents (e.g. eBL, eCO, eInvoice, eSPS Certs, eBills of Exchange)
- To enable system interoperability of trusted digital documents exchange through standards

**Standards Devt**

UN/CEFACT

ISO

**TradeTrust Digital Infrastructure**

- Blockchain gateway that allows business apps to consume blockchain services through standardized APIs, achieving decoupling that eases the burden on them of enhancement and maintenance while blockchain technologies evolve.
- Published as open source for ease of industry adoption and for further enhancements by the open source community
- To be contributed as reference implementation to standards bodies to support standards development and accelerate TradeTrust usage

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# TradeTrust Design Principles

**Public and Permissionless**
*No central governance authority*

**Data Off-Chain**
*Preserves data confidentiality*

**Payload Agnostic**
*No data format or standard restriction*

**Open-Source**
*Full transparency for faster adoption*

**MLETR-Compliant**
*Meet the requirements of the law (for electronic negotiable documents)*

*MLETR = Model Law on Electronic Transferable Records published by United Nations Commission on International Trade Law in Sept 2017*

# TradeTrust Framework is Accessible to All

**Application Layer** ▶

Basic UI — Sample implementations via PoCs

Finance — Insurance — Logistics — Platforms — Ecosystems — ...

**Commercial Applications/Platforms/Ecosystems**

**TradeTrust** ▶

Payload Agnostic Documents — Document Verification — MLETR Compliant Title Transfer — Distributed file store — Seamless Exchange Paper ⇔ Paperless — Identity Resolver (Verifiable Claim) — Smart Contracts — Connectors — API — ...

**Blockchain Layer** ▶

ethereum — HYPERLEDGER — r3. corda — Quorum — Sidechain — ...

United Nations UNCITRAL
**UNCITRAL Model Law**
MLETR, MLEC, MLES
**Singapore ETA**

UN/CEFACT — ISO
**Standards Development**

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# Dealing with Transferable Documents (BL as example)

