Technical Standard of PAA

April, 2012

Jay Kim

KTNET

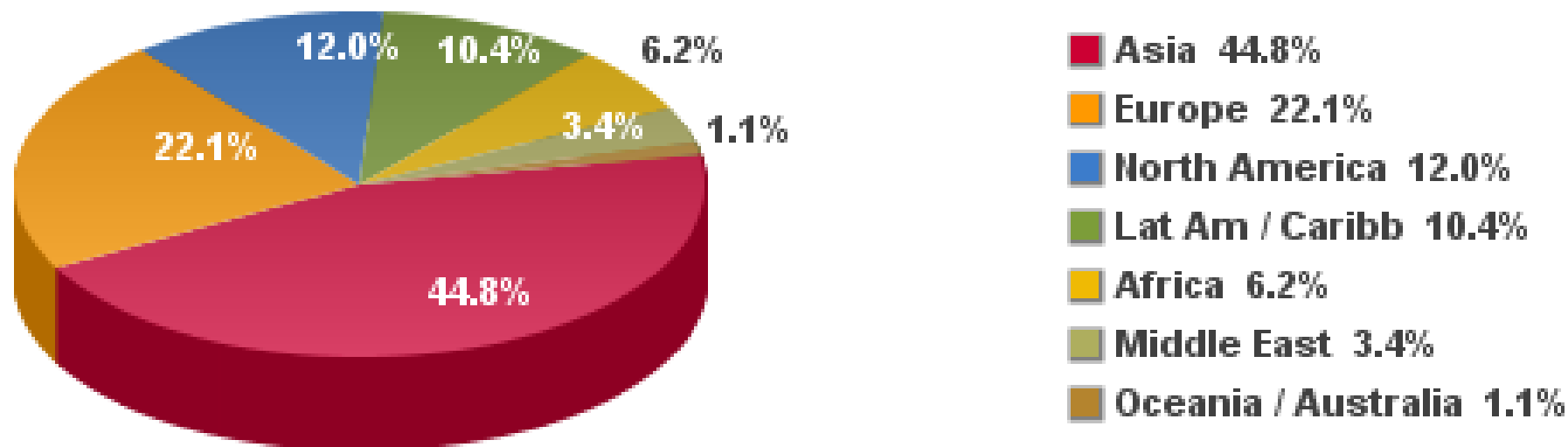# Contents

1. Messaging Standard & Communication Protocol for PAA

- □ PAA Value Position
- □ Packaging Specification
- □ Single hop transaction Model
- □ Multi hop transaction Model
- □ Messaging Standard (ebXML)

Internet Users in the World
Distribution by World Regions - 2011

- Asia 44.8%
- Europe 22.1%
- North America 12.0%
- Lat Am / Caribb 10.4%
- Africa 6.2%
- Middle East 3.4%
- Oceania / Australia 1.1%

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The PAA Value Proposition

- EFFICIENT OPERATIONS – Trade **data can be reused**

- REGULATORY INTEGRATION **-Integrated with Government services**

- ERROR FREE OPERATIONS – **reduction of errors** caused by multiple data r e-entry

- SECURITY - **no additional development** works or data mapping

- NEUTRAL RELIABLE PLATFORM – **neutral** , **reliable** and **secure**

- STRONG PAA LEGAL FRAMEWORK

Packaging Specification

- ebXML Message Structure
  - communication protocol independent MIME/Multipart message envelope
  - SOAP Messages with Attachments

- Two logical MIME parts within the *Message Package*
  - A MIME part, referred to as the *Header Container*, containing one SOAP 1.1 compliant message
  - zero or more MIME parts, referred to as *Payload Containers*, containing application level payloads
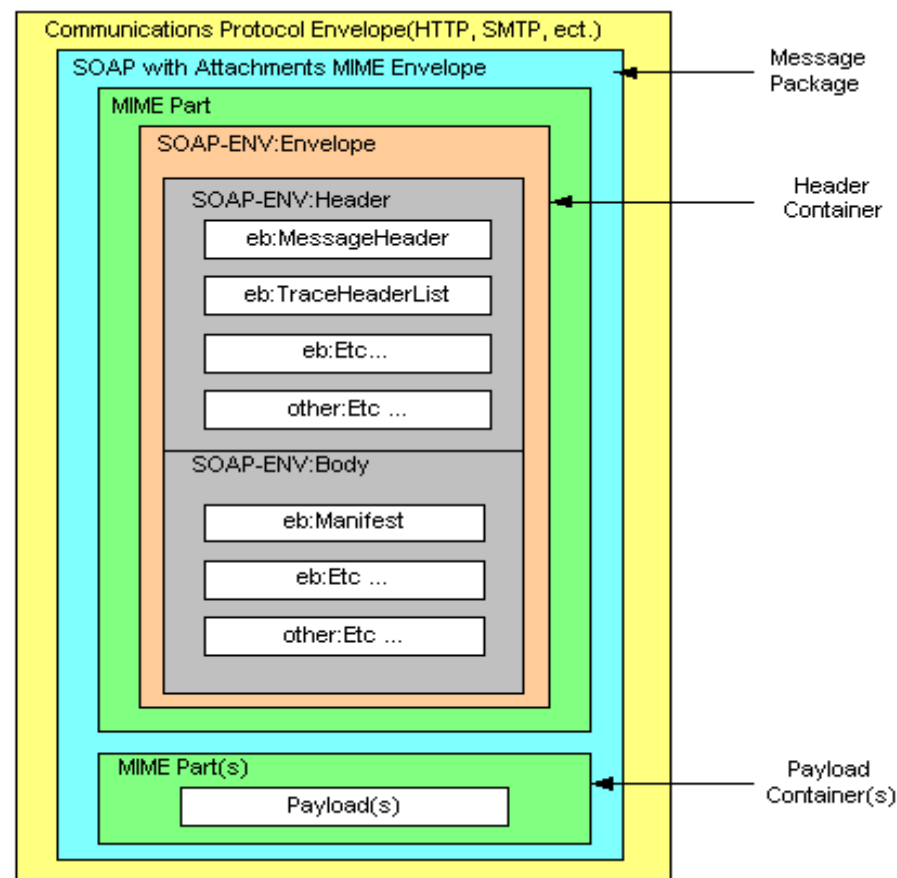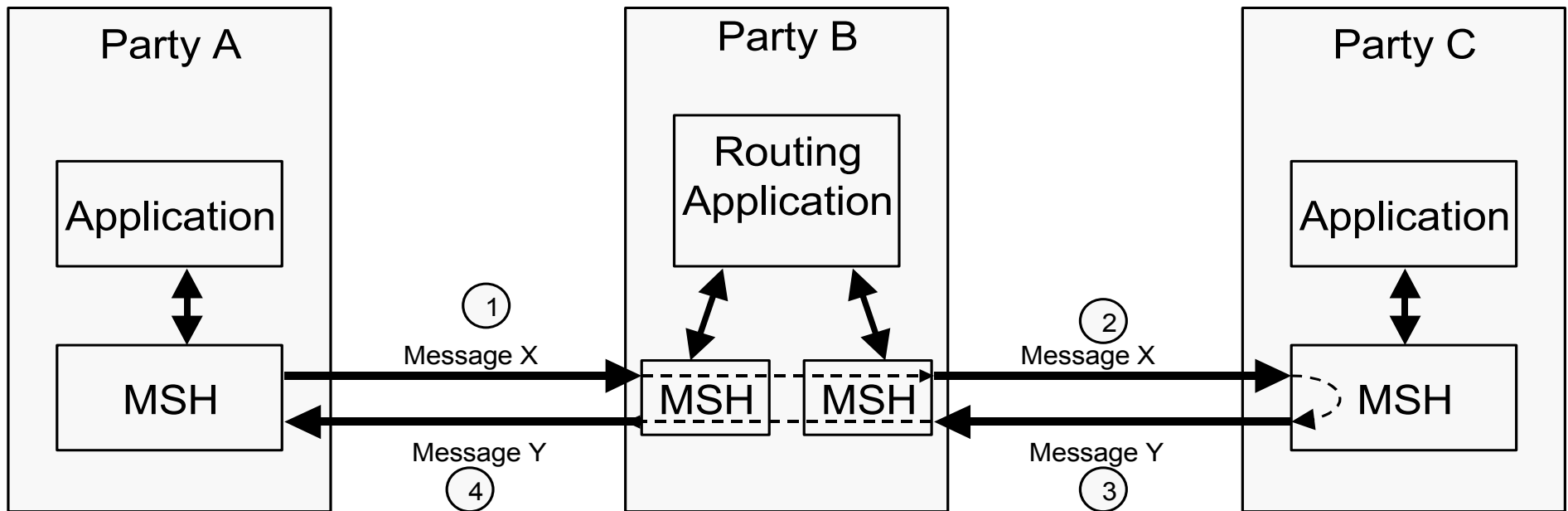
Single Hop TraceHeader Model

