

# Trade Digitalisation: TradeTrust

Transform the way you trade

## Existential Symptoms and Issues of Digitalising Trade



### Trust Deficit

- Transactions involve long 'chains' of companies, most of whom only trust/know their immediate touchpoints
- Companies forced to adopt paper as the most interoperable medium but struggle with determining **authenticity** and **source** of documents



### Digital Maturity Varies across Ecosystem

- The entire ecosystem is at **various stages of development**
- If one part of the chain falls back to paper, all parties downstream have to use that



### Siloed digital ecosystems

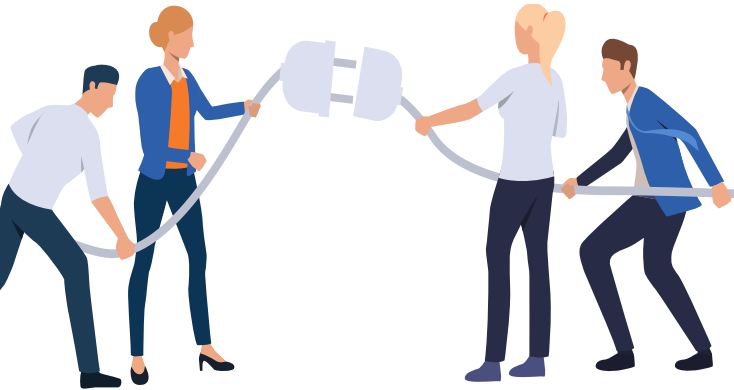
- Existing technology solutions and platforms are generally **not interoperable**
- Fractured ecosystem. Parties forced to choose one or multiple system




### Legal Validity of Electronic Documents

- Until recently<sup>^</sup>, only paper Transferable Documents were legally valid under statute law
- Therefore, transfers of title ownership via such Documents could not be performed electronically

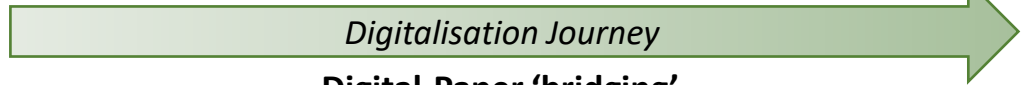
## START AT THE END STATE - INTEROPERABILITY IS THE KEY



3 aspects of Interoperability		What is our approach?
Technical	Data (e.g. semantic, formats)	Users choose from industry data standards like DCSA's and BIMCO's
	Protocols 	Making Verifiable Documents (VDs) and Electronic Transferable Records (ETRs) <b>portable and effective</b> across systems
Legal (for ETRs)		Current: Contractual Agreement
		Future: Statutory (e.g. Electronic Transactions Act)

