FY2020
International economic research project for the establishment of an integrated domestic and international economic growth strategy
(International economic research project on Japan's measures to enhance trade facilitation (including the use of FTAs))

Surbey Report

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NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

Table of Contents

0. Executive Summary

In the world, the establishment of wide-area economic zones through Free Trade Agreements (FTAs) and Economic Partnership Agreements (EPAs) has been progressing. As a result, in recent years, trade platforms have emerged to provide electronic services for trade procedures using digital technologies such as blockchain technology, mainly by private companies, with the aim of facilitating trade.

On the other hand, governments around the world are also building single-window systems based on the policy of digitization of trade-related procedures for the purpose of trade facilitation. In addition, China and ASEAN countries, which are promoting wide-area FTAs and intra-regional economic integration as a national policy, are moving forward with the interconnection of NSWs.

Against the backdrop of the above, this project conducted a survey and analysis to understand the trade platforms of each country, the current status of the single-window system being promoted by each government, and the status of digitization of documents related to trade procedures, and to contribute to the planning of Japan's policies to respond to these trends.

As a result of the survey, the trend of trade platforms in the world is that private sector-led trade platforms, mainly Western ones, which provide services across multiple continents, are collaborating with other trade platforms, but have not yet linked up with Single Window. In contrast, Asian trade platforms such as Japan, South Korea, and Singapore are characterized by their linkage with national public systems (single-window and customs systems), and in some cases, the platforms themselves are operated under national initiative.

In addition, a side-by-side overview of Japan, ASEAN, China, and the South Korea on the status of single window construction shows that Japan is aiming for private-sector-led cooperation with ASEAN centered on a trade platform, while China is promoting cooperation with the ASEAN Single Window (ASW), focusing on the computerization of procedures for certification of origin as part of its One Belt, One Road strategy. China is promoting cooperation with the ASEAN Single Window (ASW) as part of its One Belt, One Road strategy, focusing on the computerization of origin verification procedures, while South Korea is focusing on demonstration experiments to expand its own infrastructure.

In ASEAN, the items themselves on the application form for certification of origin applicable to FTAs with the ASEAN region, Japan, and China and South Korea are unified in principle. The differences were not only in the wording of the item names, but also in the selection items related to trilateral trade, which differed among the agreements. In addition, TradeWaltz, one of Japan's trade platforms, is currently considering the implementation of a function to form the data entered in the certification of origin procedure into various forms, as is the case with other platforms. The current situation is such that the differences in systems and other factors are not an obstacle to the Japanese government and private companies' future cooperation and use of various platforms and single windows. On the other hand, there is no legal basis for the digitization of trade-related procedures, especially for bills of lading (eBLs), so early legal action cannot be expected in the event of non-compliance.

In light of the above findings, it is important for Japan to take the initiative in rapidly expanding the functions of its trade platforms and public systems, to collaborate with overseas platforms, and to expand the scope of collaboration with ASEAN and other regions. In order to achieve this, it is necessary to build a position in the global trade facilitation trend through public-private partnerships that combines "support for institutional development, such as providing a legal basis for eBL" and "provision of global services that realize full digitization of trade.

1. Project Description and Implementation Method

1.1. Assessing the status of the establishment of trade platforms

The current status of GSBN, TradeLens, etc. will be surveyed through literature review via Chinese, English, etc. to understand the status of trade platform construction.

In addition, the current status of domestic platforms should be briefly organized as basic information (e.g., the current status of NACCS's electronic information sharing with overseas customs offices). If the information is limited to public information only, online interviews will be conducted as necessary.

1.2. Status of digitization of related documents such as single window and certificate of origin

Examine the current status of single windows in each country and the current status of documents tied to trade platforms in relation to Economic Partnership Agreements (including the status of digitization).

For example, in the efforts of regional single windows (ASEAN Single Window, Pacific Alliance, etc.), the ASEAN Single Window uses e-ATIGA Form D as a certificate of origin for the region, while the China-ASEAN FTA relationship uses Form E is used in relation to the China-ASEAN FTA.

We will survey the literature with a focus on these institutional differences and the obstacles to future collaboration and use of various platforms by the Japanese government and private companies.

2. Results of Project

Specific details of the projects to be implemented and detailed research and analysis will be reported as follows.

2.1. Assessing the status of the establishment of trade platforms

2.1.1. Survey methodology

In the survey of this project, we extracted trade platforms that are believed to be in operation in various countries around the world and created a long list of trade platforms in each country to be targeted to understand their construction status, etc.

For the trade platforms listed in the long list, the following information was collected and organized from the official website of each platform: entity, year of establishment, region, type of platform, purpose and basic functions of the platform, and whether or not blockchain technology is applied.

Subsequently, in line with the objectives of the project, the report was compiled to provide an overview of the status of cooperation with the Single Window, which governments are working on, the status of support for related procedures such as certificates of origin, which are an outcome of economic partnership agreements, and the status of the introduction of blockchain technology.

Of the above, interviews were conducted and detailed information was compiled for those trade platforms that, based on information on their official websites, appeared to be implementing support for single-window linkage and related procedures such as certification of origin.

Furthermore, as a survey of the current status of domestic platforms, we organized basic information on TradeWaltz and the current status of electronic information sharing with overseas customs offices of NACCS.

The following table shows the long list of trade platforms to be surveyed in this project and the list of trade platforms where the hearing survey was conducted.

Table 2-1 Long list of trade platforms

#	Platform Name	Function	Region	source (e.g. quotation)
1	TradeWaltz	Supply chain management and trade finance	Japan	https://www.tradewaltz.com/
2	STANDAGE	Supply chain management and trade finance	Japan, Nigeria (*Nigeria is an export business only)	https://standage.co.jp/
3	Vakt	Supply chain management and trade finance	Europe	https://www.vakt.com/

4	essDOCS	Supply chain management and trade finance	203 countries in 5 continents	https://essDOCS.com/solutions/banks/cmatch
5	Bolero	Supply chain management and trade finance	Five continents	https://www.bolero.net/company-overview/
6	NTP	Supply chain management and trade finance	Singapore	https://www.ntp.gov.sg/
7	UtradeHub	Supply chain management and trade finance	South Korea	https://www.UtradeHub.or.kr/porgw/japanese/html/jap_main.html
8	TRADE-VAN	Supply chain management and trade finance	Taiwan, New Zealand, Thailand, Singapore, India, Philippines, and plans to expand to Europe	https://www.tradevan.com.tw/index.do?language=2
9	Tradelink	Supply chain management and trade finance	Hong Kong	https://www.tradelink.com.hk/tc/index.html
10	SMK-DagangNET (MyTRADELINK)	Supply chain management and trade finance	Malaysia	http://www.dagangnet.com/
11	MineHub	Supply chain management and trade finance	Five continents with a focus on North America	https://MineHub.com/
12	TradeFinex	Supply chain management and trade finance	Singapore	https://www.tradefinex.org/
13	EC3	Supply chain management and trade finance	America	https://www.skuchain.com/ec3/
14	Insurwave	Supply chain management and trade finance	Europe, Russia, North America, Brazil, Republic of South Africa, Japan, China, India, ASEAN	https://insurwave.com/

15	Shippio	Supply Chain Management	Japan	https://www.shippio.io/
16	TradeLens	Supply Chain Management	Five continents with a focus on the U.S.	https://www.TradeLens.com/
17	E2OPEN	Supply Chain Management	USA, Europe, Asia	https://www.e2open.com/
18	OTB	Supply Chain Management	61 countries, mainly from ASEAN and China	https://otb.globaletrade.services/mainpage
19	CargoX	Supply Chain Management	Europe, Hong Kong	https://cargox.io/solutions/for-transport-and-logistics/
20	TradeWindow	Supply Chain Management	Australasia, China, Singapore	https://www.tradewindow.io/index.html
21	eTradeConnect	Trade Finance	Hong Kong, Australia, New Zealand	https://www.etradeconnect.net/Portal
22	Komgo	Trade Finance	Japan, USA, Europe, Australia	https://www.komgo.io/
23	Marco Polo	Trade Finance	Five continents	https://www.marcopolo.finance/
24	Contour	Trade Finance	17 countries/regions	https://www.contour.network/
25	We. Trade	Trade Finance	15 European countries	https://we-trade.com/
26	Bay Area Trade Finance Blockchain Platform	Trade Finance	China, Hong Kong	https://www.ledgerinsights.com/hong-kong-trade-financeBlockchain/
27	India Trade Connect	Trade Finance	India	https://www.edgeverve.com/finacle/casestudy/india-trade-connect/
28	Trusple	Trade Finance	China	https://www.trusple.com/
29	B3i	Trade Finance	Europe, Asia, North America	https://b3i.tech/home.html

2.1.3. Survey Results

2.1.3.1. Status of trade platform development in the world

As a result of surveying the basic information on trade platforms in the world, the following trends were found. (For the official websites of the trade platforms listed in the examples, please refer to the long list of trade platforms above.

- The functions of trade platforms can be broadly categorized into (1) supply chain management only, (2) trade finance (financial transactions among trade transactions) only, and (3) both supply chain management and trade finance.

- In the Asian region, there are cases where trade platforms have been established under state-led initiatives (some have been privatized).
  - e.g. Bay Area Trade Finance Blockchain Platform (People's Bank of China, etc.), UtradeHub (Ministry of Industry, Trade and Energy, South Korea, etc.), OTB (KTNET, etc.) privatized), TRADE-VAN（Established as a "customs clearance automation" task force under Ministry of Finance）, NTP (Singapore Customs)

- There are some trade platforms that are working to expand the scope of their services by collaborating with other trade platforms.
  - e.g., Vakt (with Komgo and essDOCS), eTradeConnect (with Bay Area Trade Finance Blockchain Platform and We. Trade), MineHub (with essDOCS), Bolero (with Marco Polo Network)

- There are examples of existing trade platform services being operated in conjunction with their own service platforms.
  - Example: ReChainMe (which uses Contour as a trade platform)

- There is a trade platform that has been established for the purpose of improving operational efficiency through electronic sharing of trade procedure documents in commodity transactions such as oil resources.
  - Examples: Vakt (a joint venture of 12 companies including banks, trading companies, and an oil company (Saudi Aramco Energy Ventures)), Komgo (a joint venture of 15 companies including banks, trading companies, and an oil company)

- Some government-led trade platforms are limited to serving only the country in question (as far as the information can be read from the official website), but they can also be linked to inter-regional single windows such as the National Single Window (NSW) and ASEAN Single Window (ASW). However, the procedures can be linked with inter-regional single windows such as National Single Window (NSW) and ASEAN Single Window (ASW).

- Examples: NTP (in collaboration with ASW), Bay Area Trade Finance Blockchain Platform (People's Bank of China, etc.), UtradeHub (Ministry of Industry, Trade and Energy, South Korea, etc.)

- There are examples of private platforms established by consortiums of financial institutions that have developed services in collaboration with state-run trade platforms (NTPs).
  - Example: CamelONE Trade Finance (trade platform functions with NTP)

- Platforms established by consortia or joint ventures of financial institutions tend to provide services over a wide area.
  - Examples: Marco Polo (33 of the world's leading banks and the largest force), Contour (23 of the world's leading banks), We.Trade (consortium of 14 European banks, joint venture), B3i (several insurance companies), Insurwave (several insurance companies)

- In addition, as mentioned above, there is a tendency for platforms operated by financial institutions to use blockchain technology (including the implementation of demonstration experiments) in the last five years. The main platforms (Marco Polo and Contour) are scheduled to move to a production environment for blockchain technology in 2021.

Based on the above trends, and in light of the purpose of this project study, an overview figure of the status of trade platform development in the world was created based on the following perspectives.

- Perspectives on functional classification of trade platforms
  - Supply Chain Management
  - Trade Finance
  - Supply chain management and trade finance

- Perspectives on the scope of business development of trade platforms
  - Domestic only
  - Specific regions (East Asia, North America, Europe, etc.)
  - Multiple Continents

- Perspectives on the trend of the governments' approaches to the NSW
  - Availability of linkage with public systems (*)

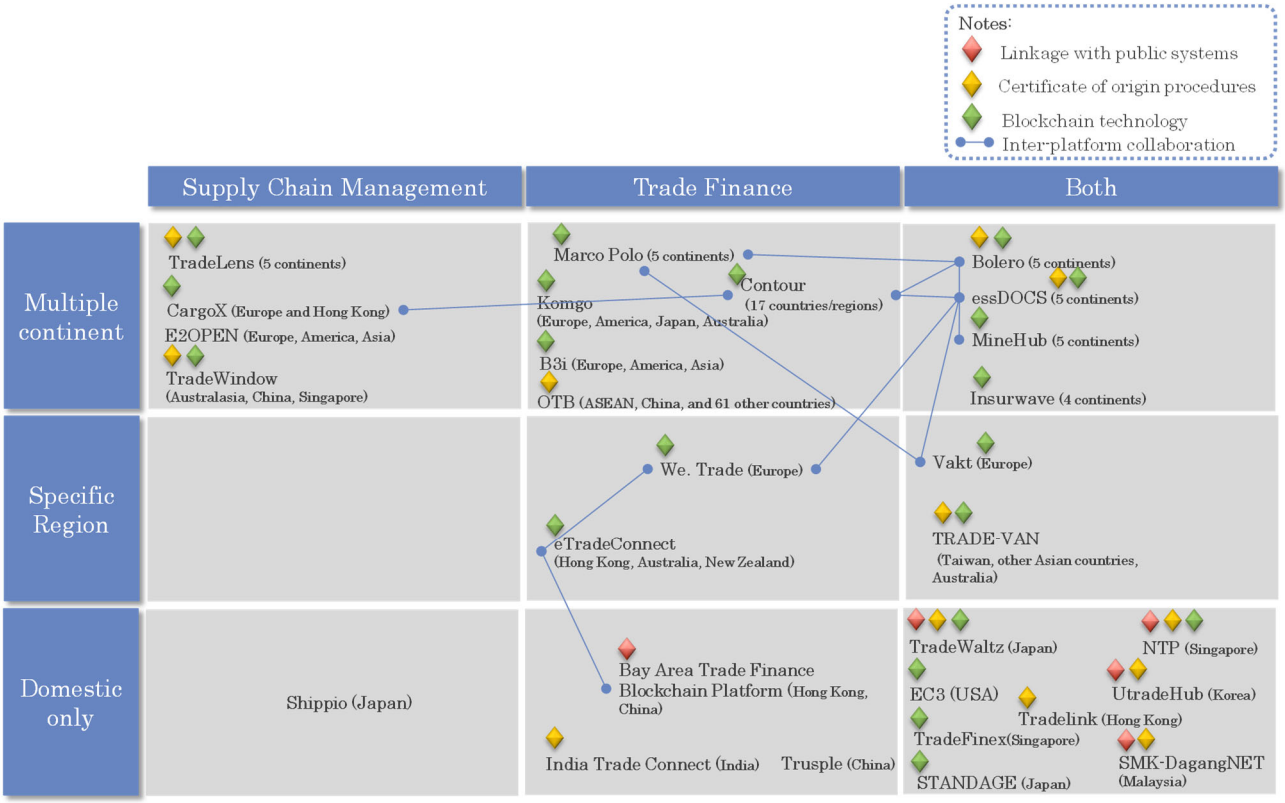
- Perspectives on the progress of digitization of relevant documents around the world
  - Support for certification of origin procedures

- Perspectives on Surveying Technology Trends in Trade Platforms
  - Whether blockchain technology has been introduced or not (including the demonstration experiment stage)

※Linkage with public systems.

Linkage with public systems in this paper means that, at present, the system is linked or integrated with the customs system and single window (e.g., certification of origin procedures) of the home country. For example, Japan's TradeWaltz is working with NACCS, a customs system, on system linkage to improve the convenience of both services for those involved in international logistics and international trade (at the MoU stage), and Singapore's NTP has a dual role as a single window (conventional trade). In addition, Singapore's NTP serves as a single window (a state-run infrastructure that integrates and replaces the existing trade platform TradeXchange and the public system TradeNet). In South Korea, a single window has not been established, but UtradeHub has linked its system of origin verification procedures with customs and issuing agencies. In addition, SMK-DagangNET in Malaysia has now integrated its services with MyTRADELINK, Malaysia's single window. In the future, SMK-DagangNET is expected to be linked with other public systems, including those other than customs and single window.

Figure 2-1 Overview of the status of major trade platforms around the world



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on information disclosed on various websites and interviews with TradeWaltz.

From the above figure, we can see how trade platforms that provide services across multiple continents (Marco Polo, Bolero, essDOCS, Contour) are collaborating with other trade platforms, compared to trade platforms that only provide services in a specific region or country.

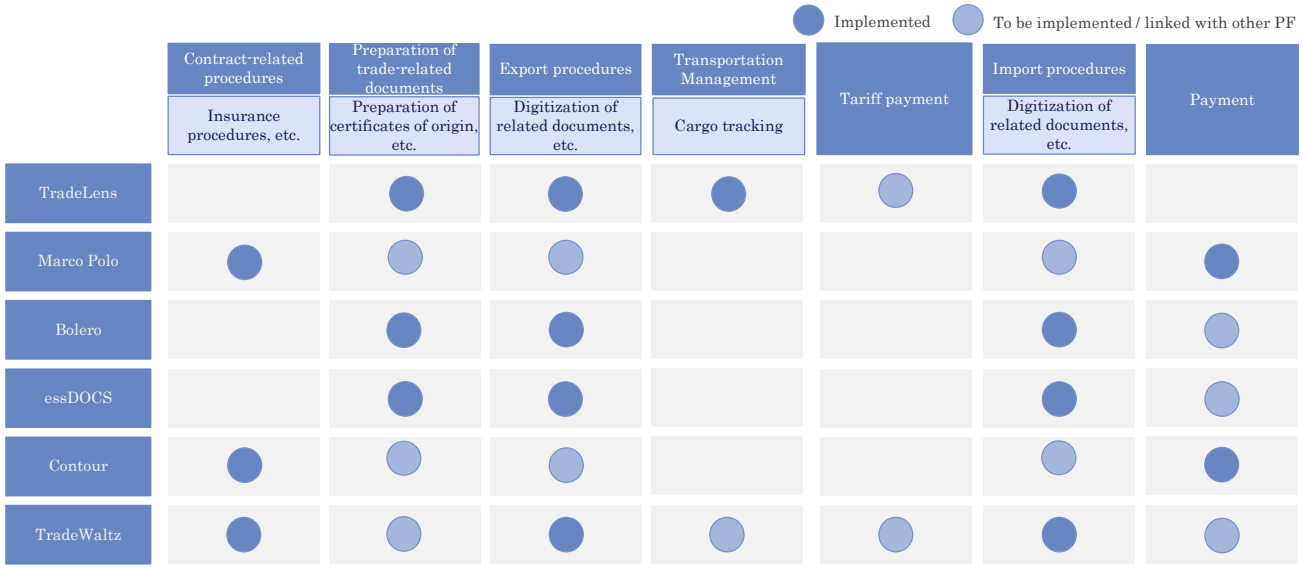
On the other hand, trade platforms in Japan, South Korea, and Singapore (TradeWaltz, UtradeHub, NTP, and SMK-DagangNET), which are currently domestic-only, are linked to national public systems (e.g., customs systems), and the platforms themselves are operated by customs organizations. In the case of [1]China (Bay Area Trade Finance Blockchain Platform), it is the only one of the domestic trade platforms that shows signs of being linked to other trade platforms.

Japan's TradeWaltz is expected to be linked to NACCS in 2021, so it is classified as having linkage with public systems.

The figure below shows a comparison of the functions of the global top-tier trade platforms and Japan's trade platform (TradeWaltz). The global top-tier trade platforms are providing services to a large number of customers over a wide area by taking advantage of their individual strengths and expertise, and are expanding their functions through mutual cooperation.

On the other hand, TradeWaltz is aiming to position itself as a single-window platform in Japan by linking with public systems such as NACCS.

Figure 2-2 Comparison of functions of each trade platform



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on information available as of March 12 from the official websites of each platform and interviews with TradeWaltz officials.

[1] There is no official web site, but information was collected from the following sites.
https://www.ledgerinsights.com/chinas-central-bank-blockchain-trade-finance/

2.1.3.2. Learn more about the global top-tier trade platform

Among the trade platforms introduced above, we examined the characteristics of TradeLens, Marco Polo, Bolero, essDOCS, and Contour, which are considered to be the top-tier platforms in terms of the regions in which they operate and the number of users. We investigated the characteristics of each platform by combining public information and some interview information.

The features of these trade platforms include the use of blockchain technology to ensure the security of trade-related data, the establishment of interoperability through collaboration and networking among platforms, and the establishment of interoperability within users and ecosystems. In addition, it has established interoperability between platforms and networks, and interoperability within users and ecosystems, thereby securing its position as a top-tier player in the global trade platform market.

① TradeLens

- Overview (web-based public information) [2]

Item	contents
Main constituent	IBM Maersk
Year of establishment	2018
Region	Five continents with a focus on the U.S.
Number of users	175 companies (as of December 2019)
Type of PF	Supply Chain Management
Role and main functions	**Role** Real-time and seamless sharing of trade documents and cargo information **Main functions** Cargo Tracking (Visibility) Electronic sharing of trade documents (Document Sharing) Alert
Blockchain Technology	Hyperledger Fabric (IBM Blockchain Platform)

The following is a summary of the contents of the interview with TradeLens and the accompanying information.

- Purpose of the trade platform

  To promote international trade more efficiently and safely, and to create new business opportunities through new ways of collaboration and information sharing.

- Service Description

  Stakeholder companies in trade-related transactions are connected through an EDI (Electronic Data Interchange) system, and trade-related documents are exchanged by accessing a platform using blockchain technology through[3] an API (Application Programming Interface). This

[2] https://www.tradelens.com/

[3] An API is a mechanism for sharing software functions, which allows your software or application to communicate with other software or applications without having to program them.

mechanism (ecosystem) eliminates the need for users to search for and collect the necessary data, and shares information owned by members who have joined the TradeLens ecosystem.

- Overview of the platform

  The architecture of TradeLens has three layers: the ecosystem layer (TRADELENS ECOSYSTEM), the marketplace layer (MARKETPLACE), and the platform layer (TRADELENS PLATFORM).

  The ecosystem layer includes importers and exporters, customs brokers, forwarders, and governments involved in international trade and shipping, who access the platform through web interfaces or APIs.

  The marketplace layer includes in-house products (Solutions) and third party products (Solutions). In-house products include trade-related document exchange functions, eBL, value-added services, and data-based processing services.

  The products in the marketplace layer are priced differently depending on the service, but the specific services are mainly data visualization, trade-related document exchange, and eBL. Other services are still under development.

  On the other hand, if a third party product is deemed to be of high value to the user, additional services can be provided to the client through the platform like an APP store. In addition, receiving services related to containers are also in the scope of TradeLens.

  The platform layer will use blockchain technology to guarantee data security, work on data standardization, and ensure commercial data privacy and confidentiality in data sharing norms.

- TradeLens Ecosystem

  - ✧ Harbors

    TradeLens is connected to more than 150 ports, and shipping companies have provided more than 600 bay port data. Examples of ports include over 20 terminal operators worldwide, such as PSA Singapore, International Container Terminal Services Inc, Patrick Terminals, Modern Terminals (Hong Kong), Port of Haryana, Port of Rotterdam, Port of Bilbao, PortConnect, PortBase, etc. Fax Port, Port of Rotterdam, Port of Bilbao, PortConnect, PortBase, etc. In addition, Holt Logistics, the terminal operator of the Port of Philadelphia, has joined the global APM Terminals network to pilot the solution. APM Terminals includes approximately 234 ports that are participating or willing to participate in TradeLens.

  - ✧ Member companies of ships, containers, shipping, etc.

    Shipping lines such as Pacific International Lines, the Swiss shipping company MSC, France's CMA, and CGM, which emphasize the platform as a neutral platform made up of several major shipping lines, have joined the solution, which already includes the world's leading container carriers Maersk Line and Hamburg Sud. Hamburg Sud have already joined the solution.

In addition to the above, BeneficialCargo Owners (BCOs) are also participating in the ecosystem, including Torreblanca/Camposol and Umit Bisiklet.

In addition, forwarders, transportation and logistics companies such as Agility, CEVA Logistics, DAMCO, Kotahi, PLH Trucking Company, Ancotrans, and WorldWide Alliance are now participating in land transportation.

✧ Customs house

Although TradeLens is not connected to China's Single Window, the ecosystem includes customs authorities from the Netherlands, Saudi Arabia, Singapore, Australia, and Peru, as well as the customs broker Ransa and Guler & Dinamik.

✧ Security measures

The company uses a private distributed ledger based on Hyperledger Fabric, an open-source, permission-based blockchain (in which an administrator grants certain privileges to a small number of trusted nodes), to prevent tampering with trade-related documents and to verify and confirm records. The company has gained the trust of its clients.

The dots in the figure below show the participation status of nodes in each channel (CHANNEL).

Figure 2-3 Node participation in the TradeLens blockchain.

Source: TradeLens official website

② Marco Polo [4]

➢ Overview

Item	contents
Main constituent	R3 TradeIX A consortium of 33 companies
Year of establishment	2020 (Marco Polo Network was established in 2017)
Region	Five continents
Number of users	Approximately 50 companies (number of participating companies in the Marco Polo Network)
Type of PF	Trade Finance
Role and main functions	**Role** Streamline the management of commercial and working capital between banks and customers **Main functions** Liquidation of accounts receivable Payment guarantee Financing for accounts payable ERP integration
Blockchain Technology	R3 Corda

➢ Purpose of the trade platform

The goal of the Marco Polo Network is to create value by facilitating the interaction (with an emphasis on interoperability) of all participants, including financial institutions, their corporate customers, and the broader trade ecosystem. By leveraging distributed ledger technology (DLT)[5] and extensive trade and supply chain finance expertise, it will bring all stakeholders together in a single shared connectivity network to enable unprecedented levels of value creation.

➢ Service Description

Marco Polo is an open, distributed enterprise software platform that enables banks and corporations to more effectively streamline and automate their global trade and working capital finance activities. Because it is a distributed platform, it can be run, customized, and deployed by individual users. Once the platform is launched, data can be connected and exchanged via a DLT-based network, creating an interoperable "network of platforms" that can utilize the platform components.

Bank users can access Marco Polo via the Marco Polo Platform. This allows access to a variety of trade finance solutions and modules hosted as SaaS and as dedicated managed instances (e.g. software) or by enterprises.

Other enterprise users have multiple options to access Marco Polo. Users can choose to use it as a dedicated SaaS or have it hosted by the company. Alternatively, they can use Marco Polo ERP embedded directly into their ERP system to provide a single interface to their trading and

[4] https://www.marcopolo.finance/

[5] Distributed Ledger Technology (DLT): A technology that enables financial transactions and the exchange of important data on an open network without the need for a centralized authority. Blockchain is a type of DLT.

working capital financing solutions. Alternatively, a lightweight SaaS-based web portal built for infrequent users and SMEs can be used for a simple user interface (UI) and functionality with less complexity.

IT vendors and service providers (insurance companies and logistics companies) can access the Marco Polo Network through dedicated APIs and connect with banks and corporate clients.

- Awarded World's Best Trade Finance Providers 2021

Marco Polo Network has been named by Global Finance as one of the best trade finance providers with DLT in the "World's Best Trade Finance Providers 2021". The trade finance sector is covered by COVID-COVID. While the trade finance sector was hit particularly hard by the COVID-19 pandemic, the Marco Polo Network was recognized for its significant contribution to global trade finance by responding and adapting to unforeseen challenges. This will continue to position the Marco Polo Network as one of the top tier global trade platforms in both name and reality.

③ Bolero [6]

- Overview

Item	contents
Main constituent	Bolero International SWIFT (Society for Worldwide Interbank Financial Telecommunication)
Year of establishment	1998 (Galileo Trade Finance Platform was launched in 2020)
Region	Five continents (part of the Marco Polo Network)
Number of users	Unknown on a stand-alone basis (Marco Polo Network has about 50 participating companies)
Type of PF	Supply chain management, trade finance
Role and main functions	**Role** Seamlessly connect companies, counterparty financial institutions, and their key logistics partners to transact with financial institutions around the world. **Main functions** Create, edit, and manage letters of credit, collections, guarantees, account opening transactions, and electronic bills of lading. Additional trade services in the areas of compliance checks, certificates of origin, discrepancies, financing, price quotations, reports, etc.
Blockchain Technology	Corda.

- Purpose of the trade platform

The goal is to enable organizations using Bolero to reduce the risk and cost of international transactions, improve operational efficiency, and increase visibility, transparency, and control over the entire transaction.

[6] https://www.bolero.net/company-overview/

- Service Description

  Bolero brings together in one platform the ability to create and edit letters of credit, collections, guarantees, account opening transactions, and electronic bills of lading (eBL), as well as manage these documents and track their status in the supply chain in real time.

  It also provides additional trade services in the areas of compliance checks, certificates of origin, financing, price quotations, and reports as value-added.

  In addition, Bolero is a member of the Marco Polo Network, which ensures interoperability with companies using the network and trade platforms.

  Banks and corporate users can centrally process transactions such as customer letters of credit and eBLs.

- Handling of Electronic Bill of Lading (eBL)

  Bolero provides the same functions and services as other trade platforms, but the official website shows that Bolero is focusing on ensuring the physical validity and security of eBL. The following is an overview of Bolero's eBL-related services.

  ✧ Issuer

  As in the case of banknotes, the shipowner can delegate the authority to issue eBLs on his behalf to other shipowners, ship operators or ship managers. eBLs are a mechanism that allows the shipowner to manage the bills of lading issued in his name, but does not require the actual shipowner to use or operate the system. The system does not require the actual shipowner to use or operate the system.

  ✧ Main issuance methods

  1) Bolero's user interface: Upload images of paper BLs created with existing BL creation software.
  2) Bolero Web Gateway: eBL comes into effect via an automatic message exchange based on configurable automatic message integration using secure FTP (File Transfer Protocol).

  ✧ Method of ensuring originality

  Bolero's platform is designed to create a unique title registry record (a type of DB configuration information) for eBLs, ensuring that you always have a unique eBL document. The system is also designed to allow the owner of the eBL to transfer ownership to only one party, thus guaranteeing that the previous owner does not have any rights on the eBL (although this is basically done only by agreement of the contracting parties and authentication by the shipping company's mutual insurance association (P&I Club), and (It should be noted, however, that this is basically done only by agreement of the contracting parties and certification by the P&I Club of the shipping company, and there is no legal basis for its originality.

✧ Methods of securing the effect of property rights

Bolero's eBL system is a system that has been agreed upon by the contracting parties and approved by the P&I Club, which guarantees that the terms and conditions attached to the bill of lading (on the back of the bill if it is in paper form) will apply when the eBL is issued. However, as mentioned above, it is only the agreement of the contracting parties and the certification of the shipping company's mutual insurance association (P&I Club).

✧ How to ensure security

The eBL is signed with a digital certificate that provides a unique signature that is encrypted. The communication channel is encrypted and the Bolero Exchange software is hosted in a secure data center. Penetration tests are conducted by a professional IT security organization. In addition, Bolero is externally audited annually by CSC (Cyber Security Control) in accordance with SSAE16 (an alternative to SAS70). It currently moves over 7 million messages per year and executes an estimated US$81 billion in transactions (hundreds of millions of dollars per day). The system was designed and built by SWIFT, which is responsible for interbank messaging, and provides a core component to the world of financial services. It has been more than 15 years since SWIFT started its operation, and currently serves about 70 banks, but there has never been a lost or misdirected message.

④ essDOCS [7]

➢ Overview

Item	contents
Main constituent	essDOCS
Year of establishment	2005
Region	203 countries on 5 continents
Number of users	Over 55,000 companies
Type of PF	Supply chain management, trade finance
Role and main functions	**Role** Management of trade documents Certification of origin procedures **Main functions** CargoDocs (a platform for exchanging trade documents) EssCert (procedures related to certification of origin)
Blockchain Technology	Hyperledger

The following is a summary of the content of the interviews with the essDOCS users and the accompanying information.

➢ Establishment Process

Alexander Goulandris, Co-CEO & CRO, had a background in shipping law as his family was involved in the shipping trade in Greece. With the idea of reforming the shipping industry in mind, Mr.

[7] https://essdocs.com/solutions/banks/cmatch

Goulandris obtained an MBA and, together with others with experience in the shipping industry and the Bolero Project, founded essDOCS in 2005, a private provider of eDocs and an online platform for the development and delivery of data solutions. Its head office is in London and its corporate registration is in Valletta, Malta. The data center is located in the UK.

- essDOCS usage flow

Using essDOCS's proprietary CargoDocs system, all parties to the transaction, including exporters, importers, their respective banks, and shipping companies, can log in to the essDOCS platform from any Internet-enabled computer and directly access and download the information in real time. All parties to the transaction, including exporters, importers, their respective banks, and shipping companies, can log in to the essDOCS platform on any Internet-enabled computer and directly access and download the information in real-time.

After the exporter and importer conclude a sales contract, the importer requests the bank to issue an eUCP-compliant eLC, and then the exporter, upon receiving the eLC notification, prepares and ships a draft of various eDocs including the eBL in CargoDocs. The eBL is issued with an electronic signature. The exporter sends the eDocs, including the eBL, to the correspondent bank, which checks the contents and, if there are no problems, accepts the eBL and notifies the importer's correspondent bank (LC-issuing bank). These eDOCs (electronic documents) are then presented to the importer's bank in CargoDocs to confirm that the LC conditions have been met. Once the import payment is made, these electronic documents are handed over to the importer. If the parties to the transaction wish to use the eBL for other purposes, they may do so only within the essDOCS platform. In this case, the other party must also be a user of essDOCS.

- Application for Certificate of Origin

Trade promotion committees and chambers of commerce are included in the platform, and if the user applies on the platform, a certificate of origin will be issued and returned to the user. The certificate of origin is then forwarded to banks, shipping companies, etc. on the platform, depending on the purpose of use, and finally presented to customs in the form of BL or eBL.

- Legislative aspects

CargoDocs has adopted a Databridge Services & Users Agreement (DSUA) that includes a method for managing eBLs, and each user has entered into this agreement with the platform. The DSUA is also approved by the P&I club. The DSUA is also approved by the P&I club, and the eBL is recognized as within insurance coverage. The P&I club also approves essDOCS, and the amount of insurance coverage is said to be about $20 million or more.

⑤ Contour

➢ Overview [8]

Item	contents
Main constituent	12 major global banks R3 CryptoBLT Bain & Company
Year of establishment	2020 (Official Launch into live production)
Region	17 countries/regions (already collaborated with Bolero and essDOCS)
Number of users	Over 80 companies
Type of PF	Trade Finance
Role and main functions	**Role** Improving transaction efficiency and preventing fraud with electronic letters of credit **Main functions** Preparation, verification, and sharing of trade documents
Blockchain Technology	R3 Corda

➢ Purpose of the trade platform

The goal is to leverage the power of blockchain technology to create a foundation that will serve as a catalyst for transforming the trade finance industry, forming a scalable network that will bring the benefits of digitization to the global trade ecosystem for the first time.

➢ Service Description

Contour provides trade finance services with a core focus on the creation, verification, and sharing of trade documents (letters of credit and other financial and settlement-related documents) using blockchain technology. However, Contour is still narrower than other trade platforms such as TradeLens in terms of the scope of its solutions, as it only became officially operational in October 2020.

For example, the electronic bill of lading (eBL) service is provided via essDOCS.

➢ Initiatives for 2020 and future prospects

Contour was established in January 2020, fully independent of the consortium project with R3 and supported by trade finance institutions and technology companies. Then, in June, the decision was made to adopt the electronic bill of lading (eBL) solution from essDOCS, and the system was officially launched in October.

In 2021 and beyond, Contour plans to continue building relationships with banks, enterprises, and technology partners to develop solutions that will benefit all users. The company also plans to strengthen its role as a regular service to key industries and expand into new markets and industries.

[8] https://www.contour.network/

- The concept of interoperability

On Contour's official website, the CPO has published an overview of his company's efforts regarding interoperability. The contents are described below.

- ✧ The CordaNetwork, of which Contour is a member, has created a common network map (a common identity across different business networks), a common notary (to allow transactions to be verified between two nodes on different networks), and a common root of trust. created. We allow these participants to connect with a state of finality (where the payment is unconditional, irrevocable, and finalized). However, using CordaNetwork does not fully achieve interoperability because the applications cannot be linked.
- ✧ Therefore, Contour plans to overcome this challenge by building a transaction flow between applications, where data is replicated across two different networks, not only providing interoperability but also keeping information secure and protected. However, currently, these elements have not yet been realized in the Corda Network.
- ✧ Contour defines interoperability as the participation of one participant in two networks using applications designed to work together. For example, it indicates a situation where Contour and essDOCS applications are synchronized using APIs between the two systems, and the corporate and personal IDs are also synchronized. In a more concise way, the image is that what happens in essDOCS is updated in Contour, and what happens in Contour is updated in essDOCS.
- ✧ The advantage of this approach is that there are no technical limitations for the two networks to function, and it can be achieved if participants join more than one network. In other words, it is possible to cooperate with blockchain-related organizations regardless of whether they are Ethereum, Quorum, Fabric, Centralized, Decentralized, etc.
- ✧ Building interoperability among participants is a matter of collaborating with the participants themselves. Collaboration between networks has created interoperability not only with Contour, but also with other trade platforms such as essDOCS, Bolero, and others.
- ✧ This interoperability will allow users to leverage the benefits of other trade platforms and services offered by Contour, extending the benefits of each platform to their business.

2.1.3.3. Status of the establishment of domestic trade platforms and Japan's response policy

Regarding the current status of domestic platforms, we organized basic information on (1) TradeWaltz, (2) NACCS, and (3) Cyberport. For TradeWaltz, we examined the position of Trade Waltz in the global trend of trade platforms and its future direction based on the information we obtained through interviews.

As mentioned above, the top tier of trade platforms in the world are those built by private companies, mainly in the US and Europe, in terms of the regions where they offer their services and the number of users. Specifically, TradeLens has 175 users on five continents, mainly in the U.S., Marco Polo has 50 users on five continents (number of participating companies in the Marco Polo Network), Bolero has users on five continents (number of users unknown), essDOCS has over 55,000 users on five continents, and Contour has over 80 users in 17 countries and regions.

In addition, these platforms are collaborating with each other to achieve interoperability in the services and networks they provide. As a result, the platforms mentioned above are expected to continue to increase their share of the global market.

On the other hand, TradeWaltz, which is a domestic platform that has just been established, is aiming to position itself on par with the world's top-tier trading platforms with a sense of speed by taking advantage of its linkage with the public system (NACCS) to meet the needs of domestic shippers and expand its services to other regions. The company is aiming to position itself on a par with the world's top-tier trade platforms.

As for TradeWaltz, it will create synergies by leveraging mutual strengths through the implementation of API linkage with trade platforms, and will also enhance its services through linkage with various public systems (single window, customs systems, etc.).

① TradeWaltz

- The history of TradeWaltz is as follows.
  - NTT Data, Mitsubishi Corporation, Toyota Tsusho, Kanematsu, Mitsubishi UFJ Bank, Tokio Marine & Nichido, and Sompo Japan jointly invested in the project and established it in 2020.
  - At present, the service targets Japan (including overseas offices of Japanese companies and group companies that trade with Japan), but in the future, the service will target global trade transactions, with the aim of expanding business regions through overseas node development and alliances with other trade platforms.
  - In its role as a trade platform, it will centrally manage a wide range of trade-related documents in electronic data and serve as a platform across trade-related industries to achieve trade information collaboration among companies.

- The main functions are as follows.
  - The use of blockchain technology (Hyperledger Fabric) will replace all trade paper documents, including electronic bills of lading and electronic certificates of origin, to ensure the originality of trade information.

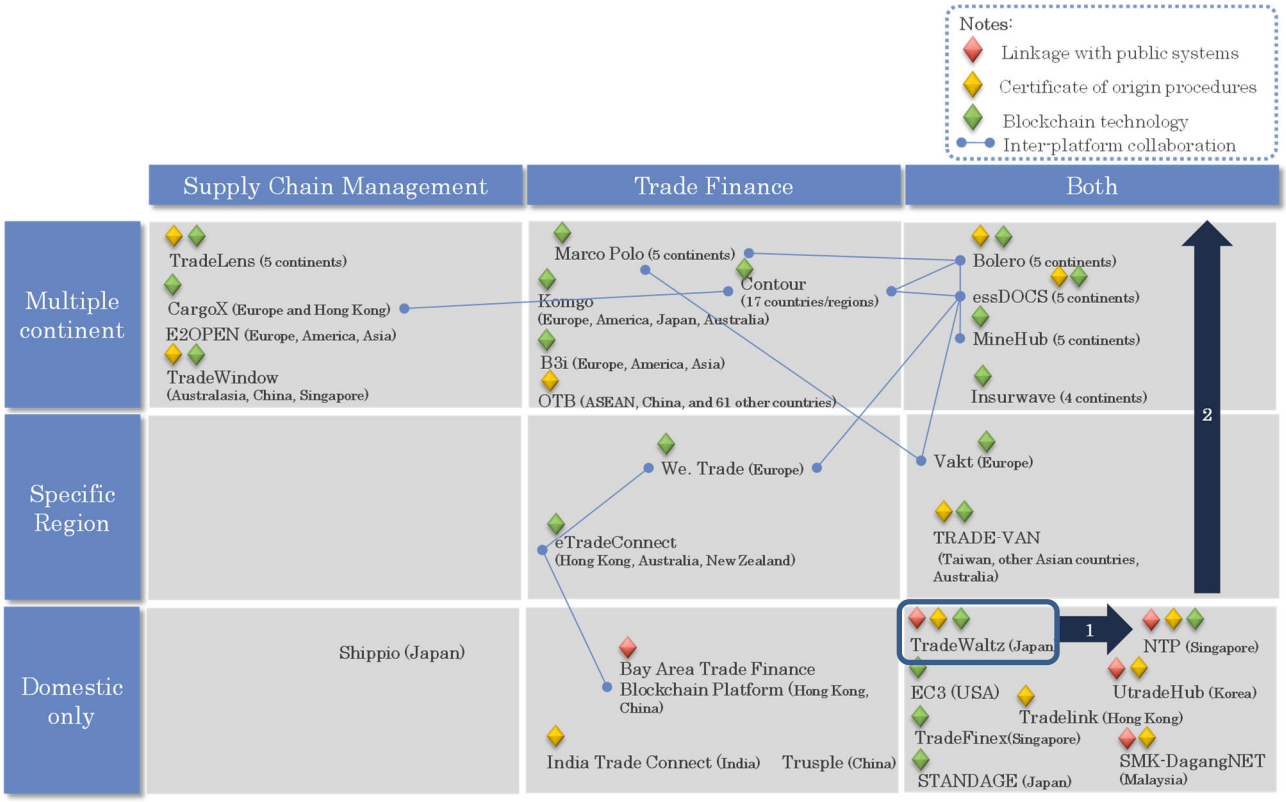
- It enables a wide range of data linkage through API connections with companies' own systems and domestic and overseas trade platforms such as NACCS.
- Trade documents can be saved as structured data instead of PDFs to eliminate duplicate entries and enable data utilization.
- In the future, we will not only digitize trade-related documents, but also provide further value-added services such as trade finance and logistics information linkage through the use and real-time sharing of information accumulated in the platform.

➢ The history and future direction of TradeWaltz is as follows.

- TradeWaltz was established as the result of a public-private partnership and all-Japan project to improve the efficiency and convenience of administrative procedures by using blockchain technology to enable seamless information sharing among trade stakeholders.
- TradeWaltz has so far conducted a demonstration experiment to connect with Singapore Customs' NTP, a demonstration experiment to connect with Thailand's customs system, and a joint demonstration experiment with Thailand JSCCIB's NDTP project.
- In addition, when the system linkage with NACCS is realized in 2021, it will become a trade platform for Japan in the same position as NTP of Singapore Customs and UtradeHub of KTNET in South Korea.
- In the future, it is expected that the system will be linked not only with NACCS but also with the systems for applying for proof of origin that are being promoted by various countries, and that it will be possible to improve the efficiency of shippers' interactions (BtoG) with customs offices of overseas importing regions. In this way, we will aim to position ourselves as a single window in countries around the world (arrow 1) in the diagram below).
- In addition, Japan has a great strength in the theme of customs cooperation among countries around the world, and is in a position to easily start discussions. In 2009, Mr. Mikuriya became the first person from Asia to head the World Customs Organization (WCO), and he has served as the head of the organization for a long period of time, building friendly relationships with customs offices in various countries. The WCO's main mission is also stated as "to conduct technical studies for the unified interpretation and application of agreements on customs valuation and rules of origin. Before foreign customs offices and governments take up the subject of certificates of origin and national customs cooperation, it is important to take up the issue from Japan.
- In terms of overseas collaboration, we will promote collaboration with trade platforms in Singapore, Thailand, and other countries, and have begun conversations with top-tier trade platforms by function overseas, such as MineHub, Marco Polo, and Bolero. (BtoB) and to expand their functions (arrow 2).
- The major difference between TradeWaltz and the government-led NTP and UtradeHub is that TradeWaltz is a private-sector initiative, which enables speedy development and implementation of system functions, overseas deployment, and easy functional expansion

through API linkage. Taking advantage of this strength, the company intends to first establish its position as a Japanese standard platform that will play a central role in improving the efficiency and convenience of trade procedures in Japan (arrow 1), and then further expand the scope of services (arrow 2).

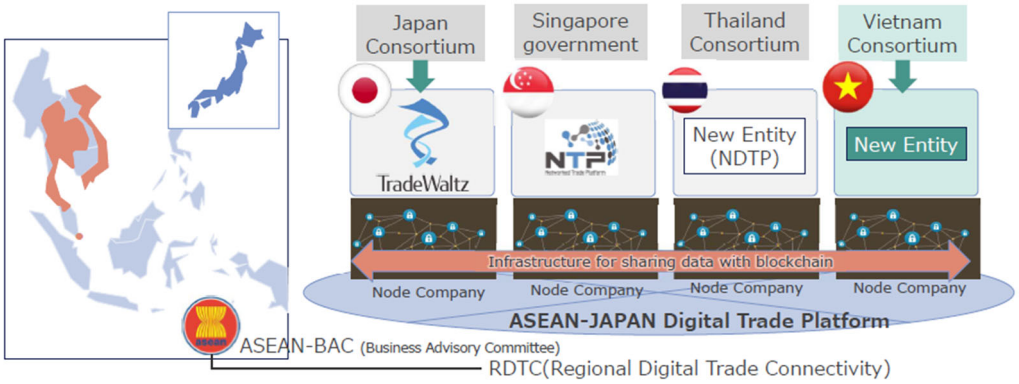
Figure 2-4 Overview of the status of major trade platforms around the world



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on information disclosed on various websites and interviews with TradeWaltz.

- As a starting point for arrow (2) in the above figure, TradeWaltz will work on the realization of the "ASEAN-JAPAN Digital Trade Platform," which is the concept of the ASEAN regional digital trade connectivity (RDTC) set forth by ASEAN-BAC. The initial members of the platform will be Japan (TradeWaltz), Singapore (NTP), Thailand (NDTP), and Vietnam (platform not yet established). It is envisioning the development of the ASEAN region through the implementation of a hybrid P2P model in which the blockchain recording (infrastructure) layer is "commonized" to enhance interconnectivity and tamper-resistance among international data, while the application layer is "developed independently" by each country.

Figure 2-5　Tradewaltz's concept for expansion into the ASEAN region



Source: TradeWaltz, Inc.

- TradeWaltz is unique among global trading platforms in that it has a hybrid strategy that combines the strengths of Asian countries' one-stop services, including governmental services (arrow 1 in the above figure), with the global reach of Western trading platforms (arrow 2 in the above figure). TradeWaltz is unique among global trade platforms in its hybrid strategy that combines both. In order to achieve a clear competitive advantage in the trade platform market, it is important to expand the scope of cooperation with overseas platforms and with ASEAN and other regions, and there are issues that need to be addressed through public-private partnerships.

➢ Issues to be addressed through public-private partnerships

- In order to promote the computerization of trade procedures for trade facilitation, as mentioned above, the legal validity of the computerized documents needs to be guaranteed. In Japan, as stipulated in Article 763 of the Commercial Code (Validity of Delivery of Bill of Lading), a bill of lading (BL) is both a valuable security and a property right, so that the right of possession of the cargo can be asserted against a third party by delivery of the BL. On the other hand, although there is an agreement between the parties for electronic BL, this is not[9] a requirement to oppose the property right effect to a third party.
- In terms of actual operations on trade platforms around the world, electronic bills of lading (eBLs) such as Bolero and essDOCS have become widespread and are being used in the field. Even though SWBs and other means are becoming more and more popular, overseas customers using eBLs have low creditworthiness, and there is a possibility of default. Therefore, in the event of non-performance, early legal action cannot be expected and shippers will be required to resolve the issue among themselves. Currently, the government's perspective is that "eBL is just what the parties involved call BL.

[9] Currently, the Hague-Visby Rules, which Japan has ratified, are based on the premise that the contents of the treaty are on paper, and the provisions of Articles 757 and 758 of the Commercial Code require that the BL is a document that must be signed and stamped. Therefore, at least in Japan, the originality and physical effect of eBL is not guaranteed.

- In addition, digital payment (electronic LC, LC substitution), etc., promoted by Marco Polo and Contour, is basically based on the right to receive packages (e.g., eBL), and the bank pays on behalf of the customer, so if there is no basis for the originality of the eBL, the situation is similar to the above.
- The United Nations has also recognized this danger, and at its July 2017 General Assembly meeting, it published MLTER (The Model Law on Electronic Transferable Records) as a model law on electronic commerce. The Model Law on Electronic Transferable Records (MLTER) was released at the General Assembly in July 2017 as a model law on electronic commerce, encouraging countries to develop their own laws on the originality of electronic commerce, stating that "electronically transferable records shall not be denied legal effect, validity, or enforceability solely because they are in electronic form. TradeWaltz's predecessor, the Trade Consortium, also presented the Japanese government with requests for legislation from the private sector, but legislation has been stalled for three years.
- Even if the trading partner does not recognize the property right effect of eBLs, if the trading partner recognizes the property right effect of eBLs in Japan, the property right effect of eBLs will be guaranteed, at least if the trade is governed by Japanese law, or if the location of the BL is Japan, the governing law will be Japanese law. In the case where the location of the BL is in Japan, the governing law will be the law of Japan, and the property rights of the eBL will be secured. Therefore, it is not necessary to "mandate" the digitization of BL, but the law should be amended to recognize the property rights effect of "eBL" as well as paper media.
- As for the most recent overseas developments, Bahrain became the first country in the world to successfully legislate in the three years that Japan's legal reforms were halted, and Singapore became the second country in the world to successfully legislate in October 2020[10]. In the future, trade platforms around the world will be able to set up their headquarters in Singapore, making Singapore the governing law and providing legal security for their services. As a result, Singapore has become a super city in the field of trade, and is losing the chance to gain industrial competitiveness and tax revenue in this field.
- In terms of recent domestic developments, with the Suga administration in power, the Cabinet Office's Council for the Promotion of Regulatory Reform and Minister Kono's attention was drawn to this issue, and a meeting to revise the law (Cabinet Office's Working Group on Investment, etc.) involving the Ministry of Justice (subject to hearings) to give originality to eBLs rapidly began in November 2020. [11]) has begun. We are now at the stage of considering legislation based on the discussions in FY2021.

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[10] Singapore amends law to give eBLs and other electronic trade instruments legal footing | Global Trade Review (GTR) (gtreview.com)

[11] The Working Group on Investment, etc. was established from February 2020 onwards with the aim of undertaking highly effective regulatory reforms from the public's perspective on themes that do not fall under the purview of other working groups, from the perspective of "regulatory reforms to prevent the spread of new coronavirus infections and to promote new lifestyles" and "regulatory reforms to revitalize the economy and restore it to a growth path, including in regional areas. It was established with the aim of tackling highly effective regulatory reforms that are responsive to changes in the economic and social environment in a speedy and people-oriented manner.

- In the above working group, the Ministry of Justice expressed the view that as the property right effect of eBL is not recognized in international frameworks such as treaties at present, there is a concern about the damage in the case that the property right effect of eBL is denied in actual trade transactions even if Japan claims the property right effect of eBL. In response, Minister Kono said that Japan should take the leadership in various discussions including the formation of international frameworks, and that there should be at least a legal amendment to recognize the property rights effect of eBL in Japan. In Japan, at least, there could be a legal amendment to recognize the property rights effect on eBL.
- In the future, the key to whether Japan and TradeWaltz will be able to achieve a position where they can both "provide a global service that realizes full digitization of trade" will be whether they can achieve a presence in the world and a unique service. It is hoped that relevant laws such as the Commercial Code and the International Carriage of Goods by Sea Act will be amended as soon as possible. The eBL function of TradeWaltz itself is expected to be ready by 2022.

② NACCS

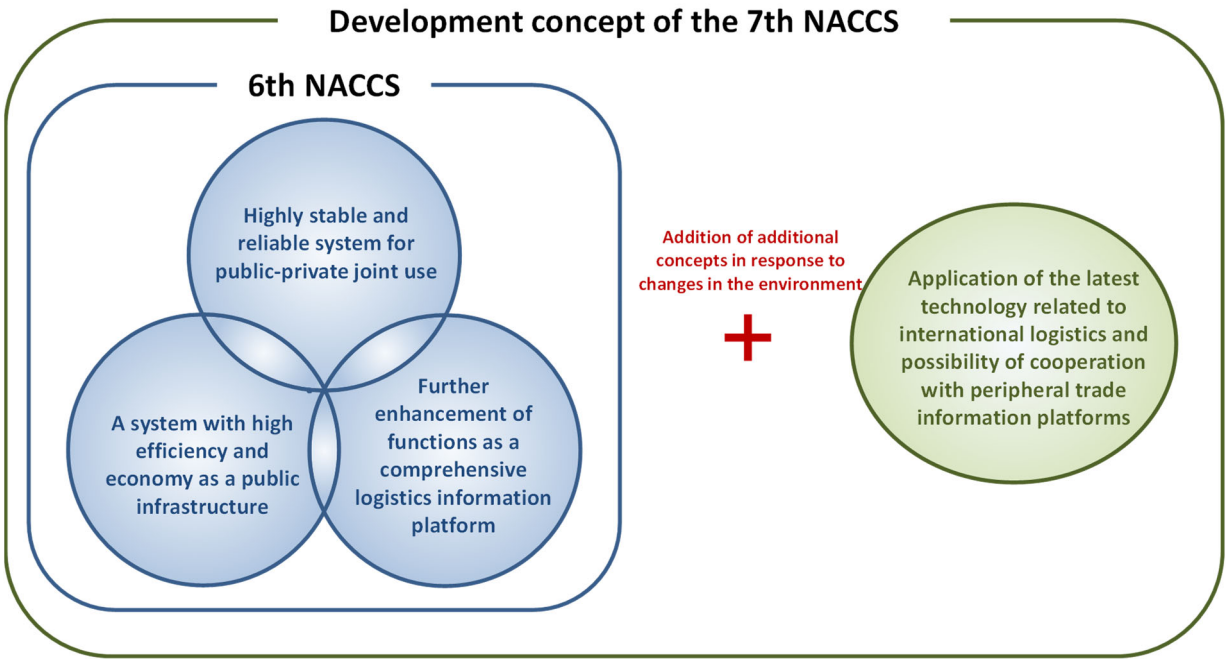
➢ International collaboration functions and linkage with various digital platforms [12]

- As of August 2019, the international collaboration functions that have been implemented include SITA/ARINC (passenger and crew name list for aircraft, advance reporting system for air cargo), etc., Service Provider (pre-departure reporting system for maritime), and eCert (quarantine certificate for animal quarantine, etc.).
- As for the future (the 7th NACCS), according to the results of questionnaires and hearings conducted by NACCS, there is a high need for the expansion of international collaboration functions as a comprehensive logistics platform, and the direction is to consider collaboration with various digital platforms including trade platforms. The results of questionnaires and interviews conducted by CS indicate that there is a high need to expand international collaboration functions as a comprehensive logistics platform.
- Specifics related to the above include: (1) international linkage of cargo information (e.g., mutual linkage of shipping information, etc., with customs systems and trade information infrastructure of trading partners), (2) computerization of certificates (e.g., computerization of certificates of origin based on third-party certification in EPA), and (3) data linkage of notices of permission to depart. (2) Digitization of certificates (e.g., digitization of certificates of origin through third-party certification under the EPA), and (3) data linkage of notices of permission to depart.
- In terms of recent developments in NACCS, the basic specifications of the seventh NACCS, scheduled to be operational in 2025, were released (September 2020). As its development

[12] https://www.naccs.jp/archives/7g_naccs/wg/20190808/01wg_shiryo07.pdf

concept, it added "the application of the latest technology related to international logistics and the possibility of cooperation with peripheral trade information infrastructure.

Figure 2-6　Development concept of the 7th NACCS



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on information disclosed on NACCS, "Basic specifications of the 7th NACCS scheduled to start operation in 2025 released", September 2020.

- In addition, in line with the development concept added above, in 13November 2020, NACCS concluded a memorandum of understanding (MOU) with TradeWaltz Inc. on mutual cooperation and collaboration with a view to system linkage, etc., to improve the convenience of the services of both companies for those involved in international logistics and international trade.
- Therefore, in light of the future direction of TradeWaltz as mentioned above, it is expected that NACCS will work in tandem with TradeWaltz in cooperation with overseas customs agencies.

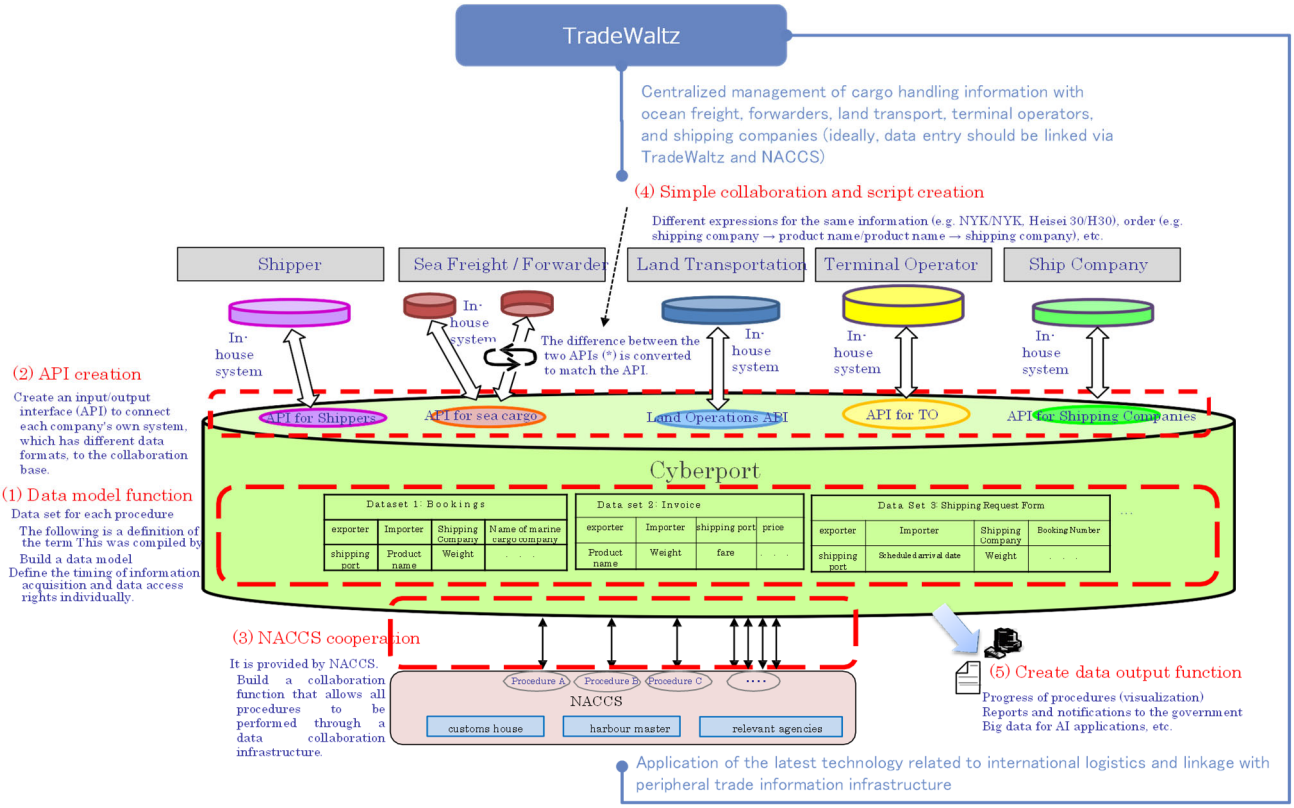
③ Cyberport

- The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has been working on a cyberport (port and harbor logistics)[14] system to consolidate port and harbor-related data and to digitize procedures between private companies.
- As of October 2020, the design of Cyberport has been completed, and the construction work is almost complete; the WG is discussing the operation, functional improvement, and usage promotion methods after the system goes into operation from FY2021.

[13] https://www.naccs.jp/news/data/20201112/20201112.pdf
[14] https://www.mlit.go.jp/kowan/kowan_tk3_000025.html

- In terms of cooperation with domestic platforms, we are planning to consider cooperation with NACCS. We plan to start discussions with NACCS on how to link data with NACCS after FY2021.
- Therefore, Cyberport has not yet considered the possibility of cooperation with overseas customs, etc., and plans to first promote cooperation with NACCS to provide a single window function for trade operations.
- In light of the current status of the TradeWaltz-NACCS collaboration, it is assumed that the platform will be able to gather cargo handling information from ocean freight forwarders, land transportation, terminal operators, and shipping companies, which has been the missing piece, and that the information from the three parties will be linked to achieve all-Japan integrated trade information management. It is assumed that by linking the information of the three parties, integrated management of all Japan's trade information will be achieved. On the other hand, when shippers input data into Cyberport, the workload of duplicate input into TradeWaltz will increase, and the overall optimization of Japan will be impaired. Therefore, it would be ideal to link the shipper information directly with TradeWaltz or via NACCS. Therefore, it is ideal to link the shipper information directly with TradeWaltz or via NACCS. It is expected that the government will be required to collaborate with other ministries and agencies with an eye to the overall optimization of Japan.

Figure 2-7　Relationship with TradeWaltz and NACCS and the concept of Cyberport



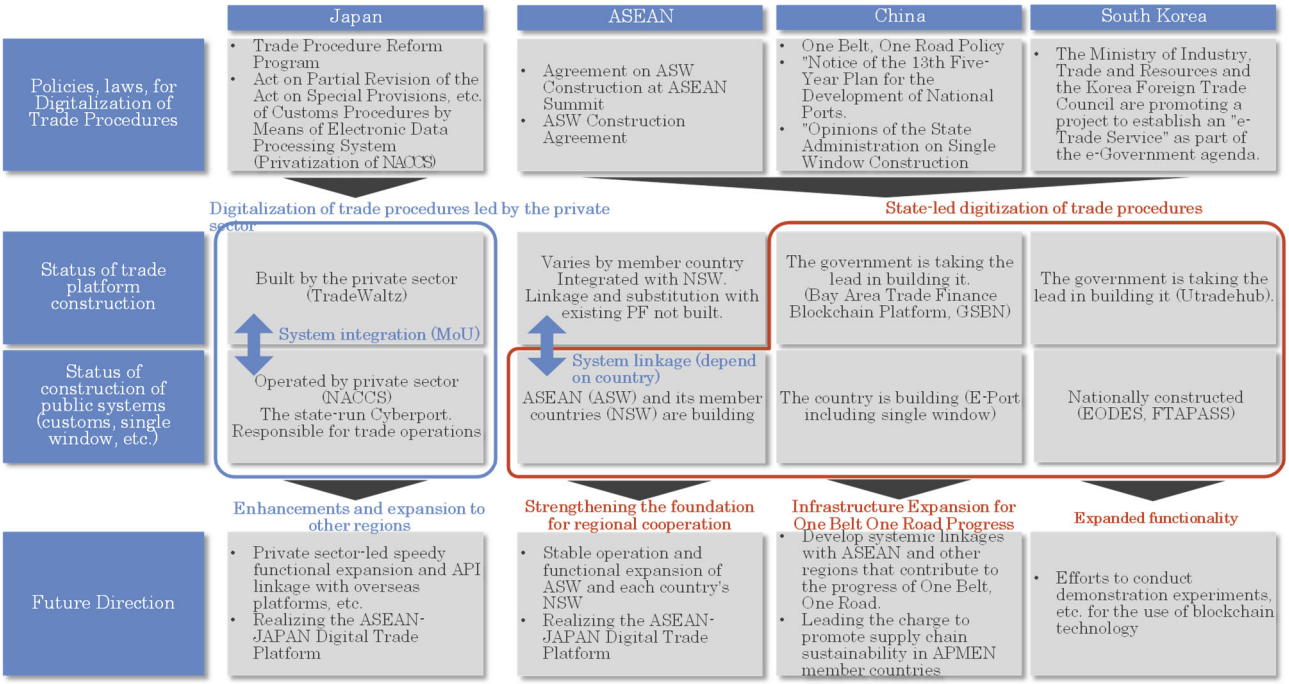
Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on "About the Committee to Promote the Digitalization of Ports and Harbors (Cyberport)," Ministry of Land, Infrastructure, Transport and Tourism, November 2, 2018.

2.1.3.4. Comparative analysis of Japan, China, South Korea and ASEAN on the status and future direction of trade platform and public system development

A comparative analysis was conducted among Japan, ASEAN, China, and South Korea on the status of building trade platforms, related public systems, and future directions, based on the aforementioned status of building trade platforms in the world and the contents of the next chapter (2.2 Status of digitization of related documents such as single window and certificate of origin).

Looking at Japan, ASEAN, China, and South Korea side-by-side, Japan is aiming for cooperation with ASEAN centered on a trade platform, while China is promoting cooperation with the ASEAN Single Window, focusing on the computerization of procedures for certification of origin as part of its One Belt, One Road strategy. In addition, South Korea is focusing on demonstration experiments to expand its own infrastructure.

Figure 2-8 Comparison of trade platform and public system construction status



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

The figure above summarizes the differences between Japan and its major trading partners, China and South Korea, as well as ASEAN countries, on the axes of policy, evidence-based laws and regulations, trade platforms, the status of the establishment of public systems (such as single-window and customs systems), and future directions for the computerization of trade procedures.

In Japan, the "Trade Procedure Reform Program," conceived by the Asia Gateway Strategy Council in 2007, examined the state of the NACCS as part of its review of the next-generation single-window system, and the "Act for Partial Amendment of the Act on Special Provisions for Customs Procedures by Means of Electronic Data Processing System In 2008, the NACCS was privatized.

In addition, Cyberport (a port-related data collaboration platform), which aims to "fully digitize ports and realize a port-related data collaboration platform" as stated in the "Declaration on the Creation of the World's

Most Advanced Digital Nation and the Basic Plan for the Promotion of Public-Private Data Utilization," is planning to implement a trade business-related system in cooperation with NACCS. (1) Cyberport

Thus, the digitization of trade procedures in Japan has effectively been a private-sector initiative.

In November 2020, NACCS signed a memorandum of understanding (MOU) with TradeWaltz, a private-sector trade platform, for mutual collaboration and cooperation with a view to improving the convenience of both companies' services for those involved in international logistics and trade. In November 2020, the two companies signed a memorandum of understanding (MOU) for mutual collaboration and cooperation with a view to improving the convenience of both companies' services for people involved in international logistics and trade.

In the future, Japan's trade platforms and public systems will be led by the private sector to quickly expand their functions and link APIs with overseas platforms, while expanding the scope of cooperation with other regions through the realization of the ASEAN-JAPAN Digital Trade Platform. We will also expand the scope of cooperation with other regions by creating the ASEAN-Japan Digital Trade Platform.

As for ASEAN, based on the Agreement on the Establishment of ASW at the ASEAN Summit and the Agreement on the Establishment of ASW, ASW and ASEAN member countries' own NSWs are being established.

As for China, under the One Belt, One Road policy, it has been promoting the construction of electronic ports (E-Port) including single-window ports. In addition, China has implemented system linkage for certification of origin procedures with nine countries, and is leading the promotion of supply chain sustainability in APMEN (Asia-Pacific Model E-Port Network, see page 52 and following for details) member countries, while focusing on expanding the scope of linkage with Single Window. In addition, China is leading the promotion of supply chain sustainability in APMEN member countries while focusing on expanding the scope of single-window collaboration.

On the other hand, progress in building trade platforms has been slow, and GSBN, which is positioned as the core trade platform in China, has not yet become operational. The platform that is currently in operation is the Bay Area Trade Finance Blockchain Platform (trade finance platform led by the People's Bank of China, whose main function is trade-related payments), but it is based in Hong Kong.

The direction for the future is to continue to take the lead in developing linkages with ASEAN, its regional single-window and trade platforms that will contribute to the progress of One Belt, One Road, and promoting supply chain sustainability in APMEN member countries.

On the other hand, the status of the construction of the trade platform and its linkage with Single Window differs among member countries. In Singapore and Malaysia, the Single Window and the trade platform have been integrated (service integration), while in Thailand (NDTP), development is being carried out in collaboration with TradeLens, and Indonesia started using TradeLens in February 2020. In Vietnam, no trade platform has been established or planned.

In the future, the most important issue is to expand the functions of the ASW and to ensure its stable operation, including cooperation with the NSW. In addition, we will work on the realization of the "ASEAN-

Japan Digital Trade Platform," the concept of the ASEAN Regional Digital Trade Connectivity (RDTC) set forth by ASEAN BAC.

With regard to South Korea, the government is taking the lead in establishing an electronic system for trade platforms and certification of origin procedures based on the "Electronic Trade Service" promoted by the Ministry of Industry, Trade and Energy and the South Korea Foreign Trade Association.

However, with regard to the procedures for certification of origin, there is a double-standard structure between the trade platform by KTNET and the EODES of the Customs and Tariff Bureau.

In the future, the company intends to focus mainly on initiatives such as demonstration experiments for the implementation of blockchain technology.

2.2. Status of digitization of related documents such as single window and certificate of origin

2.2.1. Survey methodology

The survey covered primarily China and South Korea. There was a desktop survey for public information and interviews were conducted mainly at government agencies that handle single window, certificate of origin and other procedures. We examined the status of the single window in each country and the status of documents (including e-documents) that can be used for a trade platform associated with economic partnership agreements.

This survey assumes that Japan's major trading partners are countries that belong to ACFTA (ASEAN-China Free Trade Agreement), AKFTA (ASEAN-Korea Free Trade Agreement), AFTA (ASEAN Free Trade Area), AIFTA (ASEAN-India Free Trade Agreement), AANZFTA (ASEAN-Australia-New Zealand Free Trade Agreement), AJCEP (ASEAN-Japan Comprehensive Economic Partnership Agreement), and USMCA (United States-Mexico-Canada Agreement). AJCEP (ASEAN-Japan Comprehensive Economic Partnership Agreement), and USMCA (U.S.-Mexico-Canada Agreement) and other trade agreements. After clarifying the differences in information required for the certificates of origin in each country, we then performed a survey concerning the existence of single windows in China, South Korea and the ASEAN region as well as the status of using electronic data for certificates of origin and other trade documents. We used this information to identify items that are obstacles involving mutual cooperation and utilization of different platforms by the Japanese government and private-sector companies.

In selecting candidates for interviews, specific candidates for China were categorized into the following groups: single-window management and operating organizations, organizations issuing certificates of origin, single-window users, and single-window and trade platform (essDOCS, GSBN) users.

Table 2-2 List of interview targets (China)

Company	Date
China Electronic Quayside Data Center	December 11, 2020
Major machinery trading company	December 22, 2020
Hong Kong Blockchain Association	Jan. 7, 20121.
TradeLens	January 22, 2021

In selecting candidates for the interviews, South Korea was classified into the following categories: the lead agency for certificates of origin, the managing and operating agency, the managing and operating agency for customs clearance systems, the building and operating agency for trade platforms and KTNET certificates of origin, and the managing, leading, and export support agency for trade platforms.

Table 2-3 List of interview targets (South Korea)

Company	Date
Customs and Excise (KCS)	December 28, 2020
Korea Trade Information and Telecommunications (KTNET)	January 20, 2021

2.2.2. Survey Results

2.2.2.1. Input items for certificates of origin in the accession agreements and frameworks of major trading partners

In this section, we confirmed the differences in information that is entered in the certificate of origin applications of ACFTA (ASEAN-China Free Trade Agreement), AKFTA (ASEAN-Korea Free Trade Agreement), AFTA (ASEAN Free Trade Area), AIFTA (ASEAN-India Free Trade Agreement), AANZFTA (ASEAN-Australia-New Zealand Free Trade Agreement), AJCEP (ASEAN-Japan Comprehensive Economic Partnership Agreement), and USMCA (United States-Mexico-Canada Agreement). AJCEP (ASEAN-Japan Comprehensive Economic Partnership Agreement), and USMCA (U.S.-Mexico-Canada Agreement) . The purpose was to identify items that are obstacles concerning interaction and use of all of these platforms by the Japanese government and private-sector companies.

First, we conducted a survey of the information that must be entered in applications for the certificates of origin used by these trade agreements and frameworks. The items required and the number of items (13) are the same for the certificates valid for all trade agreements ratified by ASEAN. However, the names of some items are different (name of exporter, cargo receipt information) and the item concerning trilateral trade is different.

Studies are under way for the addition of functions for the production of all types of forms based on certificate of origin data input using Japan's trade platform (TradeWaltz). Consequently, differences concerning certificate of origin items, names of these items and other items will not be a significant obstacle concerning interaction and utilization of trade platforms by the Japanese government and private-sector companies. As will be explained later in this report (information concerning the China single window, South Korea FTA Korea basic functions and the utilization method), the functions of China's single window, South Korea's UtradeHub and Singapore's NTP are the same as the functions of TradeWaltz.

USMCA was excluded from this survey because a certificate of origin, which was required during NAFTA, is no longer needed.

Table 2-4 Differences in trilateral trade items in certificate of origin applications for associations having an agreement with the ASEAN

Agreement	Form	Checklist items for trilateral trade
ACFTA	Form E	Issued Retroactively/Exhibition/Movement Certificate/Third Party Invoicing
AKFTA	Form AK	Third Party Invoicing/Exhibition/Back-to-Back CO
AFTA	Form D/ ATIGA e-Form D	Third Party Invoicing/Exhibition/Accumulation/De minimis/Back-to-Back CO/Issued Retroactively/Partial Cumulation
AIFTA	Form AI	Third Party Invoicing/Exhibition/Back-to-Back CO/Cumulation
AANZFTA	Form AANZ	Third Party Invoicing/Exhibition/Accumulation/De minimis/Back-to-Back CO/Issued Retroactively/Partial Cumulation
AJCEP	Form AJ	Third Party Invoicing/Back-to-Back CO/Issued Retroactively

2.2.2.2. ASEAN

ASEAN is taking steps to simplify customs clearance procedures for trade within the ASEAN region. Based on an agreement involving the establishment of ASW, all ASEAN member countries are focused on the establishment of an internal National Single Window (NSW) within the context the establishment of the ASEAN Single Window (ASW).

The ratification of a PLF concerning a legal framework made it possible for the live implementation of the ASW among Indonesia, Malaysia, Singapore, Thailand and Vietnam starting on January 1, 2018. Brunei, Cambodia, Laos, Myanmar and the Philippines started using the ASW in 2019. The granting of preferential tariff treatment is based on certificate of origin form D (ATIGA e-Form D) in accordance with the ATIGA. The certificate is sent electronically through the ASW.

The latest activity is a demonstration test for the electronic exchanges of ASEAN customs declaration documents (ACDD) that took place with the goal of the full-scale start of these exchanges by the end of 2020.

The following section explains the current situation concerning a national single window in ASEAN member countries and the use of electronic data for certificates of origin and other documents. This section is based on public information on the internet and some information received at interviews.

The national single window of the ASEAN member countries (Vietnam, Indonesia, Malaysia, Singapore, Thailand, Brunei, Cambodia, Laos) already has an IT system link (electronic exchanges of ATIGA e-Form D within the ASEAN region) with the ASW . However, progress with establishing a trade platform and the roles of the platform (involving the single window) differs in each country. As a result, for the ASEAN member countries, we used publicly available information to determine the progress in each country with building a single window and a trade platform, the ties between this window and platform, the use of electronic procedures for certificates of origin, and other matters.

The following table is a summary of this survey. In Singapore, NTP has constructed the single window and trade platform, which make it possible for an ASW link and electronic procedure for certificates of origin (electronic exchanges of ATIGA e-Form D within the ASEAN region). Just as in Singapore, Thailand, Vietnam, Indonesia, Malaysia and the Philippines have a national window linked to ASW (including an electronic procedure for certificates of origin).

However, the establishment of a trade platform and links with the single window are different in each country. Singapore has created a national single window (NTP) that combines a public-service B-to-G system (TradeNET) and a B-to-G trade platform (TradeXchange). In Malaysia, My TRADELINK, the national window, is integrated with SMK-DagangNET, the trade platform constructed by Malaysia. Thailand (NDTP) is developing a system in conjunction with TradeLens and Indonesia started using TradeLens in February 2020. In Vietnam and the Philippines, there are currently no plans to construct trade platforms.

The only information about links between national windows and overseas trade platforms is the intention of Thailand (NDTP) to develop a system with a TradeLens link. According to information received at the TradeLens interview, in general, establishing IT system links between a national window and trade platforms of other countries is very difficult due to problems involving reliability and other issues. For example, even for TradeLens, Thailand will have only a link with Indonesian customs that allows uploading certificates of origin.

Table 2-5 Infrastructure for Electronic Procedures for Certificates of Origin at ASEAN Member Countries

Country	National Single Window (NSW)	Trade Platform	Linkage between trade platforms and NSW	Linkage to ASW	Digitization of Certificates of Origin
Singapore	NTP (TradeNET)	NTP (TradeXchange)	BtoG's public system (TradeNET) and BtoG's trade platform (TradeXchange) integrated to form NSW (NTP)	NTP is connecting as Singapore's NSW.	Intra-ASEAN linkage of ATIGA e-Form D (via NSW), electronic exchange of certificates of origin based on the FTA agreement with China
Thailand	Thailand National Single Window	NDTP (developed by TradeLens) Plans to connect with NSW	NDTP under development	NSW is connected.	Intra-ASEAN linkage of ATIGA e-Form D (via NSW)
Vietnam	VNSW (VNACCS/VCIS)	Not built.	—	NSW is connected.	Intra-ASEAN linkage of ATIGA e-Form D (via ECOSYS connected to NSW)
Indonesia	INSW	Using TradeLens, not building in the country Not connected to NSW	TradeLens has the ability to upload trade related documents to INSW.	NSW is connected.	Intra-ASEAN linkage of ATIGA e-Form D (via NSW)
Malaysia	MyTRADELINK	SMK-DagangNET (service integration with My TRADELINK)	SMK-DagangNET is integrating its services with MyTRADELINK	NSW is connected.	Intra-ASEAN linkage of ATIGA e-Form D (via NSW)
Philippines	TRADENET	Not built.	—	NSW is connected.	Intra-ASEAN linkage of ATIGA e-Form D (via NSW)

Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on various information

The following section explains the current status of single windows and electronic procedures for certificates of origin in ASEAN member countries. This information is based on public information on the internet with some information from interviews.

① Singapore (NTP) [15]

Singapore constructed a platform in 2018 that has the following main roles. This is a government operated infrastructure that combines the previous TradeXchange B-to-B trade platform service and TradeNet B-to-G public-service system.

✧ A one-stop trade information management system with a link to other existing platforms

[15] https://asw.asean.org/index.php/nsw/singapore/singapore-general-information

- ✧ A next-generation platform that has a broad range of trade-related services
- ✧ An open innovation platform with insights using data encompassing many industries and the ability to facilitate the development of new services
- ✧ Cutting expenses and streamlining processes

The B-to-G service (shown on the official website as TradeNet, the trade platform prior to integration) of NTP performs the single window and certificate of origin electronic procedure functions. The primary functions are export/import procedures (export/import permit applications, certificate of origin applications, non-manipulation certification applications) and the IT system connection (API/SFIP) with NTP.

- ✧ Export/import procedures (export/import permit applications, certificate of origin applications, non-manipulation certification applications)[16]
  - TradeNET has the following main services involving trade procedures: (1) International Permit Exchange (export/import permit procedure); (2) NTP International Connectivity Preferential Certificate of Origin (certificate of origin procedure based on FTA); (3) NTP International Connectivity Certificate of Non-Manipulation (non-manipulation certificate procedure). The EDI system performs electronic exchanges for these services.
  - The International Permit Exchange (1) is in the trial operation stage as of February 2021.
  - The NTP International Connectivity Preferential Certificate of Origin (2) incorporates an electronic certificate of origin procedure based on the bilateral FTA agreement with China. There is no need to submit original documents for bilateral trade. The following items (for the exporter) are entered when submitting an application.
    - Unique Entity Number (UEN)
    - Name of contact person
    - Designation
    - Contact telephone number
    - Extension number
    - E-mail address
    - Engagement of a declaring agent to apply and transmit a certificate of origin to China via the EODES (yes/no)
    - Declaration of exporter (I confirm that I am authorized by my company to make this application and declare that the information provided in this application is true and correct.)
  - The NTP International Connectivity Certificate of Non-Manipulation (3) allows receiving a CNM by electronically submitting an application for certification (CNM) that goods shipped via Singapore were not switched or altered during transit.

[16] https://www.ntp.gov.sg/public/browse-govvas-catalogue

- ✧ IT system connection (API/SFTP)
  - NTP provides API and SFTP to companies for the purpose of creating an IT system link to NTP. Currently, NTP has set up a help desk and is providing a connection on a trial basis.

② Thailand (Thailand National Single Window [17]/ NDTP[18])

The government of Thailand, with the Customs Bureau of the Ministry of Finance playing the central role, established the Thailand National Single Window. Operations officially started in 2011. The purposes are to improve the cost efficiency, customer services, reliability and security of logistics services.

As of 2019, 38 government agencies and companies were involved as core organizations in the operation of this single window. There are more than 10,000 users and 6.5 million to 7.5 million transactions every month. In addition, there is a link with the ASW. Just as in other ASEAN member countries, electronic exchanges of certificates of origin (ATIGA e-Form D) are possible via NSW.

Thailand plans to develop a trade platform (NDTP) that incorporates blockchain technology and is linked with the single window. In 2019, the Thailand Customs Bureau announced that there will be a TradeLens link. Therefore, just as in Singapore, Thailand is working on electronic trade procedures with an IT system link to the single window and trade platform.

③ Vietnam (VNSW/ECOSYS[19])

In Vietnam, nine government agencies including customs of the Ministry of Finance started operating the Vietnam National Single Window (VNSW) in 2014. A link with the ASW started in 2018.

The single window has the following roles and purposes.

- ✧ The primary support and implementation tool for government agencies and companies concerning international cargo movements and trade activities
- ✧ Promotion of trade and making Vietnam more competitive
- ✧ VNSW's transactions, processes and decisions are integrated and consistent, which ensures that this single window is simple, transparent and effective
- ✧ In accordance with agreements concerning the establishment and operation by 2015 of an ASW for the ASEAN, VNSW includes electronic trade procedures with other countries

The VNSW is a project that received financial support at no cost from Japan's Official Development Assistance (ODA). In 2014, Vietnam constructed and started operating an

[17] https://asw.asean.org/index.php/nsw/thailand/thailand-general-information#

[18] http://www.customs.go.th/cont_strc_simple_with_date.php?lang=th&top_menu=menu_homepage&ini_menu=menu_puBLic_relations_ 160421_04&left_menu=menu_puBLic_relations_160421_04_160421_01&current_id=142328324148505e4e464a4f464b47

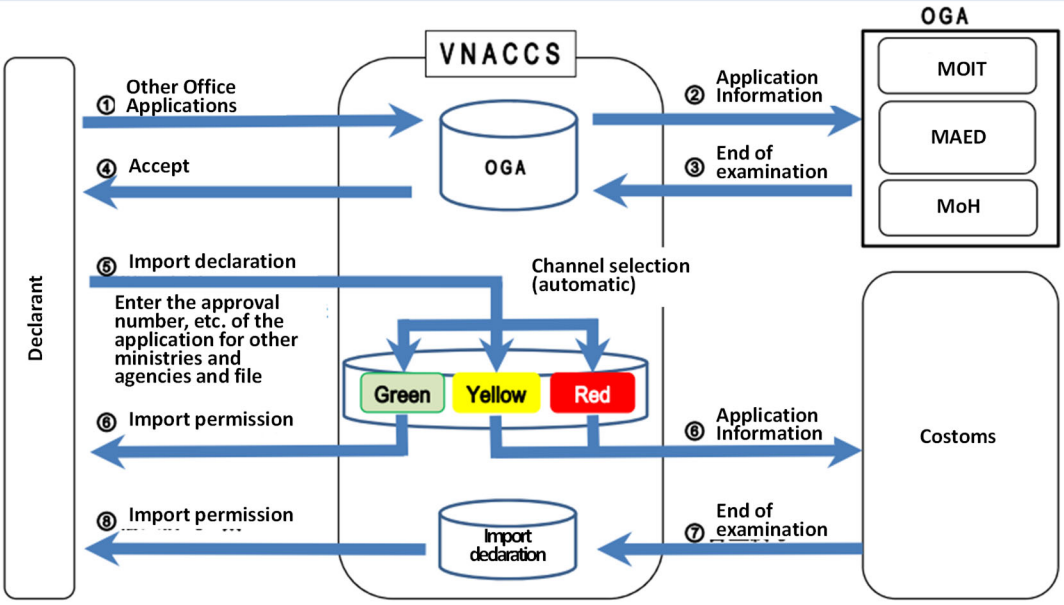
[19] http://www.ecosys.gov.vn/Homepage/NewsDetailByAlias.aspx?CateAlias=gioi-thieu

export/import and harbor data processing system. This system is based on the Nippon Automated Cargo and Port Consolidated System (NACCS) and the Customs Intelligent Database System (CIS). The system became an NSW after the addition of links with government ministries and agencies.

As of 2018, this system was handling 173 procedures of 13 ministries and agencies, including the Ministry of Finance, Ministry of Industry and Trade and Ministry of Information and Communications.

For an ASW link, the system has provided for electronic exchanges within the ASEAN region (Vietnam, Indonesia, Malaysia, Singapore, Thailand, Brunei, Cambodia, Laos) of certificates of origin (Form D) since 2020.

Figure 2-9 Conceptual diagram of the VNSW (VNACCS) (at the start of operation)



Source: E-Customs Clearance and National Single Window Construction Project for Modernization of Vietnam Customs, 2013, Tokyo Customs

Vietnam has not established a trade platform.

Regarding functions, the initial plan for building an NSW (using VNACCS/VCIS when operation started) included the following activities: e-Declarations, inspection selectivity, importer/exporter management, cargo customs clearance and receipt, supervision, management, system tests/activation tests, training for people using the customs bureau system, technological support, and system maintenance.

However, the importer/exporter management function is not used because of regulatory differences for this management in Japan and Vietnam. A system developed in another project is used instead.

ECOSYS, which the Vietnam Chamber of Commerce created and operates, is used for the electronic certificate of origin procedure. An electronic certificate of origin was added to ECOSYS in 2006 and electronic certificates of origin have been issued since 2013. In addition, there is a system link with VNACCS/VCIS (NSW).

In 2015, the decision was made to conduct a pilot process for an electronic system for exchanging certificates of origin (40482/QD-BCT) using the internet.

Subsequently, as was reported earlier, the electronic exchange (3624/QD-BCT) of certificates of origin (ATIGA e-Form D) started within the ASEAN region on January 1, 2020.

④ Indonesia (INSW) [20]

The ministry responsible for the economy established and started operating in 2007 a single window as a public-service system for the purpose of integrating as a business flow the following items: centralization of trade-related data, customs system, import/export licenses, payments, logistics and other systems. Currently, INSW is used in Indonesia at 16 major ports for more than 90% of trade volume in terms of monetary value.

In addition, there is a link with ASW. Just as at other ASEAN member countries, certificate of origin (ATIGA e-Form D) exchanges are performed via the NSW.

One recent event concerning the INSW involves the decision of the Indonesian government in 2020 (Ministry of Finance Rule 34) to exempt imported medical equipment and other supplies required to deal with the COVID-19 pandemic from import duties, excise tax and import licenses. Starting in March 2020, applications for license exemption notices and other documents from the National Agency for Disaster Management (BNPB) can be completed by simply uploading the required documents to the INSW. The INSW portal site can then be used to monitor progress with processing the application.

For the trade platform, the Directorate General of Customs and Excise started using TradeLens in February 2020. We asked about a link between TradeLens and the INSW and received the following information.

- ✧ TradeLens uses API for exchanging data with Indonesian customs. The primary items provided are information about the movements of associated cargo, bill of lading information and trade documents (but only documents uploaded with TradeLens by a fee-paying user). Trade management documents include certificates of origin.
- ✧ If the certificate of origin has been uploaded by using TradeLens, Indonesian customs can view this document by using API or UI.
- ✧ Our understanding is that there is currently no capability for electronic exchanges of documents via TradeLens with customs bureaus of other countries. In general, customs bureaus are suspicions of corporate platforms and of other countries too. As a result, a long time will still be required for national customs bureaus to trust each other's documents.

[20] https://insw.go.id/index.php/home/menu/berita/74

⑤ Malaysia (MyTRADELINK) [21]

In Malaysia, the Ministry of Finance constructed and operates the national window (MyTRADELINK). The Ministry of International Trade and Industry oversees the ASW link.

Dagang Net Technologies Sdn Bhd , which is a member of the Pan Asian E-Commerce Alliance (PAA) just as NACCS is, developed and operates MyTRADELINK under the supervision of the Ministry of Finance. Operation started in 2009. There are six main services: eManifest, electronic preferential certificate of origin (ePCO), permit applications in accordance with the Strategic Trade Act (ePermit STA), electronic customs declarations (eDeclare), electronic tariff payments (ePayment), and electronic permits (ePermit). These services are used in Malaysia at 23 ports and 166 customs locations. Currently, 30 permit-issuing agencies, 50 government agencies and 12 banks use MyTRADELINK.

Malaysia began phasing out in stages manual certificate of origin applications in 2013. Today, all certificates of origin (GSP, AANZFTA, AIFTA, MINZFTA, AJCEP, MPCEPA, MJEPA, ACFTA, AKFTA, ATIGA) require an electronic application submitted via the MyTRADELINK ePCO. There is a link with ASW. Just as at other ASEAN member countries, certificate of origin (ATIGA e-Form D) exchanges are performed via the NSW.

SMK-Dagang Net of Dagang Net Technologies, the operator of MyTRADELINK, constructed and operates a trade platform. In addition, users registered on SMK-Dagang Net also become users of MyTRADELINK. Consequently, the single window and trade platform are a single unit within Malaysia.

⑥ Philippines (TRADE NET) [22]

The Philippines started operating a single window (TRADE NET) in 2019 and added an ASW link at the end of 2019. TRADE NET was created by customizing the iGOV Government Operations Management Platform (GOMP) and can be operated mutually by 66 trade-related government agencies and 10 economic zones.

The launch of TRADE NET and its ASW connection succeeded in enabling electronic exchanges of ATIGA e-Form D or eCO with other ASEAN member countries. As a result, the Bureau of Customs at the port of Manila, Manila International Container Port and Ninoy Aquino International Airport grants preferential tariff rates upon the presentation of an e-certificate of origin from an ASEAN member country.

From January 1 to September 19, 2020, the Philippines received 69,904 e-certificates of origin from other ASEAN member countries and sent 15 e-certificates of origin to these countries.

[21] https://asw.asean.org/index.php/nsw/malaysia/malaysia-general-information
[22] http://info.tradenet.gov.ph/about-us/tradenet-overview/

In the Philippines, TRADE NET performs the roles of both a national window and a trade platform. There are no other national government or private-sector operated trade platforms with similar functions. However, ICTSI, an international terminal operator based in the Philippines, announced its decision in November 2020 to connect all of its 31 terminals on five continents, including the Philippines, to the TradeLens platform. This connection will enable real-time end-to-end data visibility of container movements and other items through the networked exchange of data.

2.2.2.3. China

① Status of the single window

The Chinese government is placing priority on the construction of a single window. Progress with the establishment of a single window is even faster than for the trade platform, which is being constructed primarily by Chinese companies. The single window is positioned as one of the key components of the construction of the China electronic port (E-port). Important policies concerning E-port include the Notice of National Port Development, 13th Five-year Plan (2016-2020) and Opinion of the National Port Administration Office concerning Construction of a Single Window (2019, National Port Administration Office announcement). In addition to constructing an international single window, the E-port construction project has the following basic goals: provide services that result in the greatest possible port customs clearance convenience for society and companies; lower the cost of government administrative operations; and make harbors more competitive overall. In addition, for regions outside China, the E-port project clearly incorporates elements of China's "one belt, one road" national strategy.

Table 2-6 Content of "Notification of the 13th Five-Year Plan for the Development of National Ports" (excerpt)

Item	Content
1. Overall requirements	Principles • Insist on serving the overall situation. Firmly establish the concept of the overall situation and overall awareness. Proactively serve the implementation of major national strategies such as One Belt One Road, Beijing-Tianjin-Hebei joint development and Yangtze River Economic Belt development and the needs of the surrounding diplomatic situation. • Accelerated the construction of the port rule of law system. Enhance the immediacy, systematization and effectiveness of port laws and regulations. • Drawing on advanced international experience, continue to promote the port work system, and innovation. • Strengthen the connection and cooperation between agencies, between agencies and localities, between the government and the enterprises. To provide maximum convenience to the community and enterprises, reduce the administrative costs of the government and the cost of customs clearance for enterprises, and improve the comprehensive competitiveness of ports, fully consider the aspirations of various departments, localities and the country, as a way to innovate cooperation and achieve co-development.
2. Optimize the design of ports, create port clusters and hub ports.	According to the One Belt One Road, Beijing-Tianjin-Hebei joint development, Yangtze River Economic Belt development as well as other major national strategies and the general opening layout of the country, combined with the port's natural endowment, location advantages, oriented economic development level, industrial layout, to create port clusters and hub ports.

3. Advance the construction of the "Three mutual" customs clearance, promote the safety and convenience of port clearance.
※(Note) "Three Mutual" means mutual exchange of information, mutual
	• Advanced the port clearance system reform. Coordinate the national customs clearance reform and integrated quarantine and inspection reform.
	• Advanced the construction of Single Window for international trade.
	  • Under the State Council Inter-Ministerial Joint Conference system to advance the construction of Single Window. Relying on the two levels of the central and local e-port public platform, co-create Single Window environment of national integration
	  • Central level to facilitate the construction of the basic functions of the Single Window, coordinate and simplify the document format

recognition of supervision and management, and mutual support for law enforcement..	and data standards, set the standard version of the single window and promote the application for free. • Docking the system between the China e-port platform, port administration departments and international trade related departments to exchange and share the information and data to carry out international cooperation. • Local level in accordance with the central standard to advance the construction of Single Window. In principle, one Single Window for one province. Eventually achieve the interconnection and interoperability between the relevant departments of the State Council, between localities and between the State Council departments and localities. Promote Single Window for free for enterprises and individuals to deal with export-related business, support the expansion of local special service functions, and improve the interoperability between the international trade supply chain and enterprise systems through Single Window.
4. Insist on sharing and strengthening the construction of port facilities.	Reconstruct and improve port inspection facilities.
5. Advanced e-port construction, develop smart ports.	• Advanced e-port construction. Create co-construction, co-management, sharing mechanism. Speed up the achievement of e-port public platform publicly, equally and uniquely. Implement the national e-port standards and certification. • Develop smart port construction. Use IoT technology to accelerate the cargo, information, and funds interaction
6. Strengthen international cooperation of ports and deepen cooperation with Hong Kong, Macao and Taiwan ports.	• Develop international cooperation on ports, exchange ideas on port management, management mode and management experience. • Include border port cooperation in the memorandum of understanding signed with "One Belt, One Road" related countries..

Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on information in the China General Administration of Customs website

Table 2-7 Excerpts of the Opinion of the National Port Administration Office concerning Construction of a Single Window

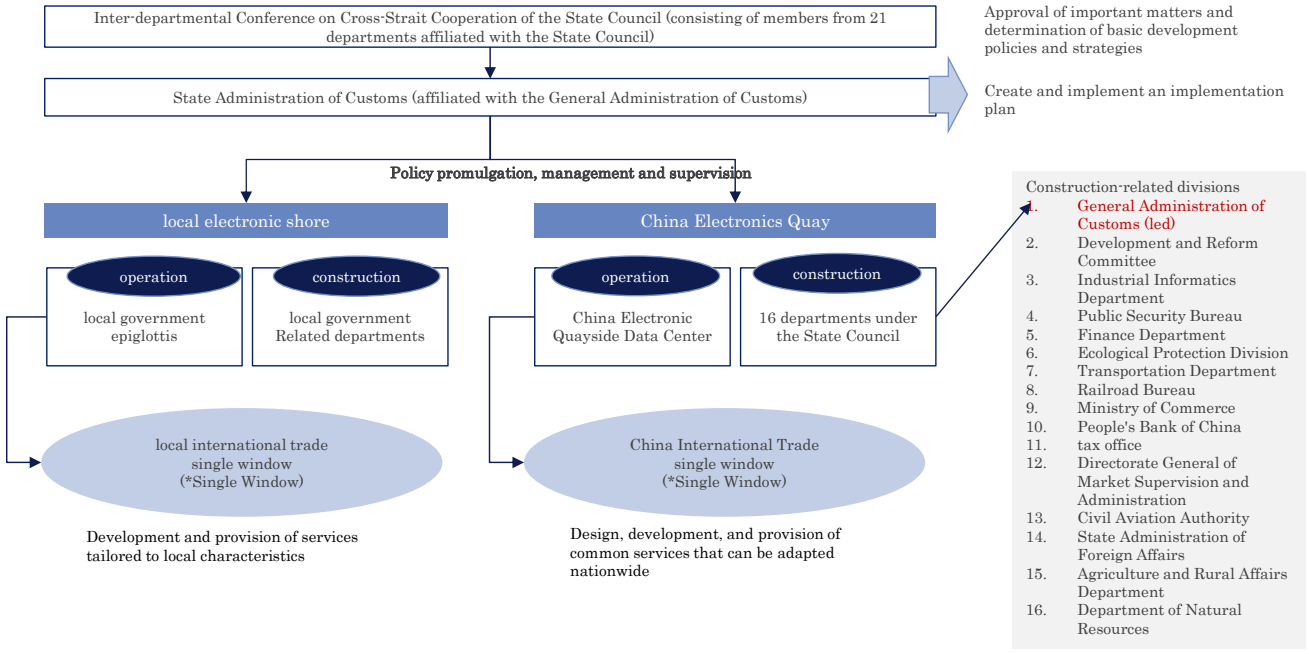
Item	Content
Goals	• Declarants through e-port platform one point of access, a one-time submission to meet the requirements of port management and international trade related departments of standardized documents and electronic information. Related departments share data information through e-port platform, implementation of functional management, processing status (results) through Single Window feedback to the declarant. • Through continuous optimization and integration, the "Single Window" function covers all major links of the international trade chain and gradually becomes the main access service platform for enterprises facing the relevant departments of port management. Through the Single Window to improve the interoperability between the systems of the participants in the international trade supply chain, optimize the customs clearance business process, improve the efficiency of declaration, shorten customs clearance time, reduce the cost of enterprises and promote trade facilitation.

Principles	Government initiative • By all levels of government to coordinate and promote, the management of the relevant departments of the ports of equal participation, and jointly establish and improve the Single Window construction collaboration and cooperation mechanism Business Convenience • For the convenience of enterprises, through the coordination of simplifying the format of documents and data standards, optimize the port business processes, reduce data entry, let the data run more, so that enterprises run less, break through the time and space constraints, to provide "one-stop" services. Standardize security • Standardize technical architecture, exchange and share data, interface standards, and standardize basic functions. Strengthen the construction of information security assurance system, establish a sound operation and maintenance management system and emergency disposal plan to ensure system operation and information security.
Overall layout	• Advance e-port public platform of publicly, equal and unitary, relying on the two levels of the central and local platform, to achieve the interconnection between national ministries and agencies, between regions and between national ministries and agencies and regions to create an integrated national Single Window" environment.

Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. from the website of the General Administration of Customs of the People's Republic of China

China's single window has been approved by the State Council as an important policy for the country's progress. The National Port Office has determined actions to take in line with the basic policy. In addition, this project is being implemented by departments involved with the construction and operation of central and regional electronic ports.

Figure 2-10 Structure of the E-port Project

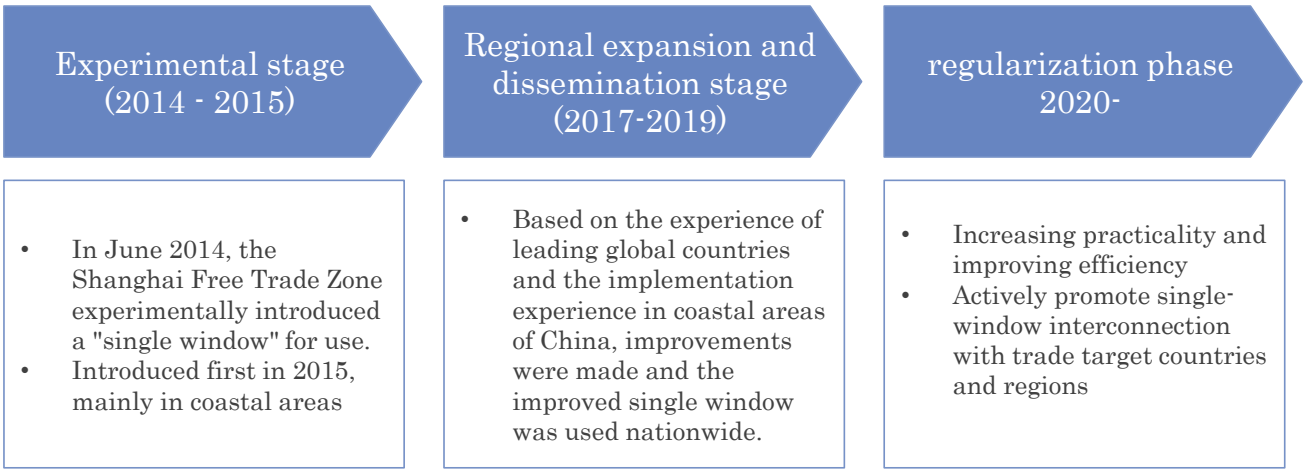


Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based mainly on information in the State Council, China General Administration of Customs and regional government websites

China is building a single window in stages. At a 2013 conference in Paris held by the World Trade Organization, the Chinese government promised to complete its single window in 2017. Work on the window

started in 2014. Areas covered by the single window were then expanded from Shanghai to other coastal regions of China. By 2017, the single window covered the entire country.

Figure 2-11 Single Window promotion progress



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based mainly on information in the State Council, China General Administration of Customs and regional government websites.

② Single window functions [23]

China's single window has the following plates: the latest information, the scope of standards, policy laws and regulations, standard services, financial services and other services. Certificates of origin are included in the standard services plate.

Table 2-8 Basic Functions of the Single Window

Item	Content Description
Latest Information	• Various latest information and notification documents on trade released by the government • Links with related departments • General Administration of Taxation, Development and Reform Commission, Ministry of Industrialization, Ministry of Public Security, Ministry of Finance, Ministry of Ecological Protection, Ministry of Transportation, Railway Bureau, Ministry of Commerce, People's Bank of China, Department of Taxation, General Administration of Market Supervision and Administration, Civil Aviation Administration, State Administration of Foreign Affairs, Ministry of Agriculture and Rural Affairs, Ministry of Natural Resources
standard norm	• Text related to standards and norms for international and domestic trade • Search for various codes required for trade (e.g., cargo attribute code table, region of origin code table)
Policies and regulations	• Various notification letters released by the General Administration of Customs
Standard Edition Service	• There are 16 service items in the standard version of the application, and the specifics are as follows (1) company qualification, (2) license certificate (license), (3) **place of origin**, (4) transportation tools, and

[23] https://www.singlewindow.cn/

	(5) Camping customs declaration, (6) cargo customs declaration, (7) processing trade, (8) tax processing, and (9) Cross-border EC, (10) Customs clearance, (11) Export tax rebates, (12) Inquiries and statistics, and ⑬Port Logistics, ⑭Inspection and Quarantine, ⑮Trade in Services, ⑯List of Fees
Financial Services	• It consists of banking services, insurance services, and export credit services.

Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based mainly on the official website of China's single window

③ Use of electronic procedures for certificates of origin for free trade agreement (FTA) countries

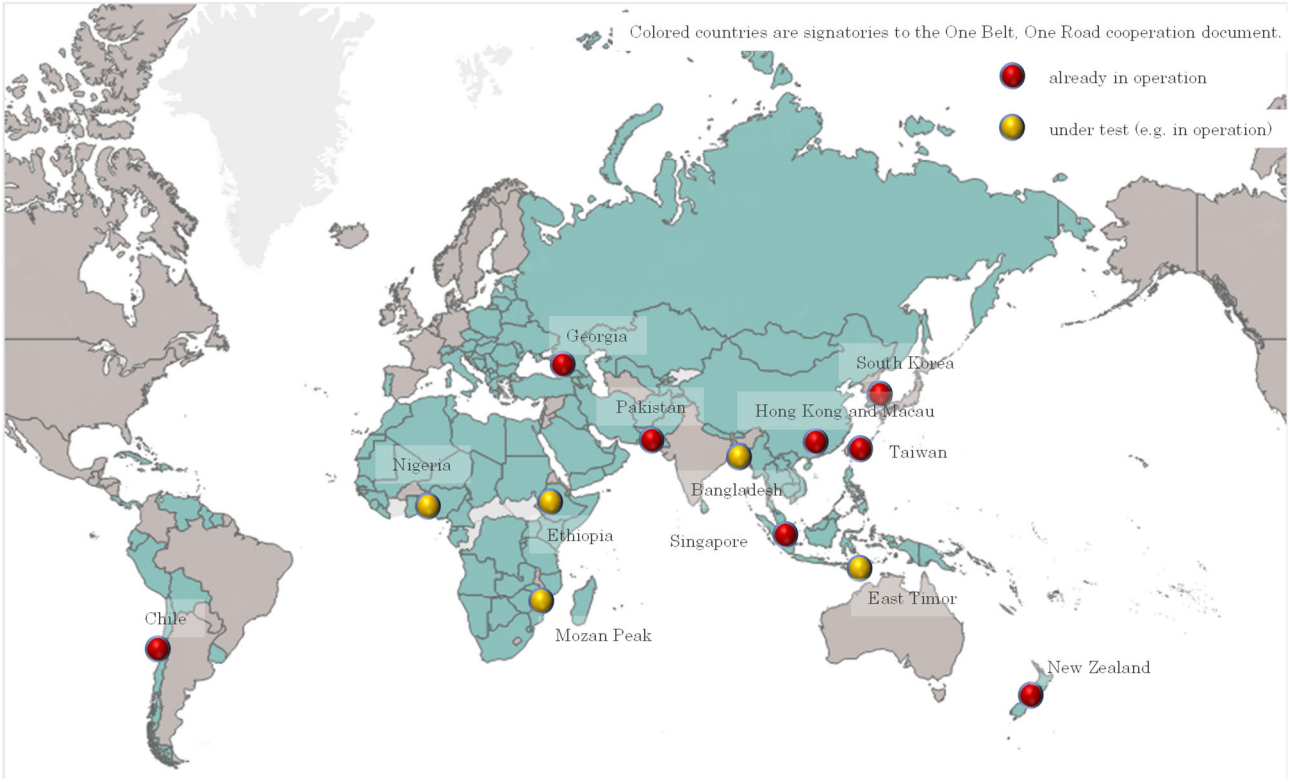
China uses electronic information exchanges of trade documents, including certificates of origin, with nine of the above countries where China has an FTA. Trial operations for electronic information exchanges are under way with five countries.

The figure below shows China's current IT system links for certificate of origin data exchanges with other countries. Included are excerpts from China's official gazette concerning the start of this electronic information exchange system for each country.

All 14 countries that are either have an electronic information exchange system link or are operating a trial link have signed agreements with China concerning the one belt, one road initiative. As a result, China is apparently placing emphasis on establishing electronic trade procedures in the one belt, one road economic zone, which China aims to establish through FTA negotiations.

In addition to the countries listed below, even within the one belt, one road economic zone, the text of APMEN appears to place priority on projects involving certificate of origin electronic exchanges and mutual authentication with countries that have an FTA with China and are APMEN members. The reason is that China has signed an MOU concerning the establishment of a certificate of origin electronic exchange system with the single window of Malaysia.

Figure 2-12 Status of establishment of electronic exchange systems for certificates of origin with FTA countries



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

- Indonesia
  - In another step to increase customs clearance procedures based on free trade agreements, Indonesia officially started on October 15, 2020 the China-Indonesia Origin Data Electronic Exchange System and the China-ASEAN Comprehensive Economic Cooperation Framework Agreement. Electronic data that is compatible with certificates of origin can be sent on a real-time basis. (Public announcement 2020 No. 200)[24]

- Georgia
  - To increase the customs clearance of goods based on the China-Georgia Free Trade Agreement (including the following), operation of the China-Georgia Origin Data Electronic Exchange System officially started on January 1, 2020. This makes it possible to send electronic certificate of origin data on a real-time basis in accordance with the free trade agreement. (Public announcement 2019 No. 198)[25]

- Singapore
  - To increase the use of the customs clearance of goods based on the free trade agreement, operation of the China-Singapore Origin Data Electronic Exchange System officially started

[24] http://www.customs.gov.cn//customs/302249/302266/302267/3269616/index.html
[25] http://www.customs.gov.cn/customs/302249/302266/302267/2786254/index.html

on November 1, 2019. This makes possible the real-time transmission of the following items: electronic data for certificates of origin concerning the China-Singapore Free Trade Agreement; electronic data for certificates compatible with certificates of origin included in the China-ASEAN Comprehensive Economic Cooperation Framework Agreement; and electronic data for non-manipulation certificates. (Public announcement 2019 No.155)[26]

- Chile
  - ✧ To increase the use of customs clearance based on the China-Chile Free Trade Agreement, operation of the China-Chile Origin Data Electronic Exchange System officially started on January 1, 2019. This makes it possible to send electronic certificate of origin data on a real-time basis in accordance with the free trade agreement. (Public announcement 2018 No. 198)[27]

- Pakistan
  - ✧ To further increase the utilization of the China-Pakistan Free Trade Agreement as well as customs clearance of eligible goods using this agreement, operation of the China-Pakistan Origin Data Electronic Exchange System officially started on April 30, 2018. This makes it possible to send electronic origin data on a real-time basis in accordance with the free trade agreement. (Public announcement 2018 No. 29)[28]

- South Korea
  - ✧ To further increase the utilization of the China-South Korea Free Trade Agreement, the real-time exchange of information for the origin of goods started on July 1, 2016 in accordance with a contract for the China-South Korea Customs Origin Data Electronic Exchange System. (Public announcement 2016 No. 39)
  - ✧ To further increase customs clearance of imports and exports using the Asia-Pacific Trade Agreement, operation of the Asia-Pacific Trade Agreement China-South Korea Data Electronic Exchange System started on February 8, 2017. This makes it possible to send on a real-time basis electronic certificate of origin data for imports and exports between China and South Korea using the Asia-Pacific Trade Agreement. (Public announcement 2017 No. 10)[29]

- New Zealand
  - ✧ To further increase the utilization of the China-New Zealand Free Trade Agreement, operation of the China-New Zealand Origin Data Electronic Exchange System officially started on December 20, 2016. This makes it possible to send electronic certificate of origin data on a real-time basis. (Public announcement 2016 No. 84) [30]

[26] http://www.customs.gov.cn/customs/302249/302266/302267/2650379/index.html
[27] http://www.customs.gov.cn/customs/302249/302266/302269/2138023/index.html
[28] http://www.customs.gov.cn/customs/302249/302266/302267/1812170/index.html
[29] http://www.customs.gov.cn/customs/302249/302266/302267/630774/index.html
[30] http://www.customs.gov.cn/customs/302249/302266/302267/630753/index.html

- Macau and Hong Kong
  - ✧ To increase trade between mainland China and Macao/Hong Kong, the following announcement was made concerning electronic certificates of origin based on the Mainland and Hong Kong Closer Economic Partnership Agreement (CEPA) and the Mainland and Macao Closer Economic Partnership Agreement
    - ✓ Since May 1, 2016, customs officials have been able to accept electronic versions of certificates of origin that were issued in accordance with the CEPA by authorities in Hong Kong and Macao. (Public announcement 2016 No. 30)[31]

- Taiwan
  - ✧ To increase the trade of goods using the Economic Cooperation Framework Agreement (EFCA), the operation of a customs data electronic exchange system started on April 1, 2014. This makes it possible to send on a real-time basis electronic origin data for cargo confirmed as ECFA goods by the customs authority of the exporter's country. (Public announcement 2014 No. 22) [32]

- Bangladesh / Nigeria / Ethiopia / Mozambique / East Timor
  - ✧ On September 10, 2020, the China General Administration of Customs decided to operate on a trial basis a Preferential Tariff Certificate of Origin. The purpose is to increase the use of special preferential tariffs for developing countries following the establishment of diplomatic ties with China. The following related information was also announced.
    - ✓ Preferential certificates of origin will be issued online to the visa agencies of five countries: Bangladesh, Nigeria , Ethiopia, Mozambique and East Timor. (Public announcement 2020 No. 94)[33]

- Use of digital certificate of origin procedures with countries participating in APMEN, as the one belt, one road initiative advances, and the outlook

In 2014, China played a leading role in the establishment of the Asia-Pacific Model E-port Network (APMEN) launched by Asia-Pacific Economic Cooperation (APEC) economic forum. China's objective is to use the development of an E-Port network, including the associated cooperation and activities, for connectivity of supply chains. China and other countries participating in APMEN are currently making rapid progress with the electronic exchanges of certificates of origin, mutual authentication and other projects.

As of March 2021, 23 ports in 13 countries and regions were participating in APMEN: China, Hong Kong, Taiwan, Singapore, Vietnam, Malaysia, Philippines, Australia, Canada, Chile, Peru, Mexico, Papua New Guinea).

The following figure shows the connectivity with electronic certificate of origin exchange systems of the countries listed above that have signed free trade agreements. This figure also shows the countries

[31] http://www.customs.gov.cn/customs/302249/302266/302267/356320/index.html
[32] http://www.customs.gov.cn/customs/302249/302266/302267/356078/index.html
[33] http://www.customs.gov.cn//customs/302249/302266/302267/3269475/index.html

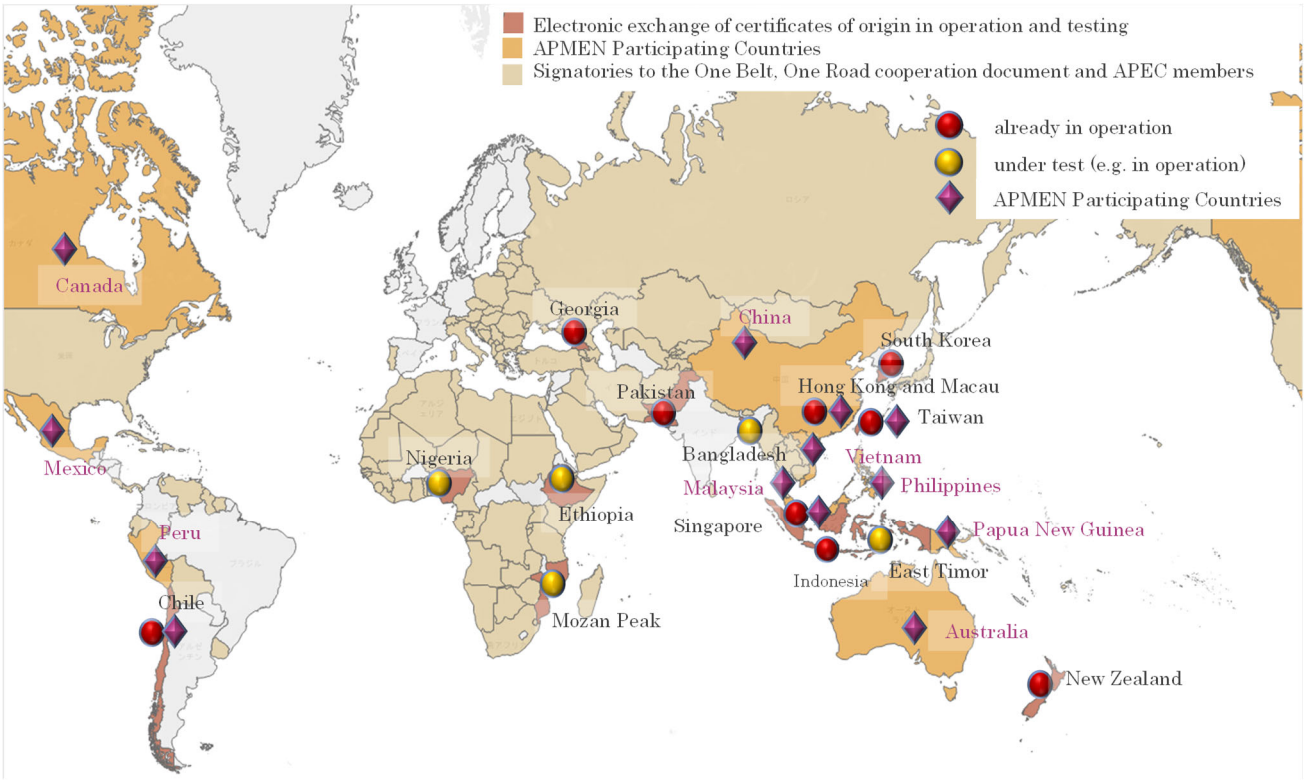
participating in APMEN. Of the countries that have not signed a document concerning cooperation with the one belt, one road initiative, eight are participating in APMEN (shown in purple): Vietnam, Malaysia, Philippines, Australia, Canada, Peru, Mexico, Papua New Guinea). All eight of these countries are APEC members.

At the APEC CEO meeting held on November 19, Chinese President Xi Jinping stated that he plans to continue the expansion of the one belt, one road initiative. Clearly, China plans to continue to urge APEC member countries to participate in this initiative. As a result, from China's perspective, the activities of APMEN (electronic exchanges of certificates of origin, mutual authentication and other projects) are one way to enlarge the economic zones of the one belt, one road initiative and APEC.

Since 2015, the Shanghai government has been placing priority on the one belt, one road economic trade cooperation project. Shanghai has been increasing support for the establishment of APMEN, the oversight and analysis of trade operations, and the establishment of credit system and other public-service platforms. The goal is the stable growth of foreign trade. Furthermore, Shanghai started taking numerous actions in 2017 in order to build a mechanism for E-Port cooperation with APEC and BRICS. Activities include authentications and approvals among many countries, standardization, mutual connectivity and data exchanges among ports, and the sharing of services.

As will be discussed later in this report, China and Malaysia have recently signed an MOU concerning cooperation involving China's central/regional E-Port and Malaysia's single window. The aim is to add a system for electronic certificate of origin exchanges between China and Malaysia. Consequently, as progress with the one belt, one road initiative continues, China plans to play a leading role in the construction of an infrastructure for electronic trade procedures in the one belt, one road region. This is to be accomplished by connecting the single windows of China and other countries in this region.

Figure 2-13 Status of establishment of electronic exchange systems for certificates of origin with FTA countries



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

The following section is an overview of APMEN and a summary of activities in recent years. APMEN has stated its intention of continuing to enlarge the electronic data exchange network linking ports and logistics companies and cooperation within this network.

At the second supply chain management meeting in 2015, an organization structure of APMEN consisting of the following three components was approved: 1) APEC Committee on Trade and Investment (CTI); 2) APMEN Joint Operational Group (AJOG); 3) APMEN Operational Center (AOC). The roles of these three units are as follows.

(1) APEC Committee on Trade and Investment (CTI)

As the unit that supervises APMEN, this committee oversees APMEN activities and submits periodically reviews thorough reports about APMEN, including progress reports, and submits recommendations and advice. The provision of guidance for the following year is another responsibility of this committee.

(2) APMEN Joint Operational Group (AJOG)

This group is an ad-hoc working group of the APEC CTI and has the following roles: adding and overseeing cooperating networks; supervising expansion of the APMEN initiative and project development activities; supervision of the activities of the AOC; and submission of annual reports to the APEC CTI about APMEN progress and policy proposals. Initially, the members of this group are representatives of the regulatory agencies of member countries, representatives of Model E-Port and

cargo hub projects in member countries, and individuals with various professional skills. The group is chaired by China, which is to be the host country. At the same time, as the ad-hoc working group for APEC CTI, AJOG will work directly with the APEC forum and, with the participation of non-APEC countries, ask ABAC, PECC and other multinational and international organizations to participate in AJOG meetings as open observers.

(3) APMEN Operational Center (AOC)

As the overall manager of APMEN activities, this center performs the key roles of coordinating and supporting these activities. In addition, AOC provides organizational support for specific cooperative activities involving APMEN. Another role is conducting PPD and skill development programs. Other activities are research involving APMEN, pilot projects, and the preparation of annual reports and development plans for studies performed by AJOG. To support all of these activities, individuals who submit reports, permanent organizational units, permanent specialist groups, and a variety of task forces may be used by AOC.

AOC has been established in Shanghai in the public-private sector dialogue conference of APMEN. In September 2015, China's Ministry of Commerce stated its intention of backing APMEN in the Shanghai Pilot Free Trade Zone, which was created by the city of Shanghai, and of starting the activities of AOC as soon as possible for the purpose of strengthening mutual communications and connectivity of international trade.

The Overall Progress Report of the Asia-Pacific Model E-Port Network 2015-2018, which was prepared by China and submitted to APEC, has the following goals for 2018 as a framework for the APMEN strategy.

- Upgrade information and communications technology capabilities for the purposes of collecting and sharing APEC Model E-Port experience, ensuring efficient and trouble-free trade within the APEC region, and optimizing supply chains.
- Determine how to implement and enlarge the Model E-Port project and achieve an understanding of other similar activities and associated issues.
- Improve the capabilities of Asia-Pacific region logistics sub-providers and the efficiency and capabilities of land/air/sea multi-modal freight shipping companies. To accomplish these improvements, create solutions for increasing the transparency of logistics and regulatory problems by using mutual data connectivity and mutual operations. Also determine the environment needed to implement these solutions.
- Use public-private sector partnerships to collect knowledge about methods for strengthening the coordination of border agencies and simplifying customs forms and other procedures.

In addition to establishing these goals, the report states that the following activities are to be taken by 2018

- Share information about experiences involving the development, operation and increase in utilization of E-Ports by sharing Model E-Port information.

- Review the existing service menu and perform E-Port activities in order to increase understanding of the economy.
- Perform case studies to determine how the economies associated with a variety of cargo hubs are using ICT infrastructures. Use this information to make trade more efficient and improve the performance of supply chains.
- Perform research to create solutions for the mutual connectivity and operation of end-to-end supply chain data and associated issues.
- Perform the targeted capacity building activities.
- Perform studies about conducting pilot projects in specific Model E-Port sectors.
- Cooperate and communicate with other APEC units and other regional and global agencies.

In addition to these activities, a project for electronic exchanges and mutual authentication of certificates of origin was conducted as part of the Model E-Port pilot project.

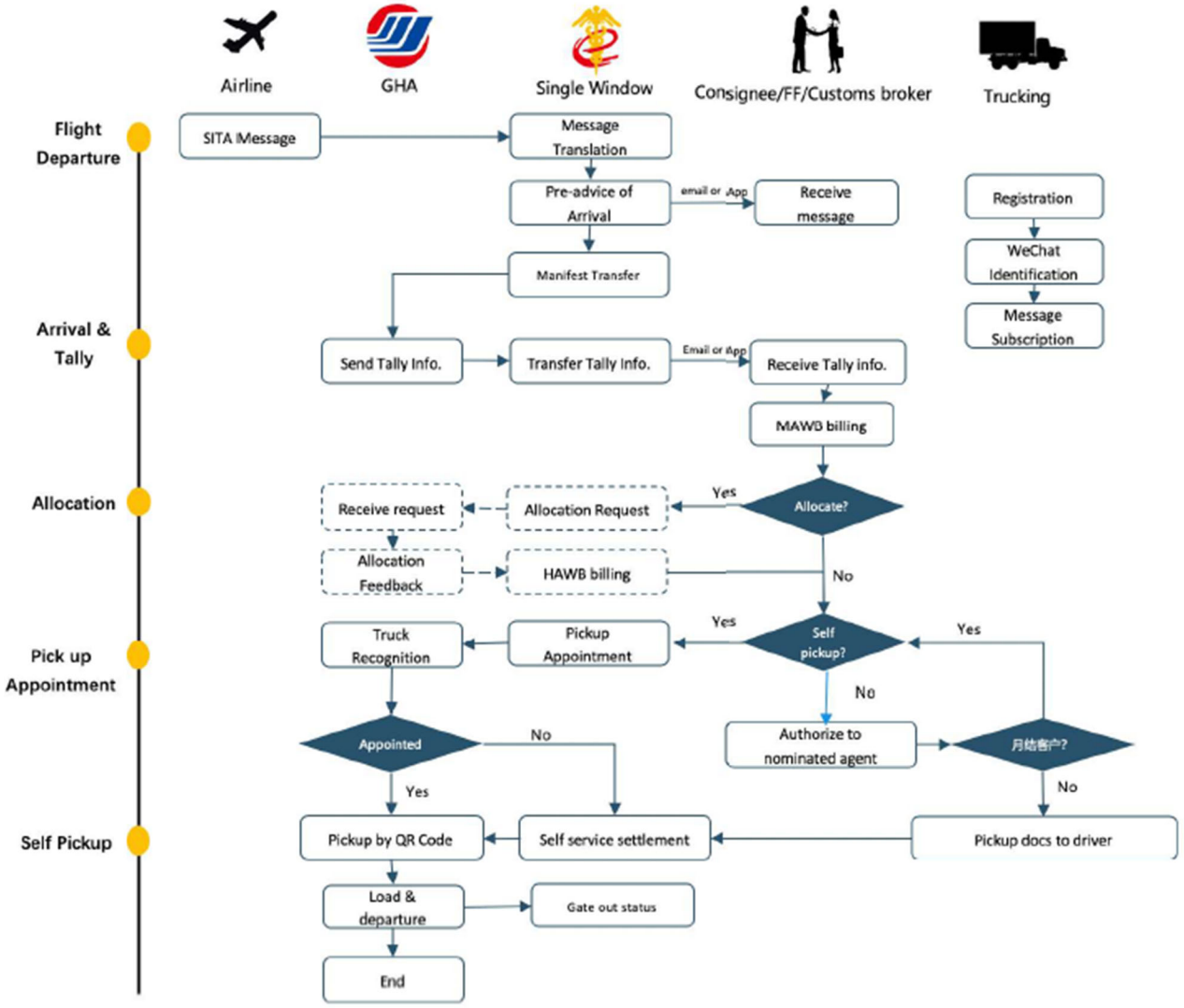
Electronic certificates of origin are currently used in the United States, the EU and other regions with developed economies as well as for trade between China and Hong Kong and China and South Korea. For other free trade agreements, companies verify certificates of origin on their own or the customs agencies of countries verify these certificates afterward. The highest priority of APMEN is to achieve widespread use for certificates of origin in these free trade agreements as well in order to greatly improve the efficiency of international trade.

This is the reason that ACC signed an MOU concerning cooperation with Malaysia's single window system. The goal is to use a data transfer system for electronic certificates of origin for trade between China and Malaysia.

SmartFTAX, a one-stop free trade agreement service, started operating in November 2018 as one element of this China-Malaysia MOU. Companies can use this service to check and compare the FTA tariff rates of many countries. SmartFTAX can also be used to confirm certificate of origin rules, required documents and the latest policies. As a result, this service has the benefits of raising the efficiency and cutting the cost of cross-border trade.

AMPEN implemented the e-AWB project at the Xiamen E-Port and Xiamen Airport, which began participating in APMEN in September 2017. The e-AWB project is a pilot demonstration project that started in 2018 with the joint backing of the Xiamen Free Trade Committee and APMEN. This is also a pilot project of China's Maritime and Port Bureau for confirming air logistics data. This platform is used as the data exchange platform provided as a public service by the single window of Amoi International Trade. The platform is linked to airline companies, cargo shipping companies, cargo owners, and other upstream and downstream companies in the air logistics chain. By quickly starting the trial operation of this platform, a process based on electronic waybills can be established for air logistics operations. The result is an entirely electronic process with no paper documents and mutual utilization of data. The operation of a system created in November 2019 has started.

Figure 2-14 Business Flowchart Using a System with E-AWB



Source: APMEN

In addition, APMEN will continue to develop software to support cross-border data exchange among APMEN member countries as an ongoing task.

This software is designed to address the concern that it is difficult to ensure the security and accuracy of data. It also aims to achieve interoperability of decentralized data and better electronic information exchange. The software can be installed voluntarily and separately in the electronic port systems of APMEN member countries.

APMEN plans to continue its work with activities that include the development of software that supports cross-border exchanges of data among APMEN member countries. This software will be designed to eliminate concerns about the difficulty of ensuring the safety and accuracy of data. In addition, this project has the goal of better electronic data exchanges by facilitating the mutual utilization of dispersed data. E-port systems in APMEN member countries will be able to decide whether or not to use software.

The cross-border data exchange software is positioned as a means of solving the problem of the poor quality of transportation infrastructures and services and inadequate access. These are issues that emerged during

phase 2 (2017-2020) of the APEC Supply-Chain Connectivity Framework Action Plan (SCFAP). The software has the following objective.[34]

- Establish an electronic data exchange network between ports and port/logistics operators and their collaboration, such as but not limited to the Asia Pacific Model E-port Network (APMEN).

[34] http://mddb.apec.org/Documents/2016/SOM/CSOM/16_csom_012app15.pdf

2.2.2.4. South Korea

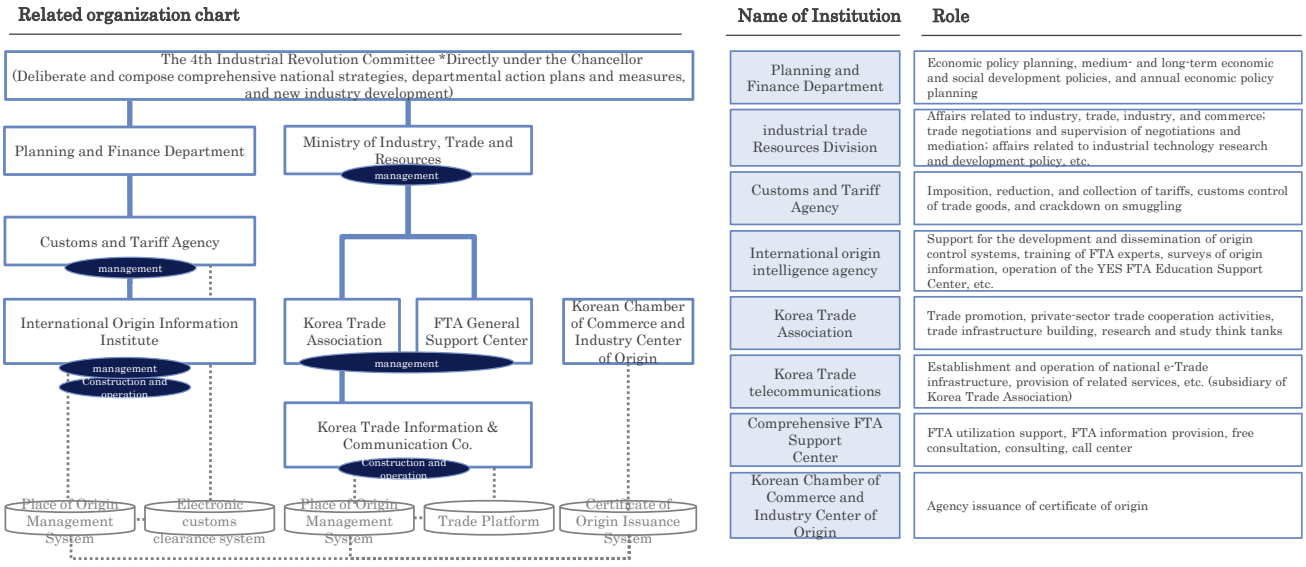
① Establishment of a single window

The government of South Korea is taking actions for performing trade procedures electronically. The Fourth Industrial Revolution Committee, which is chaired by the country's president, has discussed and determined national strategies and major policies as well as action plans for individual industrial sectors. Measures for electronic trade procedures are handled by the sector responsible for the management, construction and operation of trade procedures.

There is currently no unified national single window in South Korea. The government-operated trade platform and the system established by the Korea Customs Service provide double-track electronic services for trade procedures.

Regarding electronic trade procedures, South Korea's Electronic Trade Promotion Act (a law under the jurisdiction of the Trade Policy Department of the Ministry of Trade, Industry and Energy) requires the use of a provider of an electronic trade platform in South Korea for exchanges of documents used for trade procedures. This law is based on the stance that government agencies involved with trade must have a role in the management of trade documents. Management activities concern the importance of trade documents, authenticity when, after storage, documents are reused, and other matters.

Figure 2-15 Organization for Establishing Electronic Trade Procedures



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on information in the official websites of the government of South Korea, the Ministry of Trade, Industry and Energy, FTA PASS and FTA Korea

Services of FTA Korea, which was established by the Korea Trade Network (KTNET, part of the organization in the above figure), are one electronic procedure in South Korea for certificates of origin. FTA Korea is a company established in 1991 that is wholly owned by the Korea International Trade Association. Every year, this company handles an average of about 380 million electronic trade documents for 102,000 customers,

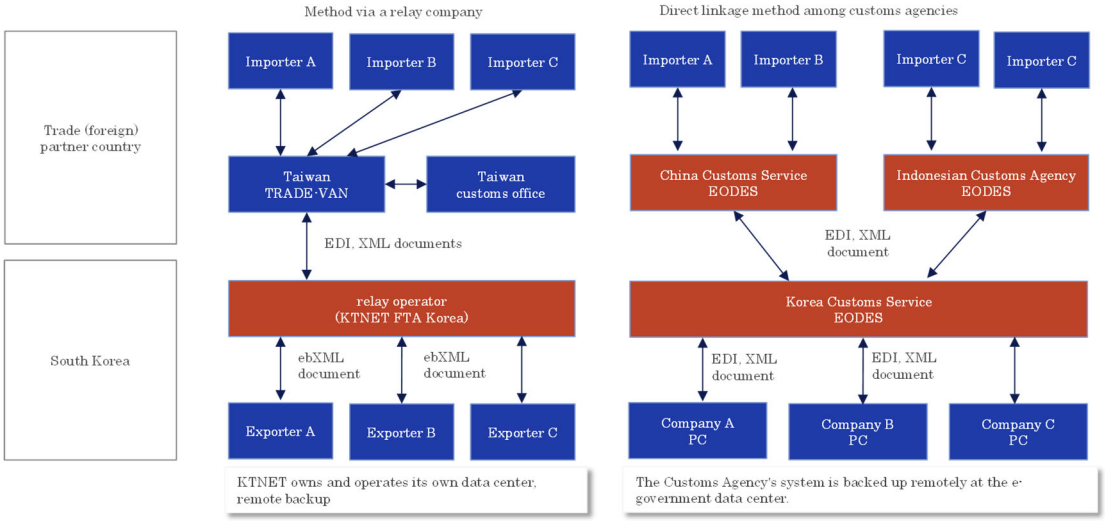
which include trading companies, banks, customs clearance companies, insurance companies, forwarders and other companies.

UtradeHub functions as the hub for electronic procedures for these trade documents. This hub is a trade platform established for the purpose of providing electronic trade services as one element of e-government activities in association with KTNET, the Ministry of Trade, Industry and Energy and the Korea International Trade Association . FTA Korea operates the portal site for the FTA certificate of origin management service, which is one of the functions of UtradeHub.

As a rule, certificates of origin are issued electronically by using the certificate of origin system. However, as in China, it is possible to submit applications for required documents directly to the Korea Chamber of Commerce and Industry and receive a certificate of origin there, as in the past. Within South Korea, there is both FTA Korea, which was established by KTNET, and EODES, which was established by the Korea Customs Service.

The reason for these two systems is when the Korea Customs Service started using EDI to automate customs clearance procedures (KTNET started using EDI prior to this in 1989), other related government agencies were required by the Customs Service Law to send and receive electronic documents. As a result, these government agencies confirmed, collected, stored and resent documents. There was a basic infrastructure that enabled operations for proof and other measures in the event of a subsequent dispute or other problem. Currently, the government of South Korea requires (pursuant to the Electronic Trade Promotion Act) that the Korea Customs Service and KTNET use infrastructure facilities for about 10 types of documents, including letters of credit, certificates of origin, letters of guarantee and other items. KTNET manages about 700 to 800 types of documents, including these 10 types. Large companies handle these documents directly by using their own ERP systems in conjunction with the intermediary system of UtradeHub. For small and midsize companies, which do not have an ERP system, there is a service that allows accessing UtradeHub to perform business procedures.

Figure 2-16 Overview of Links with Trade Systems of Other Countries



Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on public information in web sites and information received during interviews

The Korea Customs Service is currently conducting demonstration tests concerning the use of blockchain technology. These tests reflect activities of this service to utilize recent global developments in this field for the purposes of speeding up customs clearance procedures by improving certificate of origin procedures and of increasing FTA utilization and providing a more sophisticated environment for trade.

Figure 2-17 Blockchain Technology Demonstration Tests for Faster Certificate of Origin Procedures and a More Sophisticated Trade Environment

practical experiment Overview	• Test construction of a blockchain-based electronic certificate of origin data exchange system between South Korea and Vietnam • Customs officers will process and manage applications for proof of origin, and exporters will have the ability to access relevant information through FTA portals and mobile devices. • Building a function to link the blockchain and the customs clearance system in order to utilize customs clearance information sent from the Vietnamese side • Building a platform for bi-directional data transmission and reception for electronic data exchange between Korea and Vietnam • Provide Vietnam Customs and importers with a web-based screen that allows them to inquire about electronic proof of origin and customs clearance information sent by the Korea Customs Service, and to enter customs clearance information for individual electronic proofs of origin. • Configure four nodes on the blockchain: Korea Customs Service, Vietnam Customs, Korean exporters, and Vietnamese importers. • Leverage private blockchains (blockchains managed within a single organization), which are open source infrastructure.
background	• Although Korea's trade with free trade agreement countries accounts for a high percentage of its trade, the rate of FTA utilization remains low due to logistical delays caused by the procedures for the exchange and examination of electronic proof of origin documents. • Currently, there is a growing movement to apply blockchain technology to the trade industry to share reliable information in real time based on a high level of international security.
expected effect	• **(Increase in the rate of use of FTA exports)** Expedited customs clearance through simplification of procedures for issuing and examining certificates of origin will increase the rate of use of FTA exports by exporting companies, which is expected to increase corporate profits. • **(Reduction of logistics costs for exporting companies)** By eliminating the need to submit original certificates of origin and shortening the examination time, the annual logistics costs between Korea and Vietnam are expected to be reduced by approximately 24.5 billion won. • **(Enhancing export competitiveness) Issuance of** blockchain-based electronic certificates of origin with guaranteed reliability is expected to improve the country's credibility and increase the competitiveness of companies through faster customs clearance and increased use of FTA exports. • **(Improving the reliability of systems based on new technologies)** The leading application of blockchain technology can be expected to lead the market for blockchain in the trade field and expand overseas exports of electronic customs clearance systems based on new technologies.

Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on public information in web sites and information received during interviews

② FTA Korea functions and utilization method

FTA Korea has the following primary functions: agreement and place of origin rules, confirmation of HS code and other items, registration and management of basic information of applicants, supervision of judgments concerning place of origin, and issuance, distribution and storage of certificates of origin. The FTA Korea website has the following diagram for its functions and services.

Table 2-9 Basic Functions of FTA Korea

Item	Content Description
FTA Information Inquiry Simulation	• Inquiry of origin information by agreement/region • FTA Rule Management/ HS Code Inquiry • Simulation
Standards Information Management	• Company/user/authority management • Item management / purchase first management / sales first management / standard BOM / manufacturing process management • Direct input, Excel batch upload
decision management	• Raw material receipt and disbursement ledger, product receipt and disbursement ledger, target for determination of origin by product • Determination of origin by product / by sales • Issuance of individual confirmation / issuance of comprehensive confirmation

Sending and receiving electronic documents	• Certificate output/issuance • Certificate of origin, certificate of origin/product cost calculation breakdown • Management of sending and receiving (confirmation of origin, certificate of origin/pending request/notification of results, etc.)
post-event management	• Signature authority ledger, confirmation receipt items, history management by issuing document, standard information management, etc.

Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on FTA Korea's official [35]website, etc.

③ Electronic certificate of origin procedures for countries with an FTA with South Korea

Currently, South Korea exempts imports with a value of no more than $1,000 from the requirement to submit a certificate of origin for shipments from some of the countries and regions that have an FTA with South Korea. These countries and regions are Chile, EFTA, EU, United States, Australia, Canada, China and New Zealand.

Furthermore, at this time, only China and Indonesia (ASEAN) use an electronic medium for the exchange of certificates of origin with South Korea . EODES, which was established by the Korea Customs Service, is used for exchanges of electronic documents.

Table 2-10 Handling of Certificates of Origin for Countries with a South Korea FTA

Country	Effective Date	Issuance method	Form	Submission of original documents	Period of validity
Chile	April 2004	Self	Standard	No	2 years
EFTA	September 2006	Self	commercial format	No	1 year
ASEAN	June 2007 (Trade in Goods Agreement) May 2009 (Services Agreement) September 2009 (Investment Agreement)	Third-party	Standard	Yes	1 year
India	January 2010	Third-party	Standard	Yes	1 year
EU	July 2011 (Provisional) December 2015 (overall)	Self	commercial format	No	1 year
Peru	August 2011	Self, Third-party	Self: Commercial Third-party: Standard	Yes	1 year (Extension possible)
America	March 2012 January 2019 (Revised Cooperative Agreement)	Self	Standard	No	4 years
Australia	December 2014.	Third-party	Standard	No	2 years
Canada	January 2015	Self	Standard	No	2 years
China	December 2015	Third-party	Standard	No	1 year
New Zealand	December 2015	Self	Commercial, Standard	No	2 years
Vietnam	December 2015	Third-party	Standard	Yes	1 year
Colombia	July 2016	Self	Standard	Yes	1 year

Source: NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. based on FTA Korea's official [36]website, etc.

[35] https://fta.go.kr/main/
[36] https://fta.go.kr/main/

Secondary Use Unsolicited List

Title of the report;
FY2020
International economic research project for the establishment of an integrated domestic and international economic growth strategy
(International economic research project on Japan's measures to enhance trade facilitation (including the use of FTAs)) Survey Report

Commissioned project name;
FY2020
International economic research project for the establishment of an integrated domestic and international economic growth strategy
(International economic research project on Japan's measures to enhance trade facilitation (including the use of FTAs))

Contractor name;

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Page	Chart Number	Title
12	Figure 2-3	Node participation in the TradeLens blockchain.
24	Figure 2-6	Development concept of the 7th NACCS
25	Figure 2-7	Relationship with TradeWaltz and NACCS and the concept of Cyberport
34	Figure 2-9	Conceptual diagram of the VNSW (VNACCS) (at the start of operation)
47	Figure 2-14	Business Flowchart Using a System with E-AWB