

Korea Customs  
e-Clearance System  
**UNI-PASS**





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# 01 Overview

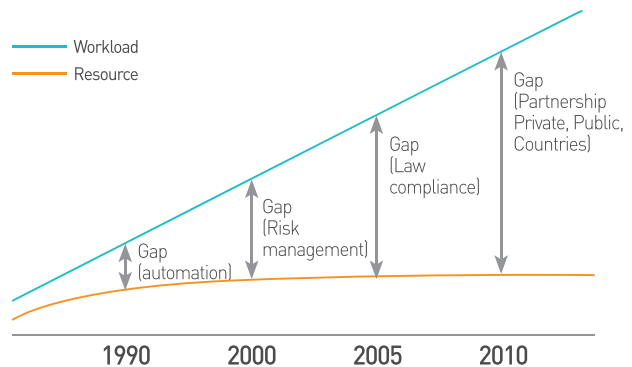


The UNI-PASS system is the Korea's e-Clearance system developed and used by the Korea Customs Service for more than 20 years.

The UNI-PASS system is not just a fully automated customs administration system utilizing up-to-date IT technology, but has embedded 20 years of know-how and experience including full transfer of the technology and cumulated knowledge. The UNI-PASS system has been implemented partially or fully in several countries and more countries are showing interests in introducing the UNI-PASS as their customs administration solution.

## » Changes in customs environment

Currently ranking top 7 in the world in trade volume (WTO, 2012) Korea's trade volume and the number of inbound and outbound travelers are growing every year. To overcome the increase in trade volume and travelers with limited resources, the Korea Customs Service has reduced the Gap by applying various measures during the different stages of the development of the customs administration.



## » Facilitation and control

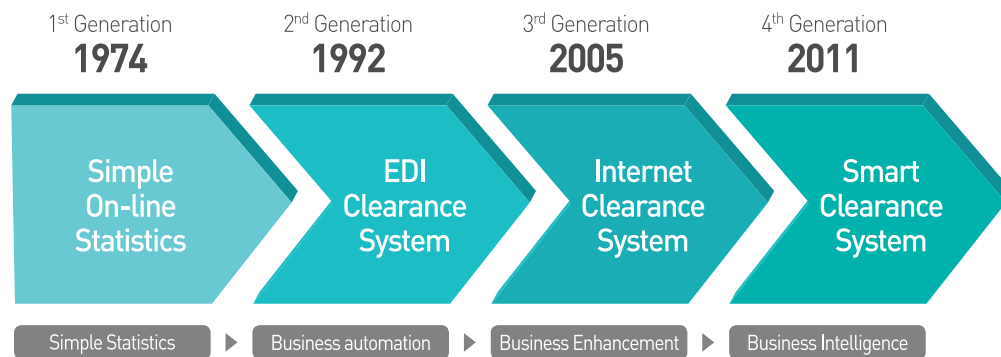
After the 9/11 attacks and the introduction of the SAFE Framework by the WCO to secure and facilitate trade; balance in the facilitation and control of the customs administration became crucial in overcoming the increasing trade volumes with limited human resources.



## » Efficiency in customs administration

Achieving transparency and revenue goals, managing performances, raising quality to satisfy the users, operating a stable IT system that will provide a continued uninterrupted service, are all of the goals and missions that can be achieved with the help of an automated customs solution.





