

Korea Customs e-clearance System

UNI-PASS



Government Complex #920
Seo-gu, Dunsan-dong
Daejeon 302-701, Republic of Korea

unipass@customs.go.kr
www.customs.go.kr



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■ Greetings from Commissioner

Along with the signing of WTO's 「Trade Facilitation Agreement」 and the announcement WCO's 「Digital Customs」, the current global society endeavors to simplify trade procedures, reduce logistical costs and strengthen border customs security. Also, various attempts to introduce state of the art technology to customs administration in divers fields.



To keep pace with such internal/external trends, Korea Customs Service (KCS) has opened it's 4th Generation UNI-PASS system that is based on the newest ICT technologies which enables mobile and smart customs clearance functions, in April of 2016.

UNI-PASS is a 100% Paperless, 24/7 non-stop system which is connected to 40 import/export related agencies and 260 thousand trading companies via Single Window. UNI-PASS is considered one of the fastest and safest e-customs systems among the 180 WCO member states where import clearance and export clearance requires only 1.5 hours and 1.5 minutes respectively.

UNI-PASS's excellence has been acknowledged in the international arena as follows.

- 6 consecutive 1st place (2009~2014) in the category of customs clearance of World Bank's 'Doing Business'
- 9 consecutive 1st place (2005~2013) in the category of customs of ACI's (Airports Council International) ASQ (Airport Service Quality)
- Incorporated by 10 countries such as Ecuador, Tanzania etc.

This booklet includes overall information regarding KCS's informatization process and the main characteristics of 4th Generation UNI-PASS. I believe that this brochure will help foreigners to get a better understanding of the UNI-PASS and hope that it will act as an reference to achieving an advanced customs administration.

Customs Commissioner,
Chun Hong-uk

1 Overview



The UNI-PASS system is the Korea Customs' electronic system developed and operated for efficient Customs Border protection.

With the purpose of complete customs border control, UNI-PASS is a fully automated system that secures national finance through accurate and fair taxation on the import and export cargo, maintains international trade order through controlling smuggling activities and foreign exchange, and supports domestic industries through swift clearance and FTA business management.

Ultimate user friendliness

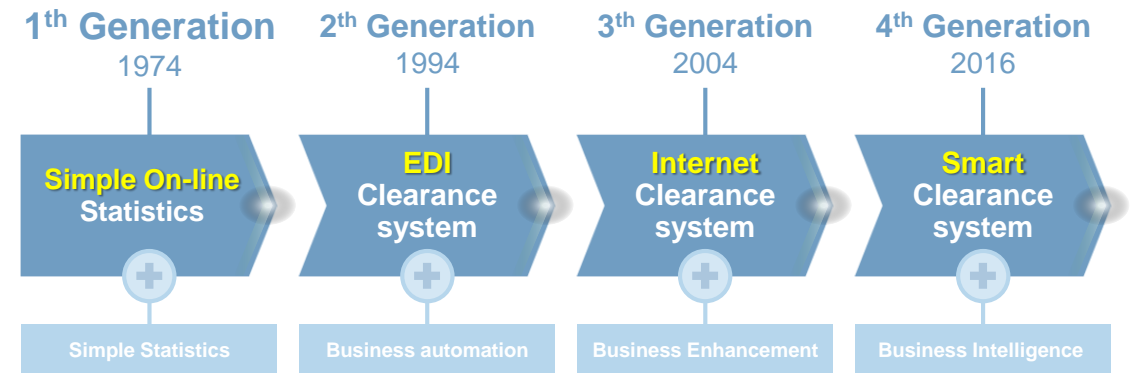
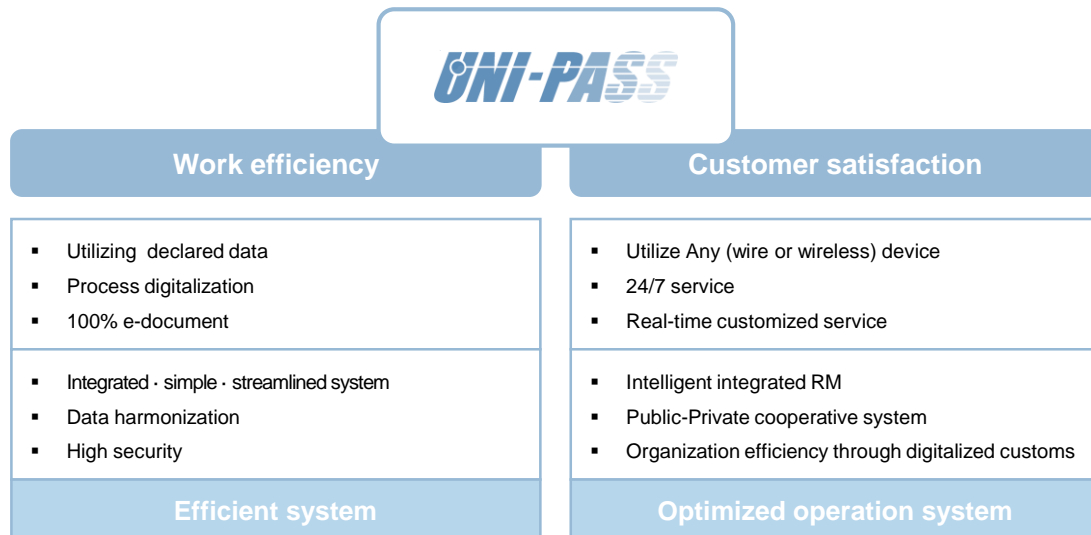
The system provides users (cargo owners, transporter, warehouse operator, and others) real-time data regarding import and export cargo anytime and everywhere.