*Paper Transferable Instrument*

*Electronic Transferable Record*



**1) TITLE ownership**

**+**

**2) BL Data**

Title ownership

BL Data

# Transferable Documents' Interoperability
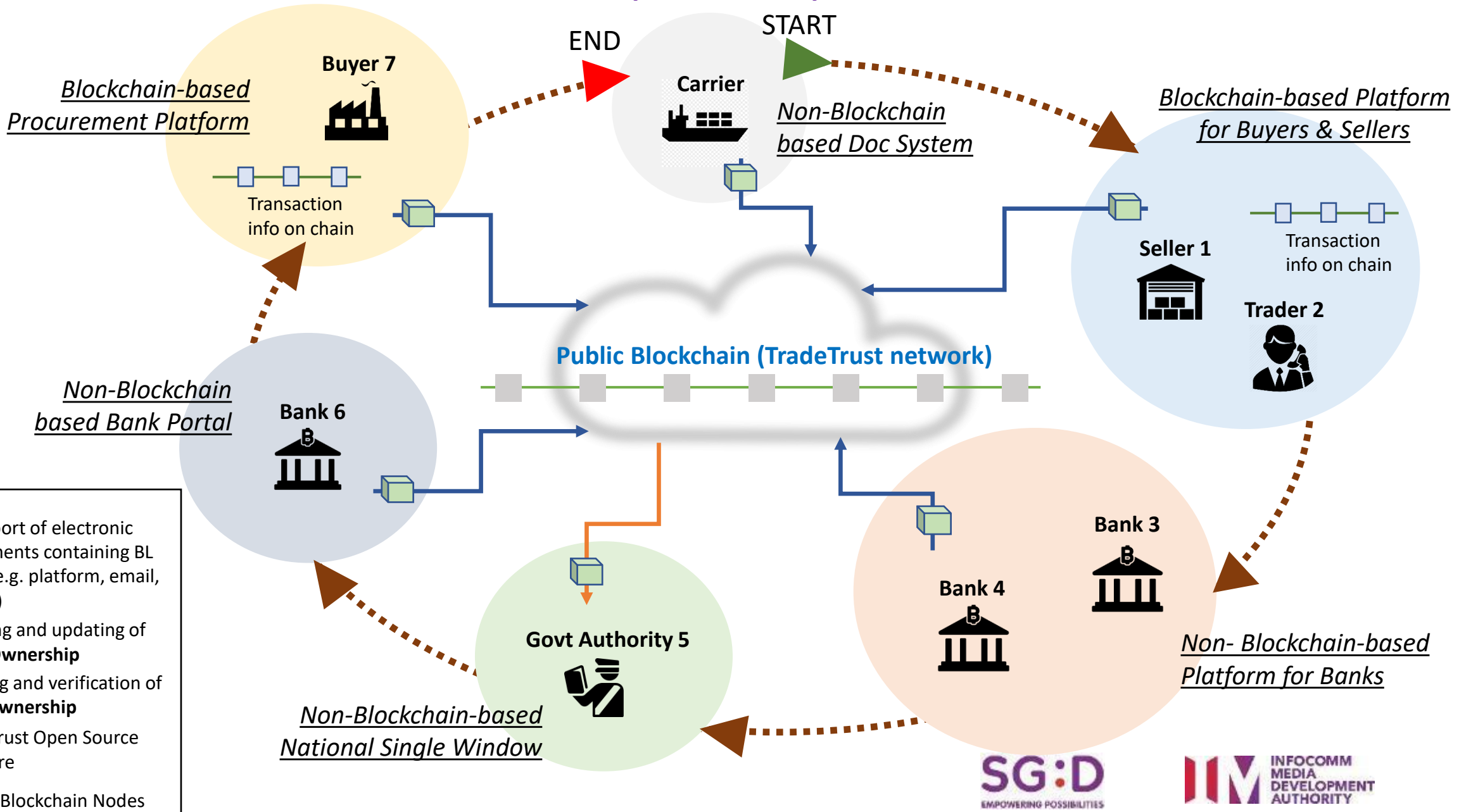


*This figure does not reflect actual business flows but serves to illustrate how Platforms can inter-operate*

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# Normal Documents' Interoperability

4. Sends digitally-signed CO and other trade documents via conventional methods (e.g. as email attachment, file transfer)

6. Declare import permit and submit digitally signed CO and other trade documents

**Exporter**

ERP System

3. Issue CO

**Cert of Origin Issuer**

Documentation system

*TradeTrust Digital Utility*

1. Apply CO

**Trader**     **Importer**

Marketplace Platform

*TradeTrust Digital Utility*

**Customs**

National Single Window

*TradeTrust Digital Utility*

2. Generates digitalliy signed asset and registers CO hash to Public Ledger

5. Verifies digitally-signed asset

7. Verifies digitally-signed asset

**TradeTrust network (Public Blockchain)**

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# EBL TRIAL WITH PORT OF ROTTERDAM

- Trial Scope:
  - Electronic Bill of Lading (eBL)
  - Cross-platform interoperability of title transfer and surrender of eBL

- Use Case Description:
  - Use of eBL to shadow a live shipment in collaboration with Olam from Vietnam to Rotterdam via transshipment in Singapore
  - Trial of Singapore-based #dltledgers' blockchain platform and the Netherlands-based NaviPorta platform to perform the title transfer transaction and thereafter surrender of the eBL issued by ONE
  - The title transfer and surrender capability on both platforms were enabled by TradeTrust digital utility

- Participants:
  - **Issuer/Carrier:** Ocean Network Express (ONE)
  - **Commercial user**: Olam
  - **Platforms**: #dltledgers (SG) , NaviPorta (Netherlands)

