TRADE DIGITAL

Find out more at
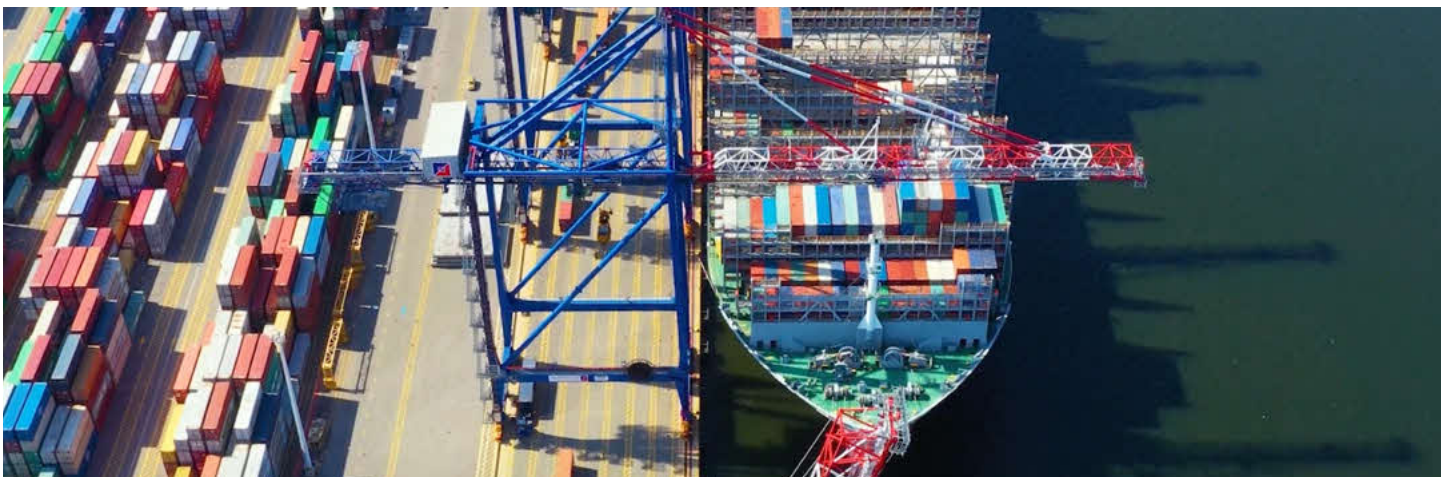**TradeTrust.io**

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INFOCOMM MEDIA DEVELOPMENT AUTHORITY

INDUSTRY NEWS

WORLD'S FIRST LIVE ELECTRONIC TRANSFERABLE RECORD (ETR) WITH TRADETRUST

We are pleased to announce that ExxonMobil and digital platform partner, Bunkerchain has successfully completed the world's first live transaction involving an electronic transferrable record (ETR).

Infocomm Media Development Authority (IMDA) partnered industry players and successfully executed a live shipment from Singapore to Thailand in the first quarter of 2023. This fully paperless, live cross-border trade involved the use of an ETR, that is functionally equivalent to a paper Bill of Lading (BL) using the TradeTrust framework[1].

The world's first ETR cross-border trade involved ExxonMobil Asia Pacific Pte. Ltd. as the shipper, Bunkerchain as the TradeTrust-enabled digital platform provider and VLK as the vessel owner who is supported by their Protection & Indemnity (P&I) Club. Bunkerchain provided a digital solution that supported the key logistics documentation processes for the cross-border liquid chemical trade involving multiple parties such as a surveyor and custom broker. The use of TradeTrust has enabled the digitalisation of the issuance, ownership title transfer and surrender of the ETR as an electronic Bill of Lading (eBL) between the different stakeholders across different systems, that is compliant to the UNCITRAL MLETR[2] requirements.

[1]TradeTrust was designed to address the challenges of paper-based cross-border trades, leveraging international standards and frameworks, utilising blockchain-powered technology to enable digitalisation of transferable documents into ETR. The TradeTrust framework harmonises the legal recognition of digital documentations between various jurisdictions which has adopted the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Transferable Records (MLETR).
[2]United Nations Commission on International Trade Law (UNCITRAL) has published the Model Law on Electronic Transferable Records (MLETR) in 2017 to enable the statutory legal use of electronic transferable records such as eBLs.

How the Shipment was Conducted

SG

TH

ExxonMobil Asia Pacific shipped liquid chemicals from Singapore to Thailand.