Optimizing work efficiency

UNI-PASS allows every customs officers to work in fully automated environment. It is optimized system for border protection that allows simultaneous access and utilization of integrated Big Data.

International standard - High security level

UNI-PASS is a system that applies international standards such as the WCO DM and is capable of data exchange with the customs administrations around the world. It is also a high security system that is developed based on hierarchical design.



Generation

1st Generation

The first IT system implemented was a simple statistics tool developed by the Korea Customs Service to manage customs statistics.

2nd Generation

The phased development of the first automated e-clearance system, UNI-PASS in an EDI based environment began in 1994: the export and import clearance (1996), cargo management (1997), Paperless clearance (1998) and the investigation system (1999). Supporting solutions were introduced to the UNI-PASS system such as the Customs Data Warehouse (2001), the Knowledge Management System (2001), the Risk Management System (2003).

3rd Generation

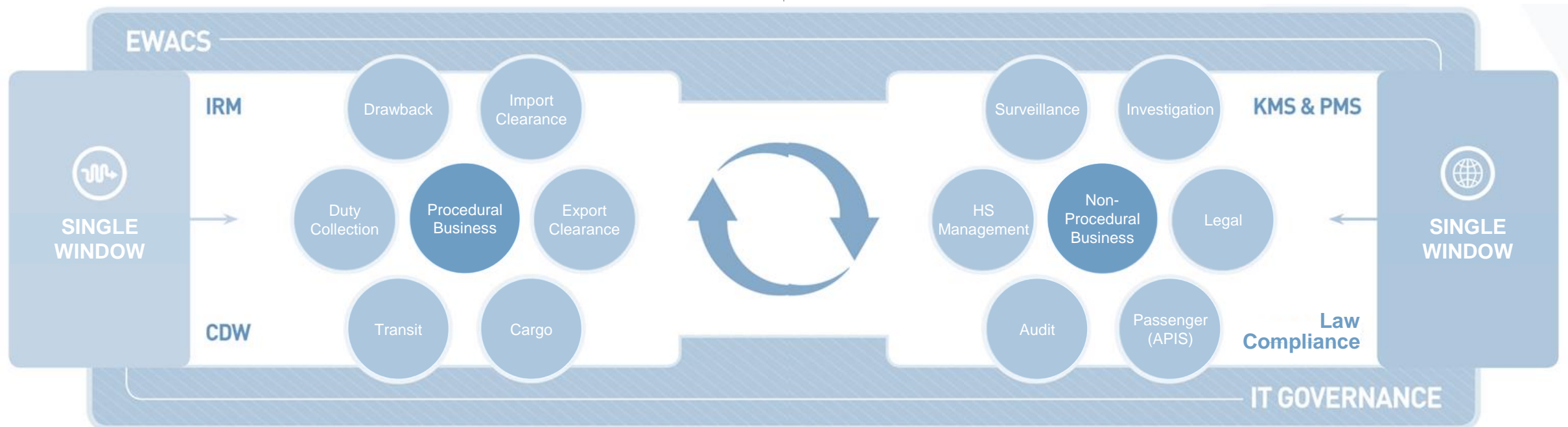
The phased development of the web-based UNI-PASS by transferring the existing EDI system into a web format and additionally developing the Internet Portal (2004), Duty collection (2005), Drawback (2005), Single Window (2005) and the Performance Management System (2005). The UNI-PASS continued introducing up-to-date IT technology such as the RFID in the air cargo management, (2007) and expand by developing the Integrated Risk Management System (2007), AEO management system (2008) and more.

4th Generation

Since the year 2016, the UNI-PASS system is in its 4th Generation adapting mobile concept with the goal to create an Intelligent customs administration system based on Smart Clearance.

2 System Structure

The UNI-PASS system is composed of various components and modules that interact and operate as one living organism to provide an efficient customs administration.



► Business Processing Component

Composed of the Single Window/portal, the Procedural business modules (ie. Clearance management, Cargo management, Duty collection, etc.) and Non-procedural business modules (ie. Investigation, surveillance, audit etc.) these form the most basic customs modules for the automation of the customs administration.

► Support to the Business Processing Component

Provides support to the Business Processing Components such as the Integrated Risk Management System (IRM), the Customs Data Warehouse (CDW), the Knowledge Management System (KMS), the Performance Management System (PMS) and the Law compliance system.

► Infrastructure Component

Provides tools for an administration and control of the customs administration system, such as the Early Warning And Control System (EWACS) that provides a monitoring on Hardware, Software, Application and Network; and the IT Governance, that allows management of information based on Enterprise Architecture.

► Application of International Standards

Considering the rise in need for interconnectivity with neighboring countries or with foreign customs in achieving Global Single Window, the UNI-PASS system applies international standards such as the WCO DM 3.0, UN codes, WTO TFA, etc. and open technology standards.

One-stop paperless service through Integrated portal and single window



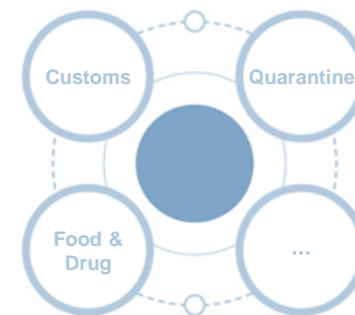
Non-stop Trade process 24/7

Web-based portal open and running 24/7 allows traders to apply trade and customs formalities anytime and anywhere without physically having to visit each government entity, resulting in time and cost reduction.