sent directly from one party to another
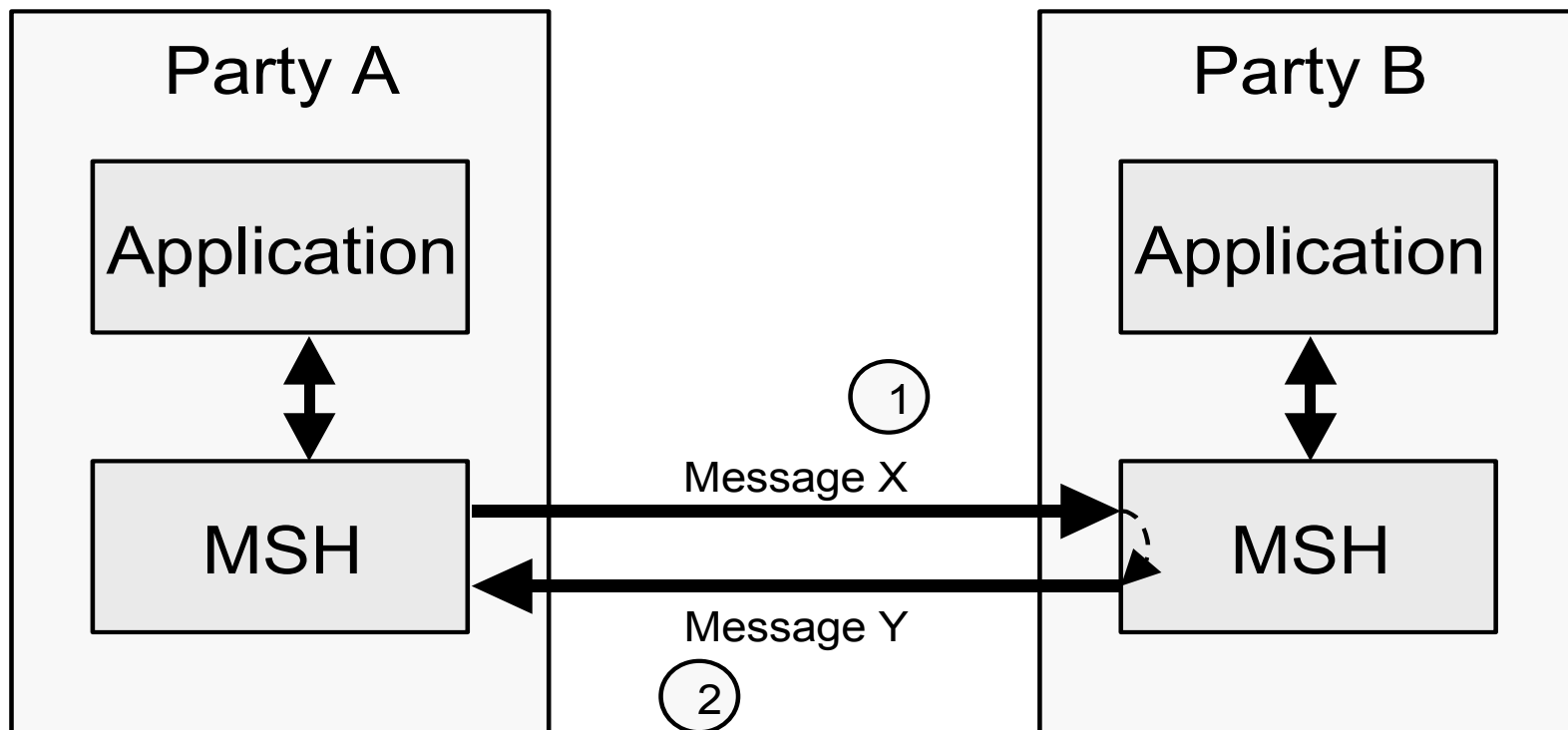
Multi-hop TraceHeader Model

Multi-hop messages are not sent directly from one party to another, instead they are sent via an intermediate party, as illustrated by the diagram below:

Transmission 1 - Message X From Party A To Party B
Transmission 2 - Message X From Party B To Party C

