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

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# 01 Overview

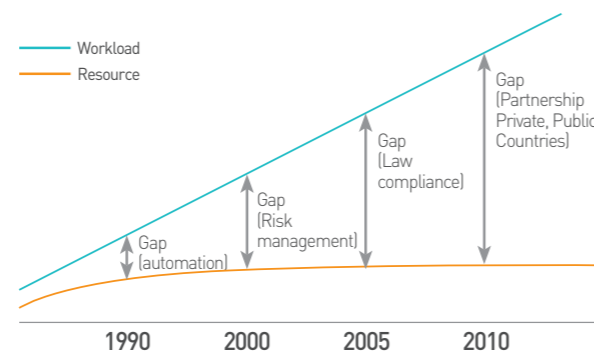


The UNI-PASS system is the Korea's e-Clearance system developed and used by the Korea Customs Service for more than 44 years.

The UNI-PASS system is not just a fully automated customs administration system utilizing up-to-date IT technology, but has embedded 44 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

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.



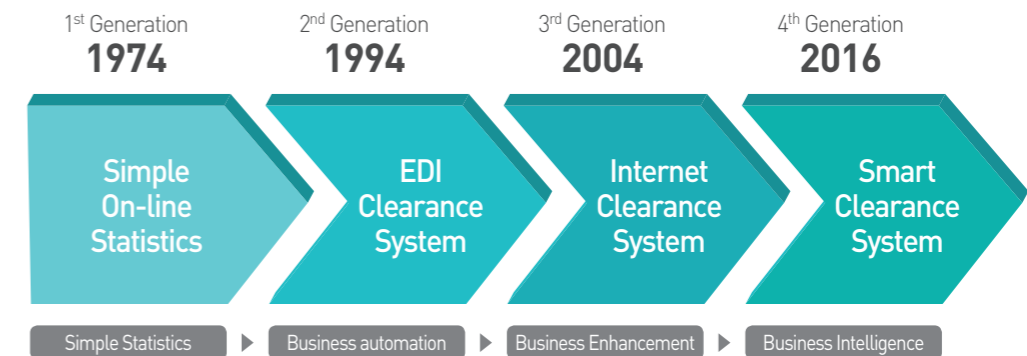
## » Facilitation and control

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

### 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 EDI based automated e-clearance system was first introduced in 1994: followed by the Export and Import Clearance module (1996), Cargo Management Module (1997), Paperless clearance (1998) and the Investigation module (1999). Supporting solutions were introduced to the UNI-PASS system such as the Customs Data Warehouse (2001), the Knowledge Management System (2001), and the Risk Management System (2003).

### 3rd Generation

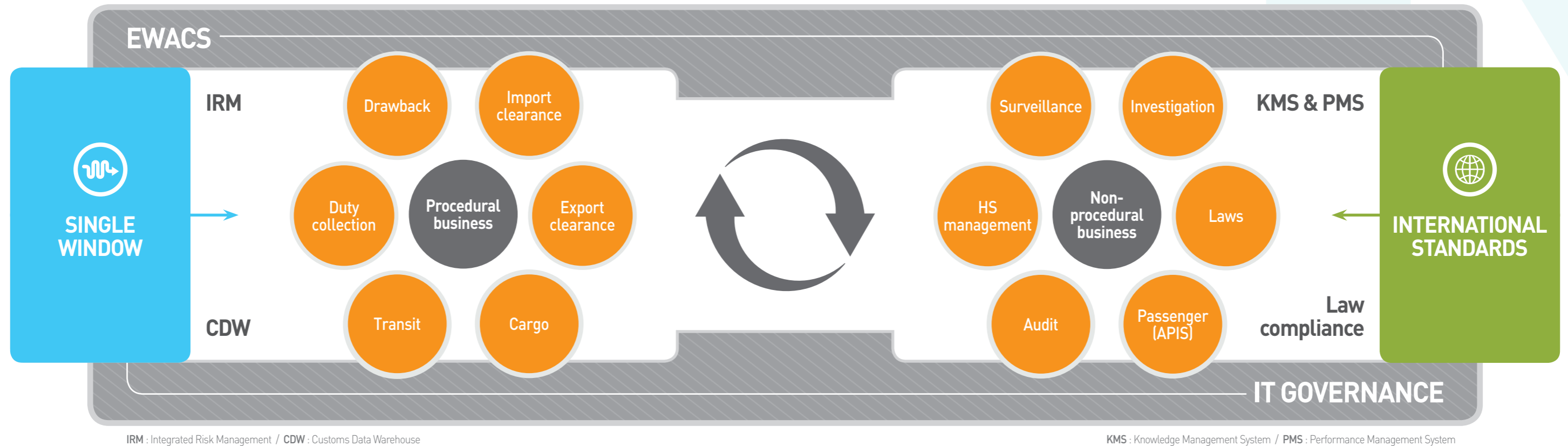
The web-based UNI-PASS transferred the existing EDI system into a web format and additionally developed the Internet Portal (2004), Duty collection (2005), Drawback (2005), Single Window (2005) and the Performance Management System (2005). The UNI-PASS continued introducing up-to-date IT technology such as the RFID for air cargo management, (2007) and expanded 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 adopting 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.