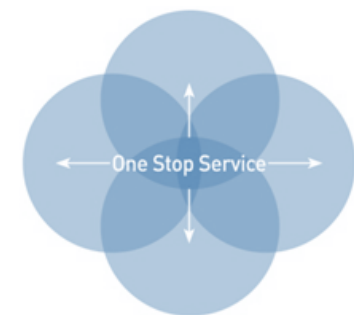
ePayment for duties and fees

Traders can pay commissions or fee's for the application of regulatory permits and licenses including duties and taxes for the clearance of goods in a secure manner and online at anytime.



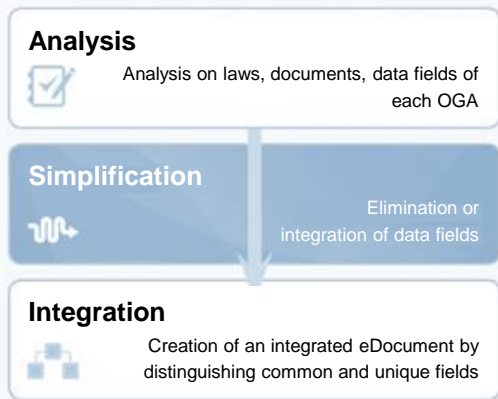
Data interchange between OGA's

The portal and single window enables sharing of information between regulatory agencies, customs and other stakeholders; not just for regulatory permits, but also statistics and information for data analysis and decision making purposes.



One-stop service based on 100% Paperless

Traders will be able to apply regulatory permits, declare to customs, review progress status, search location of cargo and much more. The portal acts as a channel to allow the Customs interact with the private sector without the need to meet physically.



► Simplicity and integration by Data Harmonization

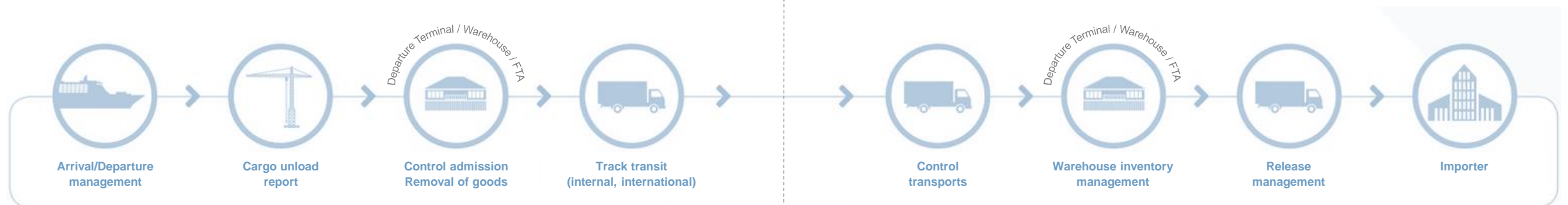
A one-stop service can be provided through data harmonization; reducing the number of data fields required to apply for the regulatory requirements and customs declaration. Analysis performed on all required documents and through a process of simplification the data fields are optimized and integrated in a eDocument created by using international standards.



► Reusing data to fill out a customs declaration form

Throughout various forms required to process a foreign trade there exists information that is required by all OGA's (common fields) and some fields that are required specifically by certain OGA's (unique fields). The Single window system distinguishes these two types of fields in order to make data reusable. Hence, information that you have already registered once will not be required again.

Real-time cargo tracking through Total cargo quantity management



The use of E-Manifest

The shipper can present an e-manifest with its documents (B/L) to the respected authorities and customs before the arrival of the ship. This information can be used by stakeholders, such as stevedores to prepare for cargo unloading procedures.

Warehouse inventory management

Controlling admission and removal of cargo inside customs territory allows for an inventory management of goods nationwide so customs can always identify the location of specific cargo.

Transport control and tracking

Declarations of transits (internal and international) allows customs to control and keep a real-time tracking of bonded goods by measuring the time of transport and checking if the goods have reached its destination inside the given time frame.

Cargo processing status (real-time)

Based on integrated information available in the system of the whole logistics and clearance procedures, an importer can have access to real-time tailored information on the location, progress, auditor, status etc. of their cargo.



► Real-time control on quantity of cargo through Total Cargo Quantity management

Creation of a unique cargo reference number through a combination of a Manifest number, a Master B/L number and a House B/L number, that a customs can use as a key to track the movement and progress of the cargo throughout the whole logistics and clearance procedure.

Total release time : 2days 3 hours 47 minutes

Step	Date & Time	Bonded warehouse Name of Bonded warehouse
1	Manifest Submission 2013-05-01 10:28	03012312 Busan warehouse
2	Unload report 2013-05-01 18:00	03012312 Busan warehouse
3	Bonded Transport 2013-05-02 15:46	010006 Dong bang Transport Inc.
4	Admission of goods 2013-05-03 10:24	13018311 TDK Bonded Factory
5	Import Clearance 2013-05-03 13:36	13018311 TDK Bonded Factory
6	Release (removal of goods) 2013-05-03 14:15	13018311 TDK Bonded Factory

► Provide customers with real-time cargo processing status through Real-time cargo tracking

Thanks to the integrated information supplied by the various modules of the UNI-PASS system, UNIPASS allows customs officers and traders to have access to information on the process, status of the cargo by each stage, stating the time, the customs officer in charge and the location of the cargo, including access(link) to the manifest, customs declaration, and other documents required during the procedures.