## Generation

### 1<sup>st</sup> Generation

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

### 2<sup>nd</sup> 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).

### 3<sup>rd</sup> Generation

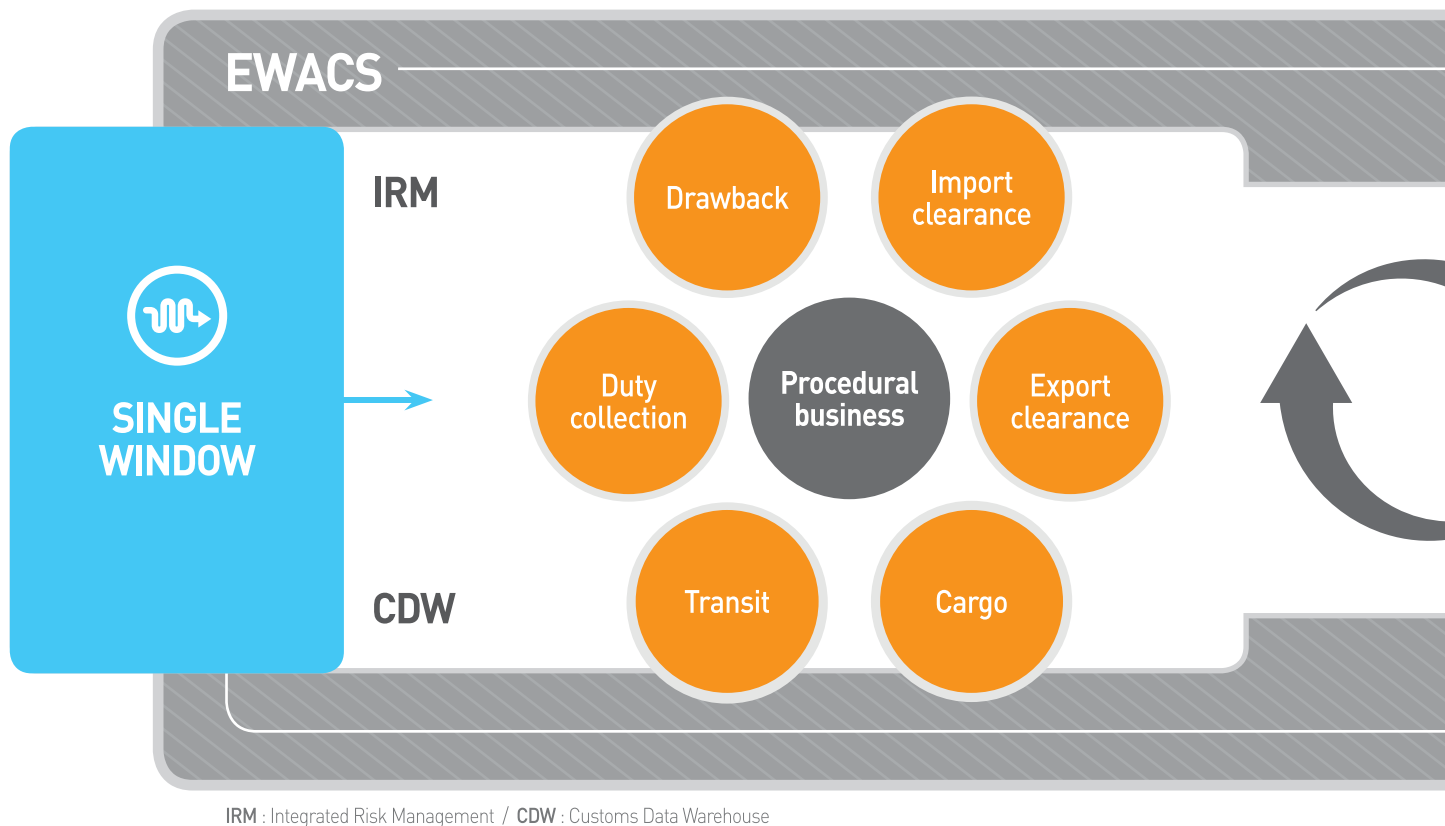
The phased development of the web-based UNI-PASS by transferring the existing EDI system into a web format and additionally developing the Internet Portal (2004), Duty collection (2005), Drawback (2005), Single Window (2005) and the Performance Management System (2005). The UNI-PASS continued introducing 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.

### 4<sup>th</sup> Generation

Since the year 2011, 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.