## » Infrastructure Component

Provide tools for administration and control of the customs administration system, such as the Early Warning And Control System (EWACS) that monitors hardware, software, applications and network; and the IT governance that allows management of information based on an enterprise architecture.

## » Application of International Standards

Considering the growing need for interconnectivity with neighboring countries or with foreign customs in achieving the Global Single Window, the UNI-PASS system complies with 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



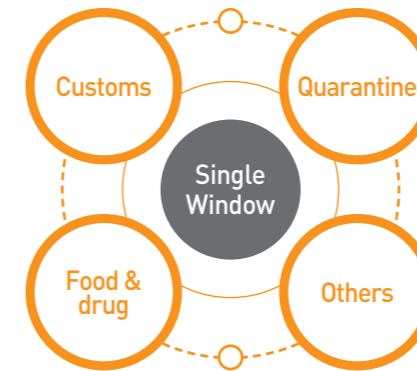
## Non-stop Trade process 24/7

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.



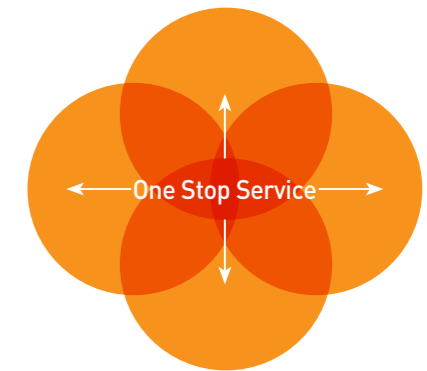
## ePayment for duties and fees

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.



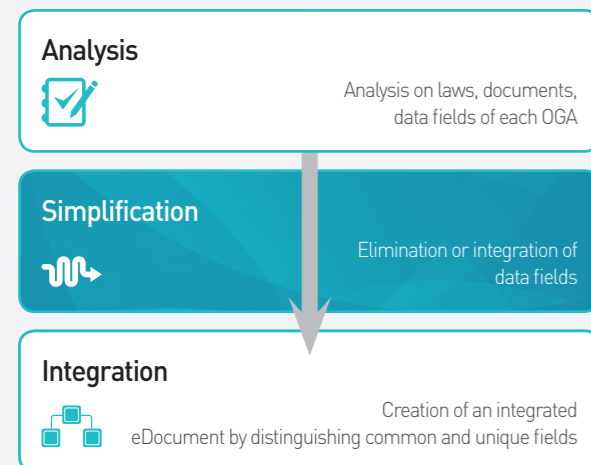
## Data interchange between OGAs

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.



## » Simplicity and integration by Data Harmonization

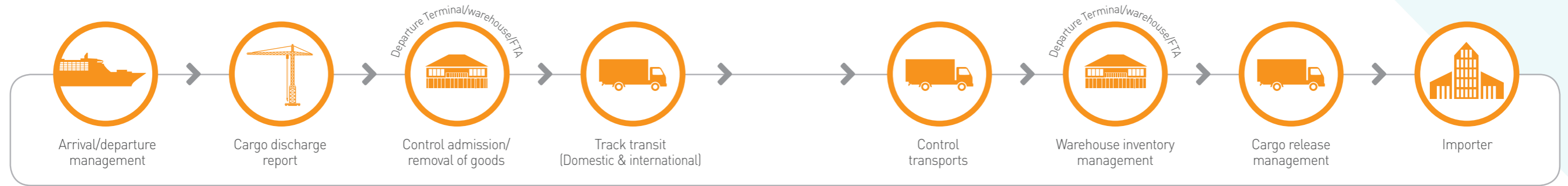
A one-stop service can be provided through data harmonization; reducing the number of data fields required to apply for the regulatory requirements and customs declaration. Analysis performed on all required documents and through a process of simplification the data fields are optimized and integrated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