Control and facilitation of passenger clearance through APIS



Electronic reception of passenger information

Passenger information (passenger list, destination, luggage quantity, weight etc.) is received electronically from airline companies prior to arrival of planes.

Risk analysis on passengers

Information obtained in advance is analyzed to select a high risk passenger. Information from immigration and other Ministries are also taken into consideration to select high-risk passengers.



Categorization of passengers

Through a risk profiling and targeting process, the system compares historic records and trends in order to categorize passengers into various levels of risk (duty payment infringement, terrorist /wanted list, smuggler, etc.)



Facilitation and control on passengers

High-risk passengers will be subject to more strict control when exiting the airport, while low risk passengers will pass through a swift clearance with little or no control from customs.



► Control on high-risk passengers through APIS system and increase national security

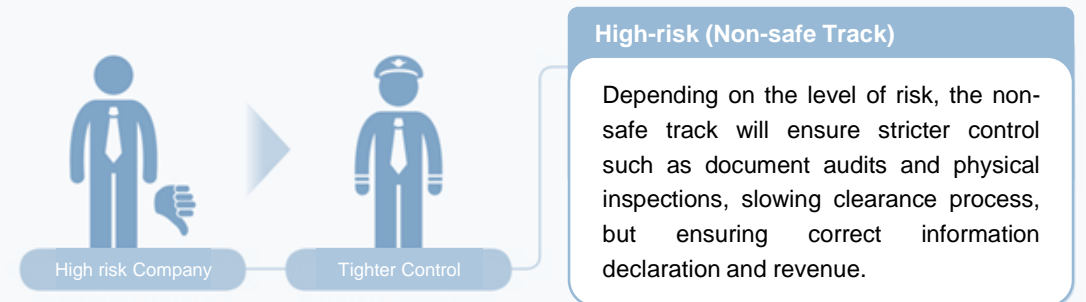
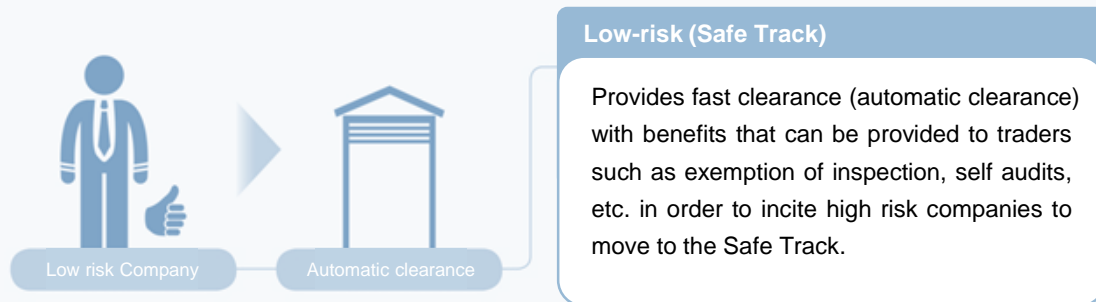
Providing a fast passenger clearance contributes to rise in a country's image. The APIS system collects passenger information in advance to analyze high risk passenger and target them for control. The targeted passengers will be tracked down by the system when the passenger passes through immigration control until an inspection is proceeded at a customs clearance stage.



► Ensure swift passenger clearance through efficient information sharing

Risk analysis is performed on high risk passengers based on information of past records provided by customs, immigration, other ministries, intelligence and the passenger information provided by airline companies. This ensures resources to be focused on high-risk passengers while providing a swift clearance to low risk passengers.

Facilitation of trade through Two-track Control management



Efficient control through Two-Track

All clearance goods will be analyzed by the risk management to upon a safe track or a non-safe track control. Goods on the safe track are cleared faster through automatic clearance while goods on the non-safe track will be subject to stricter controls.

Control on goods, travelers, company throughout the ISCM

Risk profiling in customs does not only focus on goods, but also to companies and travelers. The main goal is to ensure a controlled ISCM by analyzing risk throughout the whole supply chain and facilitate clearance to approved companies.

Foundation for AEO program

Managing risk profiles on companies and individuals enables customs to provide a two-track control management. This control becomes the foundation for building the AEO program where categorizing companies is required.

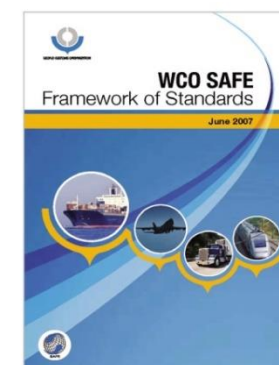
► Law compliance, the engine for the two-track control

An overall law compliance is evaluated by companies in various areas such as correct duty payments, logistics records, clearance records, inspection records, etc. The objective is to divide companies to a safe track and a non safe track. This mechanism will incite low compliance companies to improve their compliance level and transfer into the safe track. Companies are provided with records of their own activities to self-evaluate and self-improve in the customs procedure.



► AEO/ISCM

The AEO program enables the categorization of companies to apply different controls and benefits based on the level of AEO. The risk management and the law compliance creates the foundation for the AEO to provide differentiated control and incentives to traders according to their AEO level and the compliance performance levels.

