U.S. Customs and Border Protection

Report to Congress on Integrated Scanning System Pilots (Security and Accountability for Every Port Act of 2006, Section 231)

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Legislative Requirement/Citation

In the Security and Accountability for Every Port Act of 2006 (SAFE Port Act), Pub L. No 109-347 (October 4, 2006), Congress directed the Secretary of the Department of Homeland Security (DHS), in coordination with the Secretary of the Department of Energy (DOE), as necessary, and the private sector and host governments when possible, to pilot an integrated scanning system at three foreign ports. Section 231 (d) of the SAFE Port Act requires a report to Congress on the pilot integrated scanning system.

SEC. 231. Pilot Integrated Scanning System.

(a) Designations- Not later than 90 days after the date of the enactment of this Act, the Secretary shall designate 3 foreign seaports through which containers pass or are transshipped to the United States for the establishment of pilot integrated scanning systems that couple non-intrusive imaging equipment and radiation detection equipment. In making the designations under this subsection, the Secretary shall consider 3 distinct ports with unique features and differing levels of trade volume.

(b) Coordination- The Secretary shall—

(1) coordinate with the Secretary of Energy, as necessary, to provide radiation detection equipment through the Department of Energy's Second Line of Defense and Megaports programs; or

(2) work with the private sector or, when possible, host governments to obtain radiation detection equipment that meets both the Department's and the Department of Energy's technical specifications for such equipment.

(c) Pilot System Implementation- Not later than 1 year after the date of the enactment of this Act, the Secretary shall achieve a full-scale implementation of the pilot integrated scanning system at the ports designated under subsection (a), which--

(1) shall scan all containers destined for the United States that are loaded in such ports;

(2) shall electronically transmit the images and information to appropriate United States Government personnel in the country in which the port is located or in the United States for evaluation and analysis;

(3) shall resolve every radiation alarm according to established Department procedures;

(4) shall utilize the information collected to enhance the Automated Targeting System or other relevant programs;

(5) shall store the information for later retrieval and analysis; and

(6) may provide an automated notification of questionable or high-risk cargo as a trigger for further inspection by appropriately trained personnel.

(d) Report- Not later than 180 days after achieving full-scale implementation under subsection (c), the Secretary, in consultation with the Secretary of State and, as appropriate, the Secretary of Energy, shall submit a report to the appropriate congressional committees, that includes--

(1) an evaluation of the lessons derived from the pilot system implemented under this subsection;

(2) an analysis of the efficacy of the Automated Targeting System or other relevant programs in utilizing the images captured to examine high-risk containers;

(3) an evaluation of the effectiveness of the integrated scanning system in detecting shielded and unshielded nuclear and radiological material;

(4) an evaluation of software and other technologies that are capable of automatically identifying potential anomalies in scanned containers; and

(5) an analysis of the need and feasibility of expanding the integrated scanning system to other container security initiative ports, including--

(A) an analysis of the infrastructure requirements;
(B) a projection of the effect on current average processing speed of containerized cargo;
(C) an evaluation of the scalability of the system to meet both current and future forecasted trade flows;
(D) the ability of the system to automatically maintain and catalog appropriate data for reference and analysis in the event of a transportation disruption;
(E) an analysis of requirements, including costs, to install and maintain an integrated scanning system;
(F) the ability of administering personnel to efficiently manage and utilize the data produced by a non-intrusive scanning system;
(G) the ability to safeguard commercial data generated by, or submitted to, a non-intrusive scanning system; and
(H) an assessment of the reliability of currently available technology to implement an integrated scanning system.

On August 3, 2007, the President signed the Implementing Recommendations of the 9/11 Commission Act of 2007 (9/11 Act), Pub. L. No. 110-53. Under Title XVII, titled Maritime Cargo, section 1701 of the 9/11 Act amends section 232 of the SAFE Port Act to require 100 percent scanning of high-risk containers at all foreign ports shipping containers to the United States.

Section 232(a) of the SAFE Port Act, as amended by the 9/11 Commission Act, now reads:

> (1) SCREENING OF CARGO CONTAINERS — The Secretary shall ensure that 100 percent of the cargo containers originating outside the United States and unloaded at a United States seaport undergo a screening to identify high-risk containers.
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> (2) SCANNING OF HIGH-RISK CONTAINERS —The Secretary shall ensure that 100 percent of the containers that have been identified as high-risk under paragraph (1), or through other means, are scanned or searched before such containers leave a United States seaport facility.
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> Section 232(b): FULL-SCALE IMPLEMENTATION — The Secretary, in coordination with the Secretary of Energy and foreign partners, as appropriate, shall ensure integrated scanning systems are fully deployed to scan, using non-intrusive imaging equipment and radiation detection equipment, all containers entering the United States before such containers arrive in the United States as soon as possible, but not before the Secretary determines that the integrated scanning system—
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> (1) meets the requirements set forth in section 231(c);
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> (2) has a sufficiently low false alarm rate for use in the supply chain;
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> (3) is capable of being deployed and operated at ports overseas;
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> (4) is capable of integrating, as necessary, with existing systems;
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> (5) does not significantly impact trade capacity and flow of cargo at foreign or United States ports; and
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> (6) provides an automated notification of questionable or high-risk cargo as a trigger for further inspection by appropriately trained personnel.
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> Section 232(c): REPORT — Not later than 6 months after the submission of a report under section 231(d), and every 6 months thereafter, the Secretary shall submit a report to the appropriate congressional committees describing the status of full-scale deployment under

> subsection (b) and the cost of deploying the system at each foreign port at which the integrated scanning systems are deployed.

The 9/11 Recommendations Act establishes the following under its section 1701 regarding container scanning and seals:

> General Rule – A container that was loaded on a vessel in a foreign port shall not enter the United States (either directly or via a foreign port) unless the container was scanned by non-intrusive imaging equipment and radiation detection equipment at a foreign port before it was loaded on a vessel.
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> Timeline – This must be implemented by July 1, 2012, unless a port meets two of several conditions for extension.
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> Extension Conditions –
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> > (A) Systems to scan containers are not available for purchase and installation.
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> > (B) Systems to scan containers do not have a sufficiently low false alarm rate for use in the supply chain.
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> > (C) Systems to scan containers cannot be purchased, deployed or operated at ports overseas, including, if applicable because a port does not have the physical characteristics to install such a system.
> >
> > (D) Systems to scan containers cannot be integrated, as necessary, with existing systems.
> >
> > (E) Use of systems that are available to scan containers will significantly impact trade capacity and the flow of cargo.
> >
> > (F) Systems to scan containers do not adequately provide an automated notification of questionable or high-risk cargo as a trigger for further inspection by appropriately trained personnel.
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> The *9/11 Act* provides the Secretary of DHS with the authority to extend the 2012 deadline in two year increments provided two of the six statutory conditions exist. There is no limit to the number of extensions that can be granted.

Executive Summary

On October 13, 2006, President George W. Bush signed into effect the Security and Accountability for Every (SAFE) Port Act of 2006. The purpose of the Act is to improve maritime and cargo security through enhanced layered defenses, including hardening critical infrastructure, increasing port defenses against possible attacks, and working to ensure the security of the maritime transportation system. The SAFE Port Act provides a comprehensive, strategic vision that touches on all aspects of the existing maritime security architecture -- from securing the containers that transit the supply chain, to defending the vessels and ports that connect it, to ensuring the protection and accountability of the people that work within it. Acknowledging the immediate and lasting consequences that any disruption to the global system will have for the United States and the world, the SAFE Port Act emphasizes a balance between securing America's borders and facilitating legitimate trade and travel.

This SAFE Port Act also codified a number of supply chain security programs that DHS established following the September 11, 2001 terrorist attacks and which continue today. These include the use of advance electronic information and automated systems to assess the risk of every container entering our country; human resources and technology to inspect and scan all high risk cargo; and partnerships with the trade and foreign governments to ensure the security of supply chains beyond our nation's borders. Specifically, the SAFE Port Act statutorily established DHS's advanced information requirements and automated analysis, the Customs-Trade Partnership Against Terrorism (C-TPAT), the Container Security Initiative (CSI), and the use of NII technology to scan high-risk shipments. The inclusion of these provisions reflects the Act's support for the current layered, risk-based approach to maritime and cargo security.

These programs form the backbone of U.S. Customs and Border Protection's (CBP) risk-management-based, layered enforcement strategy. To most effectively manage multiple threats to our country, we must direct resources to areas of greatest risk. We are constantly working to refine this layered process by strengthening our tools and capabilities, working to maintain an appropriate balance between the wide range of threats we face and allocating our limited resources accordingly. No single layer or tool in our risk-based approach should be overemphasized at the expense of the others. The strength of the strategy is that it ensures continuous security at multiple nodes in the supply chain, distributing resources so that focus on one threat does not overshadow other vulnerable areas that could also be exploited.

The U.S. Department of Homeland Security (DHS) and the U.S. Department of Energy's (DOE) National Nuclear Security Administration (NNSA), along with the U.S. Department of State (DOS) have taken several strategic steps to enhance the layers of security in place to reduce the risk of potential radiological or nuclear threats reaching the United States.

One new layer is the launch of the Secure Freight Initiative (SFI) in December 2006 and the establishment of the SFI International Container Security (ICS) pilot program.

Under the SFI/ICS, an integrated scanning system, consisting of radiation portal monitors (RPM) provided by DOE/NNSA and non-intrusive inspection (NII) imaging systems provided by CBP, is used to scan containers as they move through foreign ports. Through optical character recognition (OCR) technology, data from these systems is integrated and provided to CBP officers who determine if the container should be referred to the host nation for secondary examination prior to lading. For the CBP officers, SFI/ICS provides additional data points that are used in conjunction with advanced manifest data, such as 24-Hour Rule information, Customs-Trade Partnership Against Terrorism information, and the Automated Targeting System to assess the risk of each container coming to the United States.

Meeting the legislative requirements of the SAFE Port Act, the first three SFI ports (Puerto Cortes, Honduras; Port Qasim, Pakistan; and Southampton, United Kingdom) became fully operational on October 12, 2007, and are attempting to scan 100 percent of U.S.-bound maritime containers (the total U.S.-bound container volume at these three ports from October 12, 2007 to February 12, 2008 was 51,937 containers). Furthermore, CBP and DOE are working to pilot scanning equipment in additional diverse environments that provide unique challenges, which may include certain terminals in Hong Kong, Salalah (Oman), Port Busan (South Korea), and Singapore.

Section 231 of the SAFE Port Act requires DHS, in coordination with DOE/NNSA, to report to Congress on a number of topics related to SFI. This report responds to the following five topics:

- an evaluation of the lessons derived from the pilot system implemented under this subsection;
- an analysis of the efficacy of the Automated Targeting System (ATS) or other relevant programs in utilizing the images captured to examine high-risk containers;
- an evaluation of the effectiveness of the integrated scanning system in detecting shielded and unshielded nuclear and radiological material;
- an evaluation of software and other technologies that are capable of automatically identifying potential anomalies in scanned containers; and
- an analysis of the need and feasibility of expanding the integrated scanning system to other container security initiative (CSI) ports (with eight subtopics).

Ten months after the SAFE Port Act became law, Congress passed and the President signed the Implementing the Recommendations of the 9/11 Commission Act of 2007 ("9/11 Act"). Any discussion of the successes and challenges of the smaller scale SAFE Port Act pilots must take into account the new, expanded mandate under Section 1701 of the 9/11 Act, requiring by July 1, 2012, that all maritime containers destined for the United States be scanned (using radiation detection and imaging equipment) in a foreign port prior to lading. The 9/11 Act recognizes that a set of technical and logistical

challenges must be addressed in order for the scanning requirement to be achieved in all foreign ports and provides DHS with flexibility to extend the 2012 deadline in two year increments, provided the scanning systems meet two of the following six conditions:

1) Are not available for purchase and installation;

2) Do not have sufficiently low false alarm rates;

3) Cannot be purchased, deployed, or operated at ports overseas, including the absence of the physical characteristics at a port necessary for the installation of such a system;

4) Cannot be integrated with existing systems;

5) Will significantly impact trade capacity and cargo flow; and

6) Do not adequately provide an automated notification of questionable or high-risk cargo.

The purpose of this report is to provide feedback on the deployment of integrated scanning equipment to the initial three pilot ports in Honduras, the United Kingdom, and Pakistan during the six month pilot period beginning in October of 2007. Further, this report details the United States Government's efforts under SFI in four additional locations (Hong Kong, Oman, South Korea, and Singapore). While integrated scanning equipment may not yet be deployed, or is not yet fully operational in each of these additional ports, this report will outline some of the lessons we derived throughout the negotiation processes, construction efforts, and initial testing periods.

Significant Findings

With the three initial SFI pilot ports in Honduras, the United Kingdom, and Pakistan, CBP has focused its efforts on exploring methods by which efficient operation (defined by maximizing the security benefit, minimizing disruptions to port operations, and containing costs) could be achieved within the deadline prescribed by law. The SFI/ICS deployments in Honduras, the United Kingdom, and Pakistan indicate that 100 percent scanning of U.S.-bound maritime containers is possible on a limited scale in low volume ports processing primarily gate traffic, but that this process will be difficult to achieve with transshipped containers delivered to the port facility from the waterside. In these first three ports, the United States government benefited from considerable host nation cooperation, low cargo volumes, low transshipment rates, and technology and infrastructure costs covered primarily by the United States Government (although it is important to note that in Pakistan, the Government of Pakistan funded the building of the inspection facility and covered all construction costs). These accommodating and supportive conditions do not exist in all ports shipping to the United States.

As this report will discuss in more detail, the data obtained by the scanning technology does have the potential to enhance targeting by providing two additional data points

(RPM spectra and NII images) to the information and tools already available to CBP officers (including 24-Hour Rule information and the Automated Targeting System). CBP is committed to a realistic and responsible approach that will incorporate these scan data points into our risk-based methodology in places where the additional information would be of the most benefit to our targeters.

The continuation of operations in some of the current SFI pilot locations will afford CBP the opportunity to further test possible solutions to the complex challenges posed by transshipment and high-volume ports. However, while the data can be useful, expenses are significant, even in these limited environments. While we continue to learn important lessons in these initial pilot locations, CBP will focus future scanning deployments on high-risk trade corridors, which represent the greatest threats to the United States. Prioritizing deployments in this way will maximize the security benefit that can be achieved with limited departmental funds and ensure that CBP has the capacity to compile, assess, and integrate the additional scan data into its effective, functioning risk-based strategy.

Lessons Learned Summary

The SFI pilots have benefited from host nation officials and port operators willing to expend, to varying degrees, the resources associated with additional staffing, alarm response protocols, construction and other infrastructure upgrades. Our foreign partners have also worked constructively with CBP and DOE/NNSA to resolve data sharing, health and safety, and other operational difficulties that arise. These partnerships with the international community and the private sector were critical to the initial SFI pilots and remain a key factor as DHS considers expansion of the program to higher risk trade corridors.

That said, global reactions to the mandate of the 9/11 Act have been significant. In several unedited appendices to this report, SFI foreign government partners (Appendix A), SFI terminal operators (Appendix B), trade and industry groups (Appendices C and D), and other foreign governments (Appendix D) have submitted reports, correspondence, and/or reviews of the "100 percent scanning" policy. Many express concerns that this policy will negatively impact container processing, increase operating costs, infringe on state sovereignty, and unnecessarily burden security organizations. As partnerships with host nation governments and terminal operators are at the center of every successful SFI/ICS deployment, our continued partnerships with them to address these legitimate concerns are indispensable.

Foreign partners are not consistent in their commitments to expend resources on the SFI pilot and to continue SFI operations when the pilot concludes. Different countries' legislation, limited resources, and other national concerns contribute to the different approaches.

For example, the United Kingdom is a strong partner in implementing multiple security programs to help protect the supply chain, and Her Majesty's Revenue and Customs (HMRC) was one of the first foreign customs services to participate in SFI. The scanning

system in Southampton pilots some of the latest technology and has yielded valuable results in testing the integration and scanning capabilities of these systems. Despite solid cooperation, obstacles remain and in Southampton transshipped containers proved not only logistically difficult to scan, but sharing the data on them proved legally difficult – two separate obstacles requiring two solutions.

Transshipped containers pose a logistical difficulty because, unlike traffic passing through the terminal gates, these containers do not pass through the SFI scanning systems. Developing a process to scan transshipped cargo was the first obstacle. While CBP and DOE preferred U.S. bound transshipment containers to drive through the SFI system, Southampton Container Terminal (SCT) believed that this approach would hinder their operations. Therefore, as a compromise, HMRC, CBP, DOE, and SCT developed a solution in which all U.S. bound transshipped containers are scanned for radiation by U.S. personnel using handheld detection equipment. However, this solution led to a second obstacle: according to HMRC, U.K. privacy laws do not allow the British government to share image data with the United States, unless there is a risk associated with the container (i.e. a radiation alarm). Under the transshipment process, the SFI team is dependent on HMRC equipment to take the NII image of transshipped containers. A compromise was reached in which, using its own equipment, HMRC has agreed to take images of all transshipped containers that show signs of radiation, and share the data with U.S. personnel in Southampton. This process began on March 3, 2008. The situation within the United Kingdom highlights the fact that even if the physical logistics of an obstacle, like transshipment, can be overcome, legal or other national concerns make overall practical solutions difficult.

Another example of the need for partnerships with the international community is the condition expressed by some foreign government partners that this pilot not last longer than six-months. The Singapore government has requested that all equipment be removed at the end of the SFI pilot phase, despite the 100% scanning mandate established by the 9/11 Act. To facilitate that request in a cost-effective manner, CBP agreed to procure mobile systems, which can be easily removed after the pilot. DOE also agreed to modify its standard design for radiation detection equipment installation in order to create a solution that could be installed and then removed and relocated after six months in a cost-effective manner.

HMRC has also limited their participation in the SFI program after completion of the pilot on April 12, 2008. HMRC chose not to staff the SFI site in Southampton after April and has reverted back to CSI protocols (agreed to in 2002). The United States government has been considering alternative solutions to continue operations.

The initial SFI pilots have demonstrated that technical and operation solutions are not yet available to capture transshipped cargo efficiently. New equipment and software must be developed to address the considerable challenge of scanning containers that often transit through ports quickly and without necessarily being placed on trucks or passing through port gates. To date, SFI has progressed on a limited scale in ports that take advantage of the natural chokepoints of entry and exit gates to scan containers. This approach

typically prevents significant impact on port operations, but is not applicable in heavy transshipment ports where containers arrive on one ship and depart on another without entering or exiting through the port gates. Because of shorter dwell times for containers, space constraints, lack of immediate availability of shipping data, and the difficulty of identifying chokepoints within busy container terminals, capturing transshipped cargo without seriously impacting port operations remains a significant challenge. Solutions to this challenge will depend upon the specific infrastructure conditions at any given port, technology interface issues, and the development of operational procedures in concert with host nation and port officials. Advances in technology that require a smaller physical footprint are also essential to any future implementation of SFI.

Discussions with the port of Singapore have highlighted the fact that developing and executing a concept of operations in a higher-volume/transshipment port will prove to be more challenging than in ports that process mainly gate traffic. The port of Singapore has very short dwell times that require extremely efficient processing of containers. As documented in the Government of Singapore's report (see Appendix A), Singapore projections indicate that SFI will have a detrimental effect on the processing times in the port. Although no such effect has been seen in the initial three SFI pilot ports, these locations do not process a large amount of transshipped cargo and the expectation is not unreasonable that transshipment operations, such as those in the port of Singapore, have the potential to create inefficiencies and will pose a challenge.

While highlighting many challenges, the SFI pilots have also produced valuable and positive feedback. SFI, in the initial three ports, has demonstrated the operational feasibility of integrating various scanning technologies and transmitting data in near-real time for review and analysis. SFI has also demonstrated that scanning data associated with maritime containers at a port of lading can be integrated into CBP's ATS and reviewed alongside the targeting system's risk assessment rule sets. This information can be successfully integrated by electronically linking specific container identification data to that container's scanning data. To date, CBP has successfully integrated, transmitted, and received thousands of data files from the three operational ports.

Additionally, a preliminary analysis of the potential trade facilitation benefits of SFI has been positive. Containers arriving in the United States accompanied by SFI data do not experience the same rate of examination at U.S. ports as containers that originate from non-SFI locations. As well, the additional data elements gathered at the foreign port assist CBP officers in more quickly and efficiently mitigating risk and adjudicating radiation alarms occurring at a domestic seaport.

The initial deployments under SFI also demonstrate the significant costs associated with procuring and deploying scanning technology and the supporting information technology (IT) infrastructure. With the announcement of SFI in 2006, DHS and DOE each committed approximately $30 million toward the implementation of SFI in the initial three ports and toward the deployment of additions and systems at three of the limited capacity pilots. The following table details the total cost incurred by DHS and DOE in establishing SFI in FY 2007 at the three 100 percent scanning ports and preparing for

deployment to the limited capacity ports. The chart does not include costs associated with the deployment of the additional CBP personnel initially required to set up the integrated scanning systems and augment the in-country CSI teams or any out-year costs associated with annual communication and IT or equipment operation and maintenance.

Table 1-1 DHS and DOE Costs

DHS Cost Element		**DOE Cost Element**	
Analytical Study	$ 200,000	Equipment	$ 5,046,757
Communications	$ 2,709,879	Installation	$ 15,365,581
Equipment	$ 10,155,000	Testing	$ 465,000
Hardware	$ 2,996,194	Maintenance	$ 550,000
Hardware (server license)	$ 82,132	Communications	$ 5,935,582
Port Deployment Support	$ 463,923		
Program Office Support	$ 1,657,500		
Software Development	$ 10,080,884		
Software License	$ 628,486		
Software Support	$ 140,535		
Training	$ 231,502		$ 1,913,000
Travel	$ 1,099,093		$ 106,687
DHS Total	$ 30,445,127	**DOE Total**	$ 29,382,607

Costs to industry and foreign partners were minimized during the initial SFI pilot by the use of primarily U.S.-owned systems in SFI ports, as well as U.S.-funded upgrades to terminal operating systems (TOS) and enhancing the local IT infrastructure. In addition to costs incurred by the U.S. Government associated with SFI scanning, the terminal operators are also absorbing costs in the form of fuel for the trucks, time to run containers through the systems, and utilities. With the exception of Puerto Cortes, terminal operators do not presently assess a fee to recoup their costs; however, they may begin to do this after the pilot phase. Additionally, our foreign Customs partners are absorbing costs associated with increased staffing levels including overtime, training, and personnel assigned to full-time operations.

Although DHS and DOE funded the initial phase of SFI deployments, the equipment, IT, and personnel costs associated with expanding the program to cover all U.S. bound traffic from the more than 700 different ports that ship to the United States – many significantly larger and more complex than any of the first three pilots – means that the benefit of immediate widespread deployments must be weighed against the Department's funding needs to address other homeland security vulnerabilities. While RPM spectra and NII images can be useful additional data points for evaluating the risk of U.S.-bound containers, the constraints of existing budgetary restrictions and lack of universal solutions to make scanning cost-effective and efficient in every port underlies the Department's strategy to focus future SFI deployments on trade corridors that present the

highest risk. Gathering scan data from these high risk corridors will provide additional information, consistent with the Department's successful layered strategy, for CBP targeters, enhancing risk assessments in the most vulnerable areas, without overwhelming the Department's budget, personnel resources, and ability to defeat other serious threats to the homeland.

As discussed above, the deployment of container scanning equipment at each of the SFI ports has presented certain operational, technical, logistical, financial, and diplomatic challenges that will likely continue to be encountered, to varying degrees, as SFI expands. These challenges include:

- Sustainability of the scanning equipment in extreme weather conditions and certain port environments;
- Varying costs of transferring the data back to the United States (National Targeting Center) in real-time, etc.;
- Re-configuring port layouts to accommodate the equipment without affecting port efficiency;
- Developing local response protocols for adjudicating alarms;
- Addressing health and safety concerns of host governments and respective trucking and labor unions;
- Identifying who will incur the costs for operating and maintaining the scanning equipment;
- Acquiring necessary trade data prior to processing containers through the SFI system;
- Addressing data privacy concerns in regards to the scanning data;
- Concluding agreements with partnering nations and terminal operators to document roles and responsibilities regarding issues such as: ownership, operation, and maintenance of the equipment; sharing of information; and import duty and tax considerations;
- Staffing implications for both the foreign customs service and terminal operator;
- Licensing requirements for the scanning technology;
- Reaching agreement with foreign and industry partners to continue scanning 100 percent of U.S.-bound containers after the pilot ends; and
- Discussing the potential requirements for reciprocal scanning of U.S. exports.

Each of the seven ports presented a unique set of challenges that required SFI managers to respond with a wide array of operational, technical, logistical, and diplomatic solutions. This report details the variety of challenges that arose as CBP and DOE/NNSA worked to implement the SFI scanning program in specific locations within a legislatively mandated timeframe. Significantly, the means by which certain issues were addressed in some locations were not necessarily available or appropriate in other locations. Each port will present its own unique set of challenges.