Paper Medium

Fully Digital



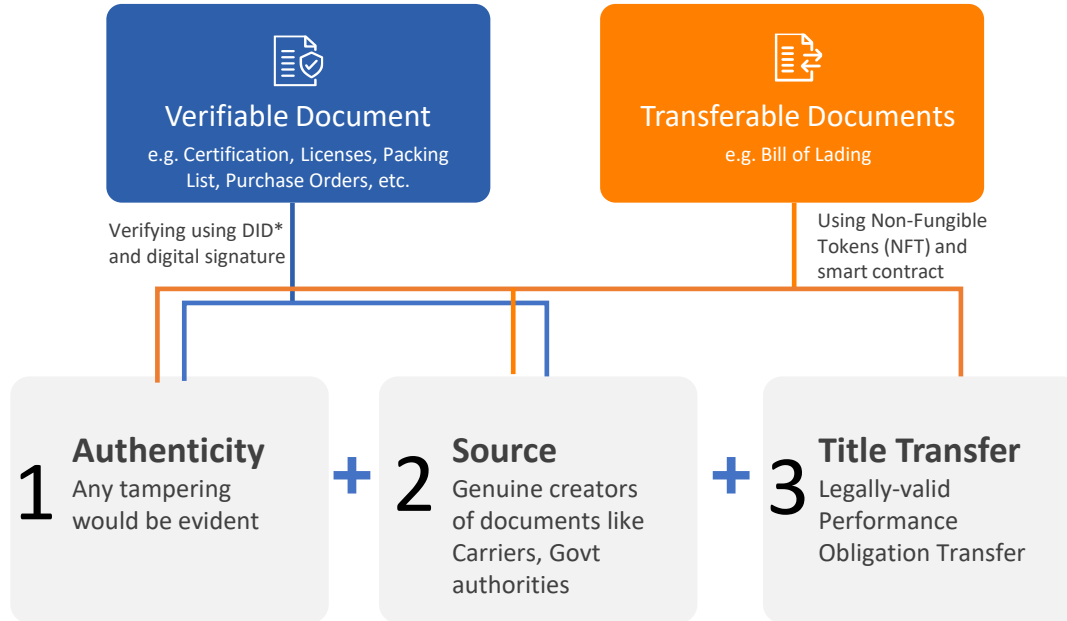
**Digital-Paper 'bridging'**

(to facilitate change management)

It is imperative that any solution bridges the digital divide, allowing participants from all levels of digital maturity to participate equally.

# TRADETRUST'S 3 KEY FUNCTIONALITIES: AUTHENTICITY, SOURCE & TITLE OWNERSHIP FOR TRADE DOCUMENTS

TradeTrust is designed to provide industry the means to verify the **authenticity** and **source** of a document, as well as to create Electronic Transferable Records (ETRs) that are functionally equivalent<sup>^</sup> to their paper versions (e.g. able to **effect title transfers**).



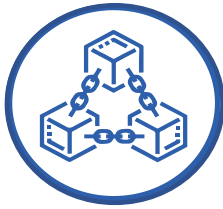
## Core-Tech of TradeTrust

- 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.

<sup>^</sup>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.

\*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

## TRADETRUST DESIGN PRINCIPLES



**Public Blockchain**  
*Transparent with 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<sup>^</sup>-Compliant**  
*Meet the requirements of the law (for electronic negotiable documents)*

### Built on:



### Aligned to:



\*<https://digitalprinciples.org/>

### Supports:

UN Sustainable Development Goals (SDGs)



# TRADETRUST FRAMEWORK IS ACCESSIBLE TO ALL

## Application Layer [Business-Led]



Finance



Insurance



Logistics



Platforms



Ecosystems

...

Commercial Applications/Platforms/Ecosystems

## TradeTrust [Government-Led]



Payload  
Agnostic  
Documents



Document  
Verification



MLETR  
Compliant  
Title Transfer



Distributed  
File Store



Seamless Exchange  
Paperless



Identity  
Resolver  
(Verifiable Claim)



Smart  
Contracts



Connectors



API

...

## Blockchain Layer



ethereum



polygon



XinFin (XDC) Network



Sidechain

...