Reliable Messaging

- Methods of Implementing Reliable Messaging
  - using the ebXML Reliable Messaging protocol
  - using ebXML SOAP structures together with commercial software products that are designed to provide reliable delivery of messages using alternative protocols.
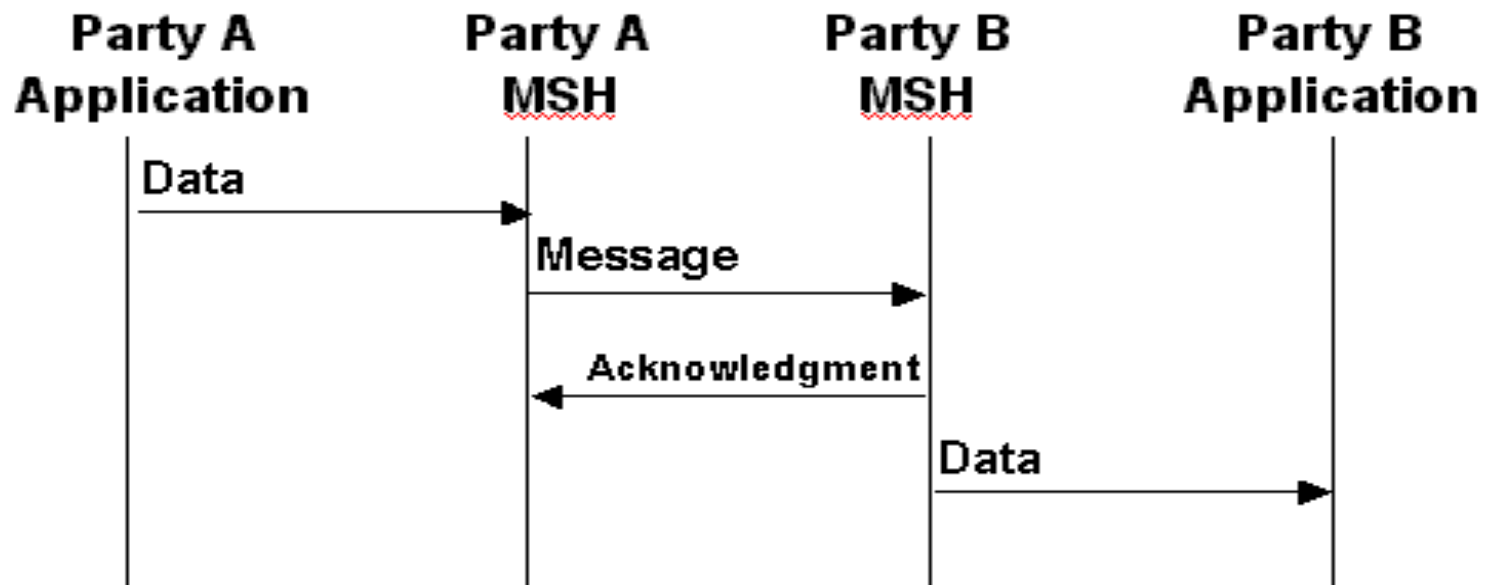
(DeliverySemantics : OnceAndOnlyOnce, reliableMessagingMethod : ebXML)

Message Standard (ebXML)

Business Document :
(Sending)
EDI
GXML
Flat File, Inhouse XML

ebXML MS v2.0

KTNET e-Trade
GXMLHub

xeni MSH

Samsung Networks
LG CNS
HANJIN Networks
DACOM

HTTPS

ASP Service
XENI MSH v2.0
VAN/EDI

SP, TP CPA
with
Certificate

CPA with
Certificate

Traditional
VAN/EDI

TP

Signal Document
(Receiving) :
Status Message
Error Message

TP

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System Architecture

KTNET Infra System

eMail Server · FAX · SMS · eDO · EDI*Net · eCF · ASPLine · KILC

uTradeHub.

Service — XML3.0

EDI   EDI

EDI
GXML4ASP
eTrade1.0

EAI

repository

EDI
XML3.0
XML2.0

XML2.0
/ebXML Msg
Service

GxHub

EDI   GXML4ASP
        GXML1.0

EDI

EDI

XML3.0

developing

ED

KFTC

EDI SRV.

e-LC System

EDI

XML2.0

Trade company

Agencies

Insurance

Customs

Banks

Message Handling Service

GeT*Mate is a solution required by an enterprise that wants to simplify business procedures and reduce expenses through paperless trade

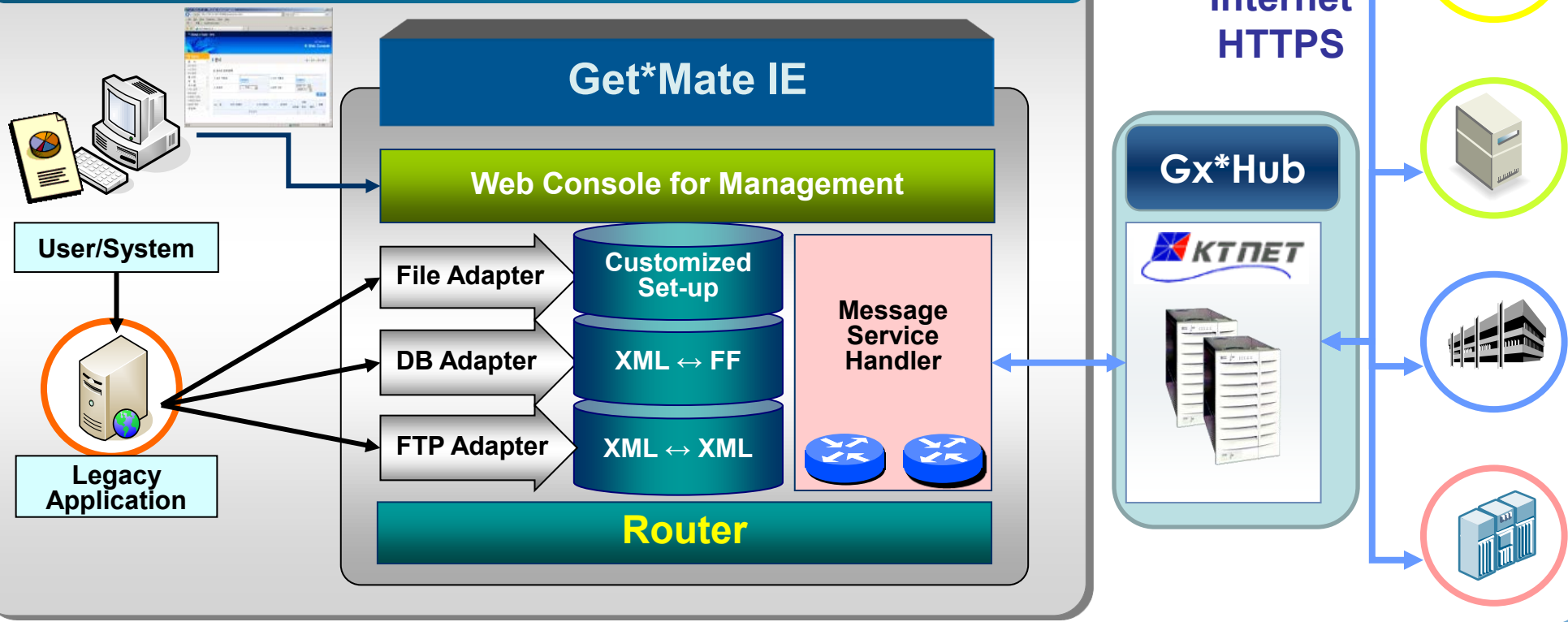**Connecting legacy EDI system with virtually any type of platform**

ebXML based Messaging solution (XML-EDI, EDI-EDI, XML-XML)