## 02 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.

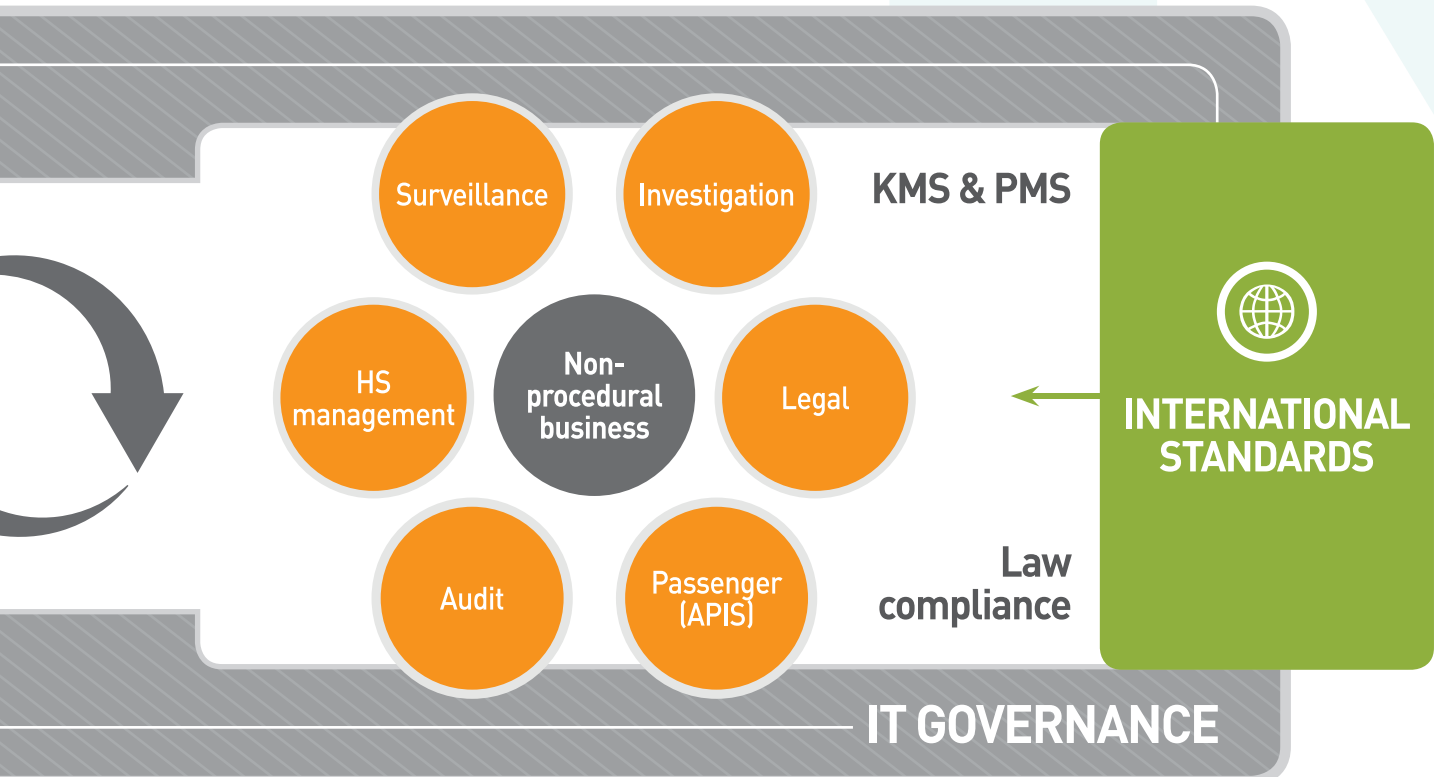


### » Business Processing Component

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.



KMS : Knowledge Management System / PMS : Performance Management 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, 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.

### Analysis



Analysis on laws, documents, data fields of each OGA

### Simplification



Elimination or integration of data fields

### Integration



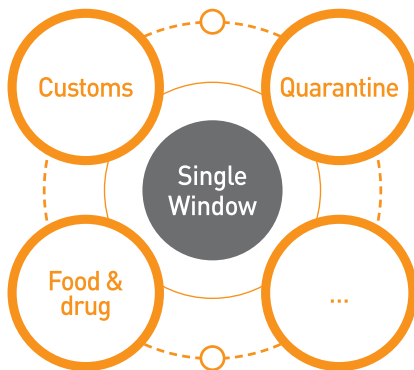
Creation of an integrated eDocument by distinguishing common and unique fields

## » 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.

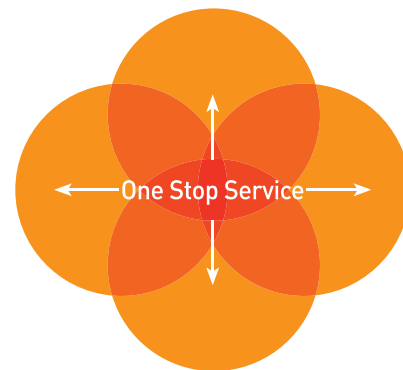
Analysis performed on all required documents and through a process of simplification the data fields are optimized and integrated in a eDocument created by using international standards.