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



Standards Development

W3C®



## FUTURE-PROOFING THROUGH ALIGNMENT TO A GROWING LEGAL STANDARD - MLETR

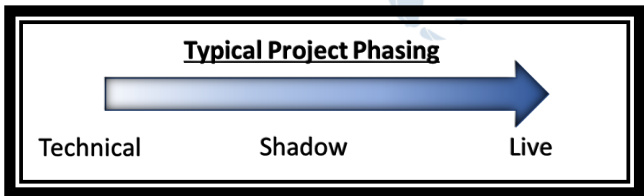
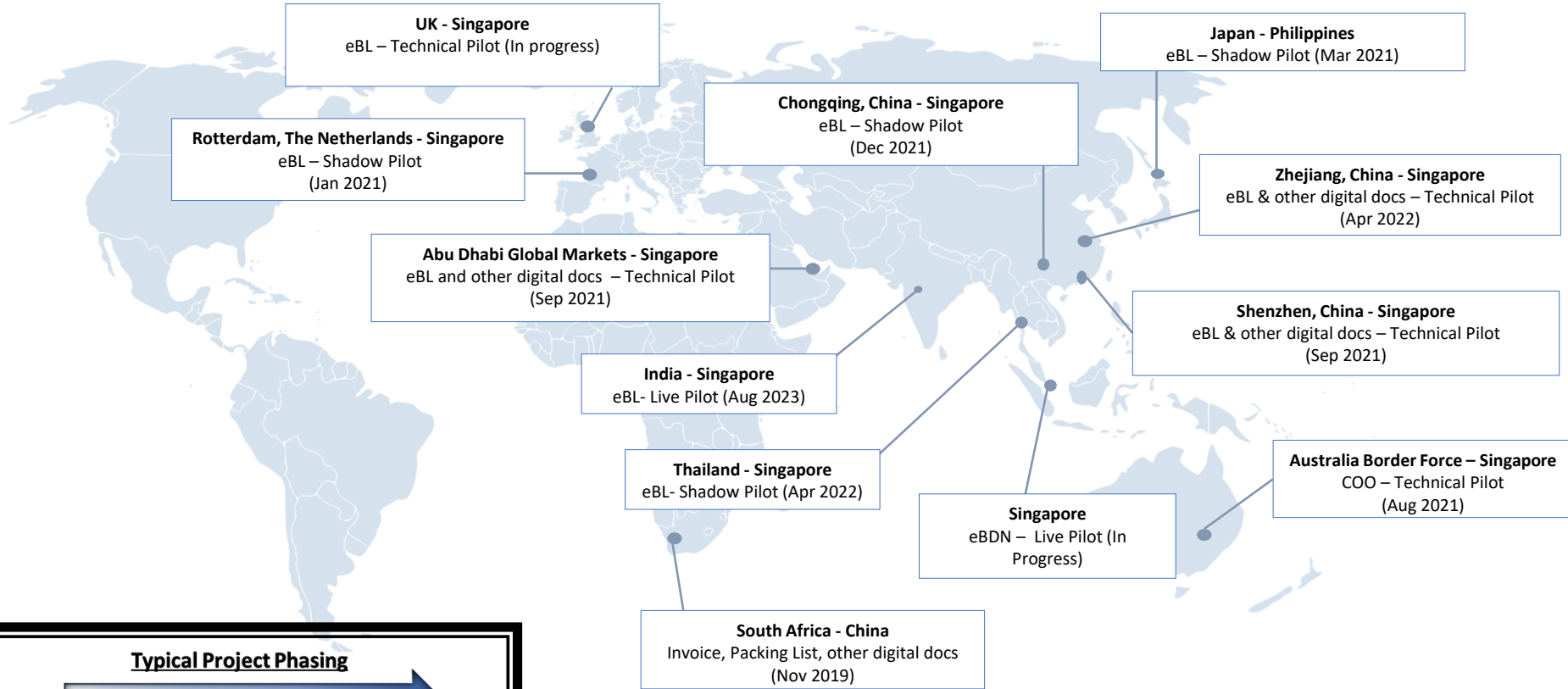
The MLETR sets forth a list of functional requirements that when met, enable an electronic record (eBL) to be treated as functionally equivalent to that of the paper version (BL).