Internet HTTPS

Get*Mate IE

Web Console for Management

User/System

Legacy Application

File Adapter

DB Adapter

FTP Adapter

Customized Set-up

XML ↔ FF

XML ↔ XML

Message Service Handler

Router

Gx*Hub

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Certificate Authority

- TradeSign(www.TradeSign.net) ensures that e-trade systems are working error-free via Trusted Third Party (TTP) Certification.

- The Government's Designated Certification Agency provides a safe and reliable basis for spreading e-Commerce including B2C,B2B,B2G and others.
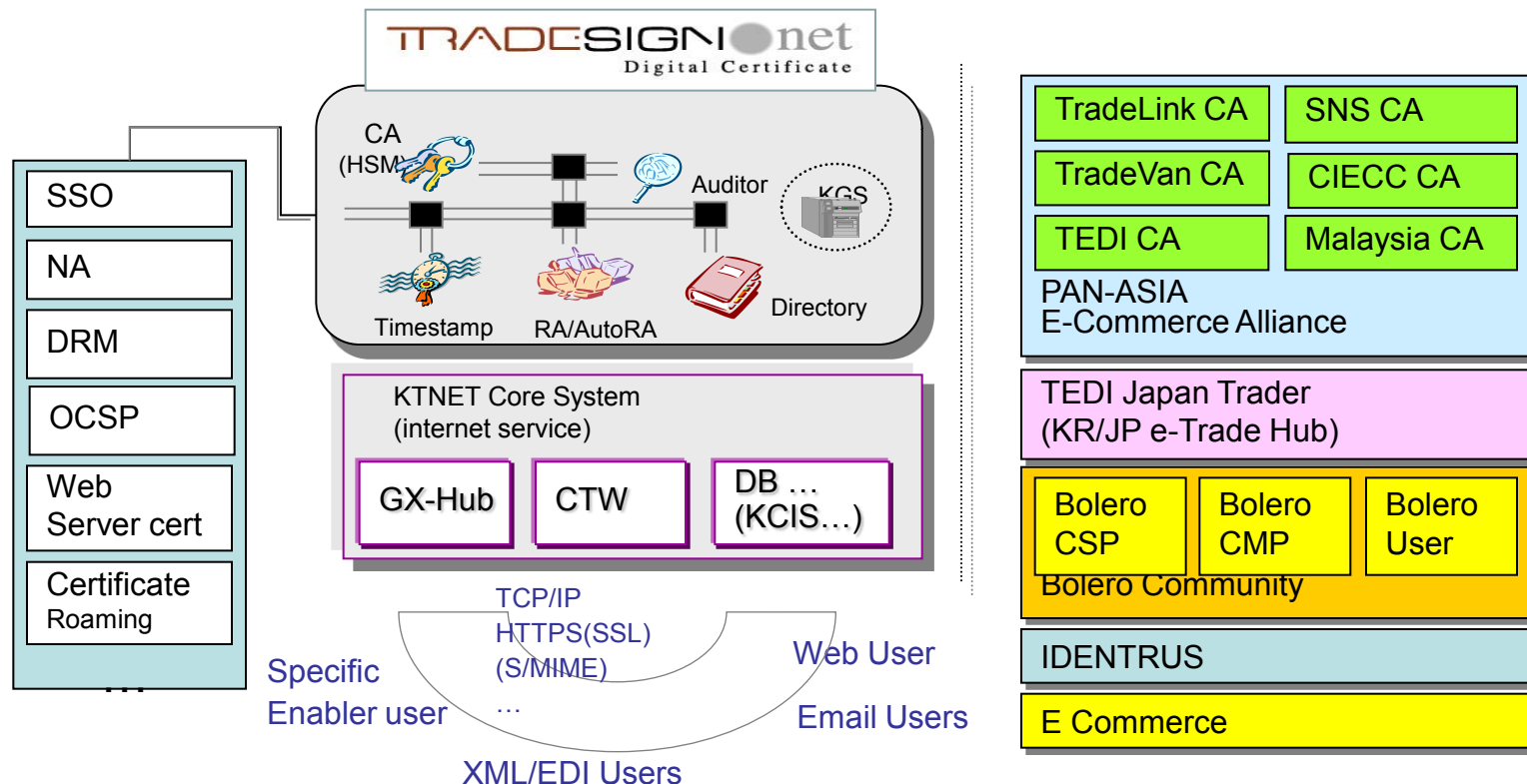
2. Security and on going Services

- ☐ Advanced Security Structure
- ☐ Supported documents
- ☐ How we implemented – pilot projects and more

Upgrading Security Structure

* Key length upgrade (recommended)
 - RSA / KCDSA 1024bit-> 2048bit (Korea Certification-based Digital Signature)
 - ECDSA(Elliptic Curve Digital Signature Algorithm)163bit-> 224, 233bit
* Hash Algorithm: SHA1(160bit)>SHA256(256bit)

Current
RSA 1024
SHA 1
RSA 2048
SHA 256

New
RSA 1024
SHA 1
RSA 2048
SHA 256

2012.1.1

2013.1.1

Digital Signature
RSA 1024
SHA 1
Recommended (Current or SHA 256 above)
RSA 2048
SHA 256

