



# Summary Report

**WCO Technology and Innovation Forum**  
5 to 6 November 2009  
Brussels, Belgium



## **INTRODUCTION**

Globalization and increased trade volumes have given added impetus to Customs and border agencies to facilitate legal flows of goods while protecting society from illegal trade. Risk management, advance electronic information, and modern inspection technology can assist Customs and border agencies to strengthen their operations in the 21<sup>st</sup> Century.

Efficient Customs procedures are even more important in an era of declining resources. Modern inspection technologies can, when used appropriately, enable Customs and border agencies to better meet their objectives and allocate their limited resources more efficiently.

Acknowledging the references to technology in the Customs in the 21<sup>st</sup> Century policy document and the needs of WCO Members to have more information about inspection technologies, the WCO organized its first Technology and Innovation Forum 5 – 6 November 2009 at the WCO Secretariat. The Forum's format included panel discussions, exhibitions and an industrial breakout session, where Hitachi High-Tech Trading Corporation and TradeBytes (UK) Limited delivered presentations on their products. Approximately 180 delegates from national Customs authorities, international organizations, technology providers, and academia attended the event. Twelve companies displayed their products and technical solutions.

The Forum's overall goal was to enhance exchange of opinions and experiences with regard to the use of technology in the Customs and border control context. A key Forum aim was to open a dialogue between technology suppliers and Customs administrations. The purpose of the Forum Exhibition was to enable WCO Members to learn more about different inspection technologies available for Customs and border control agencies.

## **OPENING SPEECHES**

The WCO Secretary General, Mr. Kunio Mikuriya, emphasized in his opening address that technology was one of the enablers for modern Customs administrations to secure and facilitate the global supply chain. As the private sector is increasingly using technology to manage global flows of goods, it is also important for Customs administrations to adapt their business model. Mr. Mikuriya stressed that the WCO advises its Members to follow the latest developments in technologies and to use them appropriately. However, it needs to be understood that technology on its own is not a remedy, as Customs officers should know how to use it efficiently. Mr. Mikuriya also underlined that technology should serve as a supporting means for Customs, and it should not drive Customs regardless of its priorities and capacities,

The former U.S. Customs and Border Protection Commissioner, Mr. Robert Bonner, in his opening statement shared his experience on managing the consequences of 9/11. One of the major aspects of his speech was dedicated to the changing role of Customs and other border protection agencies. Since 9/11 a strong security aspect has been incorporated into

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daily business of border agencies, and thus the whole strategy and tactical operations were reviewed in order to meet the new reality. The need to balance trade facilitation and security has become the top priority not only for the U.S., but all over the world. In the U.S. the cornerstones of the new approach were the use of advance electronic information, risk management and the best available detection technologies. Mr. Bonner also touched upon the U.S. 100% scanning initiative. According to Mr. Bonner, 100% scanning was not only impossible, but also unnecessary, expensive and logistically extremely difficult. The use of advanced electronic information together with automated targeting are able to produce a more efficient allocation of resources and enable Customs administrations to better concentrate on the goods posing the highest risk.

Mr. Keith Brown from De La Rue supported Judge Bonner's statement on the need of finding a balance between trade facilitation and security in the post 9/11 environment. He also noted the movement towards coordinated border management (CBM) and the emergence of new concepts, such as Authorized Economic Operators (AEO). Despite the recent changes and the adding of the security component, the traditional Customs role of revenue collection will not change. According to Mr. Brown, technology can play an important role in assisting Customs administrations in safeguarding the revenue flows from trade in goods that are of utmost importance in many parts of the world and contribute to the functioning of national economies.

## **PANEL 1**

The panel addressed the International Response to Security and was aimed to cover security measures in different modes of transport. The panel included three presentations which gave an overview of some of the security measures taken by the courier industry (Deutsche Post /DHL), the maritime industry (IMO), and the road transport sector (Jordan Customs).

Mr. Reinhard Fischer from Deutsche Post DHL discussed the new challenges for courier services relating to internet sales and Customs clearance. He stressed that speed was the key feature of the courier industry and underlined the need for simplified IT procedures, and simplification of the preferential and non-preferential rules which are important for evaluating the cost of goods. He also gave an example of the technologies used in his industry including measures such as GPS tracking and the SmartTruck initiative.

