INFOCOMM MEDIA DEVELOPMENT AUTHORITY OF SINGAPORE (IMDA)

SECTORAL TRANSFORMATION GROUP TRADE & CONNECTIVITY CLUSTER

REQUEST FOR INFORMATION: IMDA(RFI)-002

TRADETRUST DIGITAL INFRASTRUCTURE

Issued on 21 March 2019

DISCLAIMER

a. This RFI is not intended to create or impose any binding legal obligations whatsoever on IMDA, whether express or implied and whether contractual or otherwise. Without prejudice to the generality of the foregoing, each company acknowledges and agrees that IMDA shall be under no duty or obligation to act fairly or equally towards the company in relation to IMDA's evaluation of its proposal or with regard to any process adopted by IMDA under this RFI.

b. Nothing in the RFI shall constitute a contract between IMDA and any company submitting a proposal or information.

c. IMDA does not make any representation or warranty, whether express or implied, or accept any liability for the completeness, relevancy, accuracy and/or adequacy of the information provided by IMDA in this RFI.

d. IMDA accepts no liability of obligation in relation to any proposal or information submitted pursuant to this RFI. Each company shall bear all costs and expenses associated with the preparation and submission of its proposal or information.

e. The receipt by IMDA of any proposal pursuant to this RFI shall under no circumstances impose any form of obligation or amount to an acceptance of or an agreement to abide by any terms or conditions stated therein on the part of IMDA.

f. IMDA shall have the absolute discretion, at any time, to terminate this RFI or to change the nature, scope, procedures or timelines for the RFI. Under no circumstances shall IMDA incur any liability in respect of such termination or changes.

g. IMDA shall not owe any liability to any party for any loss or damage whatsoever (including loss of profit, savings, business contracts, or revenues, and all other forms of actual, direct, special, incidental, or consequential loss or damage) arising from or related to any response to this RFI, including but not limited to the submission of proposals or information.

h. This document cannot be used by any person or entity other than the Interested Participant, or for any purpose other than that mentioned in (a) above. IMDA accepts no responsibility in any way relating to the use of this RFI Document by any other person or entities for any other purpose. Interested Participants responding to this RFI Document are deemed to waive their rights to claim costs from IMDA and/or to appeal against any decision arising from the process.

Contents

1.0 REQUEST FOR INFORMATION (RFI)

1.1 Introduction (Background)

- Infocomm Media Authority of Singapore (IMDA) is working with various agencies and industry partners both locally and overseas to develop an interoperability framework, TradeTrust, for the secured exchange of electronic trade documents for cross border trades.

- TradeTrust aims to provide participants the proof of authenticity and provenance for these electronic documents, addressing the inefficiencies caused by manual verification processes that resulted from a lack of trust. It promotes greater use of digital trade documents, helps lower operating costs for businesses and facilitates faster movement of goods across borders.

- Conventional digitalisation efforts have given rise to increasingly fragmented digital ecosystems consisting of silo groups of user communities. TradeTrust works within this reality by enabling various enterprise and platform systems to effectively inter-operate.

- TradeTrust will offer a neutral and transparent channel for all trade ecosystem parties to synchronise their activities and information while giving them the assurance that their data confidentiality is not compromised. This neutrality can also spur the creation of new service offerings by businesses and governments to benefit the trade and logistics sector.

- TradeTrust consists of a set of governance and legal frameworks, standards and a future-ready digital infrastructure, to facilitate the interoperability of electronic trade document exchanges between different digital ecosystems.

1.2 Objectives of RFI

a. IMDA invites all interested parties (single vendors or consortiums, hereafter called "Respondents") to submit their proposals to develop and implement the TradeTrust network.

b. Gather feedback from potential suppliers regarding cost estimates of developing such a network including licensing terms and conditions of background intellectual properties needed for building this network.