### Data interchange between OGAs

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 on clearance

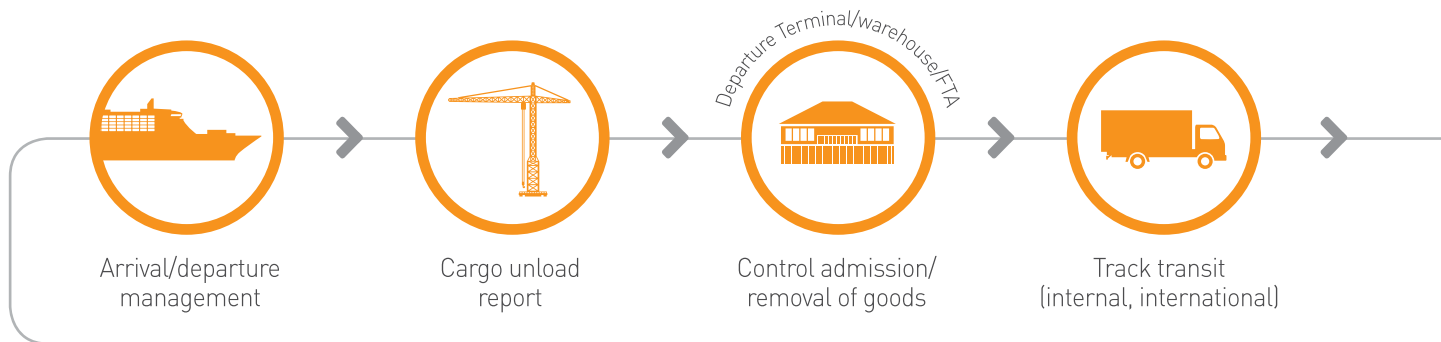
Traders will be able to apply regulatory permits, declare to customs, review progress status, search location of cargo and much more. The portal acts as a channel to allow the Customs interact with the private sector without the need to meet physically.



### » 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 OGAs (common fields) and some fields that are required specifically by certain OGAs (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.

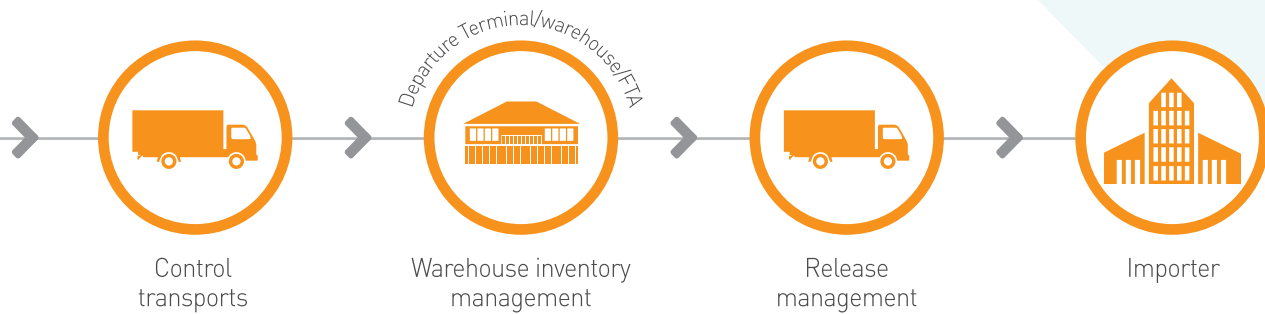
## Warehouse inventory management

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.



## » 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.



### 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.

Total release time : 2days 3 hours 47 minutes

| Arrival notice | Arrival   | Unloading | Bonded Transportation | Storage in warehouse | Storage in warehouse | Release   |
|----------------|-----------|-----------|-----------------------|----------------------|----------------------|-----------|
| 5/1 10:28      | 5/1 17:00 | 5/1 18:00 | 5/2 15:46             | 5/3 10:24            | 5/3 13:36            | 5/3 14:15 |

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

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

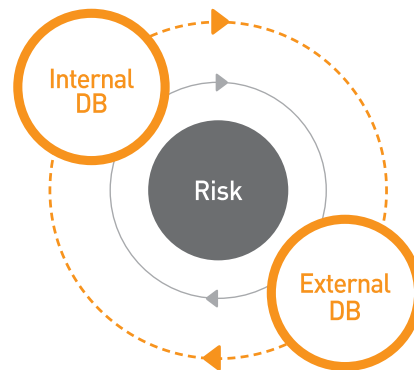
Thanks to the integrated information supplied by the various modules of the UNI-PASS system, UNIPASS allows customs officers and traders to have access to information on the process, status of the cargo by each stage, stating the time, the customs officer in charge and the location of the cargo, including 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.