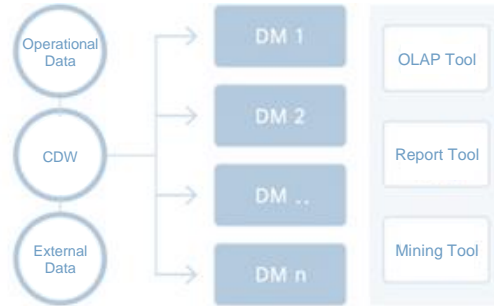


WORLD CUSTOMS ORGANIZATION

Integrated control through real-time Integrated Risk Management

Broad analysis on customs data

Not only customs data, but also data provided by other entities are stored in the Customs Data Warehouse for analytical/statistical purposes or to create risk profiles and targeting criteria.



Diverse targeting techniques

From the basic random, to data mining, targeting criteria, first-time control and more, the risk management offers diverse targeting techniques to reduce targeting rate but increase hit-ratio and revenue collection.

► Use of the Customs Data Warehouse (CDW) for comprehensive analysis and reporting

CDW allows for integration of all customs related data with external data (from OGAs) to be placed in one repository through the process of ETCL. Refined data is then created into DATA MART for specific use by different areas of customs and also into CUBE for faster multidimensional analysis. Through OLAP and reporting tools, data can be extracted to be used for analytical (risk management, audits, investigation, etc.), statistical (reporting, decision making, etc.) purposes.



Targeting all customs stages

The integrated risk management targets goods not only during clearance stage but also preclearance (cargo) and post-clearance (audit) stages allowing customs administration to focus more on high-risk goods and achieve both facilitation and control.



Information at the tip of your finger

During audit, the auditor will have access to various information, such as personal information of the trader/ declarer, inspections records and results, alerts on what the auditor must focus, HS code table, classification case-studies, etc.



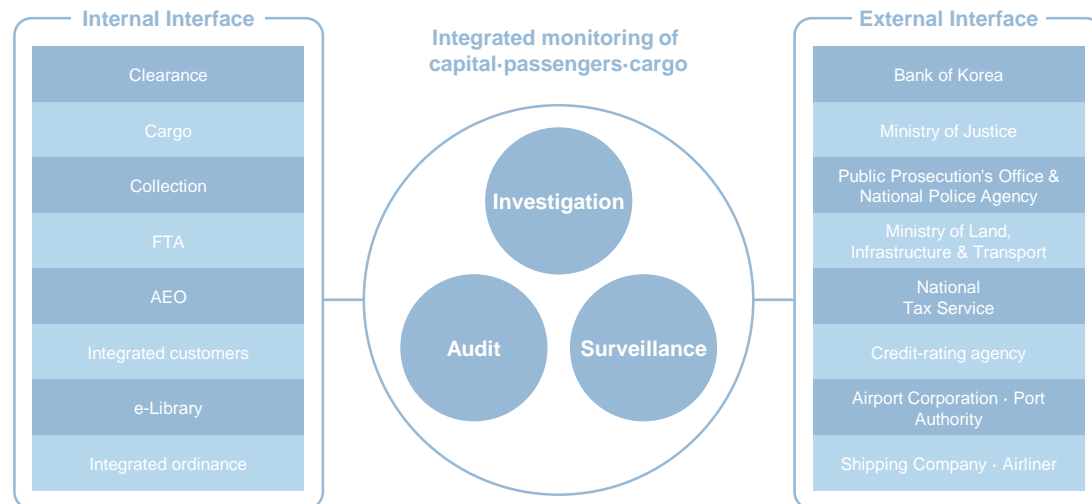
► Risk management profiles focused on companies, individuals, and not only goods

The risk management provides targeting and profiling focused not only on goods, but also to companies and travelers. The risk management creates company profiles and travelers profiles in order to control their behavior and analyze their risk patterns. This information is made available to customs officers during various stages of audit and inspection procedures to aid them in their decision making

MANAGE YOUR RISK



A perfect economic border control through Investigation·Audit·Surveillance



Internal system Interface management

Connect the export/import, cargo, crewman and vessel information of the export/import · drawback · surveillance · collection system

Connect the integrated customer management system's company · personal information with the integrated ordinance information system's classification decisions and analysis results in order to gather and analyze the information

External agency interface management

To obtain information such as investigation results needed for the investigation procedure, the system is connected to agencies such as the Public Prosecution's Office, Ministry of Security and Public Administration, Ministry of Justice, court of law, and others.

To thoroughly prevent any high-risk factors in port areas, seamlessly share information with agencies such as Ministry of Maritime Affairs and Fisheries, Ministry of Unification, Meteorological Administration, Incheon International Airport Corporation, Port Authority, and others.