1.3 Key components relating to TradeTrust

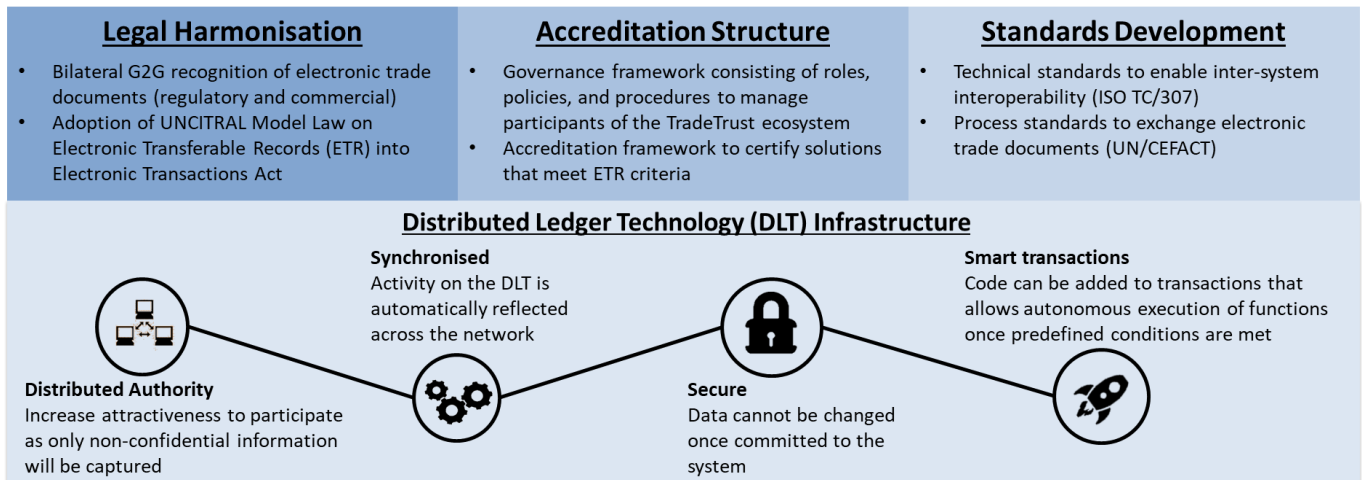- TradeTrust may somewhat incorporate the following key components (Fig 1)

Legal Harmonisation	Accreditation Structure	Standards Development
• Bilateral G2G recognition of electronic trade documents (regulatory and commercial) • Adoption of UNCITRAL Model Law on Electronic Transferable Records (ETR) into Electronic Transactions Act	• Governance framework consisting of roles, policies, and procedures to manage participants of the TradeTrust ecosystem • Accreditation framework to certify solutions that meet ETR criteria	• Technical standards to enable inter-system interoperability (ISO TC/307) • Process standards to exchange electronic trade documents (UN/CEFACT)

Distributed Ledger Technology (DLT) Infrastructure

Synchronised
Activity on the DLT is automatically reflected across the network

Smart transactions
Code can be added to transactions that allows autonomous execution of functions once predefined conditions are met

Distributed Authority
Increase attractiveness to participate as only non-confidential information will be captured

Secure
Data cannot be changed once committed to the system

Fig 1: Key Components of TradeTrust to Digitalize Cross Border Trade

a. **Legal Harmonisation**

  - Adoption of UNCITRAL Model Law on Electronic Transferable Records (ETR) into Electronic Transactions Act (ETA)

    o UNCITRAL Model Law contains a set of legal provisions, which when enacted by various jurisdictions, seek to enable the use of electronic transferable records not only within the enacting jurisdictions but also in a cross border context. The Model Law provisions will enable an electronic transferable record to enjoy the full legal recognition of the substantive law governing the paper-based equivalent. For example, an electronic bill of lading created under the enacted Model Law will enjoy the same legal recognition as a paper bill of lading, and an electronic promissory note or bill of exchange will enjoy the same legal recognition as a paper promissory note or bill of exchange. Industry and businesses will then be able to enjoy the advantages offered by the digitalization of such trade documents.