Mr. Graham Mapplebeck from the IMO said that the security of ships and port facilities was a priority of IMO conventions. He also noted that Chapter 11 of the SOLAS Convention contains a counter-terrorism element. Resolution 9 of SOLAS Conference recognised the inter-modal and international nature of the movement of closed transport units and the need to promote supply chain security. Mr. Mapplebeck stressed the importance of the ISPS code and capacity building missions to assist developing countries with maritime security. In this context he touched upon the piracy problem in Somalia, quoting the fact that in 2008 more than 600 seafarers were captured by pirates and in August 2009 the quantity of attacks increased by 270%. He urged immediate action from the international community.



Mr. Aref Alfitiani from Jordan Customs introduced the work of the local CCTV system, as well as more than 17 cargo inspection systems in coordination with other border agencies. Jordan Customs uses various technologies, in particular GPS units, electronic seal, communication network, GIS and digital maps as well as PDA and Wifi in order to track transit cargo. He explained the modus operandi of the system and its benefits when countering smuggling and other violations in transit traffic. He underlined that such system was much more efficient and favourable to traders than convoy as it reduced waiting times and facilitated the flow of goods. The system was in a pilot phase at the moment but due to the positive experiences from it, work has already begun to make it a permanent arrangement.

## **PANEL 2**

The second panel contained national presentations from Saudi Arabia, Malaysia and Australia, covering the issues of x-ray inspection, port security and maritime awareness.

Mr. Mohammed Al Najjar gave an overview of technology used by Saudi Customs. Saudi Customs currently uses 5 fixed scanners, 25 Gantry container screening systems and 5 mobile systems. Saudi Customs also expects to launch a new x-ray project in 2010-2011, which would include acquiring 16 passenger car screening systems, 26 container and 4 body x-ray scanners. In order to prove the efficiency of the technologies used, Mr. Al Najjar noted the number of seizures made by using this technology.

Mr. Razif Ratha Abdullah from Malaysian Customs focused his presentation on the challenges in using technology for port security. He said that modern inspection technology could assist in tackling the challenges caused by increased cargo volumes. Mr Ratha said that the results of a time release study had shown that there had been a significant decrease in the border crossing time of goods (from 5-6 days to 3.2 days; Customs clearance time for goods was in some cases decreased by 50 percent). Mr. Ratha stated that even though technology could facilitate the work of Customs, there were still many challenges to overcome, including procurement and financing; infrastructure and development (location, including acquiring necessary land); installation; operation (in particular staff training); maintenance and acquiring spare parts; health of staff (the problem of radiation exposure) and limitation of technology. Mr Ratha also stressed the need for cooperation with the port community to achieve the maximum effectiveness of the technology deployed.

Mr. Matthew Bannon from the WCO and formerly of Australian Customs gave a presentation on Australia's border protection services, and the AMIS system deployed for CBM. He underlined that technology and assets did not provide a solution on their own, and pointed out that the Australian approach required managing non-traditional risks. He emphasised that legislation, commitment and motivation to share information are essential elements of success.



After the presentations, the Moderator of the Panel, the WCO Deputy Secretary General Elect, Mr. Sergio Mujica, gave a brief overview of the regional scanning workshop in Buenos Aires in September 2009. He said that the workshop had identified many similar challenges that were raised during the panel by the Malaysian speaker. According to Mr. Mujica, the most important outcomes of the seminar were the recognition of the role and need of technology as part of Customs business processes and the consensus achieved on how to move forward with the use of technology in the region. Having pointed out the importance of planning and implementation of the procurement project, he stressed the need for well-established cooperation with other agencies.

### **PANEL 3**

This panel was dedicated to inspection technologies and included presentations by the U.S. Department of Energy (DOE) on dual use commodities; the Federal Customs Service of Russia on radiation detection; and Dutch Customs on public-private partnership in risk analysis and the role of technology in airfreight scanning at Schiphol airport.

Mr. Perry from the DOE noted that the detection of dual use commodities was difficult if the inspection officer did not know what to look for. He pointed out that DOE had special programmes to assist Customs and other border agency officers with their detection capacity. The special programmes and instruments include such measures as the commodity identification training; an x-ray fluorescence device for controlled alloy identification; and the electronic knowledge base of commodity information and controls (eCIT). The database contains control lists, covering different regimes, commodity information and Harmonised System references for strategic commodities.

Mr. Danko delivered a presentation on the radiation detection system deployed by Customs in Russia. He explained that the system consisted of 1500 stationary detectors and a few thousand hand-held detectors. The system was installed with the support of the U.S. DOE and has assisted in identifying violations.

Mr. Appeldoorn from Dutch Customs gave an overview of technology use at Schiphol airport and the public-private partnership in risk detection. A pilot cargo checkpoint system was implemented at the Schiphol Airport in September 2009 where the airport, Customs and KLM worked together. Mr. Appeldoorn explained that because there are at least 13 different agencies at Schiphol dealing with cargo, close cooperation is a necessity. The aim of the system is to achieve integration of inspection, high quality risk detection, high throughput, and operational cooperation. The system is focused on risk management and is intelligence driven, Customs being given the coordinatory role. Mr. Appeldoorn also said that Dutch Customs was developing a SmartGate project with Aircargo-Netherlands which would further facilitate cargo handling and bring in additional benefits.



## PANEL 4

This panel focused on inspection technologies other than scanning and radiation detection and included presentations by the European Commission Joint Research Centre (JRC) on container seals and smart boxes, the New Zealand Customs Service on fumigants and gas detection, and the UK Border Agency on drug and explosives detection.

Mr. Sironi from the JRC described different container sealing methods and discussed the container design weaknesses and possible countermeasures to prevent tampering. He pointed out that the JRC laboratory was focusing on avoiding easy intrusions and was also involved into designing seals. However, it was an independent laboratory and had no commercial interest. He offered three items for review: passive and active e-seals and a smart-box. According to Mr. Sironi, all methods have their positive and negative sides and none of the solutions can fully guarantee container integrity. Even though the smartboxes represent a sophisticated way of gathering information on the container movement and its location, they cannot prevent the opening of the container thus requiring a real time active intervention from the mobile teams in case of alarm. With regard to the costs of the different solutions, the passive e-seals are the cheapest (around 5 Euros) and the smartboxes are the most expensive (around 100 Euros).

Mr. Andy Badrick's presentation focused on the pros and cons of the fumigant programme in NZ Customs Service. He pointed out that in New Zealand 1-3 percent of containers are stopped for further investigation either by NII or physical (less than 1 percent) check. Mr. Badrick then described the current procedure of fumigation detection and the equipment used, before he turned to the problems and challenges that might occur when using the equipment. The major challenges outlined were health and safety for officers; difficulty in accessing and sampling air from inside container, unnecessary delay to the flow of cargo; dragger testing being only able to screen for certain fumigants etc. Mr. Badrick also pointed out that the New Zealand Customs Service in cooperation with other interested parties was in the process of developing an inspection friendly container.

The presentation by Mr. Richard Tomsett of the UKBA concentrated on drugs detection. He said that the value of the UK drugs market is 26.5 billion Euros per year and resulting in societal costs (health, crime etc.) of 590 Euros/person. He described different kinds of equipment used by UKBA to detect drugs on persons, in parcels, luggage and containers. Mr. Tomsett also raised different positive and negative sides of using different technological solutions in drug detection. One of the major problems the UKBA faced related to cocaine or other drugs dissolved in spirits and soft drinks. The detection of this type of drug smuggling was very time consuming and involved physical inspections. Mr. Tomsett emphasized that administrations should remember to use a bundle of different detection technologies in their efforts as no individual technology or equipment such as scanners/sniffers is enough to detect everything even when used appropriately.



## **INDUSTRY SESSION**

The industry breakout session included presentations by Hitachi and Tradebytes on their innovative solutions to detect illegal drugs and monitor the movement of containers online,

Hitachi High-Tech Trading Corporation introduced its Trace Detection System for Illegal Drugs Type DS-1000N. It is a mobile system that performs rapid and highly sensitive analysis without sample preparation. The system is easy to use and does not require additional training. Due to its database the system can recognise a type of drugs. The Japanese Customs has been using the system in case of detecting suspicious cargo after x-ray. Detected items include cannabis and MDMA in mail, cocaine and methamphetamine in air cargo, gun bullets etc. The experience of the Japanese Customs in using the system is positive as the system made few errors in detection, thus having proven to be very reliable.

TradeBytes (UK) Limited presented on the C-Hawk CT which is a global container intelligence application. C-Hawk TradeBytes Data Corp is a company with over 10 years experience in the supply of global maritime cargo data exclusively to government agencies (OLAF, MARINFO, ICE, etc). C-HAWK CT is a web-based application specifically developed for border security agencies. It exploits a large collection of foreign-to-foreign maritime cargo movement data (over 400 million records in the database) in combination with domain-specific analytics to enable more effective risk assessment and targeting. A standalone system, C-Hawk CT is optimised to deliver actionable intelligence across a range of risks and threats.