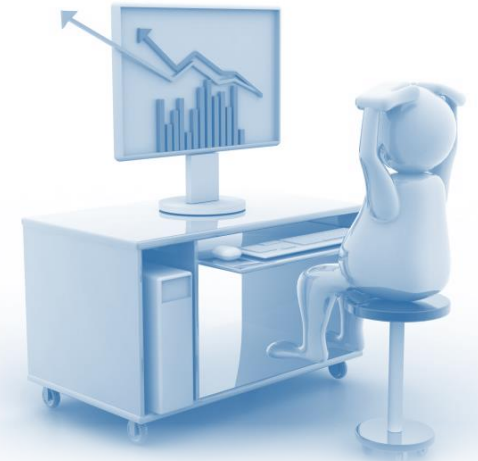


▶ Perfect economic border control

The UNI-PASS Investigation·Audit·Surveillance System is a system that can monitor the flow of cash, passengers and cargo by seamlessly sharing information with internal · external systems. It can also counteract against smuggling and even international financial crimes

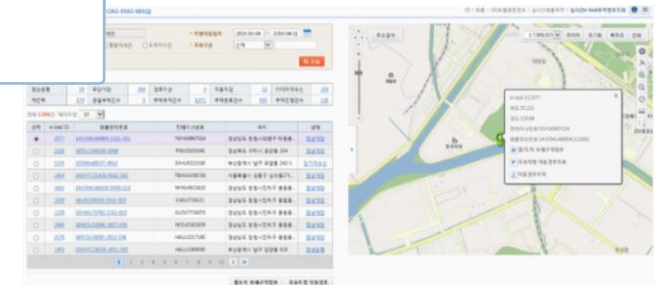
Investigation life cycle management

Able to manage the entire investigation process from collecting information, investigation, report, accusation to end result without any interruption of process flow



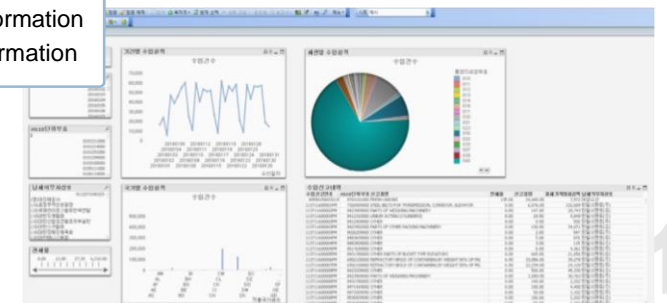
Surveillance monitoring by utilizing GPS

Establish a device location tracking service which connect the GPS information of the tracking device with GIS, thus enable a quick response in the event of an emergency



Enhancement of the audit data analysis

With help of data oriented system that has a high predictability based on gathering, analyzing and utilizing various information, and establishing overseas company information DB, enable analysis of global-level information



Raise performance of an organization with the PMS and KMS

Capacity building through standardization

Allows sharing of tacit knowledge (Know-how, experiences) of each individual through the knowledge sharing system to standardize the collective knowledge and strengthen individual capacity.

Knowledge search

Provides a keyword based search engine that enables a customs officer to find know-how, experience, case study, and knowledge that can be referenced by customs officers during customs procedures.



► Creation of knowledge maps through the Knowledge management system

Individual tacit knowledge that cannot be shared, such as experience, know-how and knowledge is collected to build a sophisticated knowledge map and shared among users. Experienced or veteran users can help nurture least experienced or new users on a 1:N structure to strengthen the overall organizational capacity and raise competitiveness.



Automated performance management

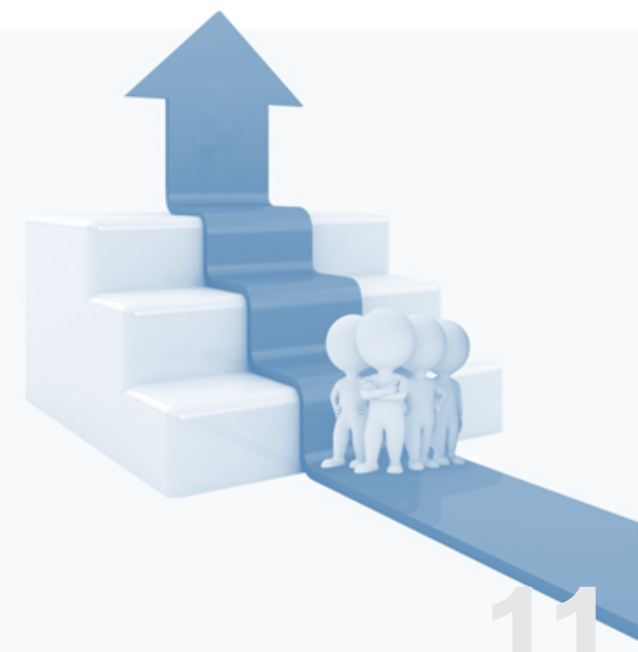
Indicators created based on performance goals and objectives will automatically calculate the performance of the customs administration at real-time and present the results in visual format.

Efficient Human Resource Planning

Performance calculated by organization, customs, departments and individuals at realtime allows policy makers to plan capacity building programs, performance enhancement programs, business improvements to collectively improve the organization.

► Raise overall organization performance

Through real-time performance management, low performance areas (customs house, departments) can be identified to apply different measures to improve the performance, that can be system improvements, capacity building, etc.



Convenient system operation through EWACS

Integrated control from IT resource to business

Allows for integrated control on IT resources of UNI-PASS and clearance processes in one view to provide a secure and stable system operation preventing failures before-hand.



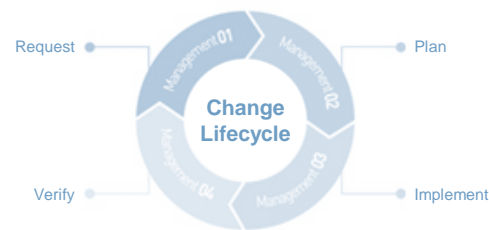
Customs made control screens

To raise monitoring efficiency, the control screens are created based on customer's needs to show information that is relevant and of interest. Moreover the screens are configurable to change



► IT Resource Management

Detailed management of resources of hardware, software and even application level to provide a systematic resource management through analysis of resource performance, issues controlling, asset status.