*Ministry of Public Administration and Security

Rivest Shamir Adleman
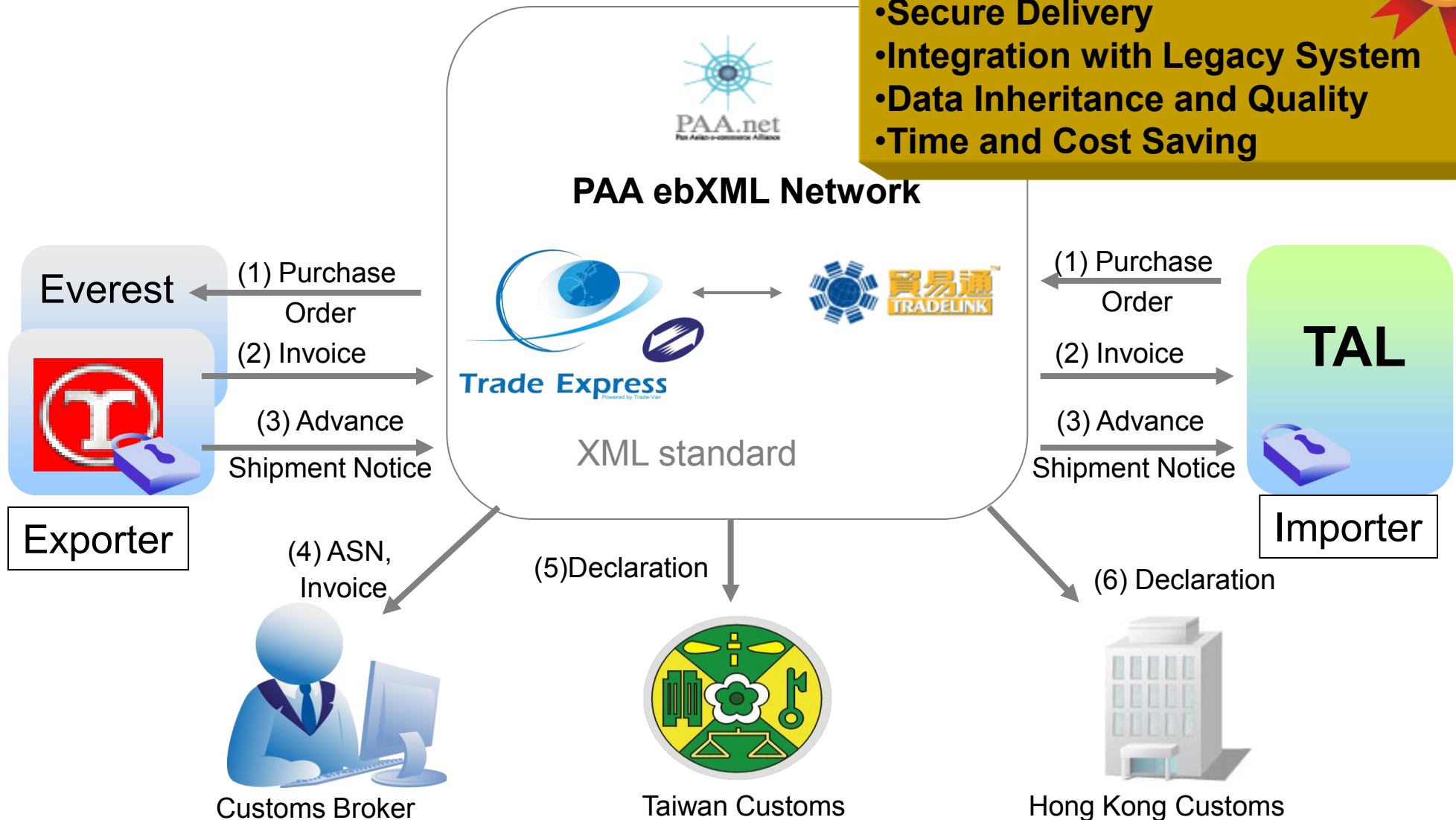
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Supported Documents

- Purchase Orders
- Advance Shipment Notice
- Packing List
- Commercial Invoice

- Air Way Bill
- Bill of Lading
- Delivery Order
- Trade Declarations
- Electronic Certificate of Origin
- Shipping Order
- Processing Trade (China)

TAL – Tai Yuen Cross Border Pilot via PAA

Guarantee
- Secure Delivery
- Integration with Legacy System
- Data Inheritance and Quality
- Time and Cost Saving

PAA ebXML Network

PAA.net
Pan Asian e-commerce Alliance

Trade Express
Powered by Trade-Van

貿易通
TRADELINK

XML standard

Everest

Exporter

(1) Purchase Order

(2) Invoice

(3) Advance Shipment Notice

(1) Purchase Order

(2) Invoice

(3) Advance Shipment Notice

TAL

Importer

(4) ASN, Invoice

Customs Broker

(5) Declaration

Taiwan Customs

(6) Declaration

Hong Kong Customs

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Global Service for Freight Forwarder

- Cross Border Hub to Hub Model through KTNET's Global partnership
- Global service for enhancing FF's competitiveness

Paper CO Scenario [Korea ▶ Taiwan]

Verify authenticity of paper CO

KCCI

Customs

National Treasury Agency

APPROVED

Exporter

①CO APPORG
②ECO CERTIF

⑤Import Declaration
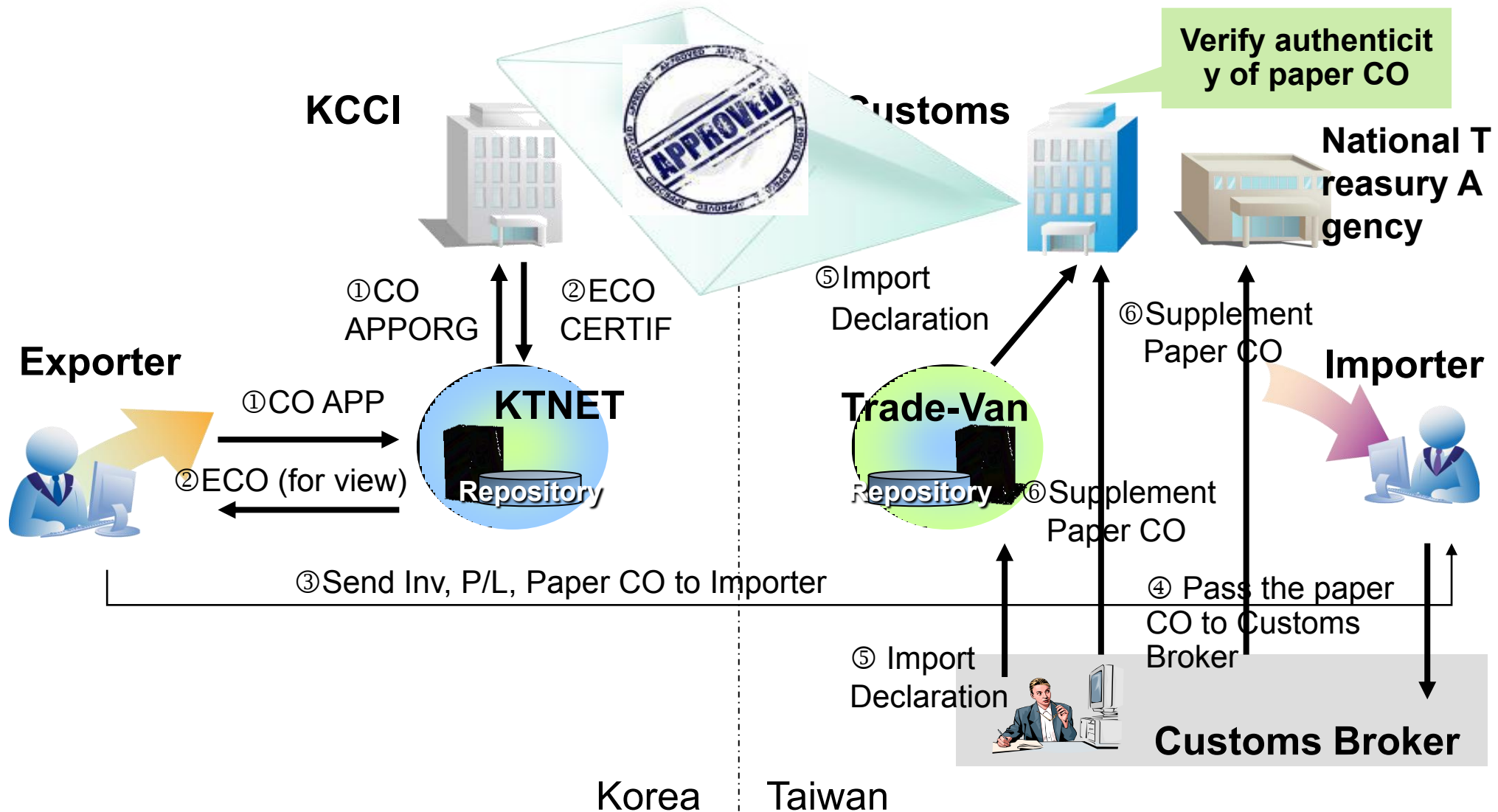
⑥Supplement Paper CO