b. **Accreditation Structure**

c. **Standards Development**

d. **Distributed Ledger Technology (DLT) Infrastructure**

  - Based on distributed architecture

  - Satisfies criteria on provenance and authenticity while being secure

  - Ability to support smart contracts
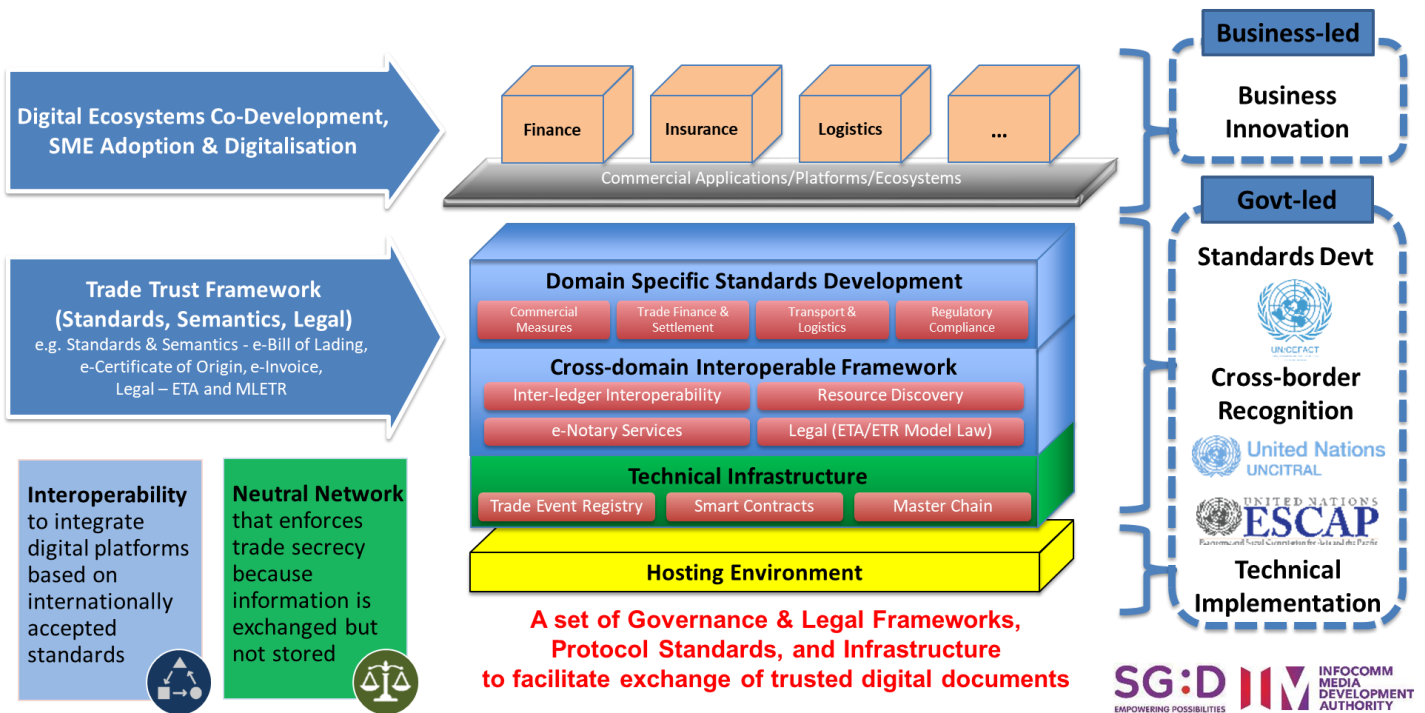
1.4 Structure of Key Components

Fig 2: TradeTrust Framework and Infrastructure

- It is envisioned that the key components relating to TradeTrust can be operationalised by a layered architecture as shown in Fig 2.

  a. Digital Ecosystems Co-Development Layer

  - The top most layer describes commercially available digital platforms that serve different communities within the trade and logistics sector.

  - All ecosystems also handle different aspect of the international supply chain.