### Bill of Lading serve as:

1. Evidence of the contract of carriage
2. Receipt for goods
3. Document of title to goods

Paper	Electronic	How it is achieved via TradeTrust
Unique Original Title Document	Singularity <ul style="list-style-type: none"><li>- Identify that electronic record as the electronic transferable record</li><li>- Functional equivalent of unique original</li></ul>	Tokenisation
Possessing that Title Document	Exclusive Control <ul style="list-style-type: none"><li>- Render that electronic record capable of being subject to control from its creation until it ceases to have any effect or validity</li><li>- Functional equivalent of possession</li></ul>	Smart Contract
Endorsement chain on that Title Document	Integrity <ul style="list-style-type: none"><li>- Retain the integrity of that electronic record</li></ul>	Cryptographic hash and Public Ledger

# TradeTrust transactions at a glance





## DIFFICULTIES (A.K.A. LESSONS LEARNT)

- 1) Most non-tech trade users find it easier to understand a solution/software than a framework/protocol
  - “Just show me which buttons to press to get it done”
  - Value of flexibility and freedom of a framework/protocol approach isn't fully appreciated (especially at the start)
- 2) Ambitions of different Solution providers vary
- 3) Decentralised technologies like blockchain and verifiable credentials are still not widely understood by the average trade user although they work everyday with another (way older) decentralised technology ..... Paper!

## USE CASES

### Use Case A Trade Finance



- **Improve operational efficiency** through faster transfers of title and other documents digitally and automate document validation
- **Reduce risk of trade finance fraud** and increase confidence in financing
- Who can benefit?  
**Financing Banks, Exporters, Importers, Carriers, Insurers, Surveyors**

### Use Case B Trade & Logistics



- **Increase productivity and optimise asset utilisation** through land logistics efficiency
- **Lower overhead cost of paper and reduce unnecessary demurrage and detention charges** of holding cargo due to delay in documentation
- Who can benefit?  
**Shippers, Consignees, Carriers, 3PL agents, Borders Control Authority, Port Operators, bunkering service providers**

### Many Other Use Cases... Tech/Platform Service Providers



- **Improve service offerings** through the development of innovative digital products and services using TradeTrust open-source code
- **Increase new business and partnership opportunities** to drive a vibrant digital economy
- Who can benefit?  
**Platform providers in bunkering, trade compliance, FinTech, Digital Art, Supply Chain, Logistics Services, Certification and Licenses Issuance**

## TRADETRUST AND THE INTERNATIONAL TRADE COMMUNITY



**July 2022**

Publication of eData VC for Cross-Border Trade, with OA/TT listed as Recommended Solution



**September 2022**

Winner of UNESCAP'S APTFF 2022 - Trade Facilitation Innovation Award



**Jan 2023**

OA (which TT is built upon) recognized as a Digital Public Good (DPG)\*



**March 2023**

WSIS GovStack Digital Service Design Special Prize

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(2022)
- 3) WTO-WEF TradeTech Report (2022)



\* <https://digitalpublicgoods.net/digital-public-goods/>

DPG Alliance Board: UNDP, UNICEF, German Federal Ministry for Economic Cooperation and Development (BMZ), iSPIRIT, Norwegian Agency for Development Cooperation (Norad), Sierra Leone Directorate of Science, Technology and Innovation (DSTI)

## A Legal Analysis Of Tradetrust-Enabled Electronic Bills Of Lading And Their Use In Global Trade

- A Comparison of Paper Bills of Lading (BLs), Contract-based electronic BLs (eBLs) and TradeTrust-enabled eBLs (TT eBLs)
- Legal Analysis of TT eBLs Under:
  - The Model Law on Electronic Transferable Records (MLETR)
  - Singapore Law
  - English Law
  - US (New York and Delaware) Law
- Advice to the Market on Using TT eBLs:
  - Common BL Claims
  - Features of TT eBLs Which Simplify Misdelivery Claims
  - MLETR and Non-MLETR Jurisdictions
  - P&I Considerations
  - Document Review and Compliant Presentations
  - How Parties Can Implement the TradeTrust Software

*Please register your interest to  
be notified when it is available  
at [tradetrust@imda.gov.sg](mailto:tradetrust@imda.gov.sg)*

## CALL TO ACTION

### 1) Use TradeTrust to co-create

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](mailto:tradetrust@imda.gov.sg)



THANK YOU



**INFOCOMM  
MEDIA  
DEVELOPMENT  
AUTHORITY**