One example of a challenge requiring different solutions in each location was the different level of automation, with paper-based rather than computerized systems, in some of the initial SFI ports. In many situations, containers can arrive at the port up to several days before they are loaded on vessels. If containers arrive more than one day before lading, then CBP will not yet have the container's corresponding trade information, received under the 24-Hour Rule. Without information about what is in the container or whether it is U.S.-bound, resolving an RPM alarm or image anomaly is more difficult. CBP addressed this challenge in a variety of ways, including agreements with customs partners, terminal operators, and carriers for access to certain information (such as destination and commodity descriptions to identify U.S.-bound containers) that assisted with the risk assessment process and adjudication of radiation alarms. Those ports that lack an automated system will provide additional challenges for providing manifest and destination information to CBP.

The pilots have demonstrated that not just scanning equipment but a combination of technology, processes, and collaboration is necessary to a successful scanning system; additional necessary factors include innovative solutions to operational hurdles, useful data that is collected, analyzed and primed to enhance targeting, a collaborative approach with the international community and port operators, and perhaps most importantly, responsible and practical policies informed by the totality of the threats to which the U.S. remains vulnerable.

Central Alarm Station (CAS) and ATS Software

DOE has developed and deployed Central Alarms Stations (CAS) in 12 seaports under the Second Line of Defense (SLD) Program's Megaports Initiative, and is currently in the testing, development or planning stages in 19 additional seaports. A CAS is also deployed at SFI ports. The SLD CAS, consisting of hardware and software, collects data from RPM, cameras, OCR equipment, and other detection equipment, such as handhelds, and displays it in way that assist CAS operators in making decisions on alarming containers.

DOE contributed its CAS technology to the SFI partnership with CBP. Under SFI, DOE augmented its Megaports CAS by integrating new components, including an Advanced Spectroscopic Portal, and a Non-Intrusive Inspection system. One of the challenges of SFI was to package this information and deliver it for use by CBP. DOE worked closely with CBP to ensure that the data was collected and transmitted by the CAS in a manner that CBP could populate its data tables and merge it with the with data already existing in

CBP's ATS system. DOE and CBP convened a joint working group to develop the N.25 format, which wrapped all data associated with an occupancy, which ATS could unpack and repackage for its integrated viewer.

Like the Megaports standard CAS, the SFI CAS system also includes software that provides the analytical tools to enable CBP officers to resolve alarming containers. In addition to screening equipment, many SFI CAS, such as that Southampton, include integration with systems belonging to the terminal operators, to ensure that the terminal is aware of alarming containers and places holds in its system so that these containers are not loaded onto a vessel prior to disposition. In addition, SFI installations also include a CBP CAS, which is a window that allows CSI personnel stationed at the foreign port to see the same data that the foreign Customs CAS operators see.

CBP, in turn, has developed a software system, called ATS-SFI, which receives and re-packages the data sent by the CAS to CBP personnel with access to the ATS systems. This repackaged data is sent with the additional ATS-SFI data to the CBP personnel at the CBP CAS at the foreign port. The development of the ATS-SFI system has progressed well and has provided CBP officers with an unprecedented ability to view SFI scan data and corresponding trade information within a single computer system. Specifically, ATS-SFI has the capability to associate SFI data with other information used by CBP to assess each U.S.-bound shipment for risk, including targeting rule sets predicated on the advanced electronic cargo information required by the Trade Act of 2002 (including the 24-Hour Rule).

While the ATS-SFI software that integrates data elements produced by the scanning equipment represents a significant accomplishment, the full benefits of this capability cannot be realized without trained personnel (on-hand either domestically or abroad) to assess the collected data and address concerns identified by the integrated scanning system. CBP is aware of technological innovations, such as automatic anomaly detection capabilities, that may potentially aid in the assessment of these data points in the future. However, until that time, the human factor will remain an essential component of the analysis process and of the SFI/ICS system as a whole.

Effectiveness of Systems to Detect Shielded and Unshielded Nuclear and Radiological Material

The integrated scanning system consists of three components: the RPM; the radiation isotope identification device (RIID); and the NII scanner. The RPM and RIID provide the capability to detect and identify nuclear and radiological materials, while the NII captures either an X-ray or gamma ray image of the shipping container and its contents that indicates density.

The SFI pilots have thus far demonstrated that, when used together as an integrated system, these components have the potential to complement each other either by adding new functions to the detection capability or by refining the results generated by the other components. The equipment is capable of detecting special nuclear material (SNM) and naturally occurring radioactive material (NORM).

Each of the three detection components of the integrated scanning system performs different but complementary functions of the detection task. Each of the components has specifications relative to its applied functionality and has been tested and found to meet or exceed those specifications. The combined effectiveness of the three components is not measurable in the same manner as the effectiveness of the individual components. Testing has not been performed on the integrated scanning system as a whole; a more comprehensive assessment of its performance as implemented in the field will be based on the analysis of operational data collected over a longer period of performance and across a broader scale of deployment than those of the limited scope of the pilot program. System modeling and testing may also be necessary to fully assess integrated system performance.

Next Generation Scanning Systems

The development and integration of new technologies is critical to enhancing security without impeding commerce. As a force multiplier, technology can enable CBP to organize and sift through vast amount of data at critical nodes of the supply chain and provides CBP officers with the necessary information to apply preventive measures and reduce vulnerabilities. The use and ongoing development of radiation and nuclear detection as well as NII equipment provide examples of advancements in technology that could augment security dramatically. These scanning technologies promise to be important as we work together with the international community to increase radiation and nuclear scanning and enhance global supply chain security. However, technological improvements to next generation radiation detection and imaging equipment will be necessary to move forward with the implementation of the SFI program in an efficient and effective manner.

For NII imaging systems, software able to accurately identify high-risk anomalies in the image is being developed but is not technically mature. In collaboration with the Domestic Nuclear Detection Office (DNDO), efforts are underway to develop, integrate, and test image anomaly detection capabilities for integration into the SFI scanning system. Images currently require a trained officer to evaluate them. CBP and DNDO intend to continue to work closely together to improve anomaly identification software.

The hardware and software of next generation RPMs (e.g., Advanced Spectroscopic Portal (ASP) Monitors) are capable of discriminating isotopes of interest in shipments from radioactive material, including NORM. Because these next generation units have larger detectors than those in existing hand-held equipment and rely less on operator proficiency, they are expected to offer an advantage in the conduct of secondary scans. However, these units are significantly more expensive than the technologies currently being used. Additionally, it has not yet been established to what extent NORM isotopes may mask the presence of SNM; testing in this area is underway. Depending on the results of this testing and for certain applications where there is a significant amount of NORM traffic, these monitors may offer a useful alternative to current systems, in which isotopes in alarming containers can only be identified in the secondary scan. It should be noted that NORM masking is an issue for all spectroscopic systems, not just ASP. In

addition, use of these monitors as more powerful secondary inspection tools is currently being evaluated as a pilot program as part of SFI. The operational benefits of these monitors are still being evaluated.

SFI Expansion to Other Ports (Recommendations)

The implementation of SFI in Pakistan, Honduras, and the United Kingdom, and the limited testing in the four other SFI locations illustrates that the scanning of all U.S.-bound maritime containers in a foreign port is possible on a contained scale. While implementation at these initial ports has illustrated the considerable challenges and costs associated with scanning abroad, the additional data points obtained from the radiation scan and the radiography image have the potential to enhance the robust layers and effective risk-management principles already in place to secure the supply chain and may potentially represent a means by which integrated technologies and cooperative partnerships could enhance security without impeding commerce.

Section 231 of the SAFE Port Act requires this report to evaluate the pilots as well as the need and feasibility of expanding SFI/ICS. As DHS develops a specific policy forward, in conjunction with the DOE and the DOS, we will prioritize our resources and efforts by focusing on specific higher risk trade corridors where the most security benefit can be realized. Based on preliminary results from the three pilot locations, and in light of the considerable costs and challenges associated with the deployment of SFI/ICS systems, this high risk trade corridor approach accords with the current risk-based strategy, best addresses the greatest threats to the United States, and represents the most worthwhile investment of limited available resources for the scanning of cargo containers at foreign ports.

Considering the immense flow of containerized cargo entering the United States on an annual basis (11.5 million containers), as well as the interdependence of our nation's security and economic health, it is imperative that resources remain focused on ensuring the security of global commerce without interrupting the flow of legitimate goods. DHS has made steady progress and has dedicated significant resources to our cargo and port security programs over the last several years. These efforts have resulted in a robust risk oriented and layered approach to security that is based on informed judgment about the totality of risks we face from potentially dangerous goods and people entering our nation.

The issue of container security has precipitated much discussion and effort over the last several years, but the Department has also been, and must remain, attuned to other threats to U.S. ports and other potentially vulnerable components of the supply chain. Because maritime containerized traffic is not the only compelling threat area or vulnerability in need of resources, DHS has created a robust layered, risk-based strategy to ensure the integrity of the supply chain and the security of our Nation's ports.

While evaluating the need and feasibility of expanding SFI/ICS, this report also includes additional information that addresses the following eight subsection requirements of the SAFE Port Act (Sec 231(d)(5)(a) through (h)).

Infrastructure Requirements

As this report discusses, each port may share basic infrastructure requirements, such as specific equipment, minimum port requirements, and information technology/communication systems, but each port is also unique, based on issues like the layout and quality of the infrastructure, environmental and weather factors, space constraints, etc. This means that actual operational solutions to challenges encountered deploying SFI scanning equipment vary greatly from port to port.

For example, each port will require radiation detection and imaging equipment as well as the physical space, or footprint, upon which to operate these technologies. The NII equipment poses a particular challenge as it requires a minimum distance from the RPMs, so as not to impact RPM operation, and an exclusion zone for safety considerations. Furthermore, an enhanced IT infrastructure is needed to push the SFI scan data to CBP officers located both the foreign port and in the United States. This often requires software modification to the equipment and to the terminal operators' systems.

Processing Speeds of Containers

The initial SFI pilots have demonstrated that the average speed in which a container is processed through the SFI/ICS equipment is three to five minutes. This three to five minute period includes the time required by a CBP Officer to analyze the image to determine whether additional scrutiny is required. Those containers that require further inspection with a radiation handheld device are delayed for an additional five to ten minutes. Appendices C and D of this report provide feedback from the trade on the SFI pilot and note that the delays and bottle-necks expected in these initial locations did not materialize. Additionally, dwell times at the three operational SFI ports are currently relatively long (measured in days, rather than in hours or less, as is the case in some larger ports) which helped to ensure that processing through the scanning systems did not cause any container to miss its voyage. While this speedy processing of containers is beneficial, it remains important to note that supportive features present at the initial three SFI pilot ports, such as the relatively low-volume, lower dwell times, and lack of significant amounts of transshipped cargo, are not characteristic of all ports.

Scalability of the Systems to Meet Current and Future Trade Flows

From a basic equipment and resource allocation perspective, scaling the capacity of the SFI integrated scanning system is a matter of installing sufficient amounts of equipment and appropriate system capacities to manage peak container traffic volumes without negatively impacting port operations and causing shipping delays. Without constraints and excluding the unique challenges associated with transshipped cargo, the current system could be scaled to address any container processing volume. However, the constraints of available space, the number of assigned personnel, the limits of host government cooperation and the realities of the considerable costs associated with the procurement, installation, operation, and staffing required to review and analyze the data and respond to potential alarms, establish a practical limit to the amount of container traffic that feasibly can be processed in an efficient manner through the system.

Furthermore, due to health and safety concerns, many foreign government regulations prohibit the use of drive-through imaging systems, which are necessary to ensure the efficient processing of containers.

Cataloging Data for Reference and Analysis in the Event of a Transportation Disruption

If a transportation disruption resulted from the actual use or forecasted use of a container for terrorist purposes, data and images gathered by the SFI/ICS could play a significant role in resumption of normal trade for containers originating from SFI ports, offering additional data points that could be used with the other risk-assessment tools that are part of DHS's existing layered strategy. The images and associated data of containers that are scanned and cleared by CBP at an SFI port would be reviewed alongside ATS risk assessment rule sets and situational intelligence to provide CBP officers with enhanced information when determining the level of risk associated with each container. This would allow CBP officers to make informed decisions when identifying high-risk containers, while facilitating the release of containers categorized as low-risk.

Requirements for Installation and Maintenance of the Integrated Scanning Systems

The key requirements for installing an integrated scanning system are: the cooperation of the host country government and port or terminal management; addressing the health and safety concerns associated with imaging systems; procuring the integrated suite of scanning equipment including RPM, RIID, NII, License Plate Reader (LPR), and OCR devices; the physical space necessary for equipment installation; sufficient additional space to allow the establishment of container traffic flow through the scanning system and for performing secondary inspections; acquiring necessary manifest and destination information prior to processing containers through the SFI system; and the financial resources to accomplish the installation and operation.

Secondary requirements include the computing systems and software necessary to collect, store, and evaluate scanning results; local network cabling to interconnect scanning devices and computing systems; facilities to house computing systems and personnel; and communications circuits to enable data transmission to the CBP National Data Center (NDC). Construction is required for any infrastructure upgrades that may be necessary to facilities and roadways at the port or terminal and for strengthened foundations for permanently installed NII, RPM, and OCR equipment. As noted in the chart above, in Fiscal Year (FY) 2007 DHS and DOE spent almost $60 million to install scanning systems in the three initial SFI ports, and for preliminary efforts to set-up systems in four additional ports. This amount does not include future costs associated with continued data transportation or equipment maintenance and upgrades.

Staff is also required to support the operation of the SFI/ICS by adjudicating radiation alarms. The system is required to be operational during those hours when container traffic is entering the port. In most ports, this requires staff to be on duty 24 hours per day, either six or seven days per week. Depending upon the port, operations staff may be CBP personnel, Foreign Service Nationals (FSN), Terminal Operators or foreign customs

personnel. Once available, CBP staff then review and analyze the integrated radiation and radiography data in conjunction with the 24-Hour Rule information and any other available information to determine whether to clear a container for loading or request further examination. Only host government personnel, usually customs or law enforcement, have the authority to perform examinations.

Ability of the Staff to Use Scanning Data

Operations in the pilot ports have demonstrated that data captured by the three components of the scanning process, to include NII images, radiation detection profiles, and container identification information, can be efficiently and effectively integrated and provided to CBP officers who have access to ATS and other CBP systems through a single, consolidated viewer. CBP officers in a variety of roles have the ability to view and analyze container images and associated data captured to examine high-risk containers without having to compile data from multiple, separate computer systems or consult separate automated or non-automated data repositories. Data are accessible by CBP officers stationed at SFI ports, CBP targeters on duty at the National Targeting Center- Cargo (NTC-C), Laboratories and Scientific Services (LSS) personnel who may be consulted on the assessment of a container, and by CBP officers on duty at domestic ports.

Some of the factors discussed in this report that impact a CBP officer's ability to best use the scanning data obtained through SFI/ICS include: the availability of commercial data at the point when a container enters the port, possible foreign government restrictions against sharing data with U.S. personnel, and the level of automation of a specific port. CBP and DNDO have been working closely on new decision-support tools as part of the consolidated viewer, including the NII image anomaly algorithms for pilot testing. Currently, however, NII equipment, (to include X-ray and gamma ray systems) has no automated alarm capability and the images generated by these systems require human interpretation and evaluation to determine whether the image reflects an anomaly or is consistent with manifested goods. A CBP officer reviews the NII image carefully before determining whether the container can proceed or is subject to further inspection. The time required for this process of review and analysis is difficult to calculate precisely, but will remain a critical component of the process until this equipment has the capability to rely upon fully automated processes to help identify potential shielding material. This necessary review and analysis of scan data by trained USG operators presents a significant challenge to the expansion of the program to port locations that process higher volumes of containers.

Ability to Safeguard Commercial Data

CBP has extensive experience using commercial data when conducting its risk assessments. CBP has been working closely with the maritime industry for many years, routinely interacting with the DHS Commercial Operations Advisory Committee (COAC), the Trade Support Network (TSN), and other trade organizations to establish guidelines for using sensitive trade data. At the SFI pilot ports, a software application

developed by DOE collects non-commercial device data about shipping containers from multiple sources – the RPM, the radiographic imaging equipment (NII), and an OCR that records the shipping container number. Data from each source is transferred to the CAS via individual direct ethernet connections. Each data stream contains only the data from the scanning device and does not include any commercial information. Physical security and maintenance of the CAS is the responsibility of the host country.

At each SFI location, a U.S. Government-owned-and-maintained network router provides firewall protection for the dedicated network connections from the SFI pilot port to domestic CBP systems. Additionally, the router encrypts the data collected by the CAS and transmits it through the firewall to the NDC. Once the CAS data is securely behind the NDC firewall, it is integrated with the commercial data provided in compliance with the 24-Hour Rule.

The Reliability of Currently Available Technology

To be considered reliable, the SFI integrated scanning system must function in the environment where it is installed, exhibit the capacity to process workloads encountered, and require minimal downtime. Not unexpectedly, and as discussed later in the report, NII systems and RPMs deployed to the initial SFI ports have experienced service outages and failures requiring repair. Where redundant elements are included in the system design (such as in the port of Qasim, Pakistan), full operations are able to continue while repairs are made. If there is no redundancy for the failing component, that portion of the scanning process does not occur. While individual components of the integrated system may experience service outages or failures requiring repair or replacement, the impact on the overall integrated scanning operation can be reduced if each installed system includes some level of component redundancy or if operational alternatives are developed so that overall system operation and integrity are not compromised by a single component failure. Note that procuring redundant equipment also increases the cost of the SFI operation.

DOE and CBP have acquired RPMs and NIIs from a number of manufacturers and have developed standard performance and reliability specifications for inclusion in procurement requests. Some of the details from these specifications for RPMs and NIIs are listed below. The complete performance specifications can be found in Section 5(H) of this report.

RPM Reliability and Performance Specifications:

DOE currently deploys RPMs in primary detection that use plastic scintillation and Helium-3 (^{3}He) tube technology. Prior to the selection of its current RPM vendor, DOE issued a Request for Proposal (RFP) containing the specifications that rail and vehicle RPMs and their associated communications systems must meet. The criteria listed below were part of that specification. Additional performance and reliability specification criteria for the RPMs and the associated communications equipment can be found in Section 5(H).

Monitor Specifications:

- Gamma detectors must be large plastic scintillators.
- To detect the presence of shielded plutonium the monitor must have moderated ^{3}He detectors.
- The monitor must be capable of determining and indicating separate neutron and gamma alarms.
- The monitor must be specifically designed to detect the low energy gamma rays characteristic to weapons grade highly enriched uranium (HEU) and plutonium.
- The monitor must be equipped with battery back-up capability that allows it to operate at least 12 hours without external electrical power.

NII Reliability Specifications

- System should have a minimal footprint.
- Penetration of a minimum of 300 mm of steel.
- Minimum source strength not less the 6 MeV for portal system and 3.8 MeV for mobile system.
- Resolution requirements shall be .125 inches, preferred, but not less than .5 inches.
- Capable of continuous operation for 24 hours per day, 7 days per week.
- Have low dose rate emissions per inspection.
- Capability to scan 20-48 foot chassis-mounted sea containers in one pass.
- Scan a minimum of 75 containers per hour and, preferably, up to 150 containers per hour for portal type systems. Mobile units must be able to scan a minimum of 30 containers per hour.
- Transmit images to a designated location in the United States via the N-25 format (N-25 baseline version 1.4) and be N-25 complaint.
- Operate as an automated drive-through system for both partial and mobile units.
- Measurement and imaging of containers/vehicles is independent of direction of vehicle motion.
- Must be integrated with redundant safety features.
- Must provide for radiation safety of operators, workers, stevedores and by-standers while maintaining a minimum footprint.
- Ability to operate effectively in extreme temperatures and accommodate worldwide deployment conditions.
- Ability to operate on universally accepted power standards.
- Must be compliant with all safety and certifications requirements in the country in which its deployed.
- Workstation and Interface System must include an Operator Console and all operating systems, software, cameras, controls and displays to depict a video and radiographic image of the target.
- Capable of capturing and displaying the radiographic and visible spectrum (video) images of the target to the Operator simultaneously.

Background

The priority mission of CBP is to enforce the laws of the United States at our borders while facilitating legitimate trade and travel. To accomplish this goal, CBP relies upon on a layered risk-management approach that identifies and stops threats without impeding commerce and endangering the economy of the country. DHS has put into place multiple levels of security mechanisms to ensure the integrity of the supply chain. Different layers focus on securing different parts of the supply chain, ensuring that cargo is regularly assessed and that security does not rely on any single point that could be compromised.

Using information to accurately assess risk is at the heart of our layered strategy to securing cargo as it transits the international supply chain and our goal is to combine existing systems, programs, and capabilities to allow us to receive, process, and act upon commercial and security information quickly and efficiently, thus mitigating threats with the least possible disruption to legitimate trade.

The use of advanced trade data and automated targeting capabilities to assess the risk of every shipment entering the United States not only allows us to focus our resources on the real threats, but it helps us recognize lawful shipments, thereby reducing the burden of unnecessary inspections and promoting the speedy flow of legitimate trade. The 24-Hour Rule and the Security Filing proposal ("10+2 initiative") focus on obtaining advance electronic information on cargo and human players throughout the supply chain. Our automated systems analyze this data, assessing each U.S.-bound shipment for risk, and our CBP officers stationed at home and at foreign CSI or SFI ports evaluate each container and ensure, using technology or physical means, that concerns related to all high risk cargo are addressed.

Peer reviews and other enhancements continue to strengthen the ATS, one of the fundamental decision support tools available to CBP officers working in Advance Targeting Units (ATUs) at ports of entry and CSI ports. The system provides a uniform review of cargo shipments, identifies the highest threat shipments, and presents data in a comprehensive, flexible format to address specific intelligence threats and trends. ATS uses a rules-based program to highlight potential risk, patterns, and targets which alert the user to data that meets or exceeds certain predefined criteria.

Additionally, the importer and carrier Security Filing proposal ("10+2"), published in the Federal Register on January 2, 2008, will allow CBP to obtain additional advanced cargo information and enhance our ability to perform risk-based targeting prior to cargo being laden on a vessel overseas. Increasing the information we get on shipments enhances our ability to target true threats and reduces the need for costly and time-prohibitive physical inspections of legitimate goods. Comments received under the notice of proposed rulemaking for this proposal, which closed on (March 18, 2008), are currently under review by CBP.

Strong partnerships with the trade and foreign governments, such as through C-TPAT and CSI, offer additional layers of security, which enable CBP to enhance security in parts of the supply chain beyond our borders. Under C-TPAT, CBP works in partnership with the trade community to better secure goods moving through the international supply chain. C-TPAT has enabled CBP to leverage supply chain security throughout international locations where CBP has no regulatory reach. In FY 2009, C-TPAT will focus on strengthening the partnership with member companies at both the macro and micro levels and leverage corporate influence throughout the international supply chain. In doing so, C-TPAT will continue to ensure compliance with the requirements of the SAFE Ports Act to include certifying security profiles within 90 days of submission and conducting validations within one year of certification and revalidations within three-years of the initial validation. C-TPAT projects that 3,800-4,500 validations will be required during FY09, requiring onsite visits at facilities throughout the world.

In strengthening this successful program, CBP will also continue to review its performance and, where needed, enhance the minimum security criteria for each enrollment sector. Additionally, CBP will continue to conduct informational and training sessions for various internal / external audiences to improve knowledge of cargo security procedures and provide the latest information regarding terrorism trends and conveyance breeches.

Another established and successful layer is the CSI program, which helps CBP meet the priority mission of preventing terrorists and terrorist weapons from entering the United States. Under CSI, the first program of its kind, CBP partners with foreign governments (currently at 58 foreign ports) to identify and inspect high-risk cargo containers before they are shipped to our seaports and are in a position to pose a threat to the United States and to global trade.

An additional part of CBP's comprehensive strategy to combat nuclear and radiological terrorism is to scan all arriving sea containers with radiation detection equipment once they arrive in U.S. ports and prior to their release into the U.S. economy. Currently, CBP has 398 RPMs deployed at priority seaports in the United States, through which approximately 98% of all arriving sea-borne containerized cargo passes. CBP, with the Domestic Nuclear Detection Office (DNDO) and DOE, is also working to test the next generation of radiation detection equipment.

These programs form the backbone of CBP's risk-management, layered enforcement strategy. To most effectively manage the risk to our country, we must direct our resources to those areas which represent the greatest threat. We are constantly working to refine this layered process; our efforts focus on strengthening our tools and capabilities while at the same time maintaining an appropriate balance that considers the wide range of threats and allocates our limited resources accordingly.

Comparison of the CSI, Megaports Initiative (MI), and the SFI International Container Security Pilots

CSI Approach

CSI was announced in January 2002. Initially implemented at the 20 ports that ship the greatest volume of maritime containerized cargo to the United States, CSI has since expanded to additional seaports of economic and strategic significance and is currently operational at 58 ports worldwide.