► Statistics information

Through a customized control screen, trade related statistics such as number of declarations is provided at real-time to aid the system operation manager make swift decision making in to provide a stable system operation environment.



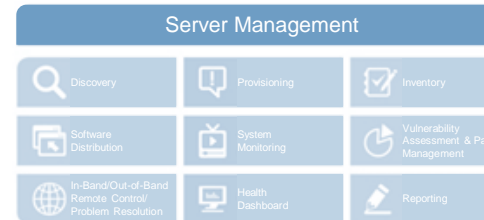
Real-time business monitoring

Real-time monitoring on customs business procedure allows for one-view of the whole system processing status. Any delays or bottlenecks found can be easily detected to prevent system failures in advance



Prevention of unauthorized access

Architecturally the system design physically separates external users from the internal system to prevent direct access. Moreover, various network equipment (such as firewalls, IPS, etc.) are installed to identify and prevent unauthorized access.



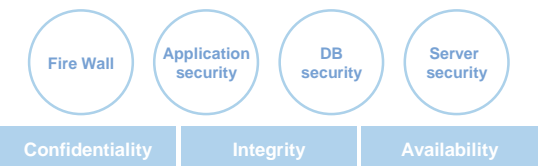
► Real-Time Monitoring

Real-time monitoring information provided for all operation sectors allows for rapid identification of expected failures through various system of alerts. Moreover logs are registered to provide reporting based on category of issues.

► High security level using hierarchical structure design

The UNI-PASS system has applied security measures in each level from the terminal to the server in order to prevent any security holes at each domain. The system is designed such that it provides an integrated management of separately implemented security solutions and prevent leakage of critical information such as personal identification, thus maintaining high level of security

Prevent information leakage and external intrusion



3 Development process and support services

Diagnosis on current status

01

Perform a feasibility study like analysis of a customs administration in areas of environmental analysis and current status of the business procedures, laws, documentations and IT systems

Design a future model

02

Perform a Business Process Re-engineering & Information Strategy Planning (BPR/ISP) for customs modernization including detailed blue prints on future business procedures, law reform recommendations, document standardization and a new tailored IT system.

Development

03

Perform an analysis and design of a new system and develop a tailored IT system based on the BPR/ISP results, including installation of required hardware and commercial software, testing, and deployment.

Operation & Maintenance

05

Provide post-development one year warranty service (maintenance) and additional operation & maintenance services of the newly built customs administration system is provided upon request of the interested country.

Knowledge transfer

04

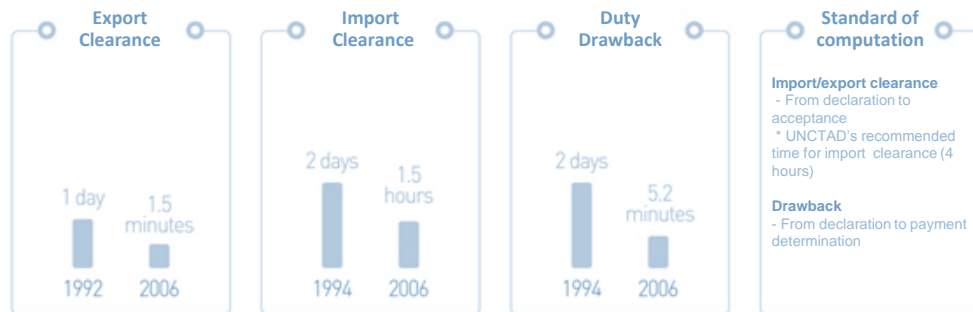
Perform knowledge transfer in the form of documentation (deliverables) and capacity building (onsite training by sending experts and training through invitation to Korea) including the transfer of program source codes to the customs administration.



4 Achievement

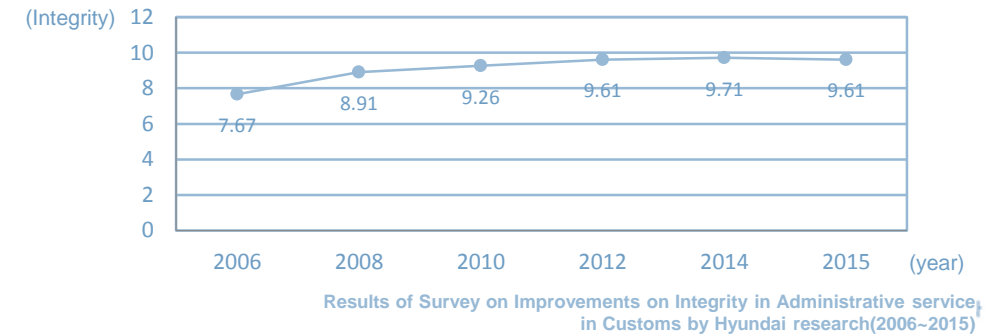
Time Saving

Thanks to the development of the UNI-PASS system, the Korea Customs now spends less than 1.5 minutes for export clearance and less than 1.5 hours for import clearance.



Integrity in customs service

Work processing in 100% e-document, clearance procedure information made public in real time leads to enhancement of transparency in the work process as well as public confidence in administration.