Bill of Lading (eBL)

VLK issued an electronic Bill of Lading (eBL) using Bunkerchain, a TradeTrust-enabled digital platform.

IMOXXXXXXX

S&P Global Market Intelligence

VERIFIED

The use of Marine Vessel Pass, a joint project between S&P Global Market Intelligence and Bunkerchain, created a Digital Passports for Ships on the eBL ensured that digital identity used in the signing, was onboarded, and verified by S&P Global Market Intelligence. This was tied to their International maritime organization number.

Bill of Lading (eBL)

TradeTrust

The eBL was subsequently surrendered on the TradeTrust Reference Implementation, demonstrating interoperability across different systems without the need to develop inter-system connectivity protocols such as APIs. It also established the interoperability between digital and paper-based processes.

Protection and Indemnity (P&I) Club

VLK was supported by their Protection and Indemnity (P&I) Club, on the basis that the P&I liabilities arising from the use of a TradeTrust-issued eBL is equivalent to the liabilities that could have arisen under the use of a paper-based Bill of Lading.

Bill of Lading (eBL)

Bill of Lading (eBL)

The eBL was legally supported solely by statutory law without the use of any contract law or rulebook. This shipment showed that an eBL issued using the TradeTrust framework can be used in a non-MLETR jurisdiction, such as Thailand.
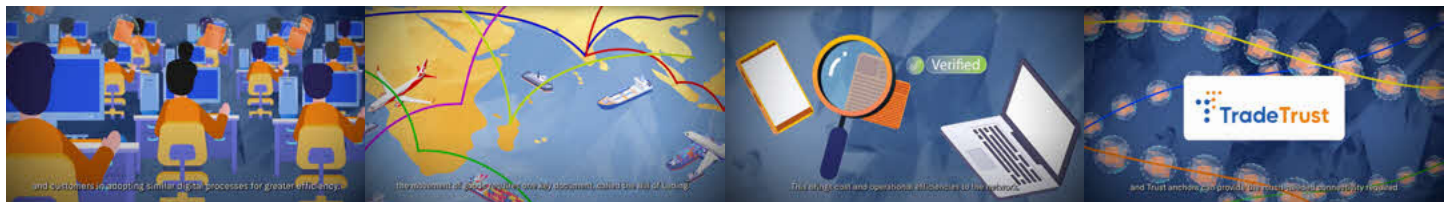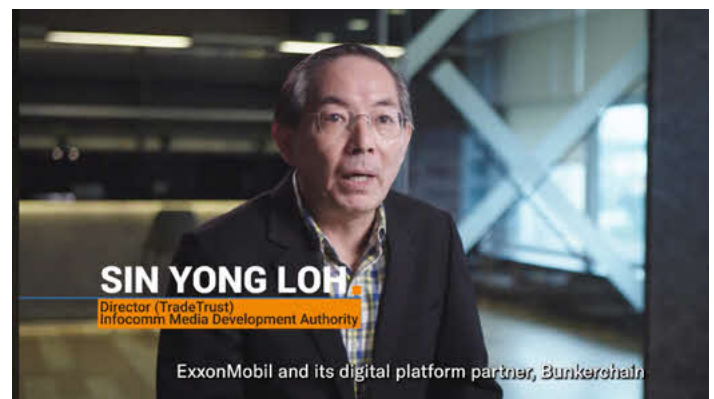
Why it matters, digitalising the Future of Global Trade

"Since 2019, Singapore has looked to reshape, reimagine, and redefine the way the world trades. International trade ecosystem is heavily reliant on physical paper documents and signatures for validation. This live transaction for consignment of liquid chemical from Singapore to Thailand, leverages on the TradeTrust framework to create an eBL that uses UNCITRAL's MLETR compliant statutory law framework. More importantly, we are excited to have demonstrated that the industry can potentially use eBL even if there was no basis of a contractual legal framework. We believe this will illuminate wider adoption of eBL in cross-border trade," said Mr Loh Sin Yong, Director, TradeTrust, IMDA.

The introduction of eBLs has enabled greater efficiency by streamlining and automating existing processes. The benefits include shorter waiting times and reduced costs. This pilot builds on cooperation with industry partners like ExxonMobil to encourage the use of ETRs and facilitate cross-border trade. Using the TradeTrust framework, ETRs can be issued, transferred, and surrendered between multiple stakeholders in a trusted manner, across different digital platforms, which is necessary in the context of cross-border trade.