Importer

①CO APP

②ECO (for view)

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Repository

Trade-Van

Repository

⑥Supplement Paper CO

③Send Inv, P/L, Paper CO to Importer

④ Pass the paper CO to Customs Broker

⑤ Import Declaration

Customs Broker

Korea | Taiwan

KTNET
KTNET

UtradeHub

ECO Scenario [Korea ▶ Taiwan]

ECO Enquiry on KCCI Website
With ID and Password

KCCI

Customs

①CO APPORG

②ECO CERTIF

⑥Import Declaration
ECO confirmed by importer

Exporter

KTNET

Importer

①CO APP

②ECO (for view)

③Inv, P/L (specify ECO Number)

Repository

③Inv, P/L, Attach ECO from repository

Trade-Van

③Inv, P/L, ECO

④ Sign to confirm ECO Assign Customs Broker

Repository

⑤ Generate Import Declaration Data

⑥Import Declaration
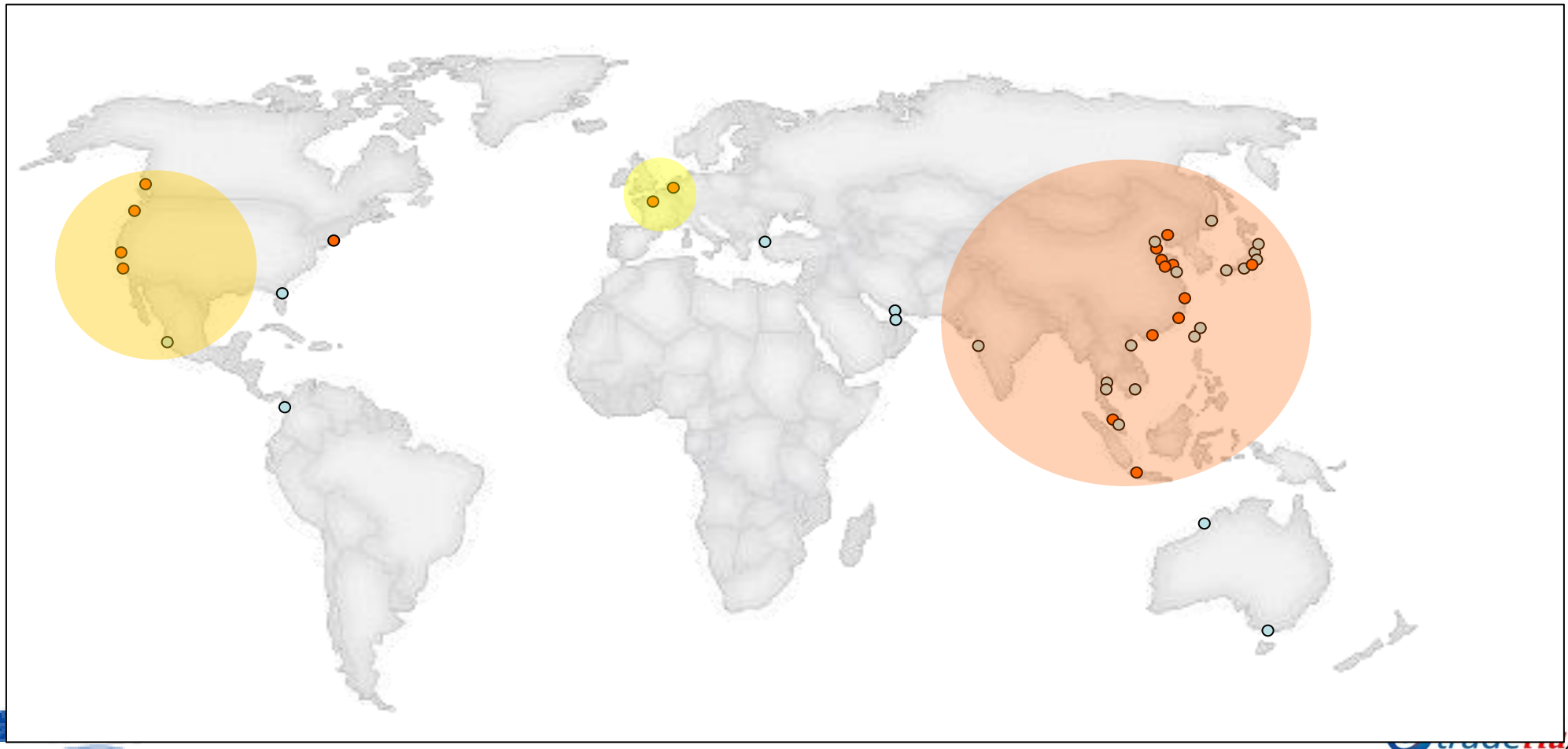
Korea | Taiwan

Customs Broker

New developments: cross border eSPS exchange

Cargo Visibility Service(CVS) Project

○ Concept
  - Network to major Ports in PAA and other region to acquire the cargo status information in the port
    and customs area, which is hard to be provided from private logistics company