  - Typically, these are business led innovations that are motivated primarily by commercial interest.

b. TradeTrust Framework

- To achieve interoperability, TradeTrust needs to be built on a set of internationally accepted standards. These standards can be categorized into 2 sub-layers.

- Domain Specific layer deals with specific business processes and standards relating to specific business activities of the supply chain.

- Non-Domain specific layer consists of common standards applicable to all business activities across the supply chain. It provides common services that are consumed by the upper layer.

c. TradeTrust Infrastructure

- This layer is the technical implementation that operationalises the TradeTrust framework. It comprises a set of tools, utilities, SDK, relevant executables, reference documentations, reference implementations and other relevant softwares (collectively called TradeTrust product) that facilitate the integration of application systems with TradeTrust. It will also enable systems and/or platforms to participate as a node on the TradeTrust network.

- The product can be distributed under appropriate open source licensing terms.

d. Hosting Environment

- The technical infrastructure will be hosted on a hosting environment that supports both on-premise and cloud (public or private).

- The first TradeTrust node will be hosted on the Networked Trade Platform (NTP).

1.5 TradeTrust Network

- Stakeholders can be part of this TradeTrust network within the supply chain by participating as a TradeTrust node which is shown on the left hand graphic of Fig 3 below:
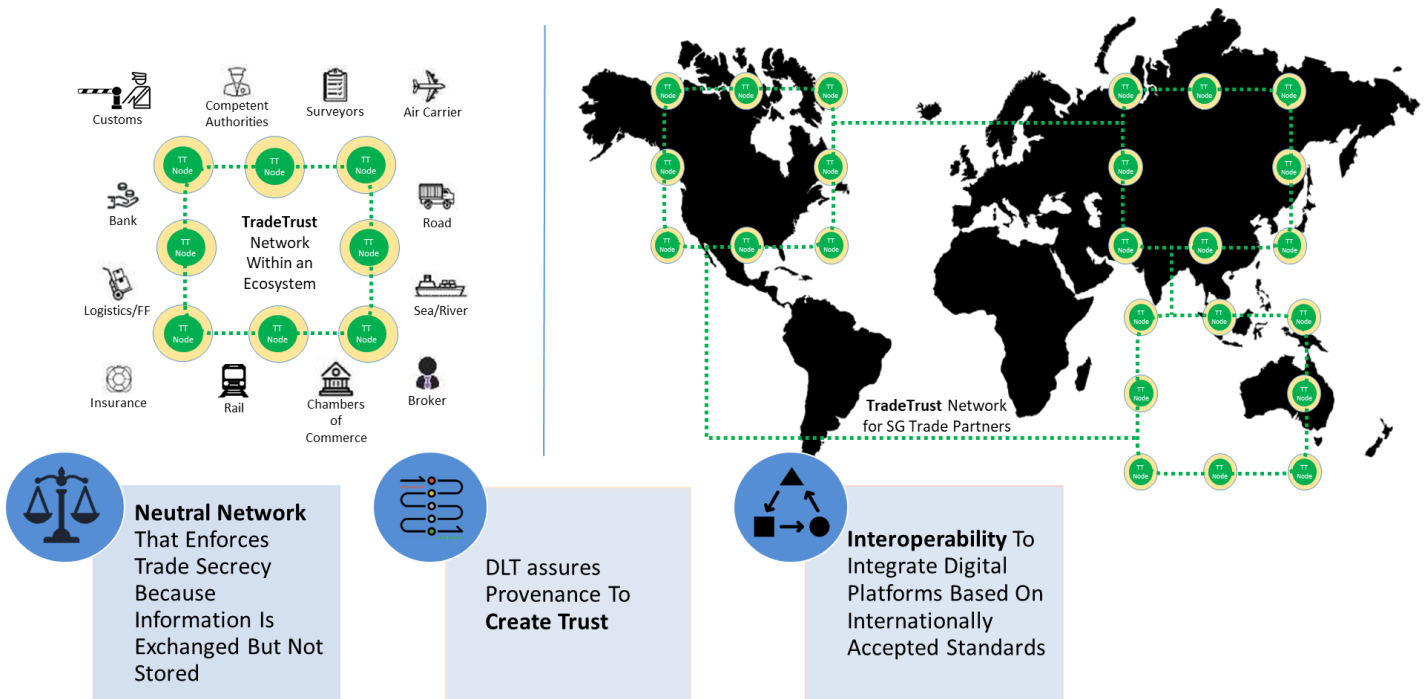