"This pilot is part of ExxonMobil's efforts to increase our supply chain resiliency through digitalisation of business processes. We welcome frameworks like TradeTrust as an important part of our journey towards digitalization. Such frameworks increase efficiency and cost savings while maintaining high standards and trust, and we hope that this successful trial will lead to increased interest from industry to adopt similar standards," said Mr Low Say Lim, Asia Pacific Liquids Logistics & Distribution Manager, ExxonMobil Asia Pacific.

Watch and hear about the experiences from our industry partners in the video here.

SIN YONG LOH
Director (TradeTrust)
Infocomm Media Development Authority

ExxonMobil and its digital platform partner, Bunkerchain

OUTREACH

TRADETRUST COMMUNITY EVENT AT INTERNATIONAL CHAMBER OF COMMERCE (ICC) FUTURE TRADE FORUM

Together with the International Chamber of Commerce (ICC), TradeTrust hosted our first physical event on 30th March 2023. We would like to thank all our partners and all who have joined at the fruitful event.

The ICC Digital Standard Initiative Future Trade Forum convenes business leaders, policymakers, technologists and other industry movers who are shaping the global trade ecosystem into its digital, sustainable, inclusive future.

We took the opportunity to invite some of our platform and industry partners to share about how they can empower the global digital trade ecosystem through TradeTrust in their various sector.

Special thanks and mention to our platform providers and partners:

Here's a quick recap of the presentations!

Leon shared about the World's first Verifiable Digital Credentials for Ships Tied to the International Maritime Organization (IMO) Database and the Smart Contract EBDN System (Touch and Sail). The Marine Vessel Pass (MVP) is a globally recognized verified digital ID for ships and it enhances the speed of digitalization in the maritime industry. The Touch and Sail system works with Marine Vessel Pass to realize the World first fully digital eBDN without pictures of wet ink signatures and stamps.

Leon Ling, CEO of Bunkerchain
Marine Vessel Pass and TradeTrust: Secure your eBL and eBDN Solution.

Steve shared about the interoperability issues that the individual industry faces. He recognizes that there are millions of parties in the whole supply chain, using thousands of different systems and platforms. Interoperability and Verifiable Credentials are crucial and should conform to the UN/CEFACT interoperability standards which TradeTrust can help achieve.

Steve CAPELL, Project Leader, United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)
Digital Trust for Sustainable Supply Chains, a UNECE Perspective on TradeTrust

Desmond introduced RYTE (product by GUUD), a Multibank Trade Finance Application Portal on the Network Trade Platform (NTP). It offers 12 trade finance products which is supported by 11 different leading banks. RYTE collaborated with TradeTrust in 2022 to conduct an electronic bill of lading(eBL) pilot for the Letter of Credit Issuance which has help to save time and cost, increase efficiency and increase security.

Desmond TAY, CEO, GUUD
Achieving Fully Paperless Documentary Trade Financing through Ryte TFAP

Gary shared about his solution to the challenges faced (E.g. food traceability and quality, messy trade communications and prolong settle process, etc) in the Agrifood industry. DiMuto can capture the flow of goods and flow of money on a single platform with visibility and trust from the beginning at the fishery to the end consumer, vice versa. With that, it will improve the visibility of day-to-day operations with blockchain and TradeTrust verification, provide a complete & accurate image of the financial operational strength of the company which will result in lower risk lending for financiers and more create opportunities for buyers/suppliers.

Gary LOH, Founder, DiMuto
Powering Agrifood Trade with Visibility

See Lin shared about the challenges faced in the bunkering process which can be inefficient and manual resulting in human error, miscommunication and the inability to authenticate. With its Bunkerflow solution, it simplifies the operational issues and increases efficiency tremendously especially when sharing and communicating real-time update of bunkering delivery details between the different stakeholders.

See Lin ANG, Founder, Angsana Technology
Digitalising the Bunker Delivery Note

The Bank serves multiple clients in different countries and hence, a common global framework across sectors and parties would definitely make it easier for the banks to support customers digital ambitions. To interoperable across various solutions with the use of tokenization, TradeTrust will be the key enabler for the flow.

Sam shared that digitalization of documents will help the trade ecosystem including clients, carriers and banks handle their risk obligations more efficiently. This is only the start of the digitalization journey, and he encourages all industry participants to take on the ownership which will enable the interoperability and digitalization of trade documents to scale.