## 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

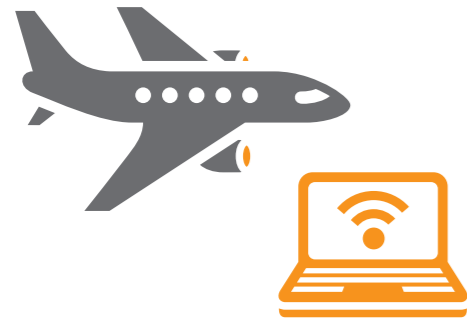
Arrival notice	Arrival	Unloading	Bonded Transportation	Storage in warehouse	Storage in warehouse	Release
5/1 10:28	5/1 17:00	5/1 18:00	5/2 15:46	5/3 10:24	5/3 13:36	5/3 14:15

	Step	Bonded warehouse
	Date & Time	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.)



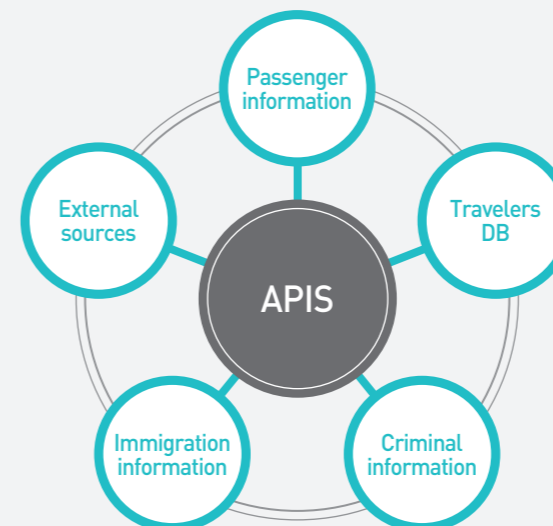
## Facilitation and control on passengers

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

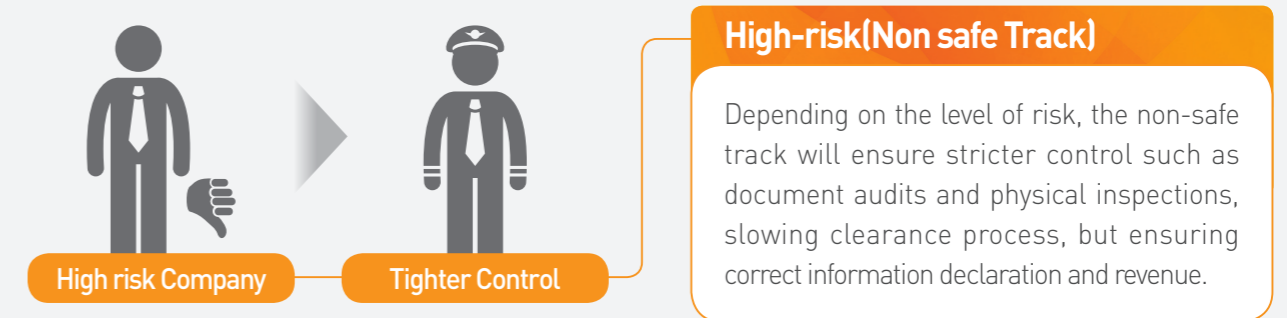
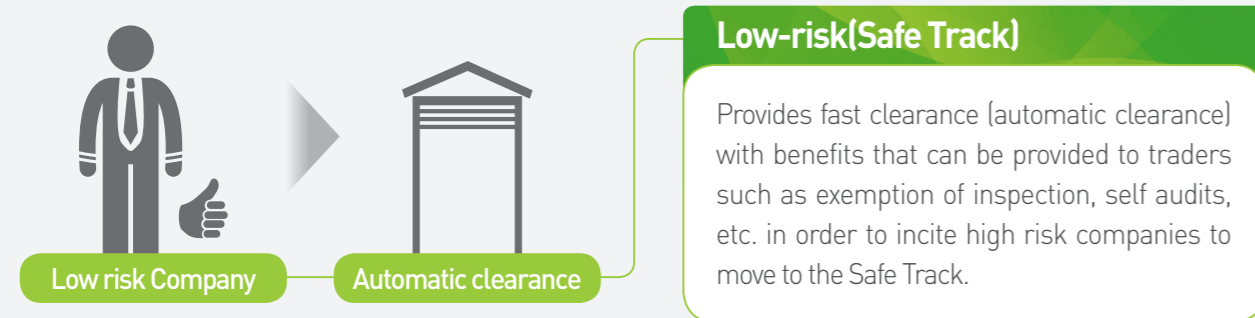
Providing a fast passenger clearance contributes to rise in a country's image. The APIS system collects passenger information in advance to analyze high risk passenger and target them for control. The targeted passengers will be tracked down by the system when the passenger passes through immigration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

