

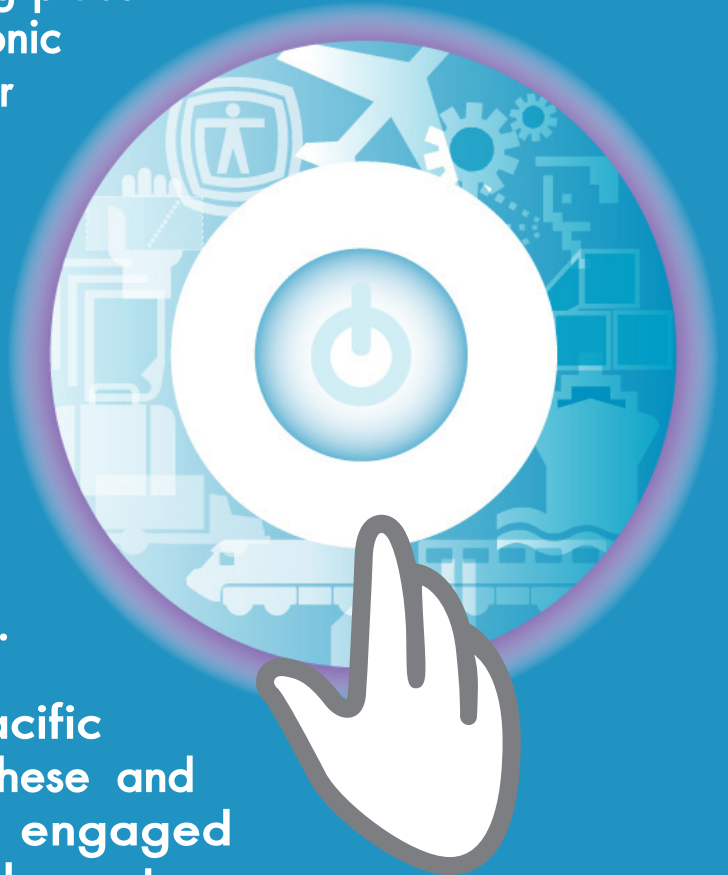
Towards An Enabling Environment for Paperless Trade

Pan Asian e-commerce Alliance (PAA): Service providers join forces to enable cross-border paperless trade

Paperless trade refers to trade taking place on the basis of exchange of electronic data and documents. Replacing paper documents by electronic ones greatly helps in cutting red tape, simplifying trade processes and improving transparency and predictability of international trade transactions. This in turn leads to enhanced trade competitiveness, as well as improved regulatory compliance and more inclusive participation in international trade.

Many countries in the Asia-Pacific region, already well aware of these and other benefits, are currently engaged in implementing paperless trade systems, including national electronic single windows.

This Brief introduces the Pan Asian e-commerce Alliance (PAA), a regional alliance of paperless trade service providers formed to enable trade data exchange across borders. The Brief describes the rationale for the alliance, its institutional arrangement and its business model and services. Lessons learnt from a decade of operation as well as future plan for further enabling of cross-border paperless trade are highlighted.



Pan Asian e-commerce Alliance (PAA): Service providers join forces to enable cross-border paperless trade

Background

In the late 1980s and early 1990s, several governments of countries and economies in Asia had initiated Electronic Data Interchange (EDI)-based paperless trade projects and established paperless trade service providers. These initiatives were part of national strategic development plans rather than market-driven, essentially in support of their export-led economic development policies. Governments of those countries and economies played critical role by providing policy support and implementing various facilitation measures, such as 1) "Calls for Collaboration" inviting trade community on the use of EDI, 2) establishment of standard bodies for e-commerce, 3) education and awareness campaign on EDI for various stakeholders, 4) adoption of legal frameworks on the use of electronic documents and data messages, 5) provision of funding for the implementation projects in strategic areas, etc.

Based on the national strategies and priorities in their respective countries and economies, paperless trade service providers developed their own paperless trade platforms and services, in close cooperation with governments. Most paperless trade service providers started with implementation of customs clearance services, although

some began with port automation, extending to customs clearance subsequently. Private sectors had also started adopting EDI more, in response to increasing EDI requirements in supply chains, in particular retails and banking sector, in line with growing initiatives in Europe and North America

After successful implementation of electronic trade transaction services such as automated Customs clearance and manifest submission, paperless trade service providers began to look for possibility of extending their service coverage to overseas market. Some of the service providers explored collaboration with newly established global paperless trade platforms and services, such as Bolero and TradeCard. At the same time, they also initiated a regional cooperation framework among paperless trade service providers in Asia, launching the Pan Asian e-commerce Alliance (PAA). The background for initiating the PAA came from three drivers: (1) introduction and spreading of the Internet-based technology, (2) completion of automation of local trade procedures including the formulation of early models for Single Window platform, and (3) growing volume of the intraregional trade in Asia.