Fireside chat with
Sin Yong LOH & Samuel MATHEW

Together with our partners, we invite you to join and use TradeTrust as we work towards a common goal to reach the potential of digitalization and interoperability of documents in the various industry.

Missed out on the session? You may purchase the video on demand at https://futuretradeforum.org/.

OFFICIAL RELEASE OF TOKEN REGISTRY V4

Token Registry v4 has officially been released, and is now available on the master branch of the respective repositories on GitHub.

TradeTrust implementers are recommended to upgrade your token-registry implementations from v2 to v4, and to migrate your Token Registry and Title Escrow contracts. Key changes from Token Registry v2 to v4 include:

- Deployment of Token Registry and Title Escrow can now utilize a default Contract Factory, which means that it takes less gas to deploy and mint.

- Title Escrows can now be minted seamlessly, with a single function call to the token-registry without having to respecify the title escrow creator during each mint.

For more information, please refer to the token-registry GitHub repository.

You may continue to check your Token Registry v2 implementation at https://v2.tradetrust.io and https://dev.v2.tradetrust.io, which will be available until Jun 2023 as a transition period during your migration to v4. The Token Registry v2 release will be shelved and tagged with 'token-registry-v2' on the Github repositories.

SUPPORT FOR TESTNETS

The recommended default testnet for application development is Sepolia. The Goerli testnet will reach End of Life in Q4 2023 and will be replaced by Holeservice in 2023.
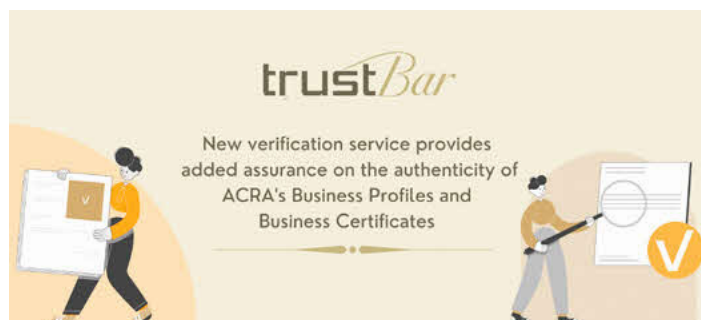
Implementers are recommended to migrate to Sepolia, which is already available on TradeTrust for testing and development.

New trustBar verification service provides added assurance on authenticity of ACRA's Business Profiles and Business Certificates


The Accounting and Corporate Regulatory Authority (ACRA) recently introduced a verification service that enables quick and easy verification of the authenticity of ACRA's Business Profiles and Business Certificates (Incorporation/Registration). The trustBar service gives added assurance to businesses and the public when conducting business and making business decisions.

Since the launch on 4 Mar 2023, over 6,600 verifications have been made through trustBar by businesses, stakeholders, and the public. The service leverages the Government Technology Agency of Singapore (GovTech)'s OpenAttestation (OA) - an open-source framework for the endorsement and verification of documents.

Business users can verify the authenticity of the Business Profiles and Business Certificates (Incorporation/Registration) in the ACRA trustBar portal by scanning the QR code or using the verification URL found in the PDF document; or uploading the OpenAttestation (OA) file for the document to the ACRA trustBar portal. These OA files contain a signature which is a unique digital code used to verify against ACRA's public key. Verification of the OA files of the Business Profiles and Business Certificates (Incorporation/Registration) can also be made using the TradeTrust framework.

Verification API Service for mass verification purposes
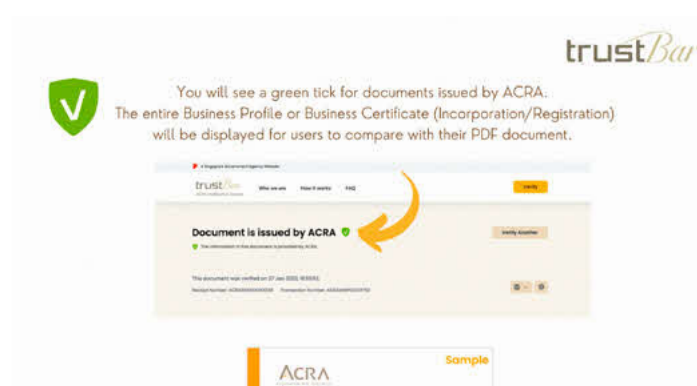
A verification API service is also offered through the ACRA APIMall portal for software developers to integrate the API into their existing processes, enabling machine to machine workflows for seamless mass verification purposes.