## » 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.



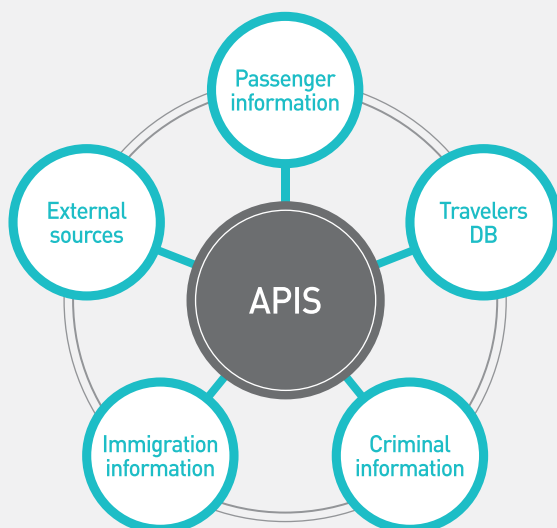
### Categorization of passengers

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

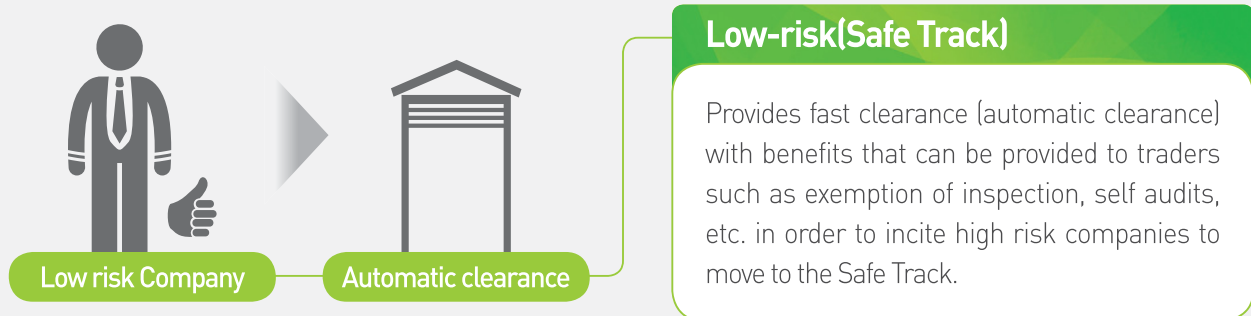
High-risk passengers will be subject to more strict control when exiting the airport, while low risk passengers will pass through a swift clearance with little or no control from customs.



### » 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

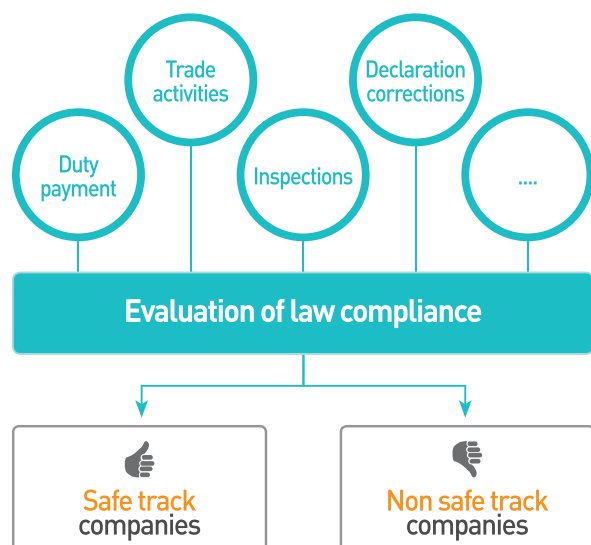


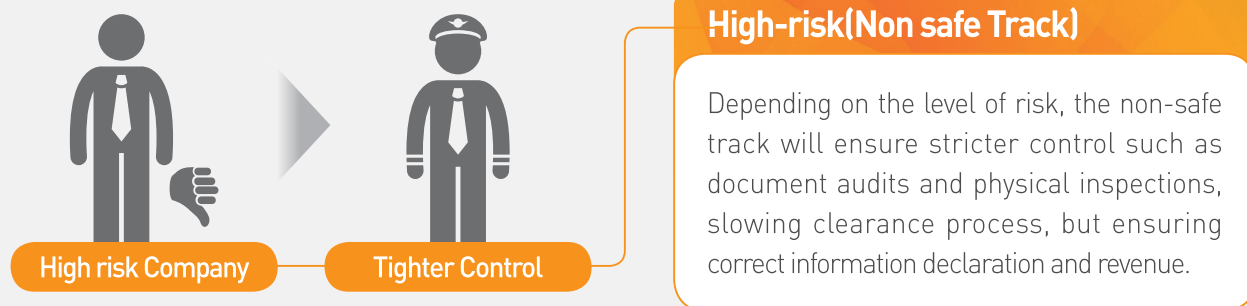
## Efficient control through Two-Track

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.

## » 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.





### Control on goods, travelers, company throughout the ISCM

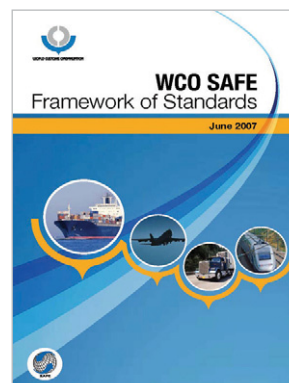
Risk profiling in customs does not only focus on goods, but also to companies and travelers. The main goal is to ensure a controlled ISCM by analyzing risk throughout the whole supply chain and facilitate clearance to approved companies.

### 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.

## » 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.

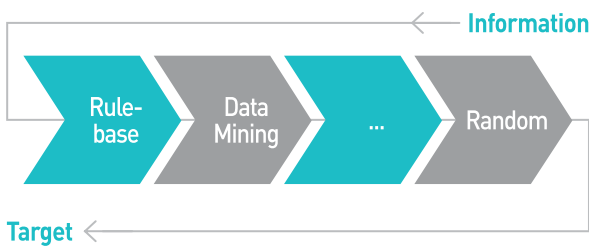
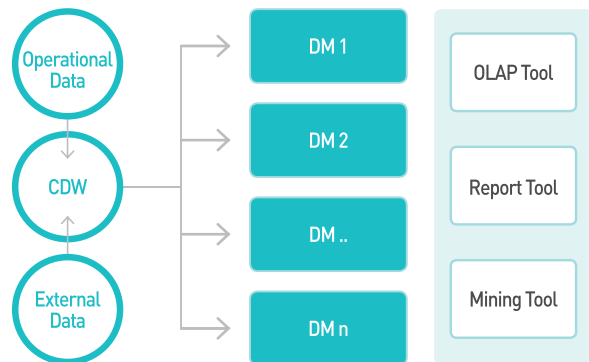


WORLD CUSTOMS ORGANIZATION

# Integrated control through real-time Integrated Risk Management

## Broad analysis on customs data

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

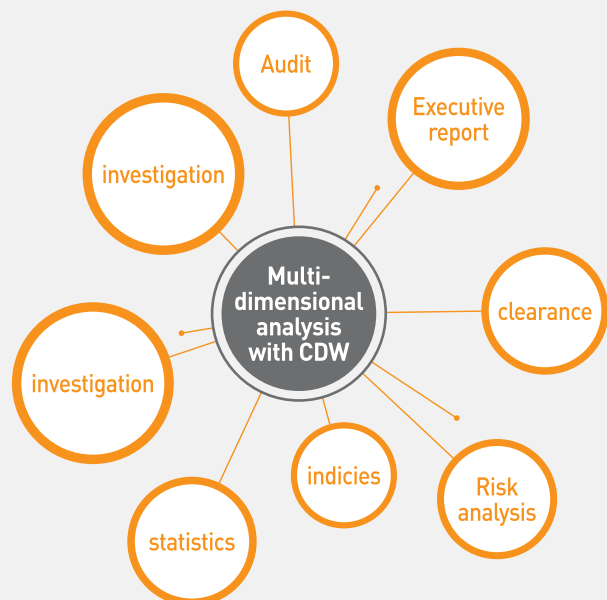


## Diverse targeting techniques

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 pre-clearance (cargo) and post-clearance (audit) stages allowing customs administration to focus more on high-risk goods and achieve both facilitation and control.

### Target

Goods, Company, travelers

### Stages

- Pre-Clearance: Manifest
- Clearance: Customs declaration, APIS
- Post-Clearance: Post audit