Technical Standard

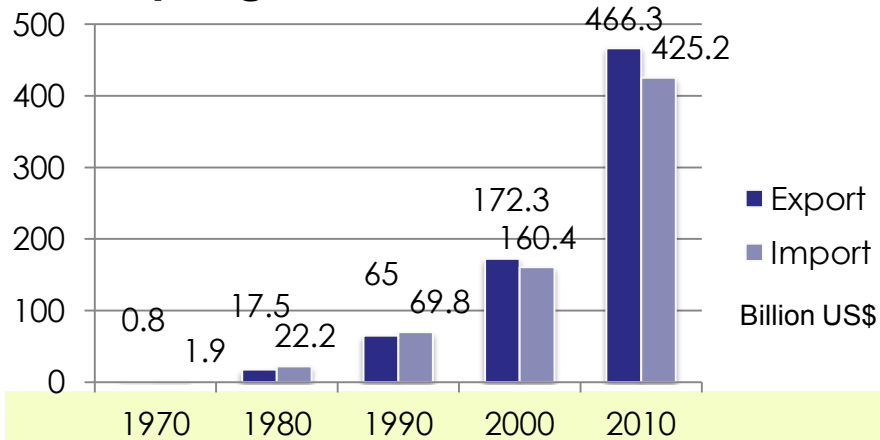|	CIECC Trade-Van SOGET	Dakosy	MISNA
Protocol	ebXML	SFTP	SMTP
Document	IFTSTQ IFTSTA	IFTSTQ IFTSTA	Private
Note	Dalian (IFTSTA Only)	Only KTNET sends Query	Vessel departure and arrival only
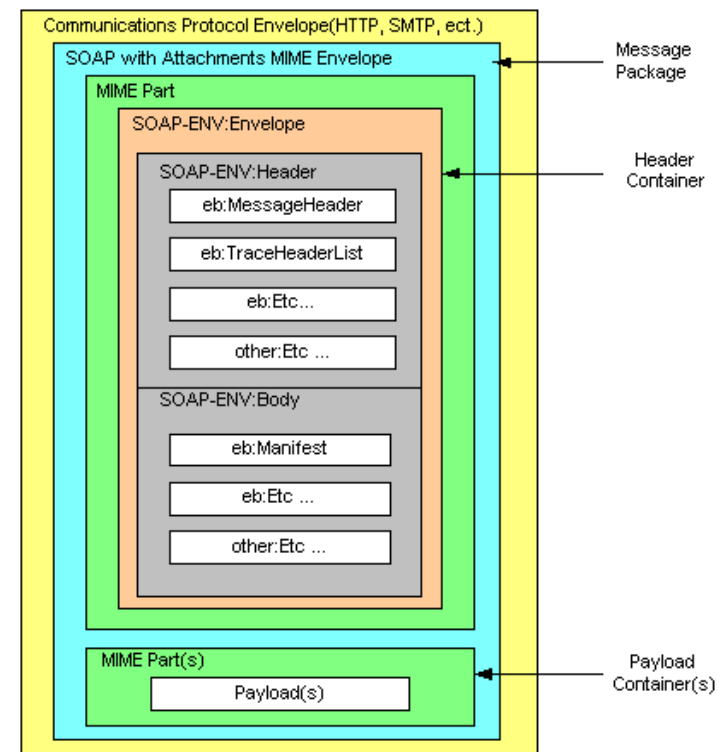
3. Introduction of KTNET

- □ Why we need Single Window?
- □ Who we are?
- □ What we do?
- □ History of KTNET

Why we need Single Window?

Rapid growth of trade volume

- Export
- Import

Billion US$

- 1970: 0.8 / 1.9
- 1980: 17.5 / 22.2
- 1990: 65 / 69.8
- 2000: 172.3 / 160.4
- 2010: 466.3 / 425.2

Tons of trade documents

More than 620 boxes per major vendor

FTA Status of Korea

▪ **In Effect**

- U.S.A.(2011.3.15), Peru(2011), Chile (2004)
- EU(2011), EFTA(2006)
- India(2010), ASEAN(2009), Singapore(2006)

▪ **Under negotiation**

- Columbia, Mexico, Canada,
- Australia, New Zealand, Turkey

Bottleneck in trade process

19-28 days for customs clearance

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Who we are?

Founded by Korea International Trade Association(KITA) in Dec 1991

- Established by the law, 'Trade Automation Act' by Ministry of Commerce, Industry and Energy(MOCIE, Currently Ministry of Knowledge economy)

KITA

Korea International Trade Association (Seoul G20 Summit)

3rd, 4th, 7th, 11th, 32nd

What we do?