CSI's true value is the relationships CBP officers develop with their CSI host nation counterparts. The knowledge and specific expertise of host nation officials leads to valuable additional country-specific and local information that validate, enhances or negates the risk associated with shipment entities, addresses, and commodities, improving the CSI team's ability to resolve anomalies and assess threats during their review of U.S.-bound containers. Better information enhances our ability to identify true threats and focus our resources on these, but it also helps resolve anomalies on legitimate traffic, removing concerns that could lead to unnecessary delays, allowing it to progress to its destination.

CSI personnel, working in partnership with host nation government officials, screen 100 percent of U.S.-bound maritime cargo laden at CSI ports and perform risk-based targeting on shipping manifest and bill-of-lading information associated with particular shipments. When a high-risk shipment is identified through ATS, it is further analyzed by CSI officers. These officers can refer a suspect container to host-country customs officials for examination, which may include radiation and NII imaging scans. If the scan data indicates a potential issue such as a radiation alarm or an image anomaly, CSI officers request that the host government perform further examinations of the container and its contents, in accordance with local laws and regulations. This process begins when CBP receives manifest information from the carrier, 24 hours prior to the container being laden on the departing vessel. The dwell time for the containers targeted by CSI ranges from hours to days, determining how much time CBP officers and host governments will have to act on high-risk containers.

Megaports Initiative Approach

The MI, established in 2003 as part of the Office of the Second Line of Defense, is an important nonproliferation program of the U.S. Department of Energy's (DOE) National Nuclear Security Administration (NNSA). The MI provides passive radiation detection equipment, communications systems, training, and technical support to international partners with the objective of enhancing their capability to deter, detect, and interdict the illicit trafficking of special nuclear and other radioactive materials through the global maritime system. Radiation detection equipment installed under this program looks for the presence of special nuclear and other radioactive materials in containerized cargo, alerting port and government officials of the need to examine the container and take appropriate action. These efforts help reduce the probability that materials could be used in a weapon of mass destruction or a radiological dispersal device against the United

States or its international partners. The goal of the MI is to scan as much container traffic at a port as possible (including imports, exports, and transshipment), regardless of destination. The MI uses a risk-based approach to guide implementation priorities, which uses both volume and regional threat to identify ports of interest.

Secure Freight Initiative Approach

As outlined above, DHS has in place a comprehensive policy to ensure that all cargo posing a risk to the United States is thoroughly addressed. The multiple tools in our layered approach revolve around gathering information and data relating to containers as they transit the global supply chain and the newest tool Secure Freight Initiative (SFI), builds on this concept. SFI includes the International Container Security pilots, which seek to gather RPM and NII scan data on containers in foreign ports and the Advanced Security Filing (known also as the "10+2" initiative), which expands the advanced commercial data that carriers and importers are required to submit to CBP. Although CBP continues to explore a third component of SFI called the Global Trade Exchange (GTX), aimed at organizing and integrating commercial and security information about shipments, no contracts were awarded in response to the recent solicitation for the trade data system.

Under the ICS portion of SFI, CBP uses an integrated network of radiation detection and container imaging equipment and data integration capabilities at overseas ports to gather additional information on maritime containers bound for the United States. These new sources of data are integrated into the CBP risk management process. Under the current SFI/ICS process, the timeframe for scanning containers typically precedes the filing of 24-Hour Rule information. Scanning occurs upon arrival at the port, prior to any risk assessment being conducted by ATS. Subsequent to scanning, a determination is made as to the need to perform additional examinations. Scan data are stored by CBP, fused with manifest information in ATS, and can be accessed at any point in the risk assessment process. The SFI pilot includes scenarios where targeting analysis is performed by CBP officers on location in the pilot ports and a scenario in which targeting is performed at the NTC-C in the United States, based on scanning data and images transmitted from the ports. The NTC-C targeting approach may in the future provide a means to reduce in-country staffing requirements.

Report Methodology

The DHS Secretary was directed to report to Congress on lessons learned from piloting integrated scanning systems under the SFI/ICS pilot study. This report is based upon data collected during initial negotiations, systems installations and initial testing, and full ICS pilot operations. Information was gathered through assessments, reviews, and interviews with CBP and DOE staff and contractors, host country officials, trade personnel, and terminal operators.

Discussion

An evaluation of the lessons derived from the pilot program

The integrated scanning systems pilot, implemented under Phase I of SFI, provided valuable lessons that will guide the expansion of the program. These lessons were drawn from experiences at the three SFI pilot ports in Puerto Cortés, Honduras; Port Qasim, Pakistan; and Port of Southampton, United Kingdom, where the goal was to scan 100 percent of U.S.-bound cargo. Additionally, the report also outlines lessons derived from initial USG efforts to deploy scanning equipment to four additional locations including Busan, Korea; Singapore; Port of Salalah, Oman; and Hong Kong. The goal in these additional ports is to deploy the integrated scanning equipment on a limited basis to better understand the challenges associated with implementing SFI in larger, more complex locations. This section will detail the progress made to-date in each of these locations.

FULL CAPACITY 100 PERCENT SCANNING PORTS

Southampton, United Kingdom

The SFI pilot at Southampton, United Kingdom, demonstrated successful integration of the technologies selected for the pilot operation. Implementation and operation of the SFI scanning process did not significantly impede the flow of container traffic through the port's container terminal, SCT, nor has it resulted in traffic bottlenecks within the terminal. SCT reports that concurrent with the installation, testing, and operation of the SFI pilot, container volume through the port increased to record levels with no resultant shipping delays, showing little or no negative effects of the pilot on the flow of container traffic through the port.

However, the pilot in Southampton was not without challenges, ranging from the realm of policy and negotiation, to the intricacies of technology, to environmental factors. The two most difficult problems encountered in Southampton were capturing transshipment containers and negotiating the post-pilot operation of the scanning equipment. U.S.-bound transshipped containers, which arrive at the port on one ship, remain inside the terminal and do not pass through the terminal gates on their way to being transferred to a U.S.-bound vessel. During the SFI installation planning process, SCT advised that rerouting transshipped containers back through the gates would have created a significant disruption to the speed and flow of traffic in the terminal, so an alternative process had to be developed. CBP and DOE worked with SCT to develop a compromise scanning process. All parties agreed that the SFI team would use hand held radiation detection equipment as a primary inspection tool to scan transshipped containers. While HMRC was able to provide NII scans from UK- owned equipment that was conveniently located to capture transshipped cargo, another challenge arose when HMRC informed CBP that U.K. privacy laws do not allow the British government to share image data with the United States unless there is a risk associated with the transshipped container (i.e., a radiation alarm). HMRC, CBP, and DOE recently reached a solution in which all transshipped containers are scanned for radiation, and HMRC images all containers that alarm for radiation using its equipment, and shares the data with U.S. personnel in Southampton. While this solution allows us to perform radiation detection on all the transshipped cargo, the legal impediment, combined with the financial and logistical necessity of using U.K-owned imaging equipment to capture transshipments, prevents the

U.S. Government from receiving images of containers that do not alarm for radiation. So while we are getting good data on transshipments, this is a significant obstruction to reaching 100% integrated scanning. This process began on March 3, 2008.

The SFI pilot phase in Southampton ended on April 12, 2008. HMRC expressed its intent to cease participation in the SFI program after the pilot was complete, chose not to staff the SFI site in Southampton after April, and the process has therefore reverted back to CSI protocols (agreed to in 2002), with CBP Officers staffing the site. The United States government has been considering alternatives to continue operations.

Technical problems have also resulted in service outages of the NII imaging system installed at Southampton. This model is the first of its type installed by the vendor, and some operational and servicing issues were unresolved at installation time. The single NII device experienced outages and down time throughout the pilot program. Two major components of the NII machinery separately failed – the compressor, which required two days to repair, and the Betatron (the particle accelerator/transformer), which failed as a result of accumulating condensation during rainy conditions and required almost two weeks to replace.

Additionally, the U.S. Government was charged customs duties and Value Added Tax (VAT) by the U.K. government for both the equipment and construction of SFI in Southampton, amounting to approximately $500,000 in additional expenses. CBP and DOE undertook lengthy negotiations to obtain a waiver. Eventually, CBP and DOE received temporary customs duties and VAT waivers for the duration of the pilot, which ended in April 2008. If, however, the pilot is extended, all customs duties and VAT will come due retroactively.

Another complication in Southampton was that CBP was informed of a requirement to comply with the United Kingdom Ionizing Radiation Regulations (IRR) of 1999, a U.K. health and safety law, only after negotiations, testing, and deployment of the SFI pilot were complete. To comply with this requirement, a Radiation Protection Advisor (RPA) was contracted to train and certify four on-site radiation security officers (RSO) to U.K. standards. To address concerns about potential health and safety risks of the scanning equipment, the SFI office proactively works with independent radiation authorities in several countries, including the radiation protection service for the United Kingdom Atomic Energy Authority.

Three final experiences bear noting. First, in the United Kingdom, the maximum height of trucks is nearly a foot higher than in the United States. Modifications to the NII portal – which was too short - were required to allow loaded U.K. trucks to pass through that device. Second, environmental regulations also had to be considered. In Southampton, the area next to the CAS installation contains a pond with a resident population of endangered turtles. Construction planning was modified to accommodate this situation. Finally, because many containers arrive at the port more than 24 hours in advance of their vessel's departure, CBP will not have received any corresponding commercial data (collected under the 24-Hour Rule). Therefore, CBP needed consent from the host

government and cooperation from the terminal operator to provide nominal information on a given container that was U.S.-bound (helpful for resolving radiation alarms on shipments containing material emitting naturally occurring radiation). However, the European Union places limits on the amount and type of shipping data that can be shared by member states with other governments. CBP and DOE worked with HMRC and SCT to agree that SCT would provide at least commodity and destination data to CBP for alarm adjudication.

Port Qasim, Pakistan

The SFI pilot at Port Qasim, Pakistan has demonstrated another successful integration of the technologies selected for the pilot operation. It showcases the successes of the SFI program in a country where the foreign government is very supportive of the initiative; from waiving the value added tax (VAT), to providing adequate staffing levels for SFI, the government of Pakistan has consistently proven to be a strong partner in piloting a system to scan 100 percent of U.S.-bound maritime containers.

Lessons learned from the Port Qasim pilot uncovered several important challenges that must be addressed, but also illustrated some trade benefits. A paramount concern is the downtime of the equipment used to scan the containers. Extreme climate conditions and lengthy operations times caused technological problems with the equipment that the vendors continue to address.

Port Qasim presented a unique situation since DOS does not allow U.S. personnel to be permanently stationed at the port for security reasons. As a result, all targeting of containers must be done remotely by CBP officers in the United States and physical exams at Port Qasim are conducted by Pakistan Customs officials and foreign service nationals (FSNs) hired by the U.S. Embassy. At all times, CBP Officers use live video feeds streaming directly from Pakistan to the United States to monitor SFI operations in Port Qasim. Creating the process for real-time data transmission and analysis required the development, installation, and integration of new software.

The trade is benefiting from SFI operations Port Qasim. In the time since SFI started operational testing, Port Qasim has experienced an increase in the container volume of exports to the United States. Shippers in the region are routing more containers bound for the United States through Port Qasim, in anticipation of faster processing through U.S. Customs upon arrival of containers that have been scanned at Port Qasim prior to shipping.

Puerto Cortés, Honduras

The selection of Puerto Cortés as an SFI pilot port provided an opportunity to pilot scanning equipment in a port with a higher volume of container throughput than at the other full-capacity pilot locations.

Several specific challenges proved obstacles to implementing SFI in Puerto Cortés. First, the terminal operator in Puerto Cortés has limited advance electronic data available and

containers may arrive days in advance of departure. Since manifest information is received by CBP only 24 hours in advance of departure, when containers arrive at the port gate days in advance and proceed through the scanning equipment, the manifest data has not yet been submitted to CBP or the port. The separation of U.S.-bound containers from non-U.S.-bound containers at Puerto Cortés occurs only after a manual documentation review by Honduran Customs personnel who are stationed at the scanning sites. This is later validated once CBP receives the 24-Hour Rule information.

A second challenge is that the NII equipment in Puerto Cortés was purchased separately by the government of Honduras and in advance of the development of integrated radiation scanning systems. There were difficulties integrating this older generation equipment with the radiation detection equipment used in the SFI pilot. For example, the imaging systems were initially unable to fuse some NII data with corresponding radiation scanning data, system reliability was adversely affected, and initially the overall data quality was poor.

Third, scanning equipment was not initially compatible with the N.25 standard used by CBP systems. This was due to the fact that implementation of DOE's Megaports Initiative at Puerto Cortés was already underway at the time of SFI selection. At the time Puerto Cortés was selected as an SFI pilot project, the system design including the software and database had already been completed under the Megaports Initiative. The scanning system was retrofitted with the N.25 standard, which caused temporary system reliability challenges.

Fourth, the labor union at the port voiced concerns about health and safety issues attributable to radiation exposure from the scanning equipment. A radiation safety fact sheet was provided by the U.S. Government on the safety of the equipment with documented, independent research on equipment safety.

Finally, CBP personnel can only work six days a week from 8 a.m. to 6 p.m. due to staffing safety concerns. Personal safety is a concern when traveling back and forth from the port to CBP housing due to the high crime rate along that route. When CBP staff is not present, any U.S.-bound container that triggers an RPM gamma alarm is sent to a holding area and handled by CBP officers when they return at the start of the next shift. For neutron alarms on U.S.-bound containers, immediate action is required. The Direccion Ejecutiva de Ingressos (DEI) will notify CBP officers, who will direct the next actions to be taken as they respond back to the port.

LIMITED-CAPACITY PORTS

Hong Kong

SFI in Hong Kong is the first of the four limited capacity ports to enter the operational testing phase. SFI systems are in place and testing the data and container flow to ensure optimal performance. These systems have been testing since November 19, 2007, and already have yielded valuable lessons. On January 11, 2008, limited scanning in Hong Kong became fully operational and is working well.

One of the most difficult challenges in Hong Kong is the limited space in which to place these systems. Jointly, the United States and Hong Kong Governments, as well as the Modern Terminal LTD (MTL), developed and implemented a CONOPS that fits this scenario. Also, data-sharing with the United States has presented a challenge in Hong Kong. Unlike other SFI locations, there is no law in Hong Kong that permits Hong Kong Customs and Excise (HKCE) to share export data with the U.S. Government. As a result, the United States receives the information directly from MTL. Another unique aspect to Hong Kong is that the equipment is largely vendor-owned, and equipment procurement by the United States was limited. DOE did, however, provide hand-held radiation detection and radioisotope identification equipment and Central Alarm Station (CAS) equipment to Hong Kong. Nevertheless, the equipment experiences downtime similar to other locations. A third issue of note in Hong Kong is that, due to health and safety concerns, all truckers entering the port have a choice of whether or not to drive through the SFI systems.

Busan, Korea

SFI in Port Busan is in operational testing and has already yielded lessons and benefited from SFI experiences in other ports such as Southampton, Honduras, and Qasim. The government of Korea, as well as the terminal operator, Hutchison Port Holdings (HPH), have been strong partners and supporters of the pilot and have facilitated many of remedies to challenges that arise.

Some of the chief challenges in Busan include union health and safety concerns with truckers using the NII equipment, the SAIC P-7500. While the government of Korea is satisfied with the independent reviews outlining the safety of the P-7500, and officials have personally studied the machine, the Korean trucker's union still expresses concerns. Other complications included export licensing for the P-7500 and staffing concerns for the pilot. However, all challenges have been remedied, and operational testing began in late May 2008.

Singapore

The SFI DOP was signed by the U.S. Ambassador to Singapore and the Permanent Secretary of the Ministry of Transport (MOT) for the Republic of Singapore on December 17, 2007. However, negotiations on the details of the Singapore installation have not been finalized. The most important detail to be resolved is whether or not

Singapore would require CBP and DOE to remove the equipment provided after a period of six months. Singapore advised CBP and DOE of this requirement in the fall of 2006, and this has required CBP and DOE to consider changes in the overall design as well as the equipment to be deployed. Consequently, the timelines for delivery of equipment and construction are not fully clear and the operational start date has also been affected. CBP and DOE are in the process of adjusting to Singapore's requirements.

Discussions also continue on various other subjects including: CONOPS, cost reimbursement, staffing, Singapore's post-pilot commitment to the project and who will bear various liabilities. This adds time to construction schedules and delays operational start dates.

Although operations have been delayed, Singapore remains an important partner. The government's historical support of DHS/DOE initiatives such as CSI, C-TPAT, and the Megaports Initiative demonstrate its commitment to collaborating on supply chain security.

Port of Salalah, Oman

The seaport at Salalah, Oman, was designated an SFI port in December 2006, after becoming both a CSI and Megaports port in November 2005. The initial negotiations, started under Megaports and continuing under SFI, have been completed and development of operational deployment timelines is ongoing. Both processes have yielded valuable lessons. Chief challenges include adequate IT infrastructure to transport data to CBP targeters; sufficient staffing levels of both CBP and Omani officials; and designing a CONOPS that works with the limited space available at the port. The Oman government and Port of Salalah have been very cooperative and valuable partners in determining solutions that will ensure the success of the project and prevent detrimental effects on port operations.

Discussion

An evaluation of the need and feasibility of expanding the integrated scanning system to other CSI ports

Continuing operations in some of the current SFI pilot port locations will afford CBP the opportunity to explore possible solutions to the complex challenges posed by transshipment and high-volumes of cargo. However, future deployments will focus on high-risk trade corridors. This strategy will explore efficient expansion options that minimize costs and disruptions to port operations abroad and to the global supply chain in general, while confining deployments to trade lanes that present the greatest risk. This responsible prioritization of departmental resources will ensure that CBP can best enhance security and realize the benefits of the scan data in an efficient manner that does not adversely impact global trade and that recognizes the need to utilize limited resources to address other important vulnerabilities.

The collaborative efforts between DHS and DOE to deploy integrated scanning equipment to the three initial SFI pilot ports in Honduras, the United Kingdom, and Pakistan have demonstrated the feasibility of capturing additional data points (including a radiation scan and image) on U.S.-bound maritime containers on a limited scale, and in locations where a variety of supportive factors exist. This framework of supportive, which cannot be expected to exist in the more than 700 ports shipping to the United States, includes host nation cooperation, low transshipment rates, relatively low volumes of cargo, and technology and infrastructure costs covered primarily by the United States. The successes achieved in these pilot locations, while laudable, were on a narrow scale and have been largely eclipsed by the variety of considerable challenges that arose. As DHS and DOE worked under tight deadlines to meet SAFE Port Act international scanning pilot port requirements, many challenges were addressed on a case-by-case basis with a variety of innovative operational solutions, necessary compromises, and temporary agreements. The conclusion to draw from the experiences with these initial SFI ports is that they are not representative of, or templates for, complete scanning operations at other international locations.

The pilots have also demonstrated that the additional data elements, if incorporated into the risk-based methodology and used to augment the information CBP already receives under the 24-Hour Rule and will soon receive under the Advanced Security Filing, have the potential to enhance targeting efforts in specific situations. While the data can be useful, the expenses are substantial and key challenges will need to be addressed as the U.S. Government considers additional deployments.

Some of the most significant challenges are the difficulties associated with capturing scan data on transshipped cargo and identifying protocols, policies and port infrastructure modifications that will permit scanning at high volume locations without impacting the movement of goods through the port and through the global supply chain. The initial SFI/ICS deployments have demonstrated the technical feasibility of integrating the various components of the scanning process, as well as the more operational feasibility of capturing this data in low-volume ports that process mostly gate traffic. However, as negotiations in the high volume and high transshipment ports of Singapore and Salalah demonstrated, developing and executing realistic concepts of operation in these more challenging environments is difficult.

As DHS develops a policy for future expansion, in conjunction with DOE and DOS, we must acknowledge both the diplomatic and operational challenges encountered in the first phase of deployments. Based on preliminary results from the three pilot locations, and in light of the considerable costs and challenges associated with the deployment of SFI/ICS systems, we will focus departmental resources on scanning in specific high risk trade corridors, where the most security benefit can be realized. This approach accords with our risk-based strategy, best addresses the greatest potential threats to the United States, and represents the most worthwhile investment of limited available resources for the scanning of cargo containers at foreign ports.

Conclusion

A critical element of any strategy to protect our nation is monitoring what is coming across our borders. Physically inspecting every single container that enters the country would be impractical and detrimental to our own economy, as well as the global economy, and extreme. Instead, we rely on a robust layered, risk-management approach that identifies and focuses our resources on threats while allowing legitimate cargo to move unhindered through the process. This risk-based and approach reduces the likelihood of a successful exploitation of any one layer in the supply chain system as a whole. The appropriate distribution of limited resources, based on informed judgment regarding the totality of dangers facing the nation, is a necessary precondition to the success of this risk-based and layered approach. The evolving nature of threats against the United States, and the attractiveness of exploiting any point of least resistance, is a call for vigilance against a disproportionate expenditure of resources and attention in one area, to the potential detriment of other vital less fortified vulnerabilities.

Significant lessons have been learned from the initial SFI pilot ports established over the last year, in close partnership with DOE. The initial three ports demonstrated that the scanning of all U.S-bound maritime containers is possible on a limited scale. These ports benefited from having host nation cooperation, low cargo volumes, low transshipment rates, and technology and infrastructure costs covered primarily by the United States Government, where available. These supportive conditions do not exist in all ports shipping to the United States, so DHS must prioritize deployments in a manner that maximizes the security benefit, minimizes disruptions to port operations and the global supply chain, and maintains cost efficiency.

The costs associated with the establishment of a SFI/ICS port and with the equipment and personnel necessary to collect, analyze, and transfer scan data obtained through SFI integrated systems are reasonable and necessary expenditures to the degree that increased security results. An approach that prioritizes deployments to high-risk trade corridors and continues operations in some of the initial pilot ports will provide CBP the opportunity to expend resources and efforts on the development of the technology and operational solutions necessary to address key challenges (such as transshipment), while obtaining additional information on cargo traveling through trade corridors that warrant additional scrutiny. Capturing scan data on transshipments without seriously impacting port operations is rendered all the more difficult by the characteristics of this type of cargo: shorter dwell times, space constraints, availability of shipping data, and the difficulty of identifying chokepoints within the container terminals. Advancements in transshipment technologies, including mobile and spreader bar technologies (should they prove to be technically viable) will help address challenges posed by heavy transshipment ports.

Sustained operations in some of the initial SFI/ICS locations, in combination with deployments to additional ports, will provide continuing opportunities to develop solutions to some of the more challenging hurdles encountered thus far. As DHS, working closely with DOE and DOS, expands international scanning responsibly and

efficiently, the focus will be on high-risk trade corridors that represent the greatest threat to the United States. This corridor approach will direct limited departmental resources toward those areas where the most benefit can be derived from the incorporation of the additional scan data into CBP's targeting systems and, more broadly, into CBP's effective risk-based strategy. Such a strategy is also consistent with the risk-based approach DOE employs in its Megaports Initiative. CBP will continue coordinate with DOE on future SFI expansion.

Central to the SFI program and to DHS's mission in general, is the conviction that reliable information obtained earlier in the shipping process supports and enhances the ability of CBP Officers to distinguish between legitimate commerce and potential threats. The integrated scanning systems have proven capable of producing, collecting, and transmitting scan data points. These additional data enhance the targeting process by providing CBP with helpful insight regarding the security of a container's contents as it transits to the United States. As technology matures, additional benefits may be derived from automatic anomaly detection capabilities that would ease the burden on the highly trained personnel now required to review and analyze scan data. An expansion approach that focuses on high-risk trade corridors will allow CBP to maximize the benefit that can be derived from the additional information.

While the scan data can be useful, the costs associated with obtaining it, even in the limited number of current SFI pilot ports, have proven significant. DHS and DOE funded the initial phase of SFI deployments, committing a combined total of approximately $60 million to the program. The resources committed by DHS and DOE greatly minimized the costs to the terminal operators and industry and foreign partners. Nevertheless, our partners in this effort incurred considerable costs, including expenditures related to staffing increases, local information technology and terminal operating system enhancements, fuel, and other program support functions. USG expenditures during the 6 month pilot phase addressed the material costs associated with equipment, personnel, facilities, and information and communication enhancements. More intangible costs associated with potential increases in wait times at higher-volume ports, more extensive infrastructure modifications that will be necessary to address transshipments and non-gate traffic, and the impact of these additional requirements on the speed and efficiency of trade flow both through specific port operations and to the United States, remain unknown. The extensive costs and operational, technical and diplomatic hurdles of expanding the SFI/ICS program to the more than 700 ports that ship to the United States necessitates a path forward that will incorporate scan data as an additional layer in the robust risk-management approach we have in place and will focus future scanning deployments on high-risk trade corridors.