# Trade facilitation through two-track control



**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, companies 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.

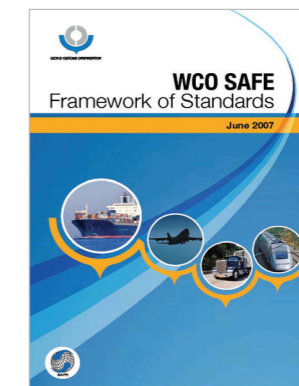
» **Law compliance, the engine for the two-track control**

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.

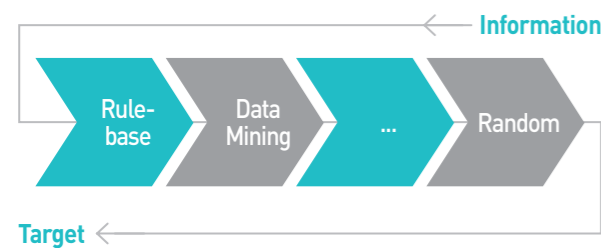
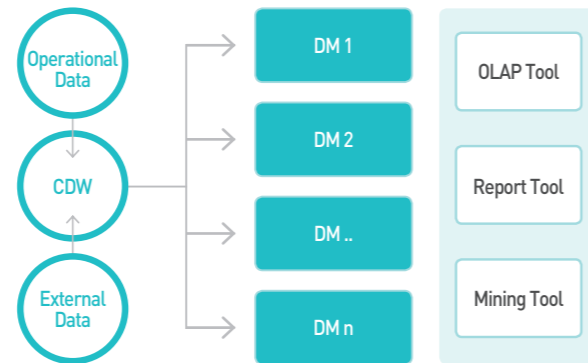


WORLD CUSTOMS ORGANIZATION

# Integrated control through real-time Integrated Risk Management

## Broad analysis on customs data

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

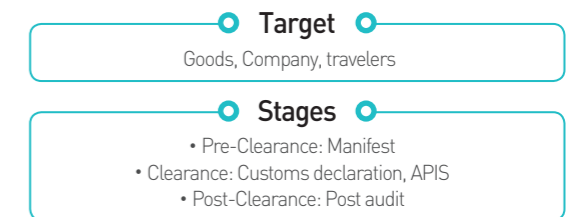


## Diverse targeting techniques

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.

## 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.



## 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.



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

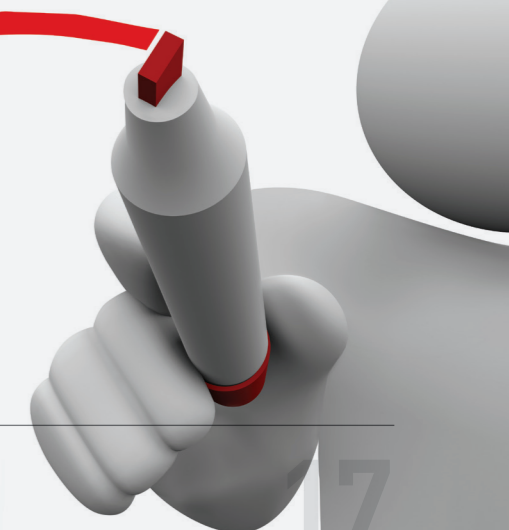
CDW allows for integration of all customs related data with external data (from OGAs) to be placed in one repository through the process of ETCL. Refined data is then created into DATA MART for specific use by different areas of customs and also into CUBE for faster multidimensional analysis. Through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



## Risk management profiles focused on not only goods but also companies, and individuals

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**



# Higher performance of an organization through 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.



## 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.



## » 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.

## » 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 management from IT resources to work processes

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.



## Customized 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.



## 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.



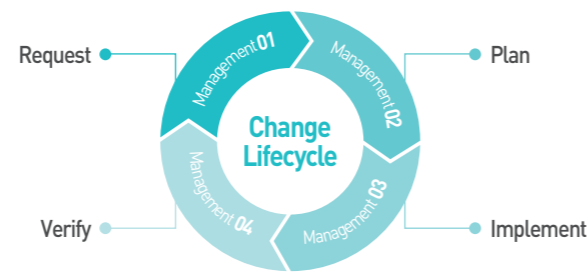
## Prevention of unauthorized access

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.



## 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.

Server Management		
discovery	Provisioning	Inventory
Software Distribution	System Monitoring	Vulnerability Assessment & Patch Management
In-Band/Out-of-Band Remote Control/ Problem Resolution	Health Dashboard	Reporting

## 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.

## 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.



# 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.

## 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.

## Designing 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.

## Knowledge transfer

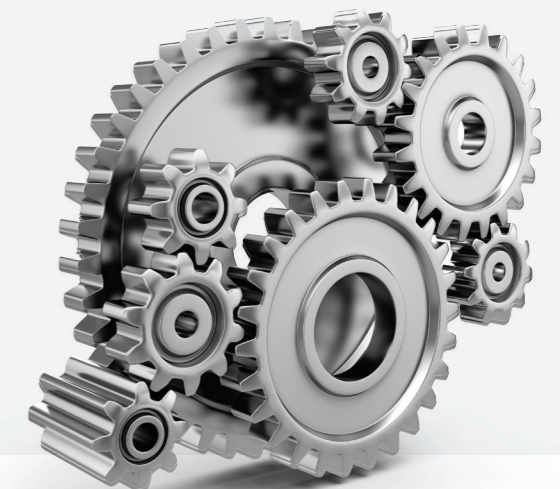
04

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.

## Development

03

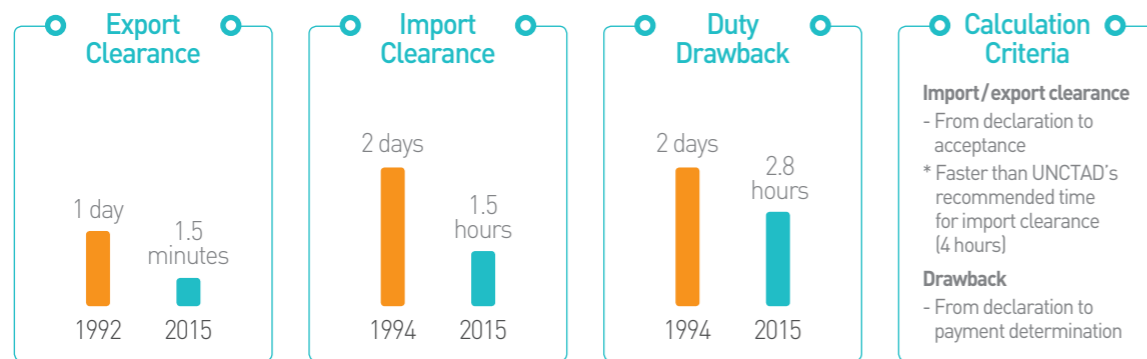
Conduct an analysis, design a new system and develop a tailored IT system based on the BPR/ISP results, including installation of required hardware and commercial software, testing, and deployment.