Feedback from users

> The trustBar verification service is a very useful tool for law firms and businesses as it enables a quick, fuss free verification of the authenticity of documents purportedly issued by ACRA.
>
> **Connie Loo**
> **Director, Notary Public**
> **JusJuris Law LLC**

> ACRA's free trustBar verification service really makes it convenient and efficient for us to do our work. We can have the assurance and proof that the documents are issued by ACRA.
>
> **Irene Tan**
> **Senior Associate, Corporate Secretary**
> **AccTrust Advisory Pte. Ltd.**

For more information, please visit www.acra.gov.sg/announcements/trustbar.

TT MILESTONE, AWARDS + RECOGNITION

RECOGNITION OF TRADETRUST CONTINUES TO GROW

TradeTrust continues to draw accolades, regionally and internationally.

As TradeTrust continues its journey to transform the way the world trades, recognition for this trailblazing work has poured in, strengthening TradeTrust's collective belief in the direction it is head towards.

2022

Sep 2022: TradeTrust/OpenAttestation listed as implementable solution to UNCEFACT's White Paper.

Sep 2022: TradeTrust/Open Attestation listed as a reference framework that is available for those looking to implement the verifiable credential approach.

Sep 2022: TradeTrust specification included in the UNCEFACT GitHub repository

2023

Jan 2023: OpenAttestation, which TradeTrust builds upon, was recognized as a Digital Public Good, an open-source software designed to improve lives and livelihoods around the world. It adheres to privacy and other applicable laws and best practices and helps to achieve the Sustainable Development Goals (SDG), affirming its scalability and application in various sectors and use cases.

March 2023: TradeTrust was also recognized as a Finalist for GovStack's[3], Digital Service Design Special Prize, in recognition of the excellent technical design based on a building block approach optimizing scalability and adaptability.

[3]A multi-stakeholder initiative dedicated to accelerating the digital transformation of government in pursuit of the UN's Sustainable Development Goals (SDG)

HOW TRADETRUST CONTRIBUTES TO THE UN'S SUSTAINABLE DEVELOPMENT GOALS (SDG)

TradeTrust Manifests the benefits of Digital Trade and contributes to numerous SDGs

TradeTrust is an innovative framework with a targeted solution to address existing pain points in international trade (i.e., heavily paper-based and siloed systems which lead to inefficiency) and support the growth of trade and income for all nations. It aims to connect the systems of governments and businesses with interoperable digital documents.

PRINCIPLES FOR DIGITAL DEVELOPMENT

- Design With the User
- Understand the Existing Ecosystem
- Design for Scale
- Build for Sustainability
- Be Data Driven
- Use Open Standards, Open Data, Open Source, and Open Innovation
- Reuse and Improve
- Address Privacy & Security
- Be Collaborative

TRADETRUST DESIGN PRINCIPLES

- **Public Blockchain** — No central governance authority
- **Data Off-Chain** — Preserves data confidentiality
- **Payload Agnostic** — No data format or standard restrictions
- **MLETR-Compliant** (LAW) — Meet the requirements of the law (for electronic negotiable documents)
- **Open Source** — Preserves data confidentiality

It supports the 2030 Sustainable Development Agenda because:

1) TradeTrust is a public good or digital infrastructure for the world. Its software code is made freely available on GitHub, reducing the barriers to entry for countries and businesses (i.e., promotes digital equality especially for the less privileged).

2) It is about paperless trade and hence reducing carbon footprint caused by paper documents used in the cross-border trade.

3) It promotes partnerships and inclusivity as it is developing an open-source community and open for collaborations with both public and private sector partners to showcase the benefits of digital trade.

4) Its various trials have demonstrated time and cost-saving for the business community (e.g., the Netherlands -Singapore trial proved time saving for BL transfer from 6-10 days to less than 24 hours). To further illustrate the potential impact which TradeTrust would bring: according to Digital Container Shipping Association (DCSA), the shipping industry could potentially save $4 billion a year if 50% of the market adopts eBL. eBL has been a key document which TradeTrust promotes.

TRADETRUST FREQUENTLY ASKED QUESTIONS

What is TradeTrust?