Acronyms

ASP – Advanced Spectroscopic Portal

ATS – Automated Targeting System

CAS – Central Alarm System

CBP – U.S. Customs and Border Protection

CBR – Central Board of Revenue

CERTS – Cargo Enforcement Reporting and Tracking System

CITOS – Computer Integrated Terminal Operating System (Singapore)

CONOPS – Concept of Operations

CSI – Container Security Initiative

CSDRD – Communications System Design Requirements Document

C-TPAT – Customs – Trade Partnership Against Terrorism

DEI – Direccion Ejecutiva de Ingressos (Honduran Customs)

DHS – Department of Homeland Security

DNDO – Domestic Nuclear Detection Office

DOC – U.S. Department of Commerce

DOD – U.S. Department of Defense

DOE – U.S. Department of Energy

DOP – Declaration of Principles

DOS – U.S. Department of State

DPW – Dubai Ports World

FSN – Foreign Service National

FY – Fiscal Year

HKCE – Hong Kong Customs and Excise

HMRC – Her Majesty's Revenue and Customs (U.K.)

HPH – Hutchison Port Holdings

HSC – Health and Safety Commission (U.K.)

IC3 – Integrated Cargo Container Control

ICA –Immigrants and Checkpoints Authority (Singapore)

ICE – Immigration and Customs Enforcement

ICIS – Integrated Container Inspection System

ICS – International Container Security

IRR – Ionizing Radiation Regulations (U.K.)

IT – Information Technology

IP – Internet Protocol

KCS – Korea Customs Service

KINS – Korean Institute of Nuclear Safety

LPR – License Plate Reader

LSS – Laboratories and Scientific Services

MI – Megaports Initiative

MOT – Ministry of Transport (Singapore)

MOU – Memorandum of Understanding

MPA – Maritime and Port Authority of Singapore

MTL – Modern Terminal LTD (Hong Kong)

NDC – National Data Center

NEEMR – National Enforcement Equipment Maintenance and Repair

NII – Non-intrusive Inspection

NNSA – National Nuclear Security Administration

NORM – Naturally Occurring Radioactive Material

NTC-C – National Targeting Center - Cargo

OCR – Optical Character Recognition

OIT – Office of Information and Technology

PNNL – Pacific Northwest National Laboratory

PSA – Port of Singapore Authority

RFP – Request for Proposal

RIID – Radiation Isotope Identification Device

ROP – Royal Omani Police

RPA – Radiation Protection Advisor (U.K.)

RPM – Radiation Portal Monitor

RSO – Radiation Safety Officer

SAIC – Science Applications International Corporation

SCT – Southampton Container Terminals

SERNA – Secretaria de Recursos Naturales y Ambiente

SFI – Secure Freight Initiative

SLD – Second Line of Defense

SNM – Special Nuclear Material

SPOG – SFI Project Operations Group (Singapore)

TDY – Temporary Duty

TCP – Transmission Control Protocol

TOS – Terminal Operating System

U.K. – United Kingdom

UAE – United Arab Emirates

UKAEA – United Kingdom Atomic Energy Authority

UPS – Uninterruptible Power Supply

U.S. – United States

VACIS – Vehicle and Cargo Inspection System (SAIC imaging device)

VAT – Value Added Tax

^{3}He – Helium 3

^{239}Pu –Plutonium- 239

^{235}U –Uranium- 235

^{241}Am – Americum 241

Appendix A

Foreign Government Review of SFI Program

HM Revenue & Customs

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Date 7 March 2008
Our Ref
Your Ref

Richard

Secure Freight Initiative : Southampton : United Kingdom (UK) and European Union (EU) contribution to the interim evaluation report to Congress

As agreed, I attach the UK and EU contribution to the interim report on the Secure Freight Initiative. In particular, the trial in Southampton, and more generally the implications for the concept of 100% scanning at export to be used on a global basis.

As the Southampton trial nears it's ending under the current operating procedures, we will be starting work on a more considered evaluation report with our EU colleagues. My understanding is you are working to a June 2008 date for having that completed, and your confirmation of this would be helpful.

Once again, I want to say how impressed we have been by the willingness of US Customs and Border Protection and the US Department of Energy to facilitate access to the Southampton trial so we can make our own judgements about the concept, and to engage with you openly about the merits and demerits of 100% scanning at export. There will be a lot more debate about this subject, but I think we have already learned much from the experience of the last year.

Regards, and good luck with putting your report together,

Mike

Information is available in large print, audio tape and Braille formats.
Type Talk service prefix number – 18001

Secure Freight Initiative (SFI)

Contribution of the United Kingdom(UK) and the European Union (EU) to the interim report to Congress on the trials of 100% scanning as mandated in the US SAFE Port Act of October 2006.

1. Background

1.1 The US SAFE Port Act of October 2006 introduced the concept of 100% scanning for radioactive materials, the point of export , of US bound containers at foreign seaports through which containers pass or are transhipped to the US. The Act called for trials to take place at selected sites around the world to test the feasibility of the concept, and for US Customs and Border Protection to provide an evaluation report to Congress on completion of those trials in April 2008. One of the sites selected was Southampton Container Terminal in the United Kingdom (UK).

1.2 In consultation with the European Commission, the UK agreed to work with the port operator and relevant US authorities to facilitate a six month trial.

1.3 The concept of 100% scanning is different to the methodology used by the member states of the European Union (EU) to control their external border. Rather, EU controls are targeted on the basis of a risk management approach. This will include the requirement to undertake scanning of selected consignments when the nature of the risk justifies bearing the cost and resource time of the activity.

1.4 The agreement to facilitate a trial was made on the basis that we believed the US was right to test the feasibility of the concept and to report to Congress before making decisions about the future of 100% scanning. And we should:

- see for ourselves what the concept of 100% scanning meant in practice,
- identify operational difficulties and either find ways to overcome them or develop alternatives,
- use the opportunity to engage with our US colleagues to argue the benefits of a risk management approach.

1.5 There were conditions attached to our agreement for the trial to take place, to which the US authorities readily agreed:

- the security of the UK must take priority over US needs,
- we could give no open-ended commitment to support the trial with operational resources,
- exporters must not be disadvantaged but derive benefits, and
- the free flow of traffic through the port must be maintained.

1.6 In August 2007, after agreement to the trial had been given but before it started operations, the President Bush signed a law based on recommendations from a US 9/11 Commission report. This mandated 100% scanning of US bound containers at all foreign port before they are loaded on a vessel; with a deadline for implementation of July 2012. This changed the context within which the trials were taking place from one of testing the feasibility of the concept, with the possibility of collaborating to find the best way forward, to being a precursor of something that was being imposed irrespective of the evidence.

1.7 This EU contribution to the evaluation report therefore addresses not just the practical effects of the Southampton trial, but also the wider views about the implications of imposing 100% scanning on all US bound containers.

2. The Southampton trial

2.1 Dubai Ports World, 51% stakeholder in Southampton Container Terminal, offered to partner with US Customs and Border Protection in the Secure Freight Initiative. H M Revenue and Customs, the competent UK authority were approached to seek their agreement to facilitating the proposal.

2.2 In the European Union, competence for the issues covered by the Secure Freight Initiative is shared. Counter-terrorism and border security is a national responsibility. Trade issues, and the Community Customs legislation relating to trade, is a Community issue. The UK decision to facilitate the Southampton trial was taken in consultation with European partners.

2.3 The factors involved in the decision making process, though varied, can be put into four broad categories.

Politics:

Any decision involving a UK government department facilitating a trial is ultimately a matter for politicians. However, in the case of SFI, there was also the need to recognise that the key decision, that of being the physical host for the trial, would be a commercial one to be made by the port operator.

The issue of being even-handed was important. The trial should not put Southampton in an unfair competitive position in relation to other UK ports, and ports in other member states of the European Union.

There was a need to determine whether the main effects of the trial were in the area of security, or on international trade. This was important as it could affect where the political lead was, and therefore what the key drivers would be in the decision making process. Though the precedent of the Container Security Initiative provided a strong case for keeping this within the competence of Customs as a supply chain security issue, the 100% scanning element of the Secure Freight Initiative had the potential to seriously affect the free movement of international trade. The area of greatest impact would determine what drove the decision making.

Logistics:
Traditionally, controls on the international movement of goods are made at import. Southampton, as with other ports, is therefore configured to cope with that, and facilities for the control authorities are geographically sited in accordance with that process. Whereas for export consignments, there is no call for the provision of space or facilities where these arrive at the port. In the European Union (EU) the export declaration is lodged and dealt with by European Customs administrations at the office of export which is situated inland before the goods are brought to the external frontier to be exported from the EU. Scanning at export thus creates the need to reconfigure the port, or find more land to accommodate the extra processes.

Law:
Data Protection Law in the UK and the European Union strongly affects how and when the exchange of information can take place. The existence of the Customs Cooperation and Mutual Assistance Agreements between the European Union and the United States provided gateways for the official exchange of information where there were suspect consignments. But it was more difficult to develop a lawful methodology that allowed the US authorities to get the basic information they needed on every consignment to make the Secure Freight Initiative compliant with the SAFE Port Act.

There was a need to satisfy UK Health and Safety law. The drive through nature of the x-ray scanning in the Secure Freight Initiative was a pioneering process for the UK. There was no precedent to draw on to determine whether the process would be compliant, and the risk assessment procedure had to be robust enough to withstand the inevitable challenges that all new ideas have to face. In the event, the process passed the test. But for some time it remained a potential showstopper for the whole project.

The handling and disposal of radioactive material is tightly regulated in the UK and, depending on the nature of the radioactivity, a number of regulatory bodies have an interest. Under normal circumstances, though H M Revenue and Customs exercise control on goods at import for a wide range of reasons, they not have the same degree of power to detain goods at export for non-customs related issues. So a series of innovative protocols had to be formulated with the competent authorities.

The resources:
A commitment to facilitate a trial brought with it an implication to provide support, not just in terms of political agreement but also the deployment of personnel. There were two main challenges here. Support to the Secure Freight Initiative did not figure in any resource allocations, and such staff that could be acquired for the period of the trial would need specialist training.

Deploying staff on Secure Freight Initiative duties would at the same time dilute the ability to deliver on agreed priority targets elsewhere. In particular, the interdiction of class A drugs and the illicit importation of cigarettes.

Finally, the blending of staff resources from three different stakeholders (US Customs and Border Protection, H M Revenue and Customs and the terminal operator) presented unique challenges of itself.

2.4 The willingness of all the stakeholders to want to make this work in order to properly test the feasibility of the concept was an important driver in overcoming the obstacles presented by the various issues. However, it has to be noted that the fact this was a time limited trial was in itself a great enabler. Some of the solutions that have been developed in order to test the feasibility of the concept cannot be seen as acceptable on a permanent basis. (For example: H M Revenue and Customs would not provide a permanent resource. The use of the heavy hand held readers without proper long term access infrastructure would offend UK Health and Safety law, as could the current configuration of sanitary facilities in the Control Alarm Station).

2.5 Southampton Container Terminal is a relatively small operation, with a single figure percentage of traffic going to North America. It manages it's own port inventory systems, and has recent experience of working with Customs authorities to put in security related systems. It also has regular users who are well versed in the vehicle booking system that is used by the port to manage the flow of traffic arriving for export. As a test bed for the concept, the port was an ideal choice.

2.6 Even with the demanding schedule which effectively meant that there were only five months available from putting the infrastructure in place to implementing the trial, the start date of 13 October was met for trucks and rail traffic. There were logistical problems with developing a solution for identifying and scanning transhipment traffic, but these were eventually resolved in order to give stakeholders sufficient experience to test the process.

2.7 At the time of writing this contribution for the interim evaluation report more than 90,000 containers had been through the radioactivity scanning process, generating more than 1,100 alarms (fewer than 300 of which were US bound). The majority of the alarms were resolved quickly, usually by reference to the consignment information provided by the port inventory system, as being within the normal limits of radioactivity expected for the commodity being shipped.

2.8 On 21 occasions there were checks made using mobile scanners or radioactivity detection units because of failures of the static equipment.

2.9 There was a small number of calls made to the Radioactivity Protection Adviser (RPA) to seek advice following alarms. The main reasons for doing this were down to knowledge gaps when trying to reconcile the isotope identification to the description of the load, and where the alarm was suspected to have been caused by a neutron source. All neutron alarms are routinely referred to the RPA, and those occurring during the trial were found to be false.

2.10 The trial attracted attention from around the world. As well as delivering operational outputs, it also showcased the concept to a range of visitors. In the main from Customs authorities, but also from a range of government delegations interested in trade and security, and from port operators wishing to see what the implications of 100% scanning could mean for them.

3. Assessment of the trial, and 100% scanning on a global basis

The successes

3.1 *Working in partnership.*
Even though the scale of the trial in Southampton was limited, it produced very real successes. The nature of the trial, and the time constraints involved, meant that the key stakeholders (US Customs and Border Protection and Department of Energy, Southampton Container Terminal and H M Revenue and Customs) faced significant challenges to make this work. The fact that they delivered underpins the two pillars of the World Customs Organisation's Framework of Standards to secure and facilitate global trade. Cooperation between customs authorities, and cooperation between customs authorities and the private sector.

3.2 *The effectiveness of the technology.*
The demands being made on the technology involved appeared ambitious to say the least. State of the art equipment was being used, a wide range of systems were being linked, and it had to support a pioneering 'drive through' process of scanning. There were inevitable teething problems, but nothing that could not be resolved during the period of the trial.

3.3 It has to be said that the technology delivered what was expected of it, and more. The anticipated 'innocent' alarm rate was approximately 6%. In the event the rate was well below 2%, thus easing the burden on the operational staff. Apart from the one alarm that resulted in disposal action being taken, and a handful of cases where expert advice was sought, all the others were resolved within minutes by reference to the port inventory or manifest information.

3.4 *Maintaining the free flow of traffic.*
A major concern was the potential effect that the trial would have on the free flow of traffic through the pre-gate area of the Container Terminal, with the implication of traffic backing up into surrounding residential areas. Though there is some evidence that there had been minor effects on the speed of traffic, there has been no third party corroboration. If traffic had slowed down, nobody appears to have noticed. Further, the evidence from port users is that they have had no problems with their consignments being shipped out through Southampton because of the trial.

The concerns

3.5 *Operational support – costs and benefits.*
H M Revenue and Customs dedicated 11 man years of operational resource to facilitating the trial in Southampton. A commitment that could not be sustained on a permanent basis. Supporting the Secure Freight Initiative, whilst contributing to the maintenance of good relations with US colleagues, is a distraction from the priorities of protecting the citizens and legitimate businesses of the UK from external threats.

3.6 The blanket approach of 100% scanning is in stark contrast to the risk targeted controls carried out under the US Container Security Initiative (CSI). The case by case decisions made

under CSI mean that intervention by the control authorities is proportionate to the risk, and taking action is justified. The Southampton trial has demonstrated that not just HM Revenue and Customs officials, but also US CBP staff are spending most of their time processing consignments that are entirely innocent. Long term, it is difficult to see how the deployment of expert public sector resources that produce no tangible results would be supported by any government.

3.7 Risk targeted control is also a principle that underpins two major World Customs Organisation instruments. The (SAFE) Framework of Standards to Secure and Facilitate Global Trade and the Kyoto Convention. Indeed, the SAFE Framework advocates the use of technology such as scanning to support a risk managed approach to control. What it does not advocate is that scanning drives the control effort.

3.8 *The effects on business – costs and benefits*
The Southampton trial was funded by the US authorities. We understand the cost to have been in the region of $18m. If 100% scanning were to be introduced globally, the costs would fall on port operators. And those costs would inevitably be passed on to the port users, the exporters. There are as yet no firm figures for the added costs per container for a Secure Freight Initiative operation. The trial is clearly an inadequate guide as those costs are only amortised over a six month period, but figures between $12 and $50 per container have been suggested in various commentaries about 100% scanning. For a vessel carrying 15,000 containers to the US, between $180,000 and $750,000 could be added to the supply chain costs, and passed on to US consumers.

3.9 Building up robust costing models is an important benefit of the 100% scanning trials under the Secure Freight Initiative. At this stage of the process we are better able to draw on credible evidence about the capital costs. But we cannot be equally as confident about the longer term running costs. There is still a long way to go before we are in a position to know what this will cost in reality; what, if any, are the quantifiable benefits; and whether it is worth it.

3.10 Under the terms of the Secure Freight Initiative, these extra costs were supposed to be balanced by enhanced facilitation. The burdens at export would be compensated for by speedy release on arrival in the US. To date, our exporters have not been able to find evidence that the promised benefits at import have been delivered.

3.11 *Scaling up*
The footprint and volumes at Southampton are small when compared to the major container terminals that serve the US. And though it is not necessarily the case that the increase in infrastructure has to be in proportion to the increase in traffic volume, it could be a serious obstacle. Southampton has three Radioactivity Portal Monitors (RPMs), one Advanced Spectroscopic Portal (ASP) and one x-ray scanner (NII). A configuration which has coped well with the traffic through the port.

3.12 But the port of Bremerhaven e.g. has fifteen times the number of US bound containers. And though there would be no need to multiply by fifteen the number of ASPs, as these are used on a small percentage of the traffic, there would need to be more RPM and NII scanners. This

will put pressure on expensive space, and demand extra staffing by US CBP to ensure that all the consignments are processed quickly and not allowed to back up. Is this an implication that has been fully thought through?

3.13 *Extrapolating the evidence from Southampton*
The trial has demonstrated that the Secure Freight Initiative concept can be made to work with the Southampton footprint and traffic type. But a number of factors that have contributed to that success will not be replicated elsewhere. This includes the motivation of the terminal owners to get involved and make the trial work, the regular community of port users, the usually predictable nature of traffic throughput, and the small percentage of non-standard vectors. (The majority of traffic is through trucking, with a low need to accommodate rail and/or transhipment traffic).

3.14 There can be no guarantee that the low 'innocent' alarm rate would be replicated elsewhere. Southampton has regular users and traffic type. And part of the achievement of the low rate was by factoring into the process the radiation emitting commodities that were expected to go through the system and to calibrate the equipment accordingly. A higher alarm rate, coupled with a higher throughput, would have implications for the amount of resource needed to manage the process.

3.15 We know there are SFI trials in other parts of the world, but it should be mentioned that Southampton has relatively benign weather. 100% scanning is technology dependent. And technology is has a reputation for being fragile in extreme weather conditions. Even within Europe, the technology would have to cope with heavy snow and winter temperatures of minus 20C in Sweden to over 40C and high humidity in Greece. We remain to be convinced that the successful deployment of the technology in Southampton can be repeated in all types of environment.

3.16 *Finding space and stacking boxes*
As well as needing extra space to put in scanning infrastructure there is a risk of exporters and shippers becoming defensive when using ports with 100% scanning, and building in safety margins by putting containers in to the facility earlier than is currently the case. Just in case something snags during the scanning process

3.17 Given the current policy at Southampton, this is a real risk. As part of their business model, they are generous with free standing time. And their customers do not abuse that. This is important for the operator as the facility is already at near full capacity. But it only takes a small shift to make an impact, leaving operators with a number of unwelcome options. Having to find more expensive land or having to stack higher.

3.18 Higher stacks bring two potential problems; exposure to the wind and risk of containers being blown off stack tops, and the risk of the extra weight being more than the reclaimed land can carry. (Because of where they are sited, it is inevitable that the majority of container terminals are on reclaimed land that has limitations on weight bearing capacity.)

3.19 *Delivering enhanced security*

A key purpose for adopting the concept of 100% scanning is to deliver enhanced security. This to be achieved by 'exporting the border' and carrying out checks as far up the supply chain as possible, and stopping dangerous material from moving. We are not aware of any of the other Secure Freight Initiative trials interdicting any suspect material, but the Southampton trial has found nothing.
(The non-US bound container of scrap metal contaminated with Cobalt 60 was outside safety limits, but not a security threat).

3.20 Whilst we do recognise that one reason for carrying out the scanning is to have a deterrent effect, we are not aware there was any proven risk before the trials started. So it cannot be argued that the absence of a detection of suspect material is proof of illicit action being deterred, or even displaced.

3.21 We have recognised for some time now that one of the most effective methodologies employed by a determined criminal (and for the purposes of this paper, terrorism related activity is classed as criminal) is the 'rip off'. At some point after controls have been carried out prior to shipment or embarkation, a consignment is compromised. At some point prior to controls being carried out on arrival, the consignment is intercepted by an accomplice and the offensive material is removed. The concept of 100% scanning does nothing to stop 'rip offs'.

3.22 *Over-engineering*
The advances in the technologies available are welcome developments. The continued rise in the numbers of travellers and the amount of goods moving internationally puts increasing pressure on the agencies responsible for managing borders. The two main ways of handling that pressure is to work in close partnership with law abiding travellers and businesses, and to use modern technology.

3.23 Where technology is brought in on a systematic basis to support a business process, this is the right way of doing things. But sometimes technology can be seductive, and instead of people saying 'how can technology support us in what we have to do?' they say 'can we think of a way of using this technology?' And there are elements of the 100% scanning approach that look like a search for a use for the technology. We are not against the use of the latest technology to scan at export, but would argue that the cost effective way to use it is when the risk management process justifies the activity.

3.24 The x-ray scanner in Southampton is more powerful than those normally used by customs authorities, yet the images produced appear to be little or no better than those from much less powerful equipment. Over-engineered technology can therefore add costs without commensurate benefit. In particular, given that for the purposes of 100% scanning, image resolution is not an issue. In the context of the Secure Freight Initiative, the search is for dense material that might be screening radioactive matter that was not picked up by the Radioactivity scanners. (Though we do accept that the image can be used at a later stage as part of the wider risk assessment process).

3.25 *Multi-modal facilities*

Though the majority of traffic through Southampton is trucked, there is a small amount of rail traffic. But not sufficient to justify the expense of dedicated scanning infrastructure. Though a logistical solution was worked up, it fell short of mirroring the smooth and automatic process that applies for trucks. This has implications for any port that has a multi-modal feed of containers to the facility. If each mode justifies it, then it would need it's own dedicated scanning infrastructure. If not, burdensome work arounds will have to be found. Either way this escalates the cost and resource implications.

3.26 *Transhipments*

For customs authorities, transhipments constitute a higher risk than direct port to port shipments. Though legally these goods are under customs supervision and may be controlled, the control intensity is often low. In particular where transfer is ship to ship. This can facilitate manipulation of the information about the consignment to hide the true origin of the goods and the routing they have taken. And yet this is probably the most difficult type of traffic to accommodate in a 100% scanning operation at the point of final shipment to the US. Compounded if the transhipments are multi-modal and coming in through road, rail, feeder ship and barges from inland waterways.

3.27 Transhipments presented logistical difficulties in Southampton, all of which were eventually overcome. But the solutions entailed the port operator having to put in an extra process to identify US bound transhipments, to allocate a dedicated area in the terminal for stacking and scanning, and to double handle the containers. It involved H M Revenue and Customs making staff and equipment available for pre-arranged times to carry out scanning operations, and to cover for US CBP staff who had to leave the normal scanning site. It involved US CBP staff using clumsy hand held scanners at a site remote from the normal scanning site.

3.28 It could be argued that the logistical problems of carrying out 100% scanning of transhipments at export are sufficient on their own to undermine the Secure Freight Initiative as an effective concept. It will be be quicker, cheaper and more effective to target such consignments for checks on arrival in the US as is now the case for land border traffic with Canada and Mexico.

3.29 *Legal obstacles*

In the US SAFE Port Act, the concept of 100% scanning at export in the country of shipment relied on the assumption that the laws of the partner country would readily facilitate the practice. This was not the case for Southampton. The three main areas of law that we had to find a way through were Data Protection (as it applied both to the Port Operator and to H M Revenue and Customs), the ability to exchange information (though related to Data Protection, there is added law placing demands on H M Revenue and Customs as a tax authority), and Health and Safety.

3.30 Though working practices that complied with UK and EU law were developed, they were not always particularly neat in design and application. Neither did they always fully satisfy what the SAFE Port Act was seeking to achieve. For example, the solution for transhipment traffic means that US CBP cannot have x-ray images from non-alarmed consignments. (They get their own data from hand held Radiological readers, and x-ray images from alarmed containers).

3.31 The implications for the US if 100% scanning is rolled out globally is that they will have to develop a variety of operating procedures to fit with the requirements of host country laws. Whereas continuing to use the Container Security Initiative (CSI) protocols can mitigate this in partner ports. Under CSI, agreed risk management procedures are followed, and if scanning is required, the host country authorities use their own laws and procedures to do this. The US then gets the product of this without the burden of having to support a variety of 100% scanning procedures.

3.32 But this still does not deal with what happens in non CSI partner ports. In the Southampton trial, though there was a real time link with the National Targeting Centre in Washington, the risk analysis was done in the UK together by US and UK officers. If 100 % scanning were extended globally, there would not be US officials in all the ports sending containers to the US. And moving outside the CSI protocols, certainly as far as the EU is concerned, could mean there are problems with the systematic exchange of data in order to carry out risk analysis.

3.33 The economic viability of smaller ports (feeder ports) through which containers are shipped to bigger ports where they will be loaded on the ocean going vessel to the US could be seriously impacted. For the bigger port, this will be transhipment traffic that is more of a nuisance to scan. This could mean them demanding that containers arriving on feeder vessels must be scanned in the port of departure, forcing a level of investment on the smaller port that it could ill afford.