# 04 Achievements

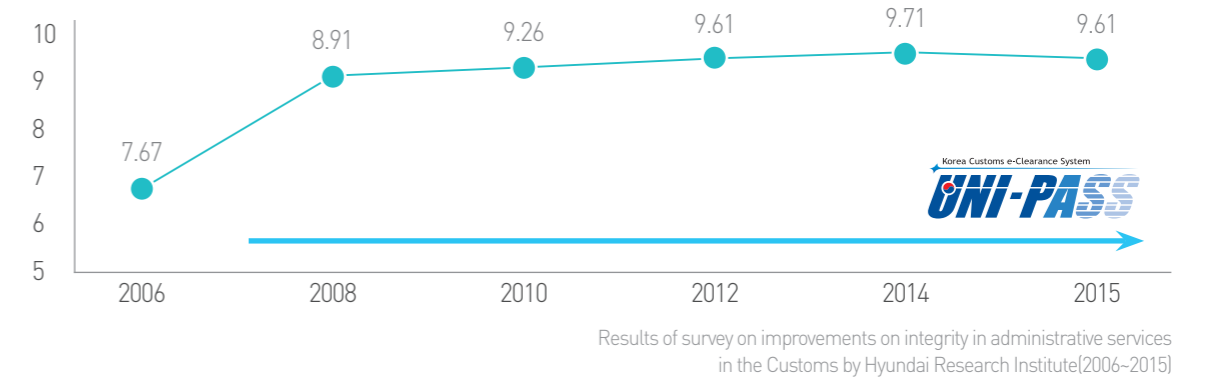
## Time Saving

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.



## 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

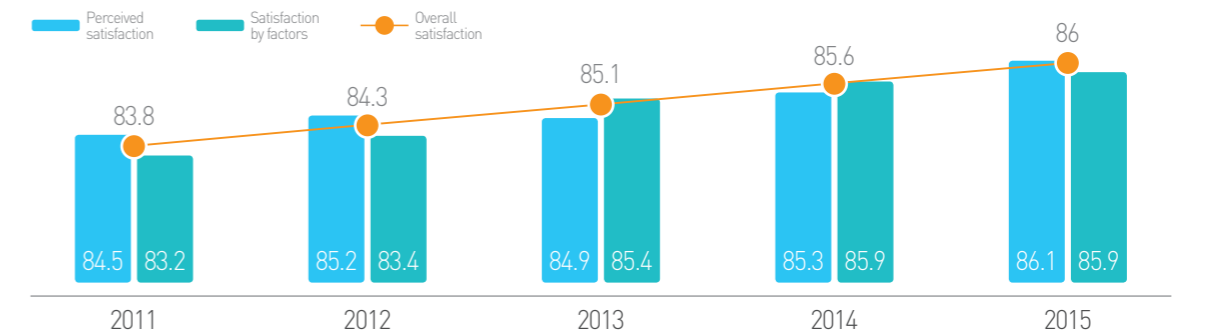
UNI-PASS development created 3.5 billion USD in economic effect in the public and private sector while maintaining the same number of customs staff for the past 30 years in contrast to 18 times increase in trade amount.

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 & Development of Accomplishment Management Model by National Computerization Agency, September 15 of 2006