History and Institutional Mechanism

(1) HISTORY AND MEMBERSHIP

In July 2000, three e-commerce facilitators – Tradelink from Hong Kong, China, Singapore Network Services (now known as CrimsonLogic) from Singapore and Trade-Van from Chinese Taipei met to consider the establishment of a 'Regional e-Commerce Alliance' which would facilitate the development of e-commerce and paperless trade in Asia. Subsequently, KTNET from Republic of Korea and China International Electronic Commerce Center (CIECC) of China joined the alliance in September 2000. In January 2001, the Alliance, called the Pan Asian e-Commerce Alliance, was formed, and its first Charter was signed by the five members. Over time, the membership of the PAA expanded, and now comprises eleven members as follows (See Figure 1):

- CAT Telecom Public Company Limited, Thailand
- China International Electronic Commerce Co. Ltd. (CIECC), China
- CrimsonLogic Pte Ltd., Singapore
- Dagang Net Technologies Sdn Bhd, Malaysia
- InterCommerce Network Services, Inc., Philippines
- Korea Trade Network Co., Ltd. (KTNET), Republic of Korea
- Nippon Automated Cargo And Port Consolidated System, Inc. (NACCS), Japan



Figure 1: Members of the PAA

- h) PT Electronic Data Interchange, Indonesia
- i) Tradelink Electronic Commerce Limited, Hong Kong SAR, China
- j) Trade-Van Information Services Co., Chinese Taipei
- k) Transferentia Electronica de Dados - Macau EDI VAN S.A. (TEDMEV), Macau SAR, China

As indicated in the mission statement in its Charter, the PAA aims to be the leading body of collaborative organizations promoting and providing “secure, trusted, reliable and value-adding IT infrastructure and facilities for efficient global trade and logistics.” Such infrastructure and facilities will incorporate both official and de facto standards and procedures, and will enable easy and wide acceptance of e-Commerce in trading activities. The aims of the PAA include, but are not limited to the following:

- (1) Enabling secure and reliable transmission of trade, logistics and customs documents. This may include the mutual recognition and cross certification of digital certificates used by Members or issued by members in their capacity as Certification Authority (CA) for use in electronic documents exchanged among the parties.
- (2) Facilitating inter-connection of network services to provide e-commerce transaction application services for the business community
- (3) Providing a Pan-Asian portal enabling global business-to-business connection and communication
- (4) Other initiatives which may be agreed by Members from time to time

(2) ORGANIZATION STRUCTURE AND OPERATION

The PAA consists of a Steering Committee, two Working Groups, special task forces and the Secretariat. The Steering Committee comprises of representatives of all PAA members and meets three times yearly. The Steering Committee is in charge of managing the PAA, including election of Chairperson and Deputy Chairperson, approval of budgets, endorsement of PAA procedures, etc. Each PAA member has one seat in the Steering Committee.

Under the Steering Committee are two working Groups: Projects Management and Publicity Work Group and Technical Work Group. The Role and Responsibility of the two Work Groups are as follow:

- (1) Project Management and Publicity Work Group
 - manages the overall system implementation to ensure PAA service is delivered on time, meet requirements and within budget
 - manages the integration between the various members’ systems
 - develops communication and marketing plan
 - develops publicity and marketing kit
 - sources appropriate platforms/events for major announcements
- (2) Technical Work Group
 - defines, implements and maintains the PAA document standards
 - defines, implements and maintains the PAA Messaging standards and members interconnectivity
 - manages the PKI and the CA Mutual recognition framework
 - ensures the system availability of the PAA portal
 - develops technical plan to support PAA initiatives

The Secretariat is responsible for coordinating organization of the Steering Committee meeting activities in cooperation with the hosting Member. Such activities include follow-up, preparation and circulation of working papers and minutes for the Steering Committee meeting; invitation and co-ordination with the Advisors to attend the Steering Committee meeting. It is also the responsibility of the Secretariat to follow up and circulate the regular progress reports of Working Groups to all Steering Committee members. From the early stage, the Tradelink has served as the PAA Secretariat.