- Outcomes:
  - Time savings from 5-10 days to under 24 hours



*Infographics from #dltlegers*
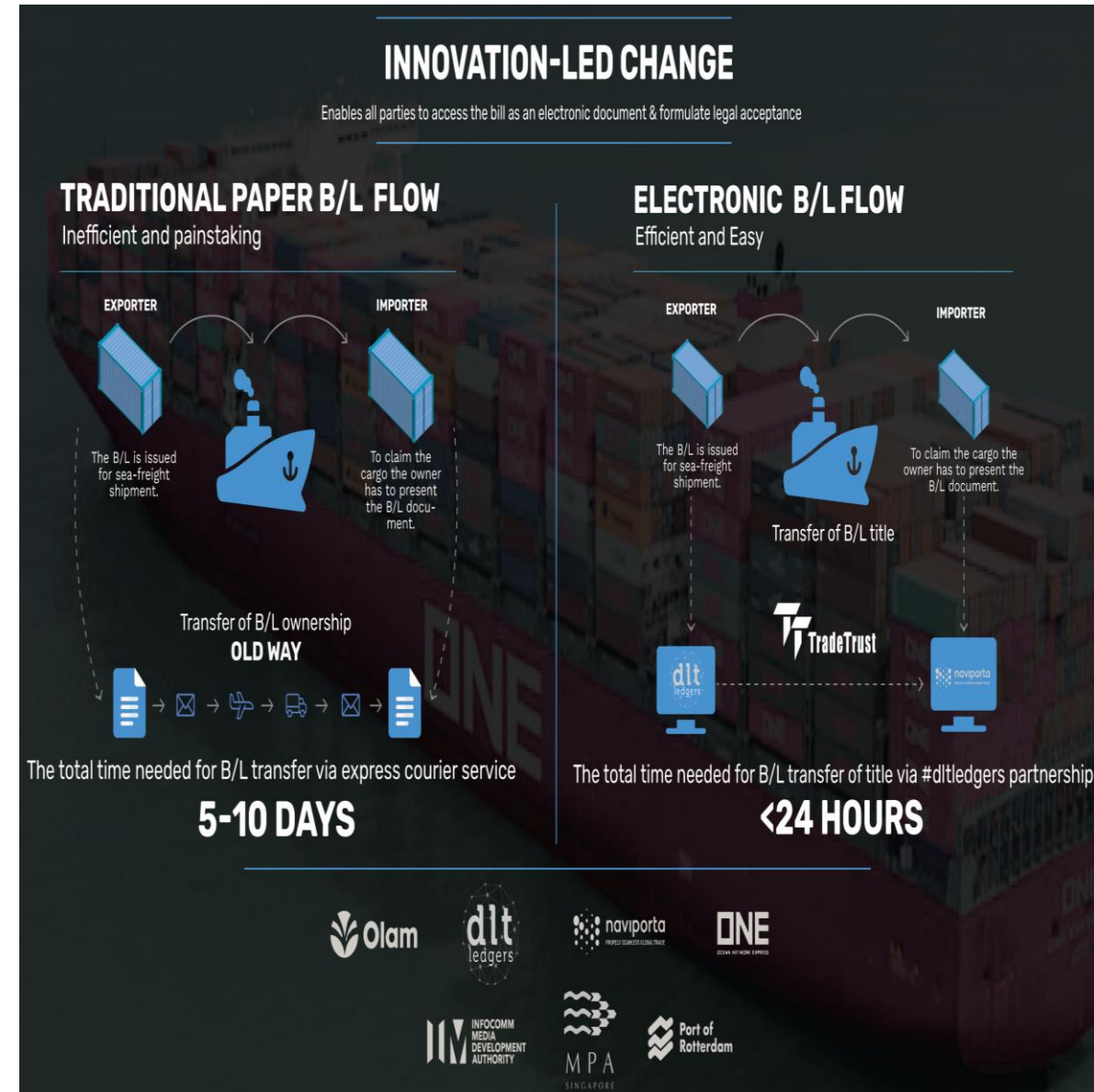
# CROSS-BORDER COLLABORATION WITH AUSTRALIA



Australian Border Force launches blockchain trial with TradeTrust

- Australia-Singapore Digital Economy Agreement
  - Australia Border Force, Singapore Customs and Infocomm Media Development Authority of Singapore

- Proof of Concepts:
  - Test Policy : Acceptance of digitally verifiable documents
  - Test Technology : Interoperability between SG TradeTrust and AU Intergovernmental Ledger

- Trial Scope
  - Certificates of Origin

- Participants
  - **Issuers**: Australian Chamber of Commerce and Industry and Australian Industry Group
  - **Commercial users**: Rio Tinto, ANZ Bank, DBS Bank and Standard Chartered Bank
  - **Regulatory Authority**: Singapore Customs

- Outcomes
  - Feedback were highly positive
  - Participants acknowledged value add to their business
  - Secured acceptance from regulatory authority (Singapore Customs) and commercial users

# Global Partnerships

## Australia and Singapore to trial blockchain for cross-border trade

The trial will test digital verification platforms across both the ABF-developed Intergovernmental Ledger and IMDA's TradeTrust for electronic trade documents.

**ICC** INTERNATIONAL CHAMBER OF COMMERCE

Home » News & Speeches » ICC joins Singapore Government and major industry partners to launch TradeTrust

### ICC joins Singapore Government and major industry partners to launch TradeTrust

News • Davos, 22/01/2020

Convening alongside the World Economic Forum Annual Meeting in Davos, the International Chamber of Commerce (ICC) has joined the Singapore Government and industry partners to accelerate the digitalisation of global trade and commerce.

