Driving Interoperable Cross-border Paperless Trade with TradeTrust

Presenter:
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Introduction of the Participating Organisation: IMDA

**DIGITAL CHAMPION**
Drive digitalisation across industries, with trade digitalisation being an important agenda.
Supporting a digitally enabled workforce

**INDUSTRY DEVELOPER**
As the architect of Singapore’s digital future, IMDA develops 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

IMDA works to accelerate digitalisation through close collaboration with public and private sector partners in Singapore and globally.
Issue: Heavy Dependence on Paper Documents Hinders the Growth of Cross-border Trade

Current State for Cross-border Trade

- Just 1 shipment involves:
  - About 20 parties across different sectors and 10-20 paper documents
  - Many exchanges of information
  - Many silo systems

The Costs of Heavy Dependence on Paper

- Inefficient and lack of security
  - Time delays
  - Manual handling – prone to human errors
  - Vulnerable to fraud

- Fragmented systems
  - Costly connections
  - No interoperability

*Maersk and IBM's Paper Trail Research in 2014
Essence of the Solution is to Offer 3 Key Functionalities with Digital Trade Documents

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

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

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

**Verifiable Documents** (e.g., Certificate of Origin)

**Transferable Documents**
(e.g. title documents such as Bill of Lading)

**Authenticity**

**Source**

**Legally-valid Performance Obligation Transfer**
Introduction of the TradeTrust Framework

**TradeTrust** is a framework that comprises **globally-accepted standards** and enables **trusted interoperability** of electronic trade documents among governments and businesses **across digital platforms** AND it is offered as a **digital utility**.

4 Key Components of TradeTrust

1. **Legal Harmonisation**
   - Provide legal validity for electronic negotiable documents through compliance to MLETR*

2. **Standards Development**
   - Develop international standards that TradeTrust complies to

3. **Accreditation Framework**
   - Certify technical solutions meet the requirements of the law

4. **Software Components**
   - A set of open-source software code that can easily integrate backend solutions to the TradeTrust network

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TradeTrust is Particularly Innovative and Effective through 5 Design Principles

- **Public and Permissionless**: No central governance authority
- **Data Off-Chain**: Preserves data confidentiality
- **Payload Agnostic**: No data format or standards restrictions
- **Open-Source**: Full transparency for faster adoption
- **MLETR-Compliant**: Meet the requirements of the law (for electronic transferable documents)

The TradeTrust Framework is Accessible to All

Application Layer
- Basic UI
- Sample implementations via PoCs

Blockchain Layer
- Payload Agnostic Documents
- Document Verification
- MLETR Compliant Title Transfer
- Distributed file store
- Seamless Exchange Paperless
- Identity Resolver (Verifiable Claim)

Commercial Applications/Platforms/Ecosystems
- Finance
- Insurance
- Logistics
- Platforms
- Ecosystems
- Government (e.g., Customs)
- Smart Contracts
- Connectors
- API

TradeTrust

Standards Development
- UNCTAD Model Law
- MLETR, MLEC, MLES
- Singapore ETA
W3C Verifiable Credentials compliant application of TradeTrust for Interoperability of Verifiable Documents

**Legend:**
- Non-TradeTrust activity
- TradeTrust activity
- TradeTrust Open Source digital utility
- Public Blockchain Nodes

0. Issuer sets up own Decentralised ID (W3C’s DID Standard)

1. Apply for COO

2. Generates digitally signed COO (TradeTrust document) and issues the COO to Exporter

3. Forward digitally-signed COO and other trade documents via conventional methods (e.g. as email attachment, file transfer, portal upload, data-sharing platform, API, etc.)

4. Verifies (automated or manual) digitally-signed COO w Issuer’s DID

5. Submit import Declaration and provide digitally-signed COO and other supporting documents (TradeTrust documents or PDF)

6. Verifies digitally-signed COO and extracts data from TradeTrust documents for automated processing

**Key benefits of such a decentralized verifiable architecture are:**

1. Remove the need for expensive data exchange infrastructure to be put in place in between exchanging parties.
2. Remove tight coupling and inter-dependencies between exchanging systems. This means exchanging parties can proceed to upgrade and make changes to their IT systems at their own pace according to their own priority.
Case Study: Certificates of Origin Trial using TradeTrust between Australia and Singapore

As part of the Australia-Singapore Digital Economy Agreement
- Driven by Australia Border Force (ABF), Singapore Customs and IMDA
- Test Policy: Acceptance of digitally verifiable documents using Certificate of Origin (COO) as an example
- Test Technology: Interoperability between AU Intergovernmental Ledger (IGL) and the TradeTrust reference implementation

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

Observed Benefits
- Participants acknowledged value-add to the cross-border trade process such as instant authentication and provenance.
- Achieved acceptance from regulatory authority (Singapore Customs) and commercial users

Please find out more about the trial [here](#).
There have been multiple successful TradeTrust pilots conducted under various efforts such as Government to Government collaborations, public–private partnerships and industry-led initiatives.

Interest for trials remains strong – there is potential for new trade routes, new public and private sector participants and for different trade documents (e.g., animal health certificates, phytosanitary certificates).

Pipeline for live shipments has also been established.
Collaborations and Partnerships which Demonstrate the Relevance of TradeTrust

World’s first digital trade financing pilot between MLETR-harmonised jurisdictions

*Paves the way for wider adoption of IMDA’s TradeTrust framework to facilitate the exchange of digital trade documents in global trade finance*

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

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

**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.

TradeTrust has been featured by *international organisations* such as:
1) ICC and WTO: ICC DSI and WTO’s Standards Toolkit for Paperless Trade.
2) WTO/WCO Report on disruptive technologies and subsequent publication launch event (2022)
3) WTO–WEF TradeTech Phase 2 Report (2022)

**Port of Rotterdam**

*Succesfull Proof of Concept Electronic Bill*

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

**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.
Thank you!