Neutral Network That Enforces Trade Secrecy Because Information Is Exchanged But Not Stored

DLT assures Provenance To **Create Trust**

Interoperability To Integrate Digital Platforms Based On Internationally Accepted Standards

Fig 3: A Trust Network for Singapore Trade Partners

- To increase adoption, the on-boarding process is in-built into the network to reduce tedious administrative process (E.g. KYC, registrations, etc.)

- The level of trust on the network increases as the level of participation increases globally.

- As the network is designed to support international trade, global adoption is the key in measuring the success of this project.

1.6 High Level Requirements

- The proposed solution should achieve the provision of proofs of provenance and authenticity for electronic documents that are being exchanged through the network.

- The solution should demonstrate that the network being built is trusted and secure for sharing trade documents between international trade partners.

- The proposed technical solution is based on distributed architecture and encompass automated on-boarding process.

- It should support the trusted transferability of electronic title documents such as e-BLs between stakeholders residing in different digital trade ecosystems.

- The technical solution needs to also satisfy the requirements of the UNCITRAL model law **(This copy of the Annex can be downloaded from the link below)** Website: http://www.uncitral.org/pdf/english/texts/electcom/MLETR_ebook.pdf

- The respondent's submission should minimally include:

    - Technical proposal (include design considerations)

    - Estimated cost of development

    - Implementation approach

    - High-level Project schedule

1.7 Timelines

- The RFI Timeline will follow as per below:

Issue Request for Information (RFI)	21st March 2019
Respondents Acknowledgement / Intent to Respond (briefing attendance) Email: tradetrust@imda.gov.sg	26th March 2019
Respondents Briefing (IMDA Board Room Level 6) Located at 10 Pasir Panjang Road, MapleTree Biz City	28th March 2019 (2pm to 6pm)
Feedback to Respondents (any last minute questions)	19th April 2019
RFI Submission Deadline	30th April 2019

1.8 Contact Details

Arun Ramchandani
CC: Dennis Yip, Kay Ren Yuh, Serena Koh
Manager
D (+65) 69550336 **M** (+65) 9380 7240 **W** www.imda.gov.sg
E tradetrust@imda.gov.sg
10 Pasir Panjang Road, #03-01, Mapletree Business City, Singapore 117438

1.9 Intellectual Property Rights

- All intellectual property rights in this RFI and all materials provided by IMDA in connection with this RFI are and shall remain the property of IMDA.

1.10 Confidentiality of Information

- IMDA may require any party receiving confidential information from IMDA in relation to or arising from this RFI to sign a written non-disclosure agreement setting out such party's confidentiality obligations in relation to such confidential information.

- IMDA accepts no liability or obligation in relation to any confidential information disclosed to IMDA by a Participant pursuant to this RFI unless otherwise agreed by IMDA in a written non-disclosure agreement setting out IMDA's confidentiality obligations in relation to such confidential information.

1.11 Closing date of submission

- The closing date of the submission is **30 APRIL 2019** at 1500hrs. Please send all submissions to tradetrust@imda.gov.sg on or prior to the closing date. We will revert with any questions directly to follow up after the submission deadline.

GLOSSARY

Annex 1: Abbreviations

"eBL"	Electronic Bill of Lading (Ocean)
"CIPL"	Commercial Invoice and Packing List
"EDI"	Electronic Data Interchange
"UNCITRAL"	The United Nations Commission on International Trade Law
"BOLERO"	Bill of Lading Electronic Registered Industry
"NTP"	Network Trade Platform
"DLT"	Distributed Ledger Technology
"ML-ETR"	Model Law on Electronic Transferable Records
"ETA"	Electronic Transactions Act