TradeTrust, which is built upon OpenAttestation[4], comprises globally accepted standards and frameworks that allow governments and businesses to endorse, exchange and verify documents and effect title transfer across different digital platforms seamlessly. TradeTrust can be utilised to digitalise two categories of documents used in cross-border trade:

1) **Verifiable Documents** such as the Certificate of Origin where the provenance and authenticity of the e-document can be easily verified by any party; and

2) **Transferable Documents** such as Bill of Lading where the e-document's title ownership can be transferred from one party to another.

For Transferable documents, TradeTrust has been developed to meet the requirements of the UNCITRAL MLETR which has been adopted into Singapore's legislation[5] in 2021. TradeTrust's open-source code is freely available and can be easily integrated into any existing system of businesses and solution providers to create and verify documents in support of viable use cases.

TradeTrust has partnered with authoritative International Organisations such as UN/CEFACT[6] and ISO[7] to ensure that TradeTrust technical methods are compatible with existing standards and where appropriate, drive their acceptance as an international standard through the organisations' respective open and neutral standards development processes. In addition, TradeTrust is advocated as the key interoperability mechanism for trade in several notable publications by WTO[8] and ICC[9].

Why does it use public blockchains?

As TradeTrust is designed to facilitate trusted digital document exchanges used in cross-border trade and logistics processes, our target audiences therefore involve many different parties across different geographies. Blockchain or Distributed Ledger Technology is used as it can demonstrate provenance, which is required for the legitimacy of documents such as Bills of Lading. One of UNCITRAL MLETR's requirements for electronic transferable records is to ensure singularity of the record. TradeTrust uses Non-Fungible Tokens (NFTs) to satisfy this requirement when dealing with Transferable documents and Blockchain is used to record the NFT transactions.

TradeTrust relies on *public* blockchain technology (either Ethereum or Polygon) to electronically endorse and transfer the ownership of a trade financing document amongst the stakeholders along a trade flow.

TradeTrust's use of public blockchain was a deliberate choice as in a global setting, there should not be a need for a central authority or body to govern the use of a network and gatekeep participation. Public blockchains also allow for an open and interoperable system that enables all international parties to participate.

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[4]Developed by GovTech, OpenAttestation is an open-sourced framework to endorse and verify documents using the blockchain. Documents issued this way are cryptographically trustworthy and can be verified independently.
[5]Electronic Transactions Act Amended To Facilitate Electronic Transactions, Providing Convenience And Strengthening Singapore's Trade Competitiveness In The Digital Economy - Infocomm Media Development Authority
[6]UN/CEFACT White Paper "eData Verifiable Credentials for Cross Border Trade
[7]ISO TR3242
[8]WTO publication: The Promise of TradeTech & WTO WCO publication: The role of advanced technologies in cross-border trade
[9]ICC: Standards Toolkit

What is the use of crypto in TradeTrust?

The use of cryptocurrencies in TradeTrust is to pay for the recording of NFT transactions for electronic transferable records during issuance, ownership transfers, and surrender etc. In operationalising TradeTrust, Business Solution Providers insulate users from cryptocurrencies, managing the cryptocurrencies required to pay for the recording of the NFT transactions.

The cryptocurrency utilised in TradeTrust is neither used in the settlement of the trade (i.e. payment for goods) nor is tradable. The cryptocurrencies involved is used solely to power the recording of the electronic trade financing document from the transferer to transferee on a public blockchain.

What is the cost of using crypto for eBL transactions in TradeTrust?

Currently, TradeTrust can be connected to 2 different public blockchain networks: (1) Ethereum; and (2) Polygon. Below are the estimated fees (USD) computed as at 1 Feb 2023 for a typical series of NFT transactions related to an electronic Bill of Lading (eBL), from its issuance to surrender:

Estimated Fees on Ethereum: $19

Estimated Fees on Polygon: $0.16

Do note that the cost estimated above involves the whole chain of endorsements (NFT transactions) for a Transferable document like eBL. This cost is expected to be shared across multiple transaction parties in the eBL value chain. Link to view live cost.