The PAA incorporated two limited companies to assist in the fulfilment of its mission: (1) the Pan Asian e-commerce Alliance Trade Services Limited, to carry on businesses in such manner as directed by the Steering Committee; and (2) the Pan Asian Certificate Policy Authority Limited, to administer certificate policy and scheme of mutual recognition of digital certificates of the PAA

The PAA consists of Full Members and Associate Members, usually organizations sharing the mission and common objectives of the PAA. Organizations interested in joining the Alliance need to write to the PAA Secretariat to express their interest. To foster tighter relationship with potential PAA partners, the Steering Committee may decide to confer “Associate” status on selected organizations to facilitate the work of such partners in joint projects, their participation in work groups, or discussions in the Steering Committee. An Associate Member has a term of two years.

Business Model and Core Services

In its endeavour to realize seamless cross-border paperless trade, the PAA has successfully developed a number of important services. The service offerings

are built on international technical standards and secure technology and supported by a comprehensive legal framework, to enable cross-border trade data exchange.

They include 1) PAA Club agreement, 2) PKI Mutual Recognition Framework, and 3) Secure Cross Border Transaction Models (See Figure 2).

(1) PAA CLUB AGREEMENT

PAA has developed multiple agreements with technical specifications to establish a robust legal framework for the secure cross-border transaction service, including PAA Club Agreement and Subscriber Agreement, Interconnection Agreement and PAA Certificate Authority (CA) Recognition Agreement.

The PAA Club Agreement constitutes agreement between all the Subscribers registered as PAA Club Member and between each Subscriber and each PAA Service Provider. When any PAA Service is used by any Subscriber, the Subscriber is deemed to have agreed and confirmed that he/she has read, understood, accepted and agreed to be bound by the Terms and Conditions of the PAA Club Agreement. Upon the entry of the name and particulars of a Subscriber in the PAA Club Member Register, the Subscriber is joined as a PAA Club Member, a party to the PAA Club Agreement bound by the terms and conditions. By entering into a PAA Subscriber Agreement with a PAA Service Provider, a Subscriber confirms that he/she has read, understood, accepted and agreed to be bound by the terms and conditions in the PAA Club Agreement and appoints the PAA Service Provider as the Subscriber's agent to join the Subscriber as a party to the PAA Club Agreement.

Major topics covered by the PAA Club Agreements are as below:

- Ownership of Data Messages or Electronic Records
- Translation and Conversion of Data Messages and Electronic Records
- Data Messages and Electronic Records
- Standard Document Templates
- PAA Club Member Register
- Subscriber's Obligation & Indemnity
- Confidentiality
- Security
- Data Privacy

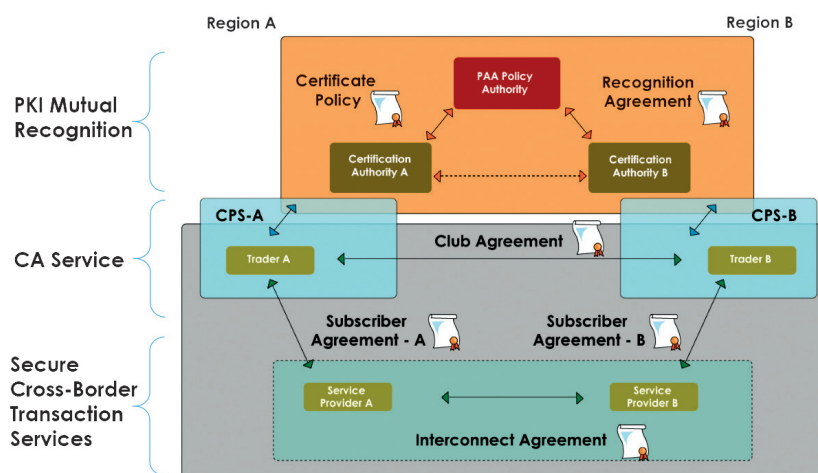


Figure 2: Legal Framework of PAA Service

The Interconnection Agreement defines the terms and conditions for the electronic transfer of data messages or electronic record between the PAA members, and the implementation of related support procedures. PAA members agreed to adhere to the technical requirements which sets forth the specifications agreed upon by the PAA members for certain technical and procedural requirements. The signor of the agreement shall observe and be bound by the provisions of the PAA Club Agreement as a "PAA Service Provider" referred above. Major topics covered by the PAA Interconnection Agreements are as below:

- Security of Data
- Transmission and Authenticity of Message
- Integrity of messages
- Confirmation of Receipt of Messages
- Storage and Retrieval of Data
- Data Ownership
- Revenue Sharing and Payment
- Liability
- Audit
- Technical specification and requirements

(2) PKI MUTUAL RECOGNITION FRAMEWORK OF THE PAA

A study towards the setting up of a Certificate Policy Authority was commissioned as a framework for the mutual recognition of Public Key Infrastructure (PKI) by the early members of the PAA. As a result, the PAA incorporated the "Pan Asian Certificate Policy Authority Limited (PAA CPA)" company. The Policy Authority was duly incorporated by the PAA with a view to providing a trusted framework for PAA member community to execute electronic cross border trading transactions securely (See Figure 3).

A key component of this framework is the mutual recognition of the PKIs adopted by the PAA members, and specifically the mutual recognition of the corresponding certification practice statements and certificates. In order to facilitate this process of mutual recognition, the Policy Authority has established a common Pan Asian Certificate Policy Authority Certificate Policy and a PAA CA Recognition Procedure, and administers the recognition of the certification practice statements and certificates used by the PAA members, against this common policy.



Figure 3: Development of PAA Mutual Recognition of PKI Scheme

The Policy is intended for the sole use of the PAA, its members and their customers. This Certificate Policy is intended for use within the PKI established by the members of the PAA as defined and managed by the Pan Asian Certificate Policy Authority Limited. The Policy contains a set of rules governing the issuance and use of digital certificates among the members of the PAA, and indicates the applicability of the certificates to the communities within the PAA. Specifically, the Policy is intended to support the PAA and its members in the following areas in connection with the aims of PAA:

- Provide high level of assurance that enables secure and reliable transmission of business and transaction documents, and contribute to assuring non-repudiation of business transactions;
- Facilitate inter-connection of network services to provide e-commerce transaction application services for the business community; and
- Support a Pan Asian portal enabling global business connection and communication.

This Policy is applicable to the use of Identification Certificates within the PAA PKI to support the authentication of

identity of individuals as well as authentication and integrity of electronic messages and transactions between the communities of users within the Alliance, and provides a means of assuring non-repudiation.

PAA CAs are the interested CAs or partnered CAs of PAA members' region seeking recognition against the PAA Certificate Policy and have shown, to the satisfaction of the Policy Authority, that the policies and procedures they adopt, comply with the common standard in the Certificate Policy in accordance with the PAA CA/CPS Recognition Procedure. Once recognized, CAs can enter into the PAA CA Recognition Agreement with the PAA CPA. Currently, six CAs in member countries and economies have been certified as PAA CAs.

- Digi-Sign (Hong Kong, China)
- GFACA (China)
- MOEACA (Chinese Taipei)
- Netrust (Singapore)
- Trade-Sign (Korea)
- TWCA (Chinese Taipei)

(3) PAA SECURE CROSS-BORDER TRANSACTION SERVICE

Based on a robust legal framework and technical specifications for the secure cross-border transaction service, PAA has implemented the following secure cross-border transaction services (See Figure 4):

- B2B(Business to Business) Services with PAA XML (eXtensible Markup Language) Document Standard
- Korea – Chinese Taipei electronic Certificate of Origin (e-C/O) Service
- Cargo Visibility Service

PAA B2B Services help traders and forwarders, particularly Non-Vessel Operating Common Carriers (NVOCCs) exchange trade documents electronically with their partners in overseas regardless of their system and solutions. The trade documents for which PAA offers exchange services are as follows:

- Purchase Order
- Advance Shipment Notice
- Packing List
- Commercial Invoice
- Air Way Bill