## SWIFT and Singapore's IMDA Join Forces to Drive Global Trade Digitalisation

TRADE, 5 OCTOBER 2020

*Collaboration combines the reach, scale and reliability of SWIFT with IMDA's efforts on technology and legal frameworks to accelerate trade digitalisation*

## Port of Rotterdam

### Succesfull Proof of Concept Electronic Bill

In October 2019, IMDA (Infocomm Media and Development Authority) and the Maritime and Port Authority of Singapore (MPA) co-hosted a 2-day workshop for the delegates from Blocklab, Port of Rotterdam's blockchain centre to work together on the requirements of title transfer capability in relation to eBLs for cross-border trade transactions.

**BT** Singapore digital trade documentation framework to combine with global Swift network

# FINANCIAL TIMES
## Singapore charts its way to digital future for trade

Longer term, Singapore is working on a project called TradeTrust that aims to develop an "interoperability framework" for the exchange of digital trade documentation that would simplify and speed up procedures.

## **DBS**

DBS and Trafigura collaborate with IMDA to launch open-sourced blockchain trade platform

*Cuts end-to-end trade document transit time by more than half from 45 to 20 days*

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# Call To Action

## 1) Join us to co-create TradeTrust Proofs of Value

**If you're from:**
a) **Shipping lines**
b) **Shippers/Consignees**
c) **Logistics Service Providers**
d) **Financial Institutions providing Trade Financing Service**
e) **Govt Authorities involved in cross-border matters**

## 2) Incorporate TradeTrust code into your Applications
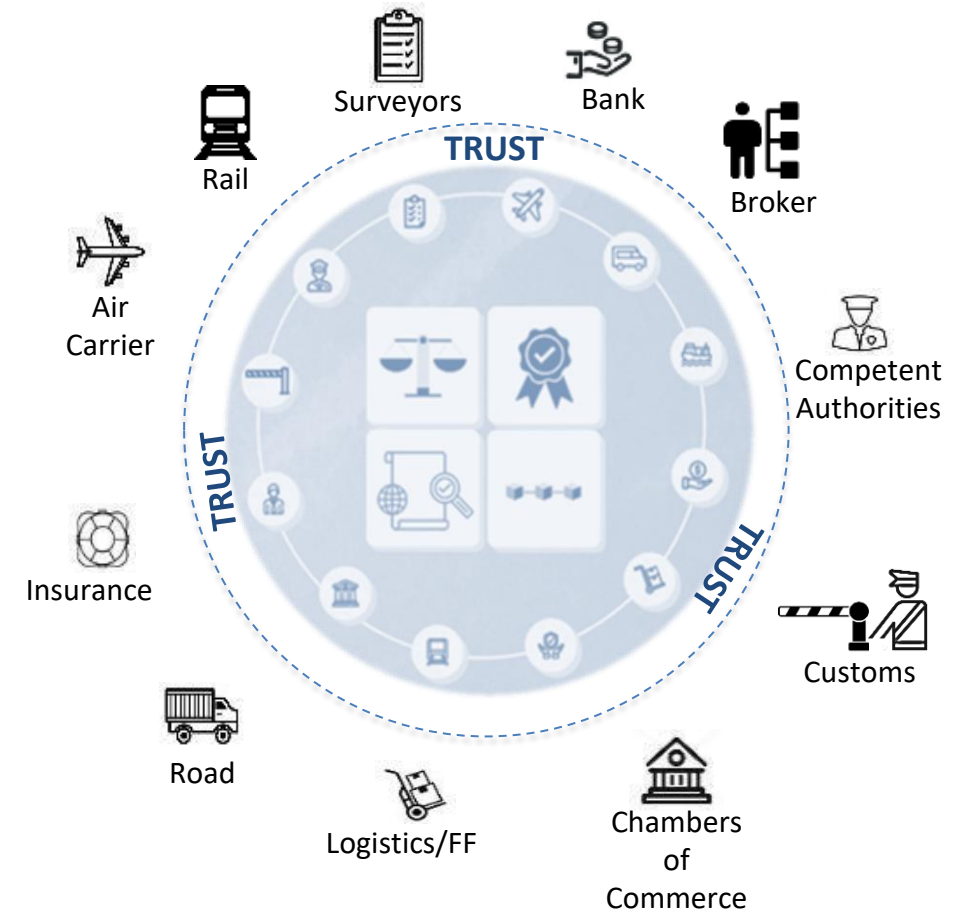
**If you're from:**
a) **Tech Companies**
b) **Platform Providers**

**Useful URLs:**

**Reference Implementation Website: https://tradetrust.io/**
**Docs: https://docs.tradetrust.io/**
**Source code: https://github.com/TradeTrust**

For more info, contact us at: **tradetrust@imda.gov.sg**

THANK YOU