TRADETRUST GIVES THE CHOICE OF MULTIPLE BLOCKCHAINS FOR USERS TO CHOOSE

Example: blank-endorsed BL for a shipment between Singapore and UK

Cost of using a TradeTrust eBL via Polygon* is **USD$0.16**

Party	Action	Cost (in Polygon)	Cost (in USD)
Carrier	Issues eBL	250,509	$0.0588
Exporter	Transfer Holdership	47,282	$0.0111
	Transfer Ownership	61,333	$0.0144
Exporter's Bank	Transfer Holdership	47,282	$0.0111
	Transfer Ownership	61,333	$0.0144
Importer's Bank	Transfer Holdership	47,282	$0.0111
	Transfer Ownership	61,333	$0.0144
Importer	Surrender eBL	84,586	$0.0199
	TOTALS	660,940	$0.15520 (< USD 16¢)
(Price as at 1/2/23)			

Cost of using a TradeTrust eBL via Ethereum* is **USD$19**

Party	Action	Cost (in ether)	Cost (in USD)
Carrier	Issues eBL	250,509	$7.12
Exporter	Transfer Holdership	47,282	$1.34
	Transfer Ownership	61,333	$1.74
Exporter's Bank	Transfer Holdership	47,282	$1.34
	Transfer Ownership	61,333	$1.74
Importer's Bank	Transfer Holdership	47,282	$1.34
	Transfer Ownership	61,333	$1.74
Importer	Surrender eBL	84,586	$2.40
	TOTALS	660,940	$18.76 (< USD$19)
(Price as at 1/2/23)			

*In addition to currently available Polygon and Ethereum, TradeTrust will progressively add more suitable blockchains. Documentation at https://github.com/Open-Attestation/token-registry/tree/beta.

What does this mean for Business Solution Providers?

Business Solution Providers which have integrated TradeTrust to provide digital services dealing with electronic transferable records such as eBLs will typically manage the cryptocurrencies required to pay their clients' recording of their NFT transactions.

Is there licensing required?

For such payments, the TradeTrust team has consulted MAS's regulatory team on the need for licensing requirement. MAS has advised that if the Business Solution Providers are not facilitating buying and selling of digital payment tokens (DPT) and arranging the transmission of DPTs from one account to another, they would not be deemed to be carrying on a business of providing a DPT service under the Payment Services Act 2019. MAS further recommends the Business Solution Providers perform their own legal and compliance review before proceeding.
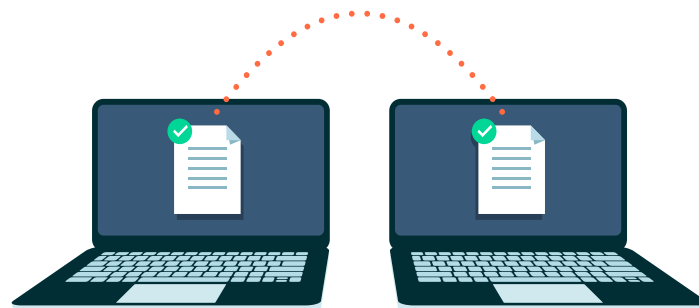
Is TradeTrust secure, especially if it is based on public blockchain?

Security and Reliability of TradeTrust is ensured through the VAPT[10] of the Smart Contract Code. In addition, the choice of Blockchain must follow the TradeTrust - Guidelines.

1) Actively maintained with a large development community
2) Have withstood the test of time
3) Ethereum Virtual Machine (EVM) Compatible
4) Accessibility of blockchain state
5) Impartial Security Model
6) Economically Secured
7) Open-sourced