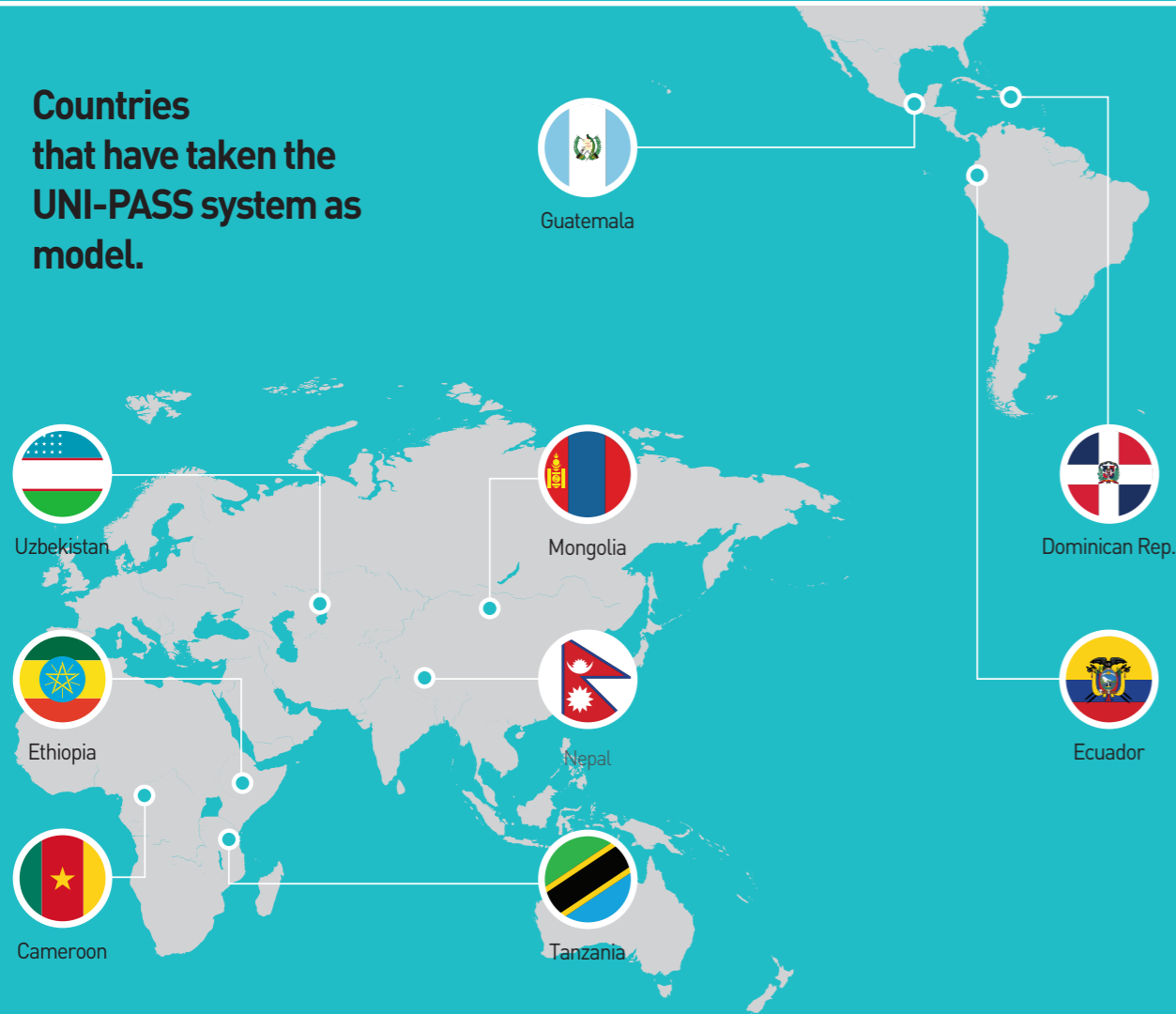
## High level of customer satisfaction

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.



# 05 References & acknowledgements

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



## Awards



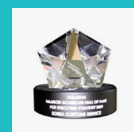
**WCO Innovation Award on ECUAPASS 2013**  
(WCO IT Forum)



**Asian MAKE Award 2011**  
(World Knowledge Forum)



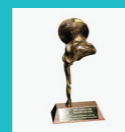
**Airport Service Quality Awards**  
(Airport Council International)



**BSC Hall of Fame Award 2009**  
(Palladium Group)



**E-Asia Award 2007**  
(AFACT)



**Intellectual Property Rights Award 2006**  
(WCO)

## 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.
- **WCO News (Issue No. 79) 2016:** UNI-PASS is introduced as Korea's Customs modernization tool and it was also mentioned that it has been established in 10 countries including Ecuador, Tanzania and Uzbekistan so as to share the experience and know-how of the Korea Customs Service.
- **WCO Single Window Compendium 2017:** Introduced The Republic of Korea's Single Window System as Best Practice
- **WCO Technology Network:** UNI-PASS is introduced as one of the customs clearance systems which provides a total customs administration solution and is customizable to fit any environment.

## WTO



- **Doha Development Agenda 2013:** The WTO Doha Development Agenda reflected practices of UNI-PASS' Single Window of Korea into the Agreement on December 7, 2013
- **WTO Trade Policy Review 2016:** It was introduced that since 2005 the UNI-PASS e-clearance scheme, the world's first 100% electronic clearance portal system has been exported to several countries including Ecuador, Tanzania, Kazakhstan, and the previous system is to be upgraded to its 4th generation system and be in operation as from April 2016.

## 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.

## World Economic Forum (Davos Forum)



- Categorized KCS UNI-PASS and the Single Window System as phase 3 of WEF's Enabling Smart Borders

## IDB's Open Online Courses



- Introduced strong point of KCS Single Window as an integrated platform that connects clearance-related agencies and organizations (10th Edition IDB Open Online Course)