Cost Saving

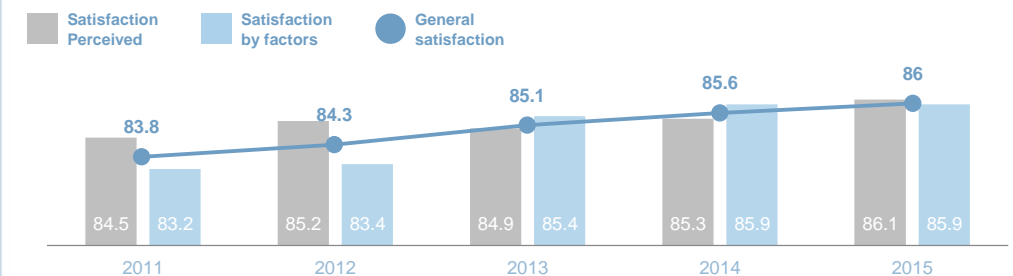
UNI-PASS development created 3.5 billion USD in economic effect in the public and private sector while maintaining the same number of customs staff for the past 30 years in contrast to 18 times increase in trade amount.

Reduction in work process	657 million USD
Increase in income by traders	1.1 billion USD
Reduction in logistics	750 million USD
Savings in infrastructure	281 million USD
Production increase in trade industry	750 million USD

Final Report on Accomplishment Measurement of Customs Modernization by National Computerization Agency, September 15 of 2006

High level of customer satisfaction

24/7 operation of a help desk since the year 2000 has helped to improve the continued uninterrupted service of the UNI-PASS system. Customer satisfaction measured by third party since the year 2002 shows a constant increase by 1% annually.





► **World Bank**

Doing Business 2010-2011

Recognized the UNI-PASS single window & cargo management system as Best Practice.

Doing Business 2012

Introduces UNI-PASS as a 100% electronic clearance system reducing exports from 11 days to 8 days and imports from 10 days to 8 days.



► **World Economic Forum (Davos) Forum**

Introduces the superiority of KCS's UNI-PASS and Single Window System in phase 3 of WEF's Enabling Smart Borders



► **WCO**

WCO News 2011

Published an article about the cargo management system of UNI-PASS resulting in 2.7 billion USD in economic effect.

WCO Customs Risk Management Compendium Volume 1 2011

Published the Integrated Risk Management System of UNI-PASS as best practice.



► **IDB's Open Online Course**

Introduced strong point of KCS's Single Window as a integrated platform that connects clearance related agencies and organization. (IDB Open Online Course 10th Edition)



► **WTO**

The WTO Doha Development Agenda reflected practices of the Korean Single Window of the UNI-PASS system into the Agreement on December 7, 2013.

► **Awards**

- Intellectual Property Rights Award by the WCO, 2006
- E-Asia Award by the AFACT, 2007
- BSC Hall of Fame by the Palladium Group, 2009
- Asian MAKE Award by the World Knowledge Forum, 2011
- 1st place in 'Airport Service Quality Awards' for 11 consecutive years. (Includes Clearance Process)
- 3 years ranked 1 in trading across borders among largest nations. (Overall ranked 3rd)



5 References & Acknowledgements

Countries that have taken the UNI-PASS system as model



Reference	(USD10,000)		
Country	Year	Amount	Funding
Kazakhstan	2005	42	Own funds
Kyrgyzstan	2008	47	Own funds
Dominican Republic	2008	2,850	EDCF
Mongolia	2009	554	KOICA, ADB
Guatemala	2009	300	KOICA
Ecuador	2010	2,163	Own funds
	2011	1,582	
Nepal	2011	383	KOICA
Tanzania	2011	266	KOICA
	2012	1,961	ICF
Uzbekistan	2014	412	KOICA
Cameroon	2015	23,000	Own funds
Total	10 countries,	\$335,000,000	



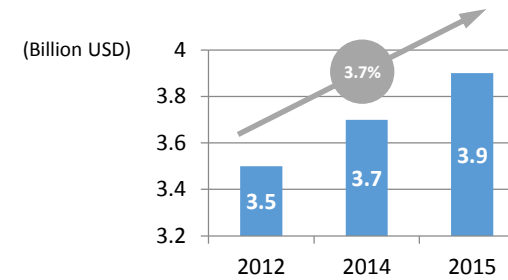
Ecuador

e-Customs system (ECUAPASS) won WCO Innovation Award

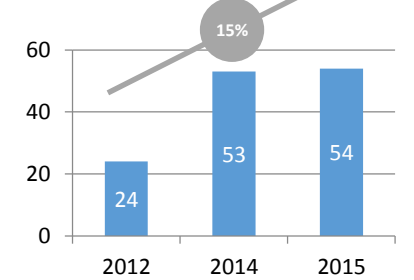
Won WCO Innovation Award at WCO TI forum held in Argentina, 15 Nov 2013



Revenue increase



Automatic clearance(%)



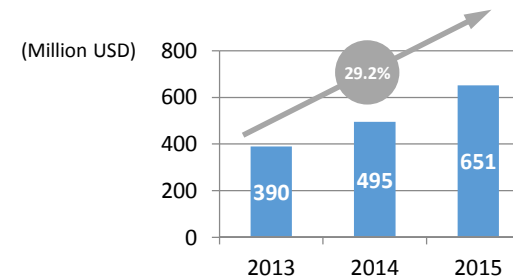
Tanzania

Self-evaluation after implementation e-Customs system (TANCIS)

Increased user friendliness due to revenue increase and reduced clearance time, since the implementation of the system in December 2013



Revenue increase



Clearance time