3.34 An alternative effect could be that feeder ports are taken out of the equation altogether, with traffic diverting direct to the major gateway port. As well as putting small ports out of business, this would increase further the congestion within, and on access to, the main ports.

3.35 *Doing the terrorists job for them*

Terrorists do not only want to kill and frighten. Disrupting the way we do business and live our lives, forcing us to bear extra costs and undermining our economies, impeding global trade and growth; are all winners for them. The challenge for us is to protect our citizens and legitimate businesses in such a way that the terrorist can claim little success from how we do that. 100% scanning risks forcing us to making disproportionate changes to best business practice, could add unnecessary costs to the international supply chain without bringing demonstrable benefits, and introduces yet another trade barrier in general but especially to developing countries trying to grow by having ready access to global markets. keeping their populations poor.

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7 March 2008

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D.O. No.3 (12) ICM/2004/Vol-VI
GOVERNMENT OF PAKISTAN
REVENUE DIVISION
FEDERAL BOARD OF REVENUE
***

Islamabad, the 3rd March, 2008.

Dear Mr. DiNucci,

The possibility of threat to international supply chain or to national security of our international trade partners remains a grave concern to Pakistan Customs. It has been our constant endeavor to respond effectively to challenges that may pose threat to integrity and security of international supply chain. We, the Pakistan Customs, support implementation of all protective measures which may deter such a threat including 100 percent scanning of outbound cargo.

2. As you are aware that Pakistan Customs is among the first of Customs Administrations around the world who supported the concept of 100 percent scanning when U.S. Customs and Border Protection was given mandate to scan all U.S. bound containers. Pakistan Customs in collaboration with U.S. Customs and Border Protection established Integrated Cargo Control (IC^3) Facility at Port Muhammad Bin Qasim. This IC^3 Facility at Port Qasim was the first amongst the ports to implement Pilot Integrated Scanning System within 18 months of passage of SAFE Ports Act 2006. The IC^3 Facility became operational in mid- August 2007. Now all U.S. - bound cargo is being cleared after hundred percent scanning at IC^3 Facility. It is expected that a second scanner shall be installed at Port Muhammad Bin Qasim in 2008 enhancing the clearance capacity. Pakistan Customs is not only keen in enhancing capacity for clearance but also extending it to other Port Terminals in Pakistan.

3. We hope to continue improvement in our collaboration with U.S. Customs and Border Protection to achieve our common objective of security in light of experience with SFI pilot operations such as being run at IC^3 Facility.

With personal regards

Yours sincerely

(Muhammad Afzal Bhatti)

Mr. Richard DiNucci,
Director, Secure Freight Initiative,
U.S. Department of Homeland Security,
Washington,
United Sates of America.

MINISTRY OF TRANSPORT

IRS.474.1.003.0.0

3 March 2008

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Mr Richard DiNucci
Director, Secure Freight Initiative
US Customs and Border Protection
US Department of Homeland Security
Washington, DC 20229
USA

Dear Mr. DiNucci,

US CBP REPORT TO CONGRESS ON SECURE FREIGHT INITIATIVE PILOT

Thank you for your letter dated 15 February 2008 requesting for Singapore's inputs to the US CBP report to Congress on the Secure Freight Initiative Pilot.

As you have pointed out, Singapore's inputs will help the US CBP effectively evaluate the feasibility and effects of conducting 100% scanning of US-bound containers. I am happy to attach Singapore's inputs for inclusion into CBP's report. I would also like to thank you for allowing our report to be attached as an unedited appendix to the overall US CBP report to Congress.

As you are aware, Singapore has not started operational testing, which currently is expected to only commence some time in May/June 2008. Notwithstanding the delay in the implementation of the operational testing, I believe that the experiences of both the US and Singapore teams in dealing with the related implementation issues as part of the preparation, will provide useful lessons for the SFI Pilot. Furthermore, the Singapore report has also looked at how 100% scanning can potentially impact the port in terms of cost and efficiency, which will eventually translate into cost to consumers.

Singapore remains committed to working with the US on this SFI trial as a non-pilot port. We look forward to working closely with the US SFI Team assigned to Singapore and to the start of the 6-month trial in Singapore from May/June 2008.

Yours sincerely

CHUA CHONG KHENG
Director, International Relations and Security
Ministry of Transport, Singapore

SINGAPORE SECURE FREIGHT INITIATIVE (SFI) TRIAL
PRE-TRIAL IMPLEMENTATION REPORT

AIM

1. This report aims to provide the US CBP with the findings and lessons learnt from Singapore's experience in the process of preparing to implement the US SFI trial to evaluate the feasibility of conducting the 100% scanning of US-bound containers, especially where there is expected impact on the level of port efficiency and costs.

BACKGROUND

2. The US Customs and Border Protection (CBP) approached Singapore in November 2006 requesting Singapore's participation in a new US initiative to scan all US-bound containers prior to their arrival in the US. Subsequently termed the Secure Freight Initiative (SFI), Singapore agreed in December 2006 to participate in the programme in a limited capacity. Singapore's objective for agreeing to the US CBP's request was to work with the US to evaluate the feasibility of conducting scanning on 100% of US-bound containers in a high-volume transshipment and hub port like Singapore, which handled about 28 million Twenty-foot Equivalent Units (TEUs) of containers in 2007. Due to the potential impact of the trial on the port container operations, it was agreed with the US CBP that the trial be limited to the terminal on Pulau Brani [operated by PSA Corporation (PSAC)] and only involve containers shipped by APL, with the quantity of containers scanned being progressively increased during the trial.

3. Singapore started planning with the US Team from January 2007. Implementation of the Singapore trial was originally scheduled for January 2008. However, in December 2007, in order to provide for the possibility for the equipment to be removed at the end of the trial, the US CBP decided to deploy mobile and re-locatable Non-Intrusive Inspection (NII) and Radiation Portal Monitors (RPM) systems for the trial instead of fixed portals as originally proposed. This change in equipment resulted in a delay to the start of the trial which is now expected to be around May/June 2008.

4. As a result of the delay, the Singapore SFI trial would not be able to provide operational trial data to be included in the scheduled April 2008 Congressional report (as mandated by the SAFE Port Act). However, it was agreed and acknowledged that despite the lack of operational data, Singapore's experience in preparing to implement the SFI trial would still be valuable in giving Congress a better understanding of the initial operational impact and challenges of implementing 100% scanning of all US-bound containers in a busy hub port.

SINGAPORE'S EXPERIENCE

5. Infrastructure Issues. The Port of Singapore is a relatively mature port. Most, if not all its available land is either already used or unsuitable to be the SFI trial site. To accommodate the SFI trial, PSAC gave up an existing container yard[1] and as the SFI trial will be implemented at a time when PSAC's container handling volume is increasing by more than 12%, the yard space committed for the SFI trial carries a high cost premium. For the purpose of the trial covering a total of 10 months[2], the cost of leasing the land is approximately US$0.5m. Similarly, there will also be considerable cost involved in setting up a tertiary inspections site for the trial, which is still being estimated.

6. Port Operator Issues. Supporting the SFI trial involves significant cost to the port operator. Over the year of planning meetings and supervision of the preparatory works for the SFI trial, PSAC has had to assign several staff to ensure that the necessary works to support the trial are completed satisfactorily. Besides the land issues, other expenditures incurred by PSAC included the cost of modifying PSAC's IT system to manage container operations, the operational cost of deploying extra Prime Movers (PM) to support SFI scanning, as well as additional utility costs. PSAC has estimated a sum of more than US$1.5m[3] to support the one year planning and 6-month trial.

7. Security Issues. To assist US CBP officers at the Central Alarm Station (CAS)[4] to direct containers for secondary and additional inspections, the Singapore Government will be employing auxiliary police officers (APO) to work with the US CBP officers. As US CBP officers have no legal jurisdiction to request a container in Singapore to undergo inspections, these APOs are bestowed with limited police powers to facilitate authorization for such inspections as required. For the purpose of the 6-month trial, the Singapore Government will be committing about US$0.4m to engage the APOs.

8. Cost of Implementation In summary, the cost of implementation of a limited 6-month trial in Singapore; at one terminal with one system will already cost more than **US$2.4 million**. The potential cost of implementing a 100% scanning system to cover all four terminals in Singapore together with the operating cost of conducting the scanning, will therefore be many times higher.

Impact on Port Efficiency and Logistics Cost

9. Increased Cycle Time The planned concept of operations for the SFI trial in Singapore is to scan the US-bound transshipment containers upon discharge

[1] Although the identified container yard was for empty containers, it is nonetheless a commercial site and empty containers still require a space to be stacked.
[2] Inclusive of a 4-month installation period and a 6-month trial (total 10 months)
[3] Inclusive of IT cost of about US$830,000 which is borne by the US.
[4] The CAS is the control station overseeing the overall SFI operations at the SFI trial site.

from the feeder vessels when they arrive at PSAC. With the need to now scan the containers, the port operators will need to establish new routes for the PM to transport the US-bound containers to the SFI scanning site. On average, the Prime Movers[5] (PM) may travel up to 4km from the discharging berth to the container stacking yard, where these containers will await its connecting ship to the US and back to the feeder. However, because of the need to now divert the PMs to the SFI scanning site, another 2km will be added to the traveling distance of the PM. This translates to the cycle time of the PM which is increased from an average of 9.6mins to 14.4mins (refer table below). This represents a **50% increase in handling time and cost** of the container.

	Travel Distance	Cycle Time
No SFI scanning	4km	9.6mins
SF scanning	6km	14.4mins

* Travel speed at 25km/h

Table 1 - Increased container handling time

10. Reducad Container handling rate Based on an average assignment of 5 PMs to support one quay crane, and three quay cranes to unload a feeder vessel with 300 containers[6], without SFI scanning and with a cycle time of 9.6min, 5 containers are discharged off the ship by each quay crane every 9.6 mins[7] or 31 containers/hr/cuay crane. However since the PM cycle time with SFI scanning is increased to 14.4mins, the container handling rate per quay crane will be reduced to 21 containers/hr/quay crane[8]. This represents a **drop of 32.2% in the container handling rate** per quay crane and has implications for the port operator's deployment of quay cranes within its terminal and its ability to provide fast turnaround times to its customers.

11. Increased Berthing time and wharf charges Using the same scenario as above, before SFI scanning, each quay crane has a handling rate of 31 containers/hr. With 3 quay cranes working the ship, the load of 300 containers can be cleared in 3.2hrs[9]. With SFI scanning, the handling rate will drop to 21 containers/hr. To clear 300 containers would therefore take 4.8hrs[10], equivalent to **50% more time at berth and a proportional 50% increase in berth charges.** This will affect the carriers' deployment of vessels and their cost of running container liner services

12. SFI Scanning rate and capacity Given the layout of the SFI equipment to be installed at the Brani Terminal, it is estimated that it would

[5] Prime Movers are the trucks that are used to tow the container trailers around the port
[6] Assuming the feeder capacity is 300 containers and all 300 containers are US-bound
[7] This does not consider the cycle time of the quay crane which is constant with or without SFI
[8] 5 containers discharged every 14.4mins/quay crane => 21 containers/hr/cuay crane
[9] 1 x quay crane discharges 31 containers/hr, 3 x quay cranes discharges 93 containers/hour. 300 containers discharged in 300/93 = 3.2hrs
[10] 21 containers/hr/quay crane, 3 x quay cranes => 63 containers/hr, 300 containers => 4.8hrs

take about 2min for a PM to drive through one set of SFI equipment[11], have its imaged analysed and then cleared to continue. On the assumption that there is no alarm raised for both the RPM and NII scans, one set of SFI equipment can scan 30 containers/min or 720/day in a continuous scanning mode. PSAC handles an average of 1000 US-bound containers a day, with peaks of up to 1500 containers over its four container terminals. At a minimum, **four sets of SFI equipment** and their ancillary infrastructure will need to be installed, one set at each of PSAC's four terminals, if 100% scanning of US-bound containers is to be implemented. Some of these four terminals handle higher volumes of US-bound containers and may thus require more than one set of equipment.

Legal and Liability Issues

13. Party to Bear the cost of tertiary inspections and delays Given the need for "suspect" containers to undergo additional inspections, there is a possibility that some of these containers may miss their onward connections. In the event of a tertiary inspection required by the US CBP, a minimum of about 8hrs is required to complete the inspection. Currently, some transshipment containers spend no more then 4 hrs in transit before catching their next connection. As such there is the likelihood these transshipment containers would miss their onward connection. In such cases, if the "suspect" container is found to be clean, the cost of the delay and the associated liabilities will need to be borne by one of the parties concerned. The accountability for this has not been established but will have to be worked out in the event of full implementation.

14. Cost of damage to cargo. In the event that suspected cargo is damaged during tertiary inspection required by the US CBP officers and is subsequently found to be clean, the cargo owner and/or shipper will have the right to claim compensation from the US Government, as the inspections are ordered by US CBP officers.

Policy Issues

15. Duplication with Container Security Measures. Singapore is already a participant of the US Container Security Initiative (CSI)[12] since 2002, and the Megaports Radiation Detection Initiative (RDI) [13] since 2006. The SFI programme adds yet another layer of container security measures. The similarity and overlap in processes among the three programmes operating within the ports of Singapore will not only result in a significant amount of inefficiency and wastage of resources, it will also disrupt container trade. These programmes will have to be rationalized to remove duplication of effort and resources if there is to be full implementation of 100% scanning.

[11] 1 set of SFI equipment comprises 1 x RPM and 1 x NII

[12] Under the US DHS CSI programme, US CBP officer conduct risk assessments of US-bound containers and target those identified as high risk or suspicious for x-ray scanning as they transship through Singapore.

[13] The Megaports RDI programme is managed by the US DOE and involves the scanning of containers for radiological material.

16. Impact on other Supply Chain Security Programmes. The World Customs Organisation (WCO) has advocated that countries adopt a risk based approach to container and supply chain security and to establish a domestic supply chain security programme. The US CBP similarly established an effective Customs-Trade Partnership Against Terrorism (C-TPAT) programme, requiring US companies to practice and comply with security measures at their premises. Many other countries have also started on or already have operational domestic supply chain security programmes. 100% scanning, which adopts a blanket approach to container security, runs counter to the increasing adoption of such programmes and what the WCO has been advocating.

CONCLUSION

17. Singapore is firmly committed towards international efforts to ensure the security of containers against possible terrorist exploitation. Our commitment in this area is reflected in our participation in the various US initiatives to secure maritime shipping against terrorist acts, such as RDI and CSI, as well as through multilateral approaches, such as the APEC total supply chain security initiatives.

18. PSAC has been successful as the world's largest container port only because it provides a high level of efficiency and at a competitive price. This report has listed some of the initial challenges encountered in the planning and implementation phase of the Singapore SFI trial, especially its impact on infrastructure requirements, costs, port efficiency, legalities, as well as broader policy issues. As seen in the preceding paragraphs, we envisage a 50% increase in operational time and cost and a 32% drop in container handling efficiency. It is hoped that the issues highlighted in this report will provide Congress with a better understanding of the initial operational impact and challenges encountered in setting up the 100% scanning system. Singapore looks forward to providing a comprehensive report after the trial to enable the US to fully assess the feasibility of implementing the 100% scanning requirement in high-volume transshipment ports.

Prepared by: Ministry of Transport
Singapore

Draft as at: 28 Feb 08

The ROK's Participation in the U.S. SFI pilot Program

March 21, 2008

□. Introduction

The government of the Republic of Korea (ROK) recognizes that the Secure Freight Initiative (SFI) serves to prevent terrorists from using nuclear or radioactive materials for the purpose of an attack by enhancing radiation detection capability, thereby contributing to the strengthening of international efforts for WMD non-proliferation. In this context, the ROK government decided in December 2006 to participate in the SFI pilot program at the Hutchison Gamman Container Terminal in Busan, responding to the proposal of the U.S. government. The decision to participate was also prompted by the belief that it would serve to strengthen the ROK-US alliance.

□. Background and current Status of the ROK in the SFI pilot Program

In order to embark on necessary arrangements for the successful preparation for the trial operation of detection equipment as part of the SFI pilot program, the Korean government formed a Task Force Team in April 2007, comprising representatives from seven governmental bodies such as *the Ministry of Foreign Affairs and Trade (MOFAT), the Korea Customs Service (KCS), the Ministry of Education, Science and Technology (MEST), and the Korea Institute of Nuclear Safety (KINS)*. The Task Force Team conducted various activities such as holding nine Task Force Meetings and dispatching a delegation in August 2007 to Southampton, the United Kingdom, where SFI equipment underwent the installation process for trial operation.

Three types of equipment were provided by the U.S. government in 2007: radiation detection equipment (portal monitor), non-intrusive inspection equipment (NII, x-ray equipment), and hand held radiation detection equipment. The Task Force Team has performed inspections of the x-ray equipment to ensure cargo driver safety. The x-ray equipment was inspected by *Korea Institute of Nuclear Safety (KINS)* and subsequently authorized in early March 2008, by *the Ministry of Education, Science and Technology (MEST)*. After the approval, the Task Force Team held a presentation on March 13, 2008 to provide general information on the SFI and the safety of NII, inviting

labor groups, businessmen, news reporters, and other concerned groups. *The US Bureau of Customs and Border Protection* and *the Science Applications International Corporation (SAIC) also* took part in the presentation.

The installation of radiation detection equipment (portal monitor) was completed in December 2007. The installation of NII is expected to be completed by the end of March, far behind the original schedule. The delay of installation of the NII was caused by the delay of the safety inspections due to the SAIC's late submission of documents which were necessary for the safety test. As a result, the pilot operation is now set to commence in late April 2008.

□. Concerns Raised in the Course of the Preparations

Despite all the progress made by the Task Force Team, some problems have arisen in the course of preparations for the operation of the SFI pilot program.

First, cargo drivers working at the Hutchison Gamman Container Terminal have expressed serious concerns with respect to the safety of NII, as it is inevitable that they are exposed to X-rays when they drive through the NII. The union of cargo drivers even raised the possibility of refusal to drive through the NII as of March 21, 2008. In this regard, there is a need for the US government to strengthen its participation in publicity activities on the NII's safety assurances for cargo drivers and equipment operators.

Second, according to the ROK-US MOU, the operation of the SFI pilot is scheduled to conclude in April 2008. However, due to the delay in the preparation process, the trial operation is expected to commence only in late April 2008. Since the MOU does not cover the period beyond April 2008, there is a need for consultations between the two governments on the MOU for the extension of the operation period. It will allow the trial operation for several more months, which is necessary to identify problems in the course of equipment operation.

Third, in the case of the full implementation of the SFI program by July 1, 2012, as *The Implementing Recommendations of the 9/11 Commission Act of 2007* stipulated, at least 20 sets of SFI equipment should be installed in the Port of Busan alone to

process the same quantity of containers bound to the U.S. as in 2007. Moreover, as the trade volume between the ROK and U.S. increases, there will not be enough space to install the total necessary radiation detection and x-ray inspection equipment at Busan Port.

□. Proposals to the U.S. Government

Taking into account the concerns set out above, the ROK government would like to make the following proposals for the U.S. government's consideration in its SFI implementation strategy.

First, there is a need for the U.S. government to provide further necessary assistance to the countries participating in the SFI in the event of the full-scale execution of the SFI. The participating countries should bear a considerable financial burden for purchasing and operating the equipment if the U.S. government does not provide financial and technical assistance. Considering that the SFI was initiated by the U.S. government for its security by strengthening the security of maritime cargoes bound to the U.S. port, it is fair for the U.S. to undertake a major portion of the burden caused by the full-scale execution of the SFI.

Second, the ROK government hopes that the U.S. government will continue to provide countries participating in the SFI pilot program with information on the progress in its SFI pilot operation program, schedule and strategy for the full-scale implementation of the SFI, and convey other relevant information.

Finally, it is important that the SFI should be conducted in such a way as not to disrupt the flow of cargo traffic when the overall implementation of the SFI commences. According to the SFI principles, cargoes not inspected in the outport will be inspected in the arrival port in the U.S. There is therefore a possibility of traffic congestion in the outport or arrival port since physical barriers and traffic signage will be used to regulate the flow of traffic through the various stages of the detection process. As the congestion of the cargo flow may result in an economic loss to both exporters and importers, swift cargo flow is recommended. It is also important that SFI should not serve as a measure of trade barrier during the cargo inspection in U.S. ports. In other words, the detecting procedure in U.S. port should not be applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination, such as non-tariff barrier.

In conclusion, the ROK government would like to take this opportunity to reaffirm its willingness to render its cooperation to the U.S. government in the conduct of the SFI program. The ROK remains fully committed to the international efforts for WMD non-proliferation. /End/

Secure Freight Initiative : Pilot in Hong Kong

As a major business hub and one of the busiest container ports in the world handling a large volume of US-bound goods[1], Hong Kong fully recognizes the importance of enhancing the security of the global maritime trading system through international cooperation. Hong Kong is one of the first ports to sign on the US' Container Security Initiative (CSI) in partnership with the industry which submits cargo data to the US 24 hours in advance. Hong Kong also maintains close cooperation with the US Customs which recognizes Hong Kong as a model for CSI implementation.

2. On the other hand, Hong Kong needs to ensure that the pursuit of port security measures should not impede legitimate trade and the efficient operation of our port.

The Pilot

3. On 27 July 2007, the Government of the Hong Kong Special Administrative Region (HKSARG) and US Government (USG) exchanged letters of understanding on launching, under the US Secure Freight Initiative (SFI), a pilot in Hong Kong limited in scale and duration. The objective is to utilise radiation detection, imaging, and related equipment to scan maritime cargo containers to help detect and interdict illicit trafficking of special nuclear material and other radioactive material destined for the US.

4. Under the pilot, containers bound for the US delivered through the in-gate of a designated terminal run by the Modern Terminals Ltd. (MTL) were subject to scanning on a voluntary basis by the Integrated Container Information System (ICIS). As agreed with the USG, the Hong Kong Customs and Excise Department is responsible for any enforcement actions, including alarm adjudications, against any suspected illicit trafficking detected. To implement the pilot, the USG provides technical assistance in the form of equipment (including a Central Alarm Station and related communications equipment, and handheld detection and other mobile devices), materials, training and services for use at the designated terminal. The ICIS system is operated by the MTL. The pilot is scheduled to end on 30 April 2008.

5. The pilot began its test run on 19 November 2007. At the beginning, the ICIS system malfunctioned on a fairly frequent basis. From 19 November 2007 to 10 January 2008, it was shut down for 450 hours, spreading over 29 days out of this period of 52 days. This represents a breakdown rate of 35.6%. From 11 January 2008 onwards, the manufacturer of the machine strengthened its on-site technical support to the MTL. Since then, the equipment has been operating properly. Given the need for test run and making allowance for teething problems at the inception stage, only the data collected since 11 January and up to 24 February 2008 are used for the purpose of analysis in this report.

[1] Hong Kong handles 11.5% of all US-bound shipments and 9.3% of all US-bound cargoes, according to US Customs and Border Protection.

6. During the material period, a total of 8,029 containers bound for the US went through the designated in-gate. Of them, 2,416 were scanned. The average scanning rate was 30%. A total of 33 alarms were recorded, representing an alarm rate of about 1%. The alarms were resolved either after data and image analysis or on-site secondary inspections conducted by the Hong Kong Customs and Excise Department with the aid of handheld equipment. A total of 10 secondary inspections were carried out. All were found to be low-risk alarms, triggered by either the presence of naturally occurring radioactive materials (such as ceramics or granite) or background radiation. No special nuclear/radioactive substance fit for the production of weapons of mass destruction was detected.

Observations

7. Having regard to Hong Kong's situation and relatively short experience in conducting the pilot thus far, we would suggest that the following factors should be given due consideration in examining any initiatives on port security -

(a) **port efficiency and cost** : the implementation of any new port security measures should not unduly affect the efficiency of the port or impose onerous costs on traders/businesses. Given Hong Kong's very high container throughput (24 million TEUs annually), limited land for terminal operations and the keen competition on port services within the region, port efficiency is an important factor underpinning our status as a major logistical hub. In considering the cost and benefit of any port security initiative when applied to Hong Kong, it is also relevant to bear in mind that Hong Kong is a safe port, as demonstrated by the non-detection of suspicious nuclear/radioactive substance in the pilot;

(b) **practicalities** : the geographical location of Hong Kong and its comprehensive shipping network makes transshipment an essential feature of our port operations. Transshipment accounts for nearly half of the total volume of cargoes passing through Hong Kong's port, with a substantive portion involving transfer of containers between local barges and river trade vessels at the quayside without going through the in-gate. The practicability of subjecting these transshipment cargoes to scanning would need to be considered;

(c) **tangible benefits for participation** : to get traders/businesses on board, it would be important to provide tangible benefits to participants by way of, for instance, greater facilitation in cargo clearance when the cargoes arrive at the US ports. This would be the most effective method to secure the goodwill and full cooperation of traders/businesses;

(d) **data ownership, legality and liability** : industry stakeholders have raised questions on the detailed rules governing data ownership, legal frame and terminal liability arising from the scanning. These would need to be addressed in any long-term port security arrangement; and

(e) **equipment** : the importance of having functionally reliable scanning equipment could not be over emphasized. It must also meet the health standards of host governments and the concerns of users, particularly those of truck drivers (in Hong Kong, truck drivers may go through the scanning system more than once every day; concern has been expressed regarding the long term effects of frequent exposure to radiation on health).