## **PANEL 5**

The last panel of the Forum was dedicated to tax, revenue and document security. The panel included four presentations which were given by the Canadian Border Services Agency (CBSA) on their approach to fraudulent document detection, De La Rue on tax stamps and revenue security, British American Tobacco (BAT) on digital verification and Passport Systems Inc. on new signature technology for cargo identification.

Ms. Carolyn Dutot from the CBSA explained the institutional setup of her agency's approach to document examination. The approach used by the CBSA included a triangle hierarchy consisting of frontline control officers, back office and experts. Ms. Dutot described the training programme that included three levels and covered different aspects of fraud detection during document verification. She pointed out that there was a need to establish more training centres in North America as there was only one training centre currently in North America.

Mr. Paul Miller from De La Rue gave a presentation on tax stamps and document security. He described public, covert and forensic features of tax stamps and outlined some of the systems, such as secure digital track and trace, in place for enhancing tax and revenue security. Mr. Miller explained that in some cases the implementation of a system of tax and

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duty stamps have increased collected revenue by 10-40 percent per year. The higher the level of illicit trade, the higher the return on investment in tax and revenue security measures. Mr. Miller also underlined the fact that tax stamps had to be designed for specific market conditions and needed to be re-designed in regular cycles in order to make it more difficult for counterfeiters to keep up with the developments.

Mr. Ben Guest from BAT made a presentation on digital verification of cigarette products. As 60-80 percent of cigarette prices consist of taxes, this product group is particularly interesting for smugglers. Mr. Guest described the technological solution of BAT to secure the legitimate supply chain of cigarettes. The main features used by the BAT to combat illicit trade in tobacco products include the use of track and trace, fiscal verification and authentication. Mr. Guest gave an overview of the pilot track and trace project between Poland and the UK that had started 18 months ago and explained that the main idea was the ability to track the movement of final products. The pilot was successful and was giving positive results.

Mr. Gustavo Bottan from Passport Systems focused on nuclear resonance fluorescence (NRF) technology that was being developed for cargo identification and could also be used for counterfeit detection. Mr. Bottan noted that the idea in using NRF for inspection was recent and was based on the possibility of isotopic identification of materials by composition. He also described different ways and possibilities on the application of the technology. According to Mr. Bottan, NRF technology could be used to verify whether a substance was for example bottled water or alcohol, granite or marble, sugar or cocaine etc. He further explained that the technology was continuously developed and mentioned three main areas of importance for future applications. These were the detection of genuine vs. fake products, differentiation of quality, and determination of quality.

## **CONCLUDING REMARKS**

In his concluding remarks, Mr. Mikuriya emphasized that in the era of globalization and declining resources, technology and innovation can assist Customs and partner border agencies in their tasks enabling them to do more with less.

Mr. Mikuriya said that the decision to purchase technology and technical equipment should be underpinned by a strong business case and should always form part of a wider goal to improve the core Customs processes. Technology needs to be combined with information flows and risk management to deliver more efficient and effective outcomes, whether those goals are associated with security, facilitation, contraband detection or revenue assurance. Customs administrations should also carefully define their needs before investing in technology. It is the combination of the right technology in the right place which usually delivers the best Return on Investment.

Mr. Mikuriya emphasized that technologies used by Customs and other border agencies can not be developed in isolation by the private sector. It is important for Customs administra-



tions to engage and participate in the development process and to express their needs with regard to existing and new products.

Mr. Mikuriya touched upon the role that the WCO could play in the field of technology. He underlined that the Forum opens and creates a useful platform for cooperation and dialogue, and added that the WCO is currently reviewing its Committee structure to see whether one of its committees could provide a fora for discussing technology.

In conclusion, Mr. Mikuriya mentioned that the WCO would continue providing a platform on technology and innovations in the future. The Forum will be organized on the annual basis to foster dialogue and enable the sharing of best practices on the use of technologies. He also extended the invitation to the event to all relevant stakeholders (other agencies operating at the border, port authorities etc.) and encouraged them to participate and learn more about available technologies and how they could be used for furthering the goals and increasing border management efficiency.

### **More information**

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