Trade Digitalisation:
Digital Economy Agreements & TradeTrust
**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
DIFFICULTIES WITH PAPER IN CROSS BORDER TRADE

Current State

- 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

Cost of shipping

20%*

Just 1 shipment involves

*Maersk and IBM’s Paper Trail Research in 2014

This inefficiency is costly
Target Outcomes

**FACILITATE**
SEAMLESS END-TO-END DIGITAL TRADE

- Domestic electronic transactions framework
- Paperless trading
- Non-Discriminatory Treatment of Digital Products
- Custom duties

**ENABLE**
OPEN & SECURE DATA FLOWS

- Cross-border data flows
- Personal data protection
- Location of computing facilities

**BUILD**
TRUST IN DIGITAL SYSTEMS

- Source code
- Spam
- Principles on Access & Use of the Internet for E-Commerce
- Trusted Authentication
- Cybersecurity Cooperation
- Online consumer protection
Benefits for Businesses

FACILITATE
SEAMLESS END-TO-END DIGITAL TRADE

ENABLE
TRUSTED DATA FLOWS

BUILD
TRUST IN DIGITAL SYSTEMS

- Provide a trusted, secure, and convenient way to transact online
- Increase efficiency
- Reduce costs, enhance trade
- Strengthen consumer trust
- Increase business competitiveness and market penetration
1. Facilitate Seamless End-to-End Digital Trade

Enable businesses to transact customs and commercial documents electronically and cuts down clearance/processing times leading to tangible cost-savings for businesses. Examples include:

- Custom forms,
- e-certifications for agricultural products, and
- e-bills of lading

- Example: cost of processing trade documents can add up to as much as 20% of the total cost of moving goods from country to country
TRADETRUST’S 3 KEY FUNCTIONALITIES: AUTHENTICITY, SOURCE & TITLE OWNERSHIP FOR TRADE DOCUMENTS

• TT is designed to provide the means to verify the authenticity and source of a document, as well as enable the digitalisation of transferable documents into Electronic Transferable Records (ETR) that have the legal ability to effect title transfers.

1) Authenticity
   - Any tampering would be evident

2) Source
   - Genuine creators of documents like Carriers, Govt authorities

3) Title Ownership
   - Legally-valid Performance Obligation Transfer

Core-Tech of TradeTrust

• Uses Decentralised Identifiers (DID) and digital signatures to verify the source and authenticity of documents.

• Uses Blockchain to create Non-Fungible Tokens (NFTs) to represent title ownership and enable transfers from one party to the next.

Verifiable Documents
  e.g. Certificates, Licenses, Packing Lists, Purchase Orders etc.

Transferable Documents
  e.g. Bills of Lading

*Decentralized Identifiers (DID) are a new type of unique, cryptographically verifiable identifiers that are designed to be decoupled from centralized registries, identity providers and certificate authorities

^Singapore’s 2021 amendment of its Electronic Transactions Act (ETA), one of the first few internationally, enables the creation and use of ETRs such as electronic Bills of Lading (eBLs), empowering practitioners to reap the benefits of digitalisation more easily.
WHAT IS TRADETRUST?

TradeTrust is a framework that comprises globally-accepted standards that connect governments and businesses to a public blockchain to enable trusted interoperability of electronic trade documents 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
THE TRADETRUST FRAMEWORK

The Framework 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 made freely available to the international community.

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

- **Govt-led**
  - Domain Specific Standards Development
    - TradeTrust Framework (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
  - Cross-domain Interoperable Framework
  - Technical Infrastructure
    - 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
TRADETRUST 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 negotiable documents)

Key Provisions of the MLETR

<table>
<thead>
<tr>
<th>Paper</th>
<th>Electronic</th>
<th>How it is achieved via TradeTrust</th>
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<tr>
<td>Unique Original Title Document</td>
<td>Singularity</td>
<td>Tokenisation</td>
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<tr>
<td></td>
<td>- Identify that electronic record as the electronic transferable record</td>
<td></td>
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<td></td>
<td>- Functional equivalent of unique original</td>
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<tr>
<td>Possessing that Title Document</td>
<td>Exclusive Control</td>
<td>Smart Contract</td>
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<td>- Render that electronic record capable of being subject to control from its creation until it ceases to have any effect or validity</td>
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<tr>
<td></td>
<td>- Functional equivalent of possession</td>
<td></td>
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<tr>
<td>Endorsement chain on that Title Document</td>
<td>Integrity</td>
<td>Cryptographic hash and Public Ledger</td>
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<tr>
<td></td>
<td>- Retain the integrity of that electronic record</td>
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TRADETRUST FRAMEWORK IS ACCESSIBLE TO ALL

Application Layer
- Basic UI
- Sample implementations via PoCs
- Finance
- Insurance
- Logistics
- Platforms
- Ecosystems

Commercial Applications/Platforms/Ecosystems

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

Digital Economy Agreement and TT

TradeTrust

Uncial Model Law
MLETR, MLEC, MLES
Singapore ETA

Standards Development

TradeTrust

INFOCOMM MEDIA DEVELOPMENT AUTHORITY
GLOBAL PARTNERSHIPS

ICC and Tratigura collaborate with IMDA to launch open-sourced blockchain trade platform

Cuts end-to-end trade document transit time by more than half from 15 to 20 days.

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.

Successful 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 workshops for the delegates from Blockch, Port of Rotterdam’s blockchain centre to work together on the requirements of the transferability in relation to bills for cross-border trade transactions.

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.

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.
CALL TO ACTION

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

If you’re from:
- Shipping lines
- Shippers/Consignees
- Logistics Service Providers
- Financial Institutions providing Trade Financing Service
- Govt Authorities involved in cross-border matters

2) Incorporate TradeTrust code into your Applications

If you’re from:
- Tech Companies
- 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