8. The limited pilot in Hong Kong has been in operation for a short while. While it provides useful reference about the technical reliability and capability of the ICIS, the full implications of the SFI (including its impact on port efficiency, cost and health implications on the industry, ownership of the data collected and terminal operators' liability, safety of the equipment used, facilitation in cargo clearance at the US ports, workload on customs authorities, cost-effectiveness etc.) are not yet clear at this stage. These issues would become even more critical if the scanning is to be done on a wider scale and mandatory basis.

Government of the Hong Kong Special Administrative Region
April 2008

Appendix B

Terminal Operator Review of SFI Program

Mar 07 08 04:52p p.2

HPH

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Gary D. Gilbert

Richard DiNucci
Director, Secure Freight Initiative
U.S. Customs and Border Protection
Washington, D.C.

March 7, 2008

Dear Mr. DiNucci

Thank you for soliciting the views of Hutchison Port Holdings relative to the Safe Port Act of 2006 and the Homeland Security Act of 2007, specifically as they relate to the Secure Freight Initiative and 100% scanning respectively.

Hutchison Port Holdings (HPH) is the largest container port operator, with 46 locations globally and having handled over 65 million containers in 2007. We take security very seriously for the welfare of our associates, customers and shareholders. HPH's facilities are critical infrastructure for the global supply chain. A terror threat on this infrastructure is very real. Containers arriving at our facilities are being taken at face value that the manifested cargo information in them is true and has not been tampered with. We know this to be a fallacy by the various seizures of drugs and other contraband found in containers. In other words every container coming into the global container terminals is a "Trojan Horse". HPH believes taking the images and having radiation scanning of containers is good security.

HPH and other container terminal operators have been testing technologies for imaging and radiation scanning. HPH facilities have imaged over 1.5 million containers and radiation scanned more than 7 million. HPH has found that 100% inspections at our gates of our larger terminals (where the majority of the containers are received) are fast, reliable, cost effective and the technology is available. We have evidenced that with our private sector work with the Integrated Container Inspection System (ICIS) and also with the present deployments of the Secure Freight Initiative (SFI). In regard to SFI, HPH would like to commend your personal work with us and that of Todd Horton in the field. That commendation also goes for your partners in SFI, they being the NNSA and in particular David Huizenga.

HPH wishes to see no backing off from complying with the 9/11 Act for scanning 100 percent of all U.S. bound containers at foreign ports of lading or relay ports by 2012. In HPH's view, there are challenges and solutions that need to be addressed in the period leading up to this deadline. Some of them are as follows:

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- Scanning at Transshipment Points..... Of the often cited 600 ports shipping containers to the U.S, few are sending these containers directly, as most are fed into large transshipment ports. With an ability to have100% inspections for transshipment containers, a solution is found to alleviate the burden on small exporting ports of having scanning equipment. This is due to fact that the inspections are not at the lading port but at the transshipment ports. HPH believes that technologies for inspections of these containers need to be fed R&D seed monies to solve this operational requirement.

- Funding .....Presently the SFI pilot is funded by the U.S. Government and the budget for 2008 is only USD $ 15 million dollars. There needs to be a transition to have the private sector to manage the 100 % screening activity and feed data that is collected. The private sector would in turn provide the capital for the equipment and operating funds for its maintenance as well as data transmissions. These expenses would be recovered from fees placed on the cargo. Such a precedent is globally used for the recovery of expenses for implementation and operations under the ISPS Code.

- Standards... Without standards for imaging and radiation detection being established/given to the private sector, the private sector cannot engage the technology providers. Standards are needed regarding penetration and clarity/definition of the image. With this information the technology providers can engage and address the terminal operator's requirements such as flow through speed (minimum 200 containers per hour), power (energy levels and the safety issue that they bring), footprint (how much space does the equipment take from the terminal) and certainly cost.

- Policy ....In HPH's opinion, there is a large need to have USCBP to manage/create policy that allows engagement of the private sector. It appears to be clear to industry, that the private sector will be needed to provide the physical aspects of scanning, secondary inspections and data transmission.

The aforementioned points we believe are key to the success of 100% scanning. HPH looks forward to the future deployments of SFI and pleased that we are participating in Busan and soon to be in Hong Kong and Karachi as well.

HPH looks forward to the continued partnership and collaboration with USCBP in the rollout of SFI and reaching the 100% scanning mandate.

Respectfully submitted,

Gary D. Gilbert
Senior Vice President
Hutchison Port Holdings

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March 13, 2008

Richard DiNucci
Director, Secure Freight Initiative
U.S. Department of Homeland Security
Washington, DC 20229
United States of America

RE.: Modern Terminals Feedbacks on Secure Freight Initiative Pilot Program

Dear Richard,

In regards to your letter requesting for Modern Terminals feedback on the SFI program, we have the following comments:

Although the pilot officially began on November 19, 2007, Modern Terminals has been running the Integrated Container Inspection System (ICIS) since September, 2004. From a technical standpoint, we are satisfied with the system's performance and responsiveness. Additionally, our terminal operations have not been negatively impacted by having this system installed. The scope of the current pilot program only scan US bound containers when delivered to our terminal by truck. However, that only represents approximately ~30% of our throughput; we still have to address the ~40% of containers that come down to Hong Kong by barges and lighters. These containers being 'barged' down the Pearl River Delta come from the same hinterland as the ones being delivered down by trucks. Also, there are the remaining ~30% throughput that are being transshipped through our terminal. These containers typically come from smaller Asian countries without direct US calls. In general, the capabilities in these smaller Ports of Origin are limited. With Hong Kong being such an important hub in Asia, it would seem natural to establish capabilities in Hong Kong to scan these volumes destined to the United States as part of the pilot program. We are confident Hong Kong has the operational capability and efficiency to handle the volume of these containers traffic. This would extend the scope of the pilot greatly in an efficient and pragmatic manner. We would also be very interested in learning from other pilot ports with large volume of transshipment.

Furthermore, since the scope of this program in Hong Kong allows the truck drivers to go through the system on a voluntary basis while the ultimate goal of the initiative is 100% scanning, the US CBP will need to actively work with the Hong Kong Government on a plan to close the gap from voluntary to mandatory.

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ModernTerminals

Last, but perhaps the most important, is the need to win the support from all stakeholder groups in the global supply chain. Last year, when the mandatory scanning was announced, several shipper and carrier groups voiced their concerns. We feel the concerns are rooted in a fear for the 'unknowns': impact to operations and the extra cost as a result of mandatory scanning remains the key concerns, despite the positive experience we have had in Hong Kong. The US Government will need to continually engage the entire supply chain communities to secure the buy-ins of all major stakeholders if 100% scanning is ever to become a reality. Equally important, the industry stakeholders need to step up and collaborate with the US Government to work out an end to end solution. As you engage with the opinion leaders in various stakeholder groups, Modern Terminals is willing to work with the US Government to share the positive experience we have in Hong Kong and to make sure the solution is developed by the industry stakeholders collectively.

Should you require additional information, please contact me.

Yours sincerely,
For MODERN TERMINALS LTD

Benjamin Lui
General Manager, Operations

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DP WORLD

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Richard DINucci
Director
Secure Freight Initiative
US Department of Homeland Security
Washington
DC 20229
2008

10th March

DP World Secure Freight Initiative Pilot Remarks

DP World would like to thank you for allowing us the opportunity to present remarks, in relation to the Secure Freight Initiative (SFI) pilot project; for inclusion in your interim congressional submission.

Background

The US SAFE Port Act, of October 2006, introduced the Secure Freight Initiative (SFI) to test the concept of scanning 100% of containers bound for the United States of America prior to export from an international port. The Act called for US Customs and Border Protection (CBP), in partnership with the Department of Energy (DOE), to conduct a number of SFI pilot projects worldwide; to test the feasibility and practicality of the concept. DP World was invited to participate in two of the six pilot programs, specifically its terminals at Qasim (QICT) in Pakistan and at Southampton Container Terminal (SCT) in the United Kingdom, where all containers were scanned for radioactivity, and those bound for the US were additionally driven through an Non Intrusive Inspection (NII) system (x-ray), to determine the radiation levels and if there was any dense material which might have been shielding radioactivity.

The US SAFE Ports Act, in particular the results of the Secure Freight Initiative pilot project, has effectively been overtaken by events through the introduction of further, more specific, US Congressional legislation (9/11 Commission Act) that mandates 100% scanning of all shipping containers from ports that export to the US; with a deadline for introduction set for July 2012.

This written submission, provided by DP World, is not intended to comment on the 9/11 Commission Act for 100% scanning, but is restricted to remarks in relation to the SFI pilot program outcomes at DP World terminals

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DP World Commitment

We at DP World believe that we have a responsibility, as one of the world's largest terminal operators, to work in partnership with Governments and other bodies to address the security of international supply chains. In this regard we were the first international terminal operator to attain the International Standards Organization 28000 Certificate (security management systems in the supply chain) at our terminals, which is externally certified by Lloyds Register of Quality Assurance. We are additionally the only international terminal operator to have been exclusively invited to participate in the US CBP Customs Partnership against Terrorism (CTPAT) initiative; as a full member in the program.

It is with this conscious realization of our responsibilities and demonstration of commitment, in actively participating in seeking solutions to securing global commerce, that we willingly partnered with the United States Government in piloting the feasibility and concept of scanning containers under the protocols set out in the Secure Freight Initiative. It is our firm belief that addressing the security vulnerabilities identified in the international supply chain will serve the interests of all trading partners, government and industry alike; in promoting the safer commerce of transported goods.

SFI Pilot Objectives (DP World)

DP World partnered with the United States Government, and its designated agencies, in the Secure Freight Initiative at QICT and SCT with two clear objectives in mind:

1. To test and prove if container scanning technologies could be deployed, integrated and operated within a terminal environment, with no adverse operational impact.

2. To test and prove if such deployed container scanning technologies would adversely impact trade with terminal partners, customers and stakeholders.

SFI Pilot Feedback

The specific terminal feedback from SCT and QICT, the two DP World terminals involved in the pilot project, are included as attachments to this submission and detail, from a terminal operational point of view, the experiences of the terminal management teams involved in the pilot. In general terms however, and in answer to our internal pilot objectives above.

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SCT - Experience

Management, Coordination and Cooperation

This particular SFI pilot, due to a variety of circumstances, had tight deployment time restrictions, with all aspects, including scoping, design, construction and testing having to be achieved in a short twelve week timeframe, prior to the 13 October 2007 pilot operational commencement date. It is testament to the extremely well planned and coordinated management processes, between SCT, CBP and DOE, that a complex variety of container scanning technologies were deployed and integrated with the gate automation and terminal operating systems, at SCT in a timely and non impacting manner.

Execution and Operations

The SFI pilot at SCT, from an operational and execution point of view, has seen the agreed operational processes (concept of operations) functioning effectively over a six months period. Since the formal pilot began, up to today, in excess of 100,000 containers have been scanned, with approximately 700 alarms being generated over the period. All of these alarms have been resolved quickly, and established as being NORMS (Naturally Occurring Radioactive Materials).

The execution and operation of the SFI scanning processes has not significantly impeded the container traffic flow through SCT, neither has it resulted in traffic disruption or bottlenecks at the primary point of access to the terminal. On the contrary, concurrent with the installation, testing, and operation of the SFI pilot, container volume at SCT has increased with little or no adverse effects on the flow of container traffic and no resultant delays to our shipping customers.

During the pilot there were however two SFI operational anomaly situations that had to be addressed in order for the pilot to proceed. From the outset planning stages it was never the intention to deploy scanning technologies in the terminal to capture transshipment and rail containers destined for the US (we believe that this was due to the fact that other SFI pilot sites had been selected to address and test these modes). Therefore in order to capture US container, in these modes at SCT, alternative and innovative concepts of operations had to be agreed and implemented in order to capture and transfer such container traffic through the SFI system. This resulted in additional movement costs borne by SCT and some operational impact to the Freightliner, the rail operator. Secondly the sharing of data issue between USG and HMRC, and the EU/UK Data Protection laws prevented clear protocols being established at the outset of the pilot and it was only laterally

(3 March 2008) that a compromise was reached between USG and HMRC to address this issue.

QICT - Experience

Management, Coordination and Cooperation

The management involvement, from a DP World of view, at QICT was much less involved than at SCT, this was primarily due to the fact that the deployment of the system in Pakistan predated the Secure Freight Initiative in the form of the IC3 project, coordinated between USG and the Pakistan Government. Additionally, the IC3 system was specifically deployed in an area adjacent to a number of terminals and not directly integrated within DP World QICT terminal. Consequently the management, coordination and cooperation between DP World and USG agencies were much less than in the SCT SFI Pilot.

Execution and Operations

The concept of operations of the SFI system in Pakistan is unique, as this is a legacy deployment and system (IC3) predating the US Safe Port Act and the SFI pilot. Consequently the operational feedback, due to limited DP World management involvement, is restricted to operational observations in the following specific areas.

There would appear to be communications problems with the continuous connectivity of the IC3 system with the US National Targeting Centre. Consequently, from a terminal operations point of view, when this problem occurs there is a resulting delay in clearing containers through the system and therefore through the terminal. Additionally with only one system servicing multiple terminals, and no alternative or redundant methodology for scanning containers, any single point of failure in the system results in container backlog as they cannot be cleared.

DP World SFI Feedback Summary and Suggestions

It is clear that the SFI pilot project, from a DP World objective point of view, particularly at Southampton Container Terminal has been successful in proving that the technologies for scanning containers, both for Radiation and Non Intrusive Imaging, are available; and that operations and trade facilitation have not been adversely impacted.

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However the transshipment and rail modal solutions, which were never the focus of the pilot at either of the DP World terminals, would need to be addressed, in order to prove container scanning is achievable in all modes; within a terminal environment. We would therefore suggest, given the broader pilot technical and operational successes, and to build on the initial pilot phase at SCT that a subsequent follow on phase is commissioned, in order to prove the technical and operational feasibility of scanning in the transshipment and rail modes of container transportation.

Our suggestion for continuation of the SFI pilot would be:

1. Starting with SCT, we are ready to immediately extend our collaboration with your agencies either during an interim period awaiting congressional direction or under a formally announced SFI Phase 2. The continuation of SFI at SCT should however, in our view, have to include:

    a. A focus on achieving technical and operational solutions for yard and rail areas, possibly with mobile, dual (RPM and Advanced Spectroscopics) systems to test the feasibility of 100% radiation screening in all modes, as the first priority. The SCT solution should also include integration and optimization of the current fixed portals at the entrance lanes, including the retained use of the Non Intrusive Inspection (NII) system to provide a fully integrated 100% container scanning solution incorporating rail and transshipment container traffic.

    b. Work towards demonstrating a secure direct link to the US National Targeting Center (NTC) for all US-bound container data and finding solutions to alleviate the concerns of host nation governments and industry, in relation to data sharing and data protection concerns.

    c. Demonstration to trade and governments that 100% container scanning may be achievable, technically and operationally, and that trade facilitation benefits are the resultant. This should include confirmation statistics and data to prove trade facilitation benefits at point of origin and at point of destination; in this case on arrival at a US Ports.

David Fairrie
Director of Security
DP World

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Southampton Container Terminals Limited

Report into the pilot project to assess the impact of 100% scanning of US bound export containers

Julian Walker
Head of Operations

February 2008

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Contents

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1. Executive Summary

The purpose of this report is to provide feedback on the experiences of Southampton Container Terminals Ltd (SCT) in participating in the Secure Freight Initiative (SFI) pilot.

The report will provide feedback into the planning process, including physical and process alterations to the existing landside process, modifications and enhancement to the SCT IT systems, up to and including the present position with ongoing ownership and operation of the equipment that is presently located at the terminal.

In addition to the views submitted by SCT into the pilot, Freightliner UK Ltd have been invited to write a brief report into the impacts on the flow of export containers through their Maritime Rail Terminal.

SCT agreed to participate in the pilot project with three clear objectives:

1. There would be no disruption to the flow of traffic or containers through the terminal.
2. There would be no additional cost to shipper or shipping line.
3. There would be no additional unit costs to SCT.

These objectives provided the key negotiating and planning position in the discussions that SCT had with the SFI representatives.

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2. Planning and Design

The first meeting between SCT and US representatives of the SFI team took place October 2006. The initial meeting was lead by representatives of Customs and Border Protection (CBP) and the Department of Energy (DoE) advising SCT personnel on the scope of the pilot. From the beginning it was made clear that the pilot had extremely tight time restrictions, and that the pilot had to be scoped, designed, constructed and tested prior to the 13 October 2007 when the pilot was due to commence.

Thereafter a series of meetings took place over a period of 3-4 months in which a number of different factors were discussed, these included.

- Type and quantity of each piece of monitoring equipment.
- Layout and traffic flow plans.
- Manning of equipment.
- Data protection issues.
- Jurisdiction between Container Security Initiative (CSI) and HM Revenue & Customs (HMRC)
- Information sharing.
- IT infrastructure.
- Procedures to deal with problem containers.

During the scoping and design stage a number of different layouts were evaluated, in this period the approach by all parties involved was to find a solution that could work and achieve the aims of all the stakeholders involved. SCT was extremely keen that the operation was not compromised to any degree to this end the representatives of DoE and CBP were very constructive in their manner and approach.

The following equipment was agreed:

- 3 x Radiation Portal Monitors (RPM).
- Licence plate and optical character recognition technology was integrated with the SCT gate administration system.
- 1 x Advanced Spectroscopic Portal (ASP).
- 1 x Radiation Ionising Detection Device (RIDD).
  1 x Non Intrusive Imaging machine (NII)
- 1 x Central Alarm Station (CAS).
- Additional equipment such as traffic lights and drop bars were also installed to manage the traffic flows between equipment.

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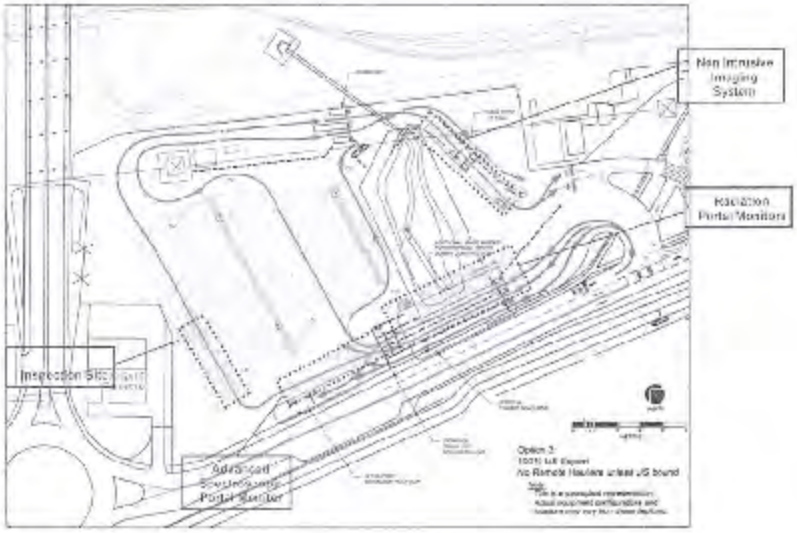
The following layout was agreed:



During the period of planning there were a number of conceptual aspects which required clarification.

1. The sharing of specific customer data between SCT, HMRC and the US was raised as a concern because of the Data Protection Act 1998. After a series of meetings and conference calls a solution between HMRC and SFI was found which involved only nominal data being released initially with greater detail released separately if necessary.

2. How US bound containers delivered to the Maritime Rail Terminal (approximately 8000 per annum) could be screened as these containers are handled between the two facilities by a one over one straddle carrier. There is presently no equipment that can conduct the examinations required. A solution was identified which required the containers to be taken through the Pre-Gate and then delivered back to the Maritime Rail Terminal. A cost was identified by Freightliner, which SCT agreed to cover for the period of the pilot, which was set at £23.69 per truck trip.

3. The inspection of transhipment containers transiting SCT. Approximately 5500 US bound containers transit SCT per annum. Finding a solution for this has required significant discussion, SCT has developed a method of identifying US bound transhipments through the main frame system which then tags the box to ensure that it is checked prior to loading.

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3. IT Integration

To meet the requirements of the SF set SCT, the various types of scanning equipment installed needed to be interfaced into the terminal's automated gate systems to maintain the smooth flow of vehicles. In addition, the container commodity details were required to be sent from CNS to the US Customs representatives so that if a radiation signature was detected in a container, verification could take place to make sure that those signatures were consistent with the listed commodity.

SCT employed three external software contractors to modify and extend the existing automated gate systems to interface to SFI. These contractors worked under a permanent technical lead within the business. Additionally, there was an appreciable amount of project management time with the various US Government instructed company representatives.

The majority of the design and development work was conducted with SI International, a very constructive working relationship existed both at a project definition level, through the implementation and post live support.

The system designed and implemented ensures that all road vehicles with either Freight Remaining On Board (FROB) containers or actual US bound containers are routed via the SCT Pre Gate and hence through the SFI scanners. Additionally, FROB containers or actual US bound containers that have arrived via rail are shunted via the SFI scanners before being allowed into the terminal. Modifications had to be made to the SCT rail operation and to Freightliner's operation to accommodate this.

The system also captures transhipments, and places a special hold on the container to prevent it from being loaded until it is scanned by a hand-held scanner within the inspection area of the terminal. When the discharge of a transhipment from the source vessel takes place, US Customs are electronically alerted so that they can arrange to have the container moved and scanned. Only once the container is scanned may it be loaded on a vessel.

Overall, the cost of the development work reached approximately US $[illegible]0,000, with some hidden costs not invoiced. The UK value added tax element of this invoice remains unpaid (as of 15.02.06).

DP WORLD

4. Construction and Installation of Equipment

The period of construction started June 2007 and ran for approximately 12 weeks. During this period the contractors were required to work without interrupting the normal traffic flow through the existing Pre-Gate. The SCT civil engineer acted as a direct link to the construction site manager to ensure satisfactory working arrangements

The installation of three RPMs and associated Licence Plate Recognition, Optical Character Recognition and traffic control tools, involved the contractors working in a relatively small area.

From an SCT point of view the SFI team and the associated contractors worked extremely hard to minimise any impact on existing operations, maximising weekend working. Both parties embraced the safety protocols required for any contractors working on SCT controlled land and the original completion date was met.

5. Impact and Performance of Scanning Containers Arriving by Truck

SCT have collated a series of Key Performance Indicators (KPIs) to monitor the usage of each element of the process and the impact of passing through the process:

Totals:

- Total number of trucks to pass through Pre-Gate process.
- Total number of RPM alarms.
- Total number of RPM alarms for non US bound containers.
- Total number of RPM alarms for US bound containers.
- Total number of non US bound containers sent to the ASP.
- Total number of US bound containers sent to the ASP.
- Total number of unresolved RPM alarms.
- Total number of trucks sent to the NII machine.
- Total number of rail trucks sent through the Pre-Gate process.

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The following table collates the stats during the period 01 October 2007 – 20 February 2008

Total number of trucks to pass through Pre Gate	101,944
Total number of RPM alarms	935
Total number of RPM alarms for non US bound containers	714
Total number of RPM alarms for US bound containers	221
Total number of non US bound containers sent to the ASP	711
Total number of US bound containers sent to the ASP	220
Total number of unresolved RPM alarms	2
Total number of trucks sent to the NII machine	4382
Total number of rail trucks sent through the Pre-Gate process (from the Maritime Rail facility)	688

Performance:

- Average time from Pre-Gate entry to Seal Check via ASP (this includes passing through the RPM).
- Average time from Pre-Gate entry to Seal Check.
- Average time from Seal Check to transfer area via the NII machine.
- Average time from Seal Check to transfer area.

The following table collates the statistics during the period 01 October 2007 – 20 February 2008:

00:24:16	00:10:03	00:07:01	00:04:34

Using these KPIs the impact of the additional checks required when an RPM alarm occurs and a US bound container is directed through the NII can be monitored.

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In the period from 01 October 2007 until the 20 February the average additional time a truck took to pass through the Pre-Gate when a RPM alarm occurred was 14 minutes and 13 seconds. This additional time would include driving through the ASP, waiting for confirmation from the CAS, and the potential additional time accrued if a RIDD examination was required. It is worth noting that information gathered from the ASP was authenticated by the use of the RIID.

The second element measures the additional time required to drive through the N.I. Due to the location of the pedestals for recording this, the time measured is from when the vehicle left the Seal Check point to when it arrived at the entry point back into the terminal on route to a transfer area to pick up or drop off the container. This process added approximately 2 minutes and 30 seconds.

SCT are not in a position to comment on the reasons for the additional time or for the two unresolved alarms.