[10]VAPT exercise for TT code is ongoing, the results of which will be published upon completion in a few months.
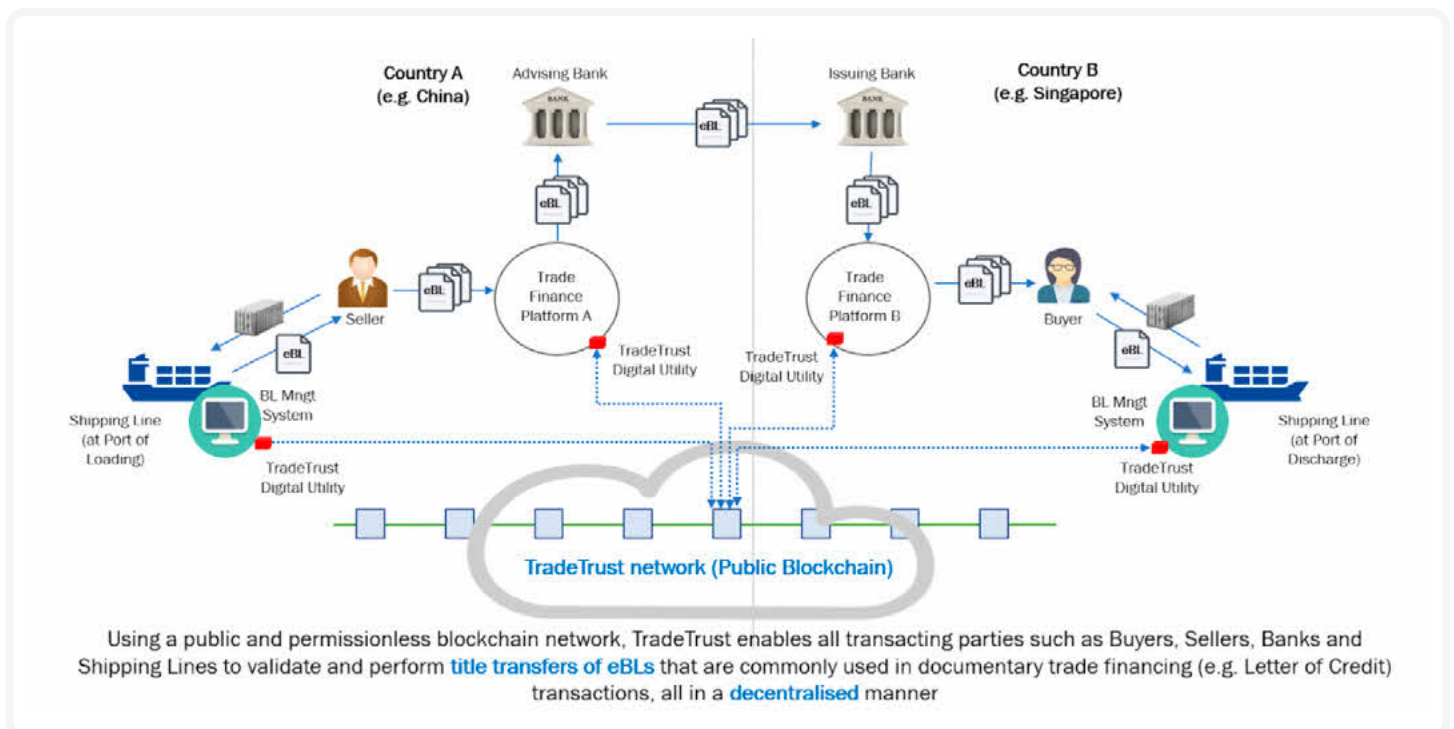
What are some pilots that have involved the industry?

The TradeTrust team in IMDA has orchestrated several industry-led eBL Trade Financing pilots involving Buyers, Sellers, Banks, Shipping Lines and Business Solution Providers. These pilots seek to demonstrate TradeTrust's ability to:

a) Digitalise the Bill of Lading document (among other required trade documents) which is commonly used in documentary trade financing arrangements

b) Facilitate online presentation of all required electronic documents to the banks for verification and title ownership transfer (for eBL)

c) Decentralise the transactions for an eBL by allowing pilot participants to use different digital solutions/platforms to verify and transact the digital document

Below is an illustration of the pilot scope for documentary trade financing arrangements such as Letter of Credit (L/C), Documents against Acceptance (D/A) and Documents against Payment (D/P) where an eBL is issued, sent, verified and endorsed to the next party in the financing value chain.

Using a public and permissionless blockchain network, TradeTrust enables all transacting parties such as Buyers, Sellers, Banks and Shipping Lines to validate and perform **title transfers of eBLs** that are commonly used in documentary trade financing (e.g. Letter of Credit) transactions, all in a **decentralised** manner

Potential benefits of such pilots include raising efficiency of the process, reducing the overall financing lead time and lowering risk of frauds involved for all parties.

About TradeTrust

TradeTrust comprises a set of globally-accepted trade process standards and frameworks, that connects governments and businesses to a public blockchain. In doing so, it enables interoperability across different platforms so that electronic trade documents can be exchanged in a trusted fashion across these digital platforms.

4 Key Components of TradeTrust

1 Legal Harmonisation

Provide legal validity for electronic negotiable documents

2 Standards Development

Develop international standards that TradeTrust complies to

3 Accreditation Structure

Certify technical solutions that meet the requirements of the law

4 Open Source Software

Develop a set of open-source codes that can easily integrate backend solutions to TradeTrust network

TradeTrust documentation: **docs.TradeTrust.io**

TradeTrust Software: **github.com/TradeTrust**

TradeTrust tech webinar videos: **TradeTrust.io/learn**

Find out more at **TradeTrust.io**

For more enquiries, email us at **TradeTrust@imda.gov.sg**