## Information at the tip of your fingers

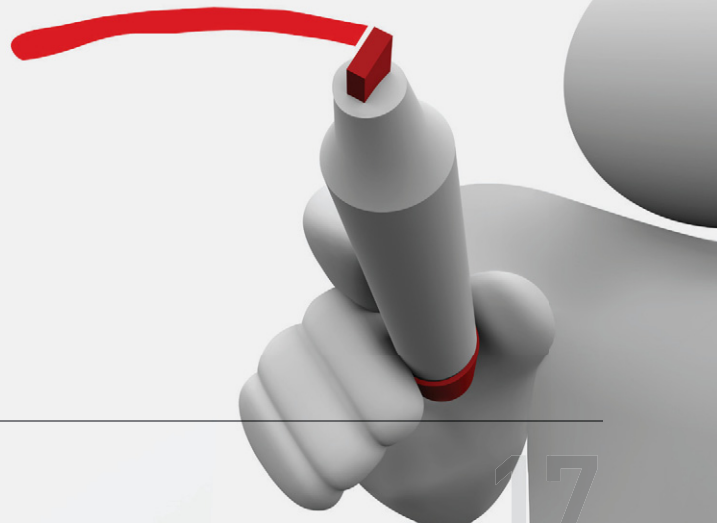
During audit, the auditor will have access to various information, such as personal information of the trader/ declarer, inspections records and results, alerts on what the auditor must focus, HS code table, classification case-studies, etc.



## » 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**



# 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 real-time 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.



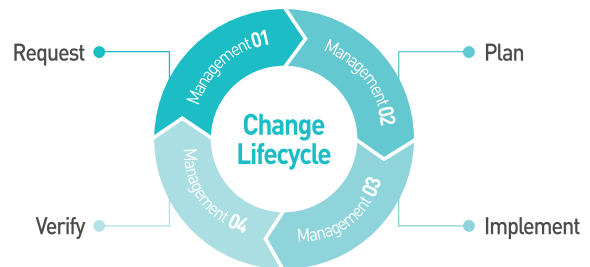
## Custom made control screens

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.

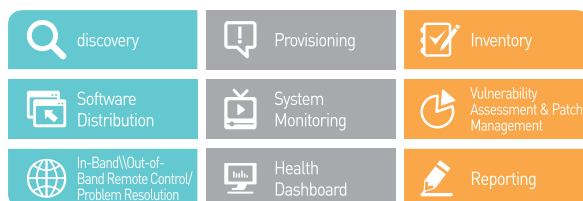


## Prevention of unauthorized access

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.



### Server Management



## 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.

## Process Monitoring

Processing status information on major customs business procedures such as import and export clearance, cargo, single window, is provided for monitoring purposes. Vast information is provided by each major stages at real-time in order to detect any delays in advance and prevent the system from failures.





# 03 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

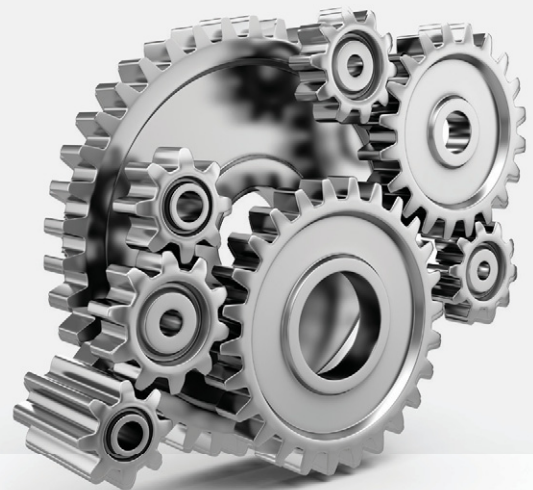
05

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

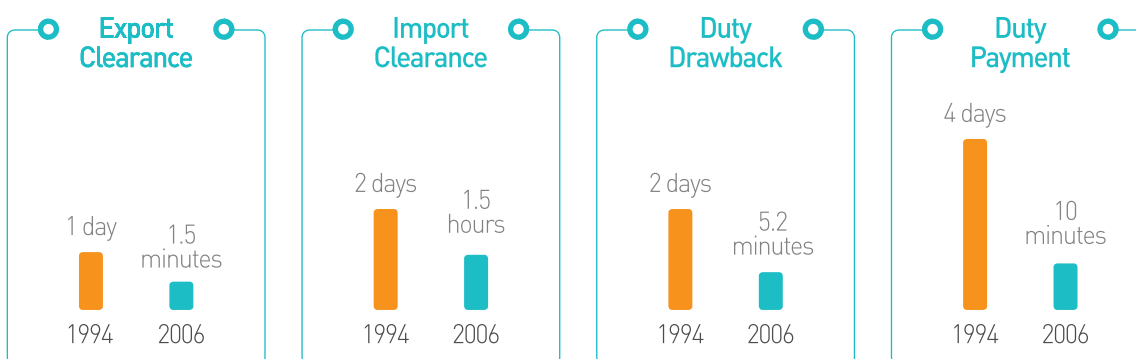
Perform knowledge transfer in the form of documentation(deliverables) and capacity building (onsite training by sending experts and training through invitation to Korea) including the transfer of program source codes to the customs administration.