Pursuing Efficiency of Trade Process & national competitiveness
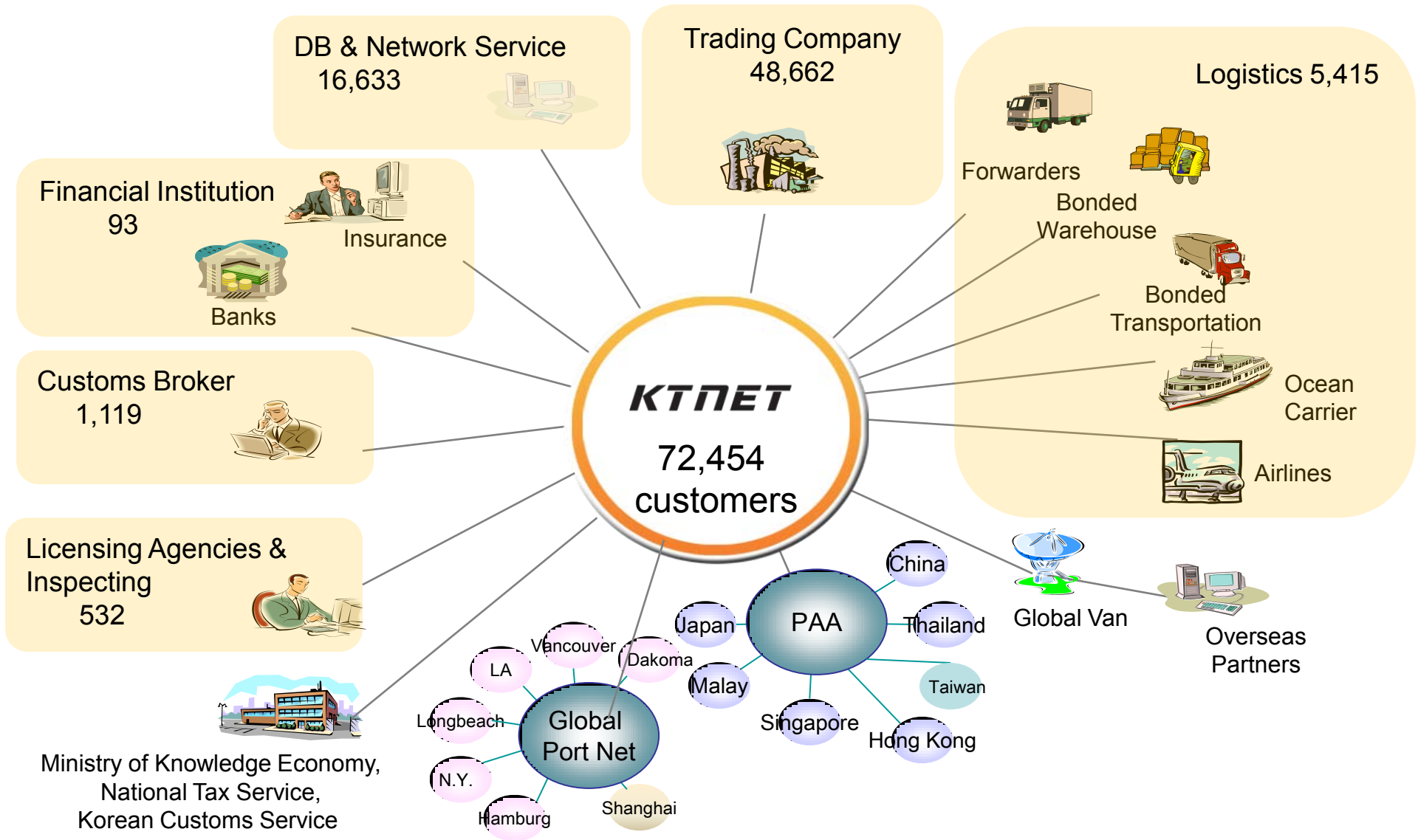- by reducing processing time and costs, through Trade Automation

Legal Support

- KTNET has designated as Infrastructure Service Provider for 6 Business
  areas by the government

- National Paperless Trade Infrastructure Provider(Electronic Trade Facilitation Act)
- e-Customs Service Provider(Customs Act)
- Electronic Bill of Lading(e-B/L) Title Registry(Commercial Act)
- Certified e-Document Authority(Framework Act on Electronic Commerce)
- Purchase Confirmation of raw materials for Export Goods Service agency
  (Foreign Trade Act)
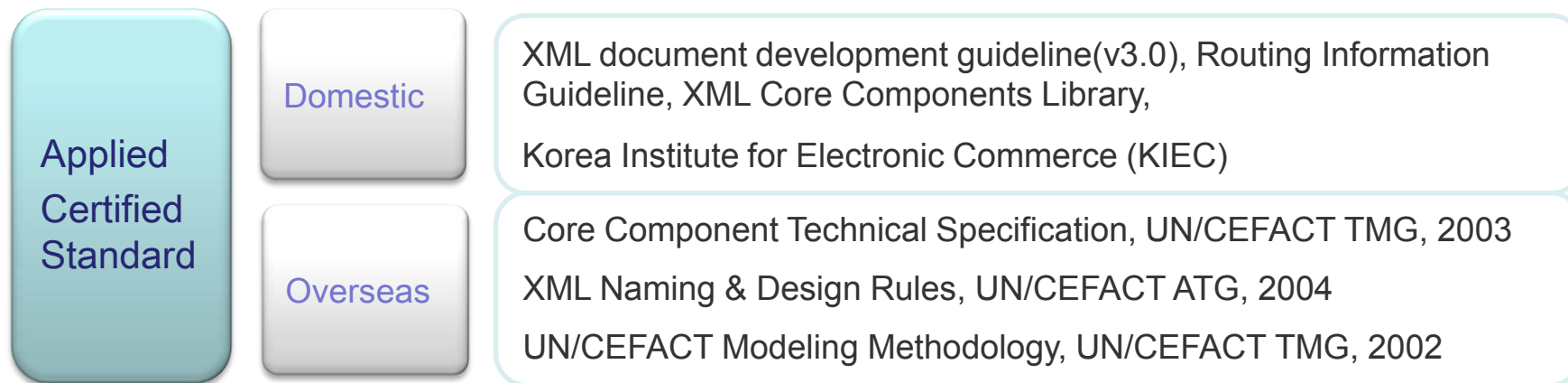- Accredited Certificate Authority(Digital Signature Act)

History of KTNET

Establishment	Internet based Service	One Stop Service

• Agreement with KCS, e-Customs System Building & Operation (Designated as 'Trade Biz. Automation Service Provider')
 • Act on Promoting Trade Biz. Process Automation
 • Foundation of KTNET
	• Designated e-Document Authority
	 • Paperless Trade Basic Infra Provider
	 • Launching 'cTradWorld.com' (Portal for Paperless Trade)
	 • Accredited Certificate Authority for digital signature
	 • e-Logis Frame (Logistics Portal)
	 • Initiatives for Global Service
	  - Founding member of PAA
	  - Founding member of ASEAL
		• Global cargo tracking service
		 • Libyan Single Window Project
		 • Mongolian e-Customs Project
		 • Mongolian National Assembly e-Library , DR Center Project
		 • e-C/O cross border transaction
		 • e-Nego service
		 • e-Settlement Service Agency
		 • e-B/L Title Registry
		 • Purchase confirmation (National Tax Service) , Hospital, Insurance e-Document repository building
		 • Launching full Internet-based One stop service

Launching Paperless Trade

- EDI based C/O and Invoice
- MFCS, customs refund system
- Services for Bonded Cargo, Import/Export Clearance
- L/C and Import/Export License

Closed Network
(1989 ~ 1999)

Open Network
(1999 ~ 2008)

Single Platform
(2008 ~ present)

Strong Community

289 Million transactions in 2011

- 585 different kinds of e-documents based on both domestic and Int'l standards

Applied Certified Standard	Domestic	XML document development guideline(v3.0), Routing Information Guideline, XML Core Components Library, Korea Institute for Electronic Commerce (KIEC)
	Overseas	Core Component Technical Specification, UN/CEFACT TMG, 2003 XML Naming & Design Rules, UN/CEFACT ATG, 2004 UN/CEFACT Modeling Methodology, UN/CEFACT TMG, 2002

- Most frequently used electronic documents

Open Account Negotiation Application
Insurance Policy
Purchase Confirmation
Licensing & Certification
L/C Opening & Notification
Certificate of Origin
Local L/C Notification
Letter of Guarantee

0   200,000   400,000   600,000   800,000