Overall the impact on the transit time through the Pre-Gate for trucks has been within an acceptable level. In terms of the additional time, SCT has received no complaints from any truck drivers about delays connected to the SFI project.

6. Impact and Performance of Scanning Containers Arriving by Rail

SCT is served by three separate rail heads, two of which are remote to the terminal and the containers are delivered to, and picked up from, the two remote terminals in the same manner as a container being delivered by road. Therefore the total number and impact on these containers is incorporated within the KPIs for road containers.

The third facility is adjacent to the terminal and normal practice is to move the container to and from the Maritime Rail Terminal using a one-over-one straddle carrier. During the consultation period a number of different methodologies of monitoring these containers were discussed, all were deemed either impractical or extremely high cost given the limited number. It was agreed that these containers would arrive normally at the Maritime Rail Terminal and would then be loaded onto a trailer and driven through the SFI equipment in the Pre-Gate and returned to the Maritime Rail Terminal to be delivered to SCT on a one-over-one straddle. This process adds an additional truck trip into the normal transport delivery chain. The KPI measurements for these containers are incorporated within the road statistics as well as the being highlighted as separate rail truck moves.

This process became operational in December 2007. Up to (20th February 2008) 688 containers have undergone this process. The cost for this process has been covered by SCT through an agreement with Freightliner UK Ltd who operate the rail head and have provided the transport. A negotiated price of £23.89 per truck trip was agreed between SCT and Freightliner to reflect the operating cost of this process.

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The following report has been supplied by Freightliner to provide their views and experiences on the trial. The report has not been altered.

Quote

THE IMPACT OF SFI PROJECT ON FREIGHTLINER

NB This information is given in the strictest confidence and is for use in assessing the success of the SFI project in Southampton only.

In Southampton Freightliner have two terminals, Millbrook which handles approximately 25% of Freightliners business and Maritime the remaining 75%.

The Millbrook terminal is approx 3km outside of the dock boundary and traffic is moved from the terminal by truck. All Millbrook containers already cycle through the pre gate and scanner.

The Maritime terminal is directly adjacent to SCT, and this site is operated by Sprinters which convey containers at high speed directly between the Freightliner site and the SCT stacks. This allows us to maximise the use of our rail facility, which is key to the local infrastructure to ease traffic congestion.

In order to move the USA boxes from the Maritime terminal, through the scanner, a road vehicle has been hired in, as the sprinters cannot travel in this area. The table below gives the volumes handled and the associated cost.

09/12/2007	8	16	£189.52	£120.00	£8	£317.52
16/12/2007	87	174	£2,061.03	£1,305.00	£87	£3,453.03
23/12/2007	11	22	£260.59	£165.00	£11	£436.59
30/12/2007	54	108	£1,279.26	£810.00	£45	£2,134.26
06/01/2008	45	90	£1,066.05	£675.00	£45	£1,786.05
13/01/2008	69	138	£1,634.61	£1,035.00	£103	£2,772.61
20/01/2008	103	206	£2,440.07	£1,545.00	£79	£4,064.07
27/01/2008	79	158	£1,871.51	£1,185.00	£79	£3,135.51
03/02/2008	33	66	£781.77	£495.00	£33	£1,309.77
10/02/2008	73	146	£1,729.37	£1,095.00	£73	£2,897.37
	562	1124			Total	£22,306.78

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- *As you can see the cost of moving USA bound containers through the pre-gate and scanner has mounted to £22.3k over the 10 week period it has been fully running. This equates to an annual cost of approximately £116k or £39.69 per container.*
- *As an indication the average Freightliner rail rate is £195 per box, this additional cost therefore represents 20% of the overall price before the container has even left the dock confines.*
- *The shipping line is very unlikely to accept additional charges for these containers in order to move them by rail. The line will not be able to determine which boxes will be moving via Maritime and therefore surcharged, they will simply move all USA business from rail to road. If the above figures were representative of 75% of the throughput, this would indicate a potential loss of revenue to Freightliner of circa £760k. Should the USA volume through the port increase this loss would also increase.*

In addition to the commercial impact, there are numerous operational issues in operating with this system as follows: -

- *The operation has had to complete an extra 1124 sprinter moves to and from the transfer area. Considering the daily number of moves is 280 this is equivalent to 4 days work over that period. This in itself puts extra pressure on the operation because it means that 4 sprinters need to be available the majority of the time as 3 will not transfer the required number of imports/exports to and from the berth and this in turn will limit the ability to maximise use of rail capacity*

- *Additional work has also been placed on our traffic office personnel, as they have to manage the transport/transfer of these containers from the transfer area, through the VBS and back to the transfer area. This additional workload has meant that we have ceased to perform certain statistical duties to enable the staff to concentrate more on running the operation. If the trial continues after the 13th of April then these duties will have to be covered by additional overtime.*

- *The containers tend to come down in batches on the same trains, as USA cargoes are very specific flows which are targeting specific vessels and tend to be on a just in time basis This results in my main cranes having to double lift these containers as they have to lift them firstly into storage and then later into the chevrons. As we never know how many are being sent until the containers are placed into SCT's H frame.*

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- *At times we get inundated with them and when possible have to divert additional vehicles from our Millbrook terminal to cope with the volume. This then means that additional import bookings can't be taken on due to not having sufficient vehicles available to collect them*

- *On occasions we have even had to change export trains between our terminals due to the amount of containers required for scanning, which has itself disrupted the rail network.*

Summary

We feel that the present system imports risk to containers being shut out from vessels, it restricts the ability to maximise rail capacity/use and actually disadvantages rail over road transport. A modal shift would be a key concern in the UK and goes against the UK Governments Environmental policy.

As you can see over the 10 week period to date we have handled 562 USA containers through the Maritime terminal which in terms of the port throughput over the same period is circa 0.3% and would therefore question whether the scale of cost involved can be justified against the back drop of such an un-representative USA volume.

It would be impossible for any external party to know which of our trains arrive into which terminal on a given day and therefore be unable to clearly target rail for any terrorist/threat action, I would suggest therefore that our business is relatively low risk.

Freightliner fully appreciates the need to reduce the risk of terrorist activity. However, in a low margin business, this is an extremely costly operation and is potentially damaging to our business. We don't feel that the present method is suitable for operational efficiency and we are not willing to accept additional costs nor have these costs passed to our customers.

Mark Beckett
Freightliner Port Operations Manager

Unquote

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7. Impact and Performance of Scanning Transhipment Containers

Transhipment accounts for approximately 3-4% of total throughput at SCT. In 2007 there were approximately 1000 transhipments bound for the US or FROB.

Finding a solution for screening these containers however was deemed not practical given the location of the SFI equipment in the Pre-Gate, firstly due to the fact that the Pre-Gate is not within the ISPS restricted area and secondly the operational impact of two additional straddle moves plus the truck trip to and from the Pre Gate.

There were extensive discussions with HMRC, the SFI team and SCT to find a solution. It was initially agreed that the container would be identified within the SCT system on arrival and prior to load taken from the stack to the HMRC inspection area where it could be x-rayed and scanned for radiation and then the information would be shared with the SFI team. The plan was never put into action for reasons between HMRC and the SFI team.

An alternative solution has not yet been identified.

It is also worth noting that the period of time a US bound export is in SCT can be very limited if a container is being discharged off one vessel to be loaded onto another vessel already alongside. The 24 hour Manifest Rule does not stop this happening as a container can be submitted and cleared at the previous port of loading.

8. Post SFI Pilot

At the end of the pilot project the SFI team have indicated their preference for the equipment to continue to be used to monitor US bound export containers. There are a number of outstanding issues which need to be resolved for this to happen.

- Ownership of the equipment.

  Whoever takes ownership of the equipment will be liable for both Import Duty and Value Added Tax, this is a significant Liability.

- Maintenance of the equipment.

  The maintenance cost of running the equipment has to date been covered by the US as a project cost. Going forward, responsibility for the maintenance cost will transfer with ownership. Presently these costs are not known by anyone other than the SFI team.

- Licensing of equipment

  As well as general maintenance of the equipment, the Non Intrusive Imaging equipment is required to be compliant with Ionizing Radiation regulations 1999. Responsibility for compliance, as well provision of a Radiation Protection Supervisor, will need to be undertaken by somebody.

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- Interpretation of data

  It is unclear who would provide and cover the costs of the manning for the CAS.

- Release of data

  There are restrictions on the data that can be shared with the US, under the Data Protection Act 1998. To date a solution has been found for the pilot. However whether this solution can be applicable in perpetuity, if there is no change in the present Act, remains to be determined.

- Responsibility and liability for handling containers that are not shipped

  There are a number of potential scenarios which require resolution. First if the US do not accept a container due to a positive but minor radiation alarm, who will be responsible to cover the disposal costs etc? Secondly and more seriously, who takes responsibility for boxes producing an unresolved high gamma or neutron alarm - which require specialist expertise for disposal and potentially offer a threat to national security?

- Maintaining no Impact to SCT Customers and Minimising Disruption to Cargo Transiting the Port.

  Traffic through the port must remain unhindered in order to ensure that the terminal does not lose containers to competitive terminals that do not have this equipment and process.

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9. Conclusion

Overall the SFI pilot for 100% scanning at SCT has been largely successful in all aspects bar the inspection of transhipments

It should however be noted that there are a number of factors which have assisted the SFI project at SCT significantly.

- Pre-notification of the nominal details of a container prior to arrival in the terminal, mean that the container is known prior to arrival and that there is no shipping paperwork (except for hazardous containers) when the truck delivering the container arrives at the terminal.
- The Vehicle Booking System, which is mandatory, ensures that every truck arriving at the port must have a booking made against a container which has been pre-notified if it is dropping off an export.
- The majority of the containers shipped through the port are origin / destination, rather than transhipment
- A small proportion of the containers handled at the terminal are US bound exports
- Overall the working relationship between SCT and the representatives of the Department of Energy and Customs Border Protection has been extremely constructive, dynamic and proactive

Transhipment is going to be the major challenge going forward, especially in a straddle carrier facility where there is presently no established technology which will allow the container to be scanned or x-rayed without it either being placed on the ground or driven through a fixed set of readers by a truck and trailer.

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QICT SFI Feedback Report

Connectivity:

IC3 connectivity with US is through ISDN lines and whenever they get connectivity problem which is bit frequent scanner stops performing which result delay in clearance of containers from IC3.

Single Scanner:

At this stage we have single scanner installed at IC3, single scanner is single point of failure incase it is not operational IC3 is unable to clear any containers.

Advance Manifest System (AMS):

From trade's perspective, it will indeed be helpful in reducing bottlenecks which they presently face in having manifest rejected due to following issues:

- Shipping lines face problem in extracting complete information from the shippers in order to file AMS.
- Shipping lines also struggle to get the correct information from the shippers to correctly file AMS.
- At times the information so provided by the shippers is complete and correct but not submitted in a timely manner either delaying the AMS filling or containers are not captured, thus delaying the shipments.
- The shipping line has to wait for 24 hours to receive the confirmation if the containers/consignment has been cleared under the advance manifest.
- In case if any amendment is made in the earlier submission than the shipping lines again have to wait for another 24 hours before it is approved/cleared.
- Due to this requirement the shipping lines cannot plan their bookings.
- Despite containers received by the terminal cannot be planned for upcoming/alongside vessel till the manifest is approved.
- In addition to the cutt-off's (as announced by the terminal) for receiving exports boxes for a particular vessel, the shipping lines have to take extra measures to receive AMS in time.

Appendix C

International Economics, Inc. (IEC)

IEc

MEMORANDUM | February 28, 2008

TO Richard DiNucci, Director, Secure Freight Initiative Program, CBP

FROM Gail Coad, Chris Chan, and Nora Scherer, Industrial Economics, Inc.

SUBJECT Assessing the potential impact of 100 percent container scanning on port economics

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The Security and Accountability for Every Port Act (SAFE Port Act) of 2006 required U.S. Customs and Border Protection (CBP) of the U.S. Department of Homeland Security (DHS) to implement a pilot program, known as the Secure Freight Initiative (SFI), to determine the feasibility of 100 percent scanning of U.S.-bound cargo containers at foreign seaports. In August 2007, the Implementing Recommendations of the 9/11 Commission Act of 2007 (9/11 Act) was enacted, which requires, among other things, 100 percent scanning of U.S.-bound cargo containers at foreign seaports by 2012, with possible exceptions if a seaport cannot meet the deadline. Full-scale deployment of CBP's container scanning systems to achieve the 100 percent scanning requirement is expected to affect the performance of container operations at foreign ports, which substantially vary in their size, scope, and configuration. As a result, we anticipate that the 100 percent container scanning requirement will affect ports economically. In this paper, we examine and assess the potential operational and economic impacts from 100 percent container scanning. We also examine the feasibility of predicting the potential economic impact at each foreign port.

We first generally describe the economics of ports and terminals and how their performance and efficiency are measured. Efficiency represents the basis of competition among ports. We then describe how deployment of 100 percent container scanning would potentially impact ports operationally and economically. Finally, we discuss the limitations associated with trying to predict the economic impacts of container scanning at the foreign ports.

PORT AND TERMINAL ECONOMICS AND PERFORMANCE

The advent of containerized shipping, intermodal systems of transportation, and the globalization of supply chains has brought many ports, even those located in remote parts of the world, into increasing prominence. As a result, competition among ports for containerized shipping business is strong, offering shippers, suppliers, exporters, and importers a number of compelling choices with which to deliver goods in an efficient and cost-effective manner. In addition to port-to-port competition, terminals within the same port may compete for business. "The biggest ports in the world often consist of several terminals: the port of Hong Kong consists of nine container terminals operated by five companies; the port of Rotterdam has 13 container terminals; and the port of Hamburg has four dedicated container terminals and eight multi-purpose terminals able to handle containers. .Competitiveness is therefore a crucial issue to survive in the market, given that a shipping company which decides to serve a certain port with regular services has

also the possibility to choose the most appropriate terminal for its business" (Vacca, 2007).

Improving port efficiency to remain competitive

The base of competition is achieving the most efficient total service (Heaver, 2006). The increasing level of competitiveness among ports (and terminals) requires port and terminal operators to constantly monitor and improve their service levels and performance, to ensure that "they are not lagging behind" (Wang, 2005). However, port activity is complex and involves a large number of economic stakeholders, including port and terminal operators and owners, carriers and transporters, ship and cargo servicing companies, importers and exporters, governmental departments and agencies, and worker unions (Vacca, 2007). Public entities, government organizations, or private companies may run ports in whole or in part. While many terminals are operated by private companies, many ports are owned and operated, or at least governed by public entities such as government departments responsible for transport, economic affairs, and economic development. As a result, "port operation really encompasses a large number of smaller operations, most of which form successive links of a chain in which the weakest link is the one that determines the strength of the chain as a whole. The fact that there are a large number of stakeholders and operations means that coordination becomes one of the essential keys to port efficiency" (Jara-Diaz, 2006).

Ports therefore need to coordinate and work with their logistics partners to enhance the quality and cost of their services, which may include the development of collaborative marketing initiatives (Heaver, 2006). Ports also need to "plan and invest in capacity in a sophisticated manner, taking into account the lumpiness of capacity and the long life of major infrastructure and facilities" (Wang, 2005). Local and national governments, depending on their involvement and control of ports, may devise policies or regulations to keep their country's ports competitive in the shipping marketplace.[1]

The economic and competitive benefit of efforts made to improve port efficiency has been measured. In general, port improvements made to increase efficiency have a stronger impact on a country's exports than on imports (Wilmsmeier, 2006). Port improvements make the port more attractive to customers and ultimately reduce costs and increase trade competitiveness. "[P]ort improvements will not only lead to lower freight rates, but by providing better services ports can also attract additional liner services and additional cargo. Both – more liner services and higher cargo volumes – lead to a further reduction of freight rates. Lower transport costs, in turn, will stimulate increased trade volumes, which lead to further economies of scale and lower freight charges" (Wilmsmeier, 2006).

From the perspective of shippers, their transport costs are also primarily a function of port efficiency. Wilmsmeier et al conducted a regression analysis of data on containerized trade among 16 Latin-American countries in 2002 (Wilmsmeier, 2006). They tested the following variables potentially affecting maritime transport costs: cargo type and value, geographical distance between ports, economies of scale (total volume of bilateral trade between two countries and volume of individual transactions),

[1] For example, governments have used privatization to encourage intra-port competition and improve economic efficiency. Public ports are generally known to suffer deficiencies as a result of public monitoring hierarchies, goal displacement, lack of clarity in corporate objectives and operative responsibility, and excessive ministerial intervention in operational decisions (Wang, 2005). However, "privatization cannot always guarantee improved port performance" (Wang, 2005). Depending on the extent to which the primary port functions (e.g., regulatory, landowner, and operator) are managed and administered by the public or private entities involved, conflicts can exist between the pursuit of private profit or maximum returns and the pursuit of more socially oriented objectives, such as employment gains or local and regional economic welfare benefits (Cullinane, 2006a).

trade balance, and certain port characteristics (port infrastructure, port efficiency, general transport infrastructure, port privatization, import customs delay, and port connectivity). They found that port efficiency, port infrastructure, the degree of private sector participation in ports, and inter-port connectivity have a statistically significant and strong impact on international maritime transport costs. Port efficiency has the most significant impact on international maritime transport costs. "Doubling port efficiency in a pair of ports has the same impact on international transport costs as halving the distance between them would have" (Wilmsmeier, 2006).

Measuring port performance and efficiency

However, measuring port or terminal performance in a consistent, meaningful way has been challenging. "The heterogeneity of ports and, within them, terminals in terms of their physical characteristics, the mix of traffic handled, the size and volume of cargoes handled by ships and the lack of available data have all been factors limiting efforts to measure port or terminal performance" (Heaver, 2006). However, given the increasing standardization in container terminals, port economists have recently suggested new performance measures. For example, Vacca et al identified two main classes of new objectives and performance measures to evaluate the performance of a container terminal (Vacca, 2007):

- **Service-oriented:** they measure the service levels provided to clients and are usually expressed by the turn-around time of both ship liners and outside trucks, berth service time (i.e., vessel turn-around time in hours; vessels time to berth; vessels berthed on time, etc.), and gate service time (i.e., truck turn-around time at the gates; trucks still on terminal over one hour, etc.)
- **Productivity-oriented:** they measure the volume of containers' traffic managed by the terminal, such as twenty-foot equivalent unit (TEU) volume growth (TEUs per year), crane utilization (TEUs per year, per crane), crane productivity (moves per crane, per hour), berth utilization (vessels per year, per berth), land utilization (TEUs per year, per gross acre), storage productivity (TEUs per storage acre), and gate throughput (containers per hour, per lane).

In the context of modeling basic port economics, Talley also defines several "operating options" that differentiate the quality of a port's service (Talley, 2006). In developing his basic economic model of the port, Talley assumes that ports have the economic objective of maximizing throughput subject to a minimum profit constraint.[2] The overall performance standard is the maximum annual port throughput per profit dollar (given the port's profit constraint). The annual demand for a port's throughput is a function of its generalized price. The port's generalized price is the sum of the port's money prices (per unit of throughput) charged for various services rendered and the port's (value of) time prices incurred by ocean carriers, inland carriers, and shippers per unit of throughput. The choice variables ports use to optimize their economic objective are its generalized port prices and "operating options." The operating options include:

- loading and unloading service rates for ships (i.e., tons of cargo loaded/unloaded on ships per hour of loading/unloading time);

[2] The port's economic objective may also be to maximize profits. If the port is owned by government, this profit constraint may be zero (where port revenue equals cost) or a maximum deficit (where port revenue is less than cost) that is to be subsidized by government. Ports may also have noncommercial goals, such as develop marine commerce; generate jobs; and support national, regional, and local interests with respect to promotion of maritime related commerce, fisheries, recreation, industrial, and commercial activities.

- loading and unloading service rates for container vehicles (i.e., tons of cargo loaded on/from vehicles and railcars per hour of loading/unloading time);
- port channel and berth accessibility and reliability (i.e., average daily percent of time during the year that the port's channel and berth adhere to authorized depth and width dimensions and are open to navigation and berthing of ships);
- entrance and departure gate reliability (i.e., the average daily percent of time during the year that the port's entrance and departure gates are open for vehicles); and
- damages and property losses to ships, vehicles/railcars, and cargos in port.

A port is cost efficient when its throughput is provided at minimum cost. As discussed above, cost efficiency represents the base of competition among ports. Later in this paper, we discuss how deployment of 100 percent container scanning at a particular port may affect these operating options and therefore its cost efficiency and competitiveness.

Summary

In summary, ports and terminals have to constantly monitor and improve their service levels and performance in order to remain competitive in the global shipping marketplace. According to the basic economic model of ports, a port is cost efficient when its throughput is provided at minimum cost. In order to achieve cost efficiency, ports can maximize throughput or minimize costs by optimizing their "operating options" (e.g., ship and vehicle load and unloading service rates, channel and berth accessibility and reliability, entrance and departure gate reliability). Such optimization may require investments in infrastructure, development of collaborative marketing and operating initiatives with logistics partners, and new government initiatives. Improving port efficiency has also been shown to substantially reduce shippers' transport costs by lowering freight rates, which may be reduced further by the attraction of new cargo business to the more efficient ports that achieve higher economies of scale.

POTENTIAL IMPACT OF 100 PERCENT CONTAINER SCANNING ON PORT EFFICIENCY

As discussed above, to remain competitive, ports strive to maximize throughput and minimize cost to achieve cost efficiency. Deployment of 100 percent container scanning, however, would affect, and in all likelihood, reduce port efficiency. These efficiency reductions will vary from port-to-port, depending on ports' unique operating and management characteristics and how and to what extent they respond to and address the resulting efficiency changes. In this section, we examine this effect.

Based on scanning operations conducted to date at the SFI pilot ports (Puerto Cortes (Honduras), Port Qasim (Pakistan), and Southampton (United Kingdom)), container scanning systems are typically installed at or near port or terminal entrance gates. Thus far, significant traffic backup or congestion issues have not occurred as a result of the SFI pilot scanning program. However, this may be due to the relatively low container throughput of these ports, low transshipment and railcar volumes, preexisting container screening or pre-clearance processes by the host country or terminal operator, the relative ease with which CBP's container scanning systems were integrated with existing port or terminal infrastructure and operations, and the relatively high level of cooperation with host country governments. CBP officers stationed at some of the larger foreign ports and representatives from the supply chain (importers, exporters, carriers, trade consultants) we interviewed maintain that there is the potential for significant congestion problems as a result of container scanning at the larger ports.

In his basic economic model of the port, Talley indicates that vehicle gate congestion would impact one of the "operating options" at the port, the loading and unloading service rates for container vehicles (e.g., tons of cargo unloaded from vehicles and railcars per hour of unloading time) (Talley, 2006). As a result of 100 percent container scanning, the total time in port incurred by a container would increase, thereby decreasing the service rates and port efficiency. Port operators estimate that the average time containers spend sitting at the docks before being shipped, known as "dwell time," would increase from five days to seven days (Miller, 2007). At most ports, container scanning may exacerbate an already congested situation at the terminal gates because terminals typically do not have control on the arrival process of trucks bringing containers (Vacca, 2007). Because of competition among container transporters, the transporters do not share data and as a result, arrive at the terminal simultaneously because they all serve customers with similar characteristics and constraints. This situation generates peaks of service demand at the terminal gates, which result in a concentration of loading and unloading operations and a high utilization of limited shared resources. These issues would even be more relevant if possible disruptions occur at the terminal (e.g., unloading equipment failure, container scanning). We interviewed exporters and importers who maintain that delays would be substantial at the higher volume ports, especially if CBP wants to complete review and analysis of scan data before releasing vehicles to the quay or container yard for unloading and stacking in preparation for lading on outgoing vessels bound for the United States.

In addition to vehicle gate congestion, vehicle congestion may also arise if there are insufficient labor and equipment to transfer (unload and load) containers arriving at the port by rail or feeder vessel (transshipment) for scanning. Changes in transfer operations may be necessary to handle and transport transshipped containers arriving at the terminal by feeder vessel or railcar to the scanning facility and subsequently back to the terminal yard for lading on outgoing (mother) vessels bound for the United States. The additional handling and transfer operations may extend berth service times for mother vessels, reduce berth utilization, and reduce loading and unloading service rates for ships and vehicles. These service reductions would substantially affect the terminals' cost efficiency. Given that fuel and maintenance costs account for up to 50 percent of overall terminal costs and the handling and reshuffling of transshipments are not revenue generating activities, terminals are already striving to minimize the total ground distance covered and the number of moves by containers (Vacca, 2007). Also, from an ocean carrier's perspective, most of their expenses are incurred during the time their vessels are berthed (Davies, 1983). As a result, the additional delays caused by the scanning of transshipped containers may force shippers and carriers to seek alternatives to getting their cargo to the United States in a more efficient manner (e.g., use a more efficient transshipment port or terminal, reroute containers to avoid transshipments altogether).