# 04 Achievements

## 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.



## 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.

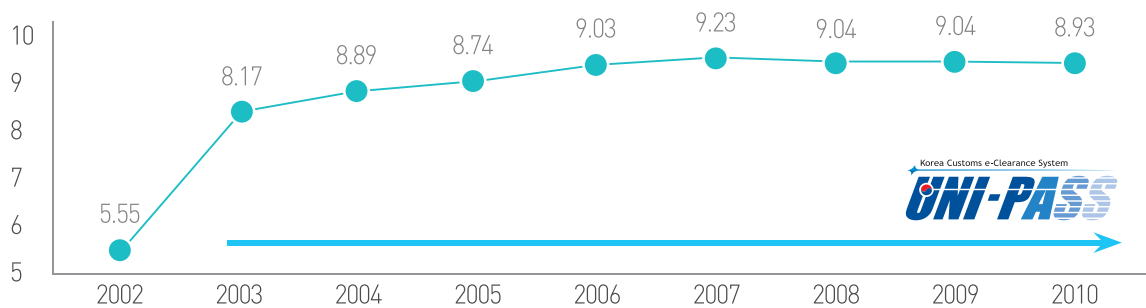
|                                       |                 |
|---------------------------------------|-----------------|
| Reduction in work process             | 657 million USD |
| Increase in income by traders         | 1.1 billion USD |
| Reduction in logistics                | 750 million USD |
|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

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



## Integrity in customs service

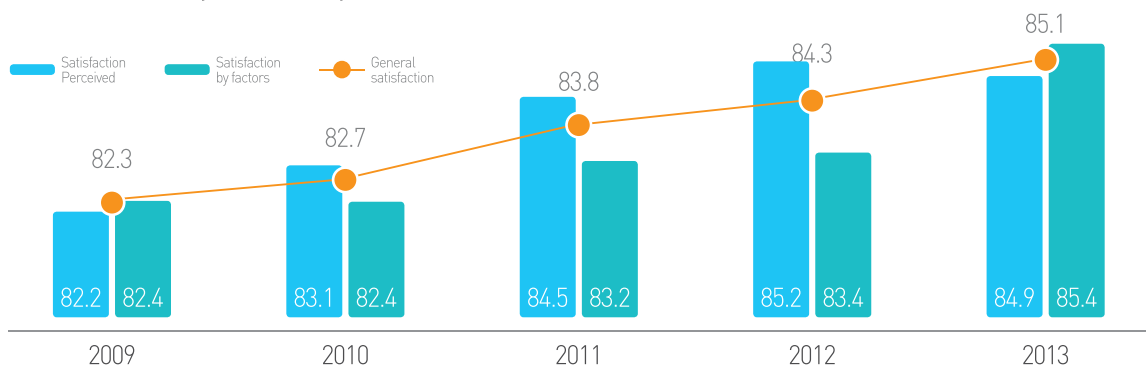
Work processing in 100% e-document, clearance procedure information made public in real time leads to enhancement of transparency in the work process as well as public confidence in administration.



Results of Survey on Improvements on Integrity in Administrative service in Customs by the Anti-Corruption & Civil Rights Commission of Korea, 2010

## 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.



# 05 References & acknowledgements

Countries that have taken the UNI-PASS system as model.



Guatemala



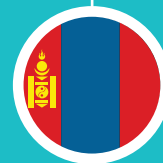
Ecuador



Dominican Rep.



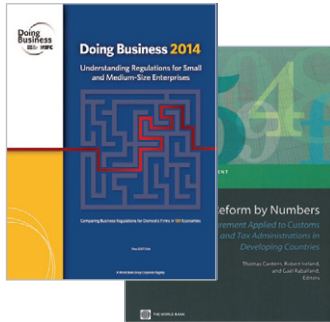
Nepal



Mongolia



Tanzania



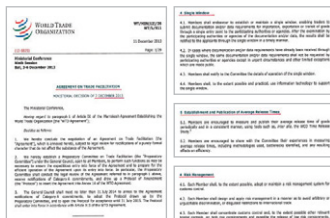
## » World Bank

- **Doing Business 2010**  
Recognized the UNI-PASS single window system as Best Practice.
- **Doing Business 2011**  
Recognized the UNI-PASS 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.
- **Reform by Numbers 2012**  
Published the "Measuring the Effects of the Republic of Korea's Single Window System" as Best Practice.



## » 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.



## » 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





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