PAA Transaction Services Operation

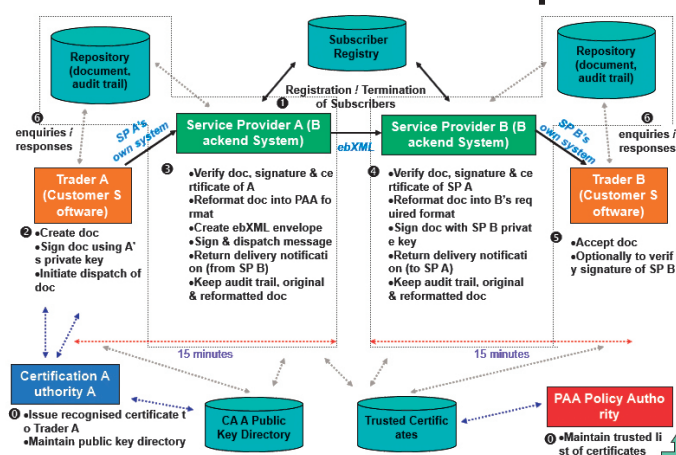


Figure 4: Operation Model of PAA Secure Transaction Services

- Bill of Lading
- Delivery Order
- Trade Declaration
- Electronic Certificate of Origin
- Shipping Order
- Processing Trade (China)

TAL Apparel of Hong Kong, China was the first user of the PAA B2B Service. Tradelink of Hong Kong, China provided TAL with intermediary service including message translation between TAL message standard and PAA XML standard. In their commercial transaction, TAL exchanges Purchase Order, Invoice and Advance Shipping Notice with their overseas suppliers.

Korea-Chinese Taipei e-C/O Service is one corner stone of PAA services as PAA framework has achieved official recognition by Governments of both economies for its cross-border exchange of e-C/O. Figure 5 illustrates an arrangement for exchanging e-C/O between Korea and Chinese Taipei.

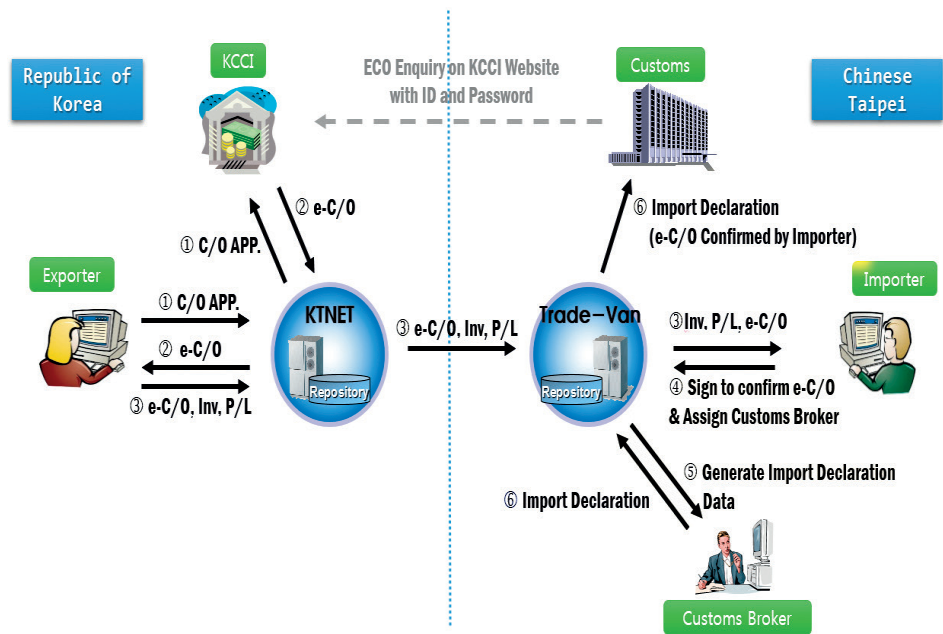


Figure 5: Korea-Chinese Taipei e-C/O exchange Model

(4) COLLABORATION WITH OTHER INTERNATIONAL ORGANIZATIONS

The PAA continuously extends its collaboration with other international organizations specializing in paperless trading. Some PAA members have expanded their service scope to facilitate paperless trading between Asia and Europe via the Asia-Europe Alliance for Paperless Trading (ASEAL). Also, PAA members are deeply involved in and cooperating

with other regional paperless trading and Single Window activities such as Association of Southeast Asian Nations (ASEAN) National Single Window (NSW) initiative and Asia Pacific Economic Cooperation (APEC) Paperless Trading Subgroup under the Electronic Commerce Steering Group (ECSG).

Lessons Learned: Gaps in Facilitating Cross-border Paperless Trade

The PAA is a private sector alliance of government-backed 3) Slow implementation: Unlike domestic paperless trade

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