To maintain their service levels, transshipment ports and terminals may elect to provide more land, labor, and equipment to accommodate the additional handling of transshipped containers for scanning. Although shippers and carriers would be pleased with this response, it may result in additional cost through increased transshipment fees from terminals. If the cost increases are significant, shippers and carriers may then seek alternative means of transshipping their containers. Adopting such alternatives would lower the demand for a transshipment port's throughput, and ultimately, their competitiveness.

In summary, it is reasonable to expect that 100 percent container scanning would likely reduce port efficiency, given the prevalent, ongoing congested conditions at terminal gates and within container yards. A port's and terminal's relative competitiveness may be impacted, depending on how and to what extent other ports and terminals are addressing these same congestion problems. The additional handling involved with the transfer of transshipped and rail containers for scanning is especially problematic. Ports and terminals may elect to do the best they can with available resources, but at the risk of alienating

shippers and carriers because of additional delays. On the other hand, ports and terminals may elect to provide additional resources to maintain service levels, but at the risk of alienating shippers and carriers because of the additional costs (as terminal charges) involved. Either way, shippers and carriers will likely incur additional costs (as delays or terminal charges), and will therefore seek out those terminals and ports that are the most cost effective in dispatching their cargo while satisfying CBP's security requirements. There are likely to be tradeoffs associated with this decision. For example, shippers and carriers may face a choice between a container terminal that can scan and dispatch cargo relatively quickly at a higher overall cost (lower delay cost, higher terminal charges) versus another terminal that takes longer to scan and process containers at a lower cost (higher delay cost, lower terminal charges).

PREDICTING THE ECONOMIC IMPACT OF 100 PERCENT CONTAINER SCANNING AT FOREIGN PORTS

As described above, we find that the deployment of 100 percent container scanning at the foreign ports will likely rearrange the relative competitiveness framework for terminals and ports, as well as increase overall costs. However, projecting the economic impact of container scanning at each foreign port is very difficult. First, we cannot reliably predict how and to what extent container scanning will affect the operations of each terminal and foreign port, and how they will, in turn, respond. Additionally, we cannot reliably predict how and to what extent shippers and carriers will change their practices and operations in response to changes in port and terminal efficiencies and any delays or additional costs resulting from 100 percent container scanning. Although operation of the SFI pilot scanning program gives some indication of how many of the issues we discussed earlier (e.g., gate congestion, transshipment handling) may be addressed, the program is not sufficiently broad enough to understand all port situations and potential responses.

The heterogeneity of operations and configurations among the various foreign ports does not allow for straightforward evaluation of operational and economic impacts, even if standardized port production and cost efficiency models were constructed. "Specific port characteristics (unused container storage, cargo volume over which to spread increased capital costs for security) lead to different operational consequences from imposing security measures at different ports" (Conrad, 2003). In addition, assessing the costs for security measures directed towards ports are difficult for the following reasons (Bichou, 2004):

- Institutional and organizational differences among ports and terminals (e.g., public or private ownership, centralized or decentralized ownership);
- Physical, operational, and management differences among ports and even within a single port (e.g., type and size of port facilities (berths, terminals), traffic and throughput, ship/cargo types, nature and scope of landside operations (transshipment, storage/warehousing, intermodal arrangements));
- Port resource systems (e.g., level of investments and capital inputs, financing); and
- Differing capital and operating cost schemes among ports (labor wages, interest rates, depreciation, and tax systems).

For example, the additional costs borne by ports and terminals for infrastructure, labor, and operational improvements to accommodate 100 percent container scanning will vary from port-to port and terminal-to-terminal, depending on the type and level of available financing and public or private involvement. Foreign governments that want to maintain and even enhance the competitiveness of their country's ports

may elect to subsidize some of these additional costs so that no additional costs are borne by shippers, exporters, and carriers. On the other hand, there may be other ports that impose additional security charges that do not accurately reflect or may even exceed the true incremental costs incurred. Evidence from past practices suggests that supply chain participants, including ports, generate extra profits by transferring costs to each other (Bichou, 2004).

Ports have even highlighted their own differences in discussing the implementation of 100 percent container scanning. "Asia's newer ports tend to be bigger, but more compact, than their European counterparts. They will have less trouble meeting the [100 percent container scanning] requirements" (Miller, 2007). "[T]o meet the rules, construction can take years in the face of tough EU [European Union] environmental laws, putting them at a significant disadvantage." For example, big, older ports like Antwerp in Belgium would need to build new road and bridges to get all containers to scanners from its scattered docks. Additionally, ports that are already less efficient will be at a disadvantage when it comes to deploying 100 percent container scanning. In general, smaller container ports or terminals tend to be less efficient that their larger counterparts (Cullinane, 2006b). "[S]maller ports such as Seville in Spain, Dunkirk in France and Naples, Italy, could have to stop shipping to the U.S. altogether. The law [100 percent container scanning] will force us to stop shipping to the U.S., unless we can attract a lot more customers, which would justify investment in the equipment" (Miller, 2007).

Understanding how shippers, carriers and other parties in the supply chain would react to operational and cost changes at ports and terminals is even more complex. Because of increasing competition among ports and terminals that cover a wider geographical range, "those that exercise the port choice decision now have a much greater range of viable alternatives to select from" (Cullinane, 2006b). Supply chain participants evaluate a number of tradeoffs with respect to shipping cost, speed, and reliability when choosing shipping options. As discussed above, the deployment of 100 percent container scanning will affect these tradeoffs that will vary from port-to-port and terminal-to-terminal. The continuing consolidation and verticality of the shipping marketplace, however, may simplify the relationships among supply chain participants and the decision making process. For example, many carriers now provide door-to-door shipping services through their subsidiary logistics operator companies. In addition, carriers may own and operate their own container terminals to gain better control of loading, unloading, and berthing operations. Bichou suggested that additional security measures should ultimately favor collaborative and agile supply chains (Bichou, 2004). One approach that has been discussed to effectively address the 100 percent container scanning requirement overseas is the redirection and consolidation of U.S.-bound container shipping from just the larger (and as discussed above, likely more efficient) foreign ports. However, "[c]onsolidation would also force more trucks onto Europe's already congested roads…as they move U.S.-bound goods to bigger, but more distant, ports for shipping" (Miller, 2007).

Finally, our ability to apply the data and experience from the SFI pilot program to date to the remaining foreign ports is limited. In many ways, the pilot program involves scanning of containers at ports that share similar traits (e.g., relatively low volume of container throughput, single container terminal, low transshipment and railcar volumes, and long average dwell times). These attributes are not characteristic of full-scale container operations at a number of foreign ports, particularly the largest ports that handle a large volume of transshipments. We find that scaling the pilot program to meet demand and forecast the economic impact is not readily related to just container volume, but also dependent on other factors that are port-specific and appear to be largely uncorrelated (e.g., number, size, and location of container terminals and their entry points, modes of container entry, dwell time, level of technology employed in port operation, government involvement and support, public or private ownership). CBP is currently

expanding the SFI pilot program to other ports (Hong Kong, Singapore, Busan, Salalah), which will provide an opportunity to understand the issues of implementing a scanning program in more complex, higher volume port situations.

SUMMARY

The marketplace among ports and even terminals within the same port is very competitive, given the advent of containerized shipping, intermodal systems of transportation, and the globalization of supply chains. The measure by which ports and terminals compete for is maximizing cost efficiency, or providing maximum throughput at minimum cost. Shippers and carriers also evaluate ports and terminals based on efficiency, because the more efficient ports tend to have the lowest transport costs and best services.

The deployment of 100 percent container scanning will likely affect and, in all likelihood, reduce port and terminal performance and efficiency. These efficiency reductions will vary from port-to-port and terminal-to-terminal, depending on their unique operating and management characteristics and how and to what extent they respond to and address the resulting efficiency changes. Based on our review of the literature pertinent to port economics and efficiency, container scanning will likely have a negative impact on a number of operating parameters on which port and terminal efficiency is based, such as truck turn-around times, container vehicle and ship loading and unloading service rates, and berth service times. The additional handling involved with the transfer of transshipped and rail containers for scanning is especially problematic. We anticipate that overall costs will increase to reflect the additional delays (e.g., increased shipment lead or dwell times) caused by 100 percent container scanning and increased costs incurred by terminals to accommodate scanning and maintain efficiency (e.g., additional land, labor, and equipment). In the end, a port's and terminal's relative competitiveness may be impacted, depending on how and to what extent other ports and terminals are addressing the problems and efficiency changes resulting from container scanning.

Projecting the economic impact of container scanning at each foreign port, however, is difficult. Because of the extreme heterogeneous nature of port and terminal operations and configurations among the foreign ports, we cannot reliably predict how and to what extent 100 percent container scanning will affect the operations of each terminal and foreign port, and how they will, in turn, respond. The available literature suggests that the newer, more compact, and more efficient ports would have an advantage. Because of the complex relationships among ports and terminals and their customers (e.g., shippers, carriers, freight forwarders), we also cannot reliably predict how and to what extent they will change their practices and operations in response to port and terminal efficiency changes and any delays or additional costs resulting from 100 percent container scanning. The available literature suggests that those ports and terminals that proactively collaborate with their logistics partners have an advantage. Finally, although operation of the SFI pilot scanning program gives some indication of how many of the operational impacts may be addressed, the program is not sufficiently broad enough to understand all port situations and potential responses. Further expansion of the SFI pilot program will provide CBP an opportunity to understand the issues of implementing a scanning program in more complex, higher volume port situations.

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MEMORANDUM | February 28, 2008

TO Richard DiNucci, Director, Secure Freight Initiative Program, CBP

FROM Gail Coad, Chris Chan, and Nora Scherer, Industrial Economics, Inc.

SUBJECT Summary report of trade comments on CBP's Secure Freight Initiative program

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Industrial Economics, Inc. interviewed 10 trade representatives to gather information and feedback regarding CBP's Secure Freight Initiative (SFI) program. The primary purpose of these interviews was to solicit input on the trade's experience and expectations to date on the SFI pilot program currently in operation at Puerto Cortes (Honduras), Port Qasim (Pakistan), and Southampton (United Kingdom). We also interviewed trade representatives willing to offer general comment on the SFI program and the 100 percent container scanning requirement. The information obtained from these interviews is summarized below. Six of the 10 trade representatives we interviewed declined our request to be explicitly cited and identified in our report.

PUERTO CORTES, HONDURAS

We interviewed four trade representatives involved in the importation of containerized goods from Puerto Cortes: Wal-Mart Stores, Inc. and an ocean carrier and two other importers who do not want to be cited or identified in CBP's report.

To date, Wal-Mart has not experienced any issues or impacts relating to CBP's container scanning program. Wal-Mart imports less than one percent of their total import volume from Puerto Cortes (588 containers from January through September 2007). They do anticipate changes in their import operations as scanning systems are implemented – they will observe for scanning operations that impact flow/speed and will make adjustments as necessary. Their major concern is the scalability of the scanning systems from the relatively small pilot ports to the larger Chinese ports, which are pivotal to their operations and involve importation of goods with short lead times. Inadequate system capacity, scan delays, and equipment malfunction would be problematic, especially at origins where manufacturers typically ship their goods in large batches just ahead of established ocean carrier cut-off times. Delays due to scanning could overwhelm a terminal already experiencing delays due to routine container processing and lead to containers missing their ocean vessel departure times, which would significantly disrupt Wal-Mart's supply chain. Extending cut-off times to accommodate longer container processing (and scanning) times would require more containers stored or dwelled at space-limited ports. Wal-Mart also expressed concern about the potential increase in secondary examination rates in order to resolve alarms (and false positives), which could again lead to containers missing their ocean vessels, especially at foreign ports with limited dwell times.

To date, an ocean carrier operating out of Puerto Cortes has not experienced any issues or impacts relating to CBP's container scanning program. This ocean carrier ships

approximately 12,000 containers of primarily agricultural products (produce) from Puerto Cortes to the United States annually. Because they have personnel stationed at their own proprietary terminal at Puerto Cortes, they can closely monitor any changes in container flow (e.g., gate times) due to container scanning.

To date, a large importer has not experienced any issues or impacts relating to CBP's container scanning program. They export approximately 50 containers per week from Puerto Cortes to the United States. Their concern is that poor implementation and management of CBP's scanning systems would cause delay and inefficiencies in their supply chain. Inadequate scanning system capacity or infrastructure resulting in long delays or queues, particularly in the Central American ports, represents a significant risk. This is because their goods would have a higher likelihood of being stolen, damaged, or lost as drivers become fatigued or less vigilant. Additionally, any delays due to scanning could lead to containers missing their ocean vessel departure times because their containerized goods typically have short dwell times of less than 24 hours. Currently, some of their containers are delivered to the port only hours before they are scheduled to be loaded on the vessel. The importer estimated that they would have to carry an additional day of inventory to accommodate delays due to scanning, which would require additional storage and security. As an alternative, they suggested that CBP explore scanning containers at free trade zone centers located outside of the ports to alleviate port traffic and space constraints. They also commented that the local customs personnel involved in the operation and management of the scanning systems are insufficiently staffed and trained, and tend to be corrupt, undermining the scanning program. Furthermore, the current operating procedures do not efficiently resolve or adjudicate containers that alarm – instead these containers are typically held unnecessarily for prolonged periods of time without notification to shippers. Finally, to monitor and measure impacts from scanning to their container processing and transit times, the importer would closely monitor their shipment data in near real-time, as they do now.

To date, a large importer has not experienced any issues or impacts relating to CBP's container scanning program. They export approximately 120 containers per week from Puerto Cortes to the United States. Their containers typically arrive at the port two days to as soon as the same day before scheduled sailings. Because of the relatively short dwell times of their cargo and limited storage space at their warehouses and the port, any delays caused by the scanning program would be problematic. Finally, to monitor and measure impacts from scanning to their container processing and transit times, the importer would closely monitor their cycle and inventory hold times.

PORT QASIM, PAKISTAN

We interviewed two prominent U.S. importers who import containerized goods from Port Qasim, one who does not want to be cited or identified in CBP's report and Wal-Mart Stores Inc. According to CBP data, they each imported approximately 625 containers from Port Qasim during the period August 1, 2006 through July 31, 2007.

To date, a large importer has not experienced any issues or impacts relating to CBP's container scanning program. They favor risk-based targeting over 100 percent scanning. They commented that implementation of scanning systems could be problematic and result in increased lead times. This is a particular concern at ports operated by public or governmental entities because they are not as efficient or disciplined as privately-operated ports. They indicated that while the scanning systems may have adequate capacity to accommodate the volume of containers, there could be substantial delays associated with the reading, reviewing, transmittal, and interpretation of scan data (locally and/or at ATS) before

containers are released. There may also be significant delays in resolving alarms, especially in instances where there are high rates of false positives. They also noted that the rate at which their containers imported from Pakistan are reexamined upon arrival at U.S. ports has not changed appreciably (0.1 percent) since implementation of the pilot scanning program. Finally, they offered the following metrics to monitor and measure the effects of container scanning: cut-off times, transit times, overseas hold time, and costs.

Wal-Mart's comments above for Puerto Cortes also apply to Port Qasim.

SOUTHAMPTON, UNITED KINGDOM

We interviewed one exporter of containerized goods, who does not want to be cited or identified in CBP's report. We also interviewed a trade association, the Freight Transport Association.

To date, the exporter has not experienced any issues or impacts relating to CBP's container scanning program. They export approximately 1,000 TEUs of containerized goods from the United Kingdom to the United States annually, of which about 50% is shipped from Southampton. Because of the early stage and the relatively limited scope of the pilot container scanning program, they cannot predict potential impacts at this time. Their shippers/freight-forwarders typically transport their goods by feeder vessel and rail to the larger British ports (e.g., Southampton and Liverpool) for lading on larger ocean vessels destined for the United States. They also transport goods by feeder vessel from Grangemouth, Scotland to Antwerp, Belgium. However, CBP is scanning only a limited number of transshipped and rail containers at Southampton. Because of close relationships with their suppliers and shippers/freight-forwarders and the constant need to control shipping costs, the exporter believes that they can closely monitor any changes in container processing and transit times and costs due to container scanning.

The Freight Transport Association (FTA) represents more than 14,000 member companies involved in the manufacture, supply, and commerce of goods within and outside the U.K. Their membership represents approximately 70 to 75 percent of the U.K.'s total import and export volume. To date, FTA members have not been able to detect any impacts specifically from the pilot scanning program because the Port of Southampton already had prevailing, serious congestion issues. The terminal operator, Southampton Container Terminals, recently addressed these issues by taking measures to improve their vehicle booking system, coordination of labor and equipment, and ocean carrier compliance with shipping schedules. As these improvements take effect and the pilot program matures, the member companies operating at the port may then begin to notice impacts specifically from the scanning program. In the meantime, FTA members have expressed concern about implementing container scanning in the U.K. because the country's major container ports (Southampton, Felixstowe, and Thamesport) are already operating at near capacity. They believe that container scanning would cause additional delay and cost by exacerbating already congested conditions and reducing port efficiency. Implementing container scanning at Felixstowe represents a significant challenge because it would require significant road and railway infrastructure improvements, given the number of container terminals (three) and poor existing road and rail connections to and within the port. In addition, FTA members who typically transship containerized goods through the major container ports (e.g., from manufacturing centers in Scotland through Southampton) are concerned with the additional handling, delays, and risk of loss that would be involved with the scanning of transshipped containers. The pilot program is currently scanning these containers on a limited basis. Finally, the FTA favors risk-based programs over 100 percent scanning. For example, the FTA currently supports expanding the U.K.'s "Known Shipper" regime beyond air freight, which

specifies security measures that shippers must adopt in order to facilitate transport and clearance of their goods for export within a tightened transport security environment.

OTHER

We also interviewed three other trade representatives able to comment on supply chain issues. Two of these representatives had provided input to our regulatory analysis of CBP's proposed "10 + 2 rule."

While supporting CBP's supply chain security goals, Home Depot, Inc., a large importer, expressed several concerns with 100 percent container scanning that could negatively impact global trade and ultimately the U.S. economy. Home Depot's first concern is the physical limitations of ports around the world. Major ports are already struggling with significant space constraints and do not have the space for new equipment, inspection facilities, and vehicle queues that would be necessary for 100 percent container scanning. Home Depot's second concern is the scanning of transshipped containers, which have very tight windows to connect with outbound sailing vessels. They questioned how and where would scanning of these containers occur. If shipments fail to meet their transshipment sailings, they could be delayed by a full week waiting for subsequent sailings. Home Depot's third concern is congestion at the port of origin. The additional time necessary to scan containers and analyze scan data will slow the flow of containers through ports, with rippling effects in downstream parts of the supply chain. The ultimate result could potentially be the halt or extreme slowdown of global trade, sending the U.S. economy into serious downturn. Home Depot's fourth concern is the effectiveness of scanning equipment. They indicated that recent, informal accounts suggest that only 27 percent of risky cargo is successfully identified with the scanning equipment currently being tested. The program should measure not only cargo risk identification successes but also false-positive identifications to gauge how well scanning equipment is functioning. If scanning equipment is ineffective, it could create a false sense of security, actually making it easier to achieve what the equipment is trying to prevent. Finally, Home Depot regularly tracks the following metrics which they would use to monitor and measure the effects of container scanning: general queue times at ports and terminals, container status messages, transit times, lead times, and amount of inventory carried. Home Depot's computerized import systems track the movement of containers as soon as they are booked for shipment of goods to the United States. Using data and information provided to these systems by various parties in their supply chain (e.g., carriers, logistics providers, port and terminal operators), Home Depot could readily detect and evaluate container delay.

To date, a trade logistics company has not experienced any issues or impacts relating to CBP's container scanning program. However, they believe that impacts will materialize upon implementation of scanning at major Asian ports. They indicated that if the scanning program increases review of shipment documentation at foreign ports, delays might result because foreign parties typically submit this documentation inaccurately. They also expressed a concern about costs the trade may incur for scan equipment, secondary inspections, and additional container handling or transportation. They expect that the container scanning program will not affect the secondary examination process at U.S. ports. They indicated that if a particular container is scanned at a foreign port, it should have a reduced likelihood of secondary examination upon arrival at the United States. Otherwise, they expect container processing and transit times and costs to increase overall.

To date, Trade Innovations, Inc., a trade consulting firm, has not experienced any issues or impacts relating to CBP's container scanning program. They favor a risk-based program over 100 percent scanning, which, in their opinion, poses significant informational, logistical, and infrastructure challenges

for limited additional benefit. They indicated that container scanning would most likely lead to advanced cut-off times and increased costs for carrying additional inventory, transportation, and handling. They also expressed concern about reciprocity and its potential impact on U.S. exports. Trade Innovations added that using costs as a potential metric to monitor and measure impact of container scanning should consider any additional fees, surcharges, or taxes levied on scanned containers and any increases in existing "port security" or "port congestion" fees. Other metrics include transit time and cut-off times.

SUMMARY

To date, the trade generally has not experienced any issues or impacts relating to CBP's container scanning program. Further, the trade generally cannot reliably predict an impact at this time because of the early stage and the relatively limited scope of the pilot container scanning program. Some of the companies we interviewed expressed concerns about the potential for backups, congestion, and shipment loss and damage at the ports and container terminals as a result of inadequate capacity of scanning equipment and port infrastructure, scanning equipment malfunction, and other potential sources of delay. In general, importers stated that the ports are already operating at full capacity. One importer commented that while there may be adequate capacity of the scanning equipment to accommodate the volume of containers, there could be substantial delays associated with the reading, reviewing, and interpretation of scan data before containers are approved for staging or loading at the foreign port. There were also concerns about significant delays in resolving alarms, especially if there are a high number of false positives. In addition, foreign manufacturers typically ship their products in large batches just ahead of established ocean carrier cut-off times. Thus, delays due to scanning could overwhelm a terminal already experiencing delays due to routine container processing and lead to containers missing their ocean vessel departure times. Delays would be especially problematic for the larger container ports that handle a significant number of transshipments (containers arriving by ship) with very short dwell times. As a result, importers and exporters may have to carry additional inventory, and ocean carriers may have to advance their cut-off times for containers scheduled for pre-assigned sailings. Finally, some trade representatives commented that the container scanning program may have no effect on the rate of secondary examination process at U.S. ports, thus not providing the benefit of faster processing at U.S. ports. One importer questioned the effectiveness and accuracy of the scanning equipment in detecting risky cargo.

The trade identified some possible metrics they would use for evaluating the efficiency of the overall container scanning process. Metrics cited include carrier cut-off times, container gate and transit times, overseas hold time, shipping costs and any fees for the container scanning process.

The trade also questioned the need for expanding the integrated scanning system to the remaining CSI ports. The trade favors the risk-based security approach that CBP has developed with many of its international partners. They believe that continued use of the automated targeting tools used under the current CSI program, supplemented with additional security filing data elements that would be required from importers and carriers under the "10 + 2" rule currently proposed and under consideration, would allow for reduction of risk against possible terrorist attacks with less disruption to trade operations than 100 percent scanning.

Appendix D

Trade Review of SFI Program – Report

WORLD SHIPPING COUNCIL
PARTNERS IN TRADE

Comments of the World Shipping Council

Regarding

U.S. Customs and Border Protection's

Secure Freight Initiative Pilot Projects Evaluating 100% Overseas Container Scanning

March 7, 2008

The World Shipping Council (WSC) appreciates the letter of February 5, 2008 from Mr. Richard DiNucci, Director of U.S. Customs and Border Protection's Secure Freight Initiative (SFI) inviting comments from the WSC with respect to the April 13 report that Customs and Border Protection (CBP) is required to submit to Congress under the SAFE Port Act regarding overseas SFI container inspection pilots.

The WSC and its member companies commend CBP for its efforts to conduct these pilots and to assess all the implications of the concept of 100% container inspection. The following are some preliminary comments that the Council has at this stage of the analytical process. We hope that they will be of assistance as these efforts continue to examine the implications of these pilots and overseas container inspections.

Containerized Cargo Security Strategy Overview

The WSC fully supports what we understand to be the U.S. government's present strategy in addressing containerized cargo security. Specifically, the Council supports CBP's risk assessment and screening of 100% of all containerized cargo shipments prior to their being loaded onto vessels destined for the U.S., and the pre-vessel loading inspection of 100% of those containers that CBP's cargo risk assessment system determines to present a substantial security risk or question. The Council also supports CBP's programs to undertake the radiation scanning of all containers at the U.S. ports of arrival and the non-intrusive inspection (NII) or physical inspection of all containers that merit inspection treatment at the U.S. port of discharge if they were not inspected prior to vessel lading.

1

The "Implementing the 9/11 Commission Recommendations Act" contains statutory language calling for inspection of 100% of all U.S. import containers before vessel loading by 2012, but that statute contains many unanswered questions and may be impractical.

We support the efforts of CBP to conduct SFI pilot programs of radiation and non-intrusive container scanning at various foreign ports of lading in order to obtain further lessons about the issues and costs that would arise in an effort to conduct expanded overseas container inspections.

Container Security Initiative (CSI)

The network of bilateral Customs-to-Customs agreements forming the 'Container Security Initiative" (CSI) continues to grow. There are at least 58 foreign ports participating with the U.S. in this initiative, covering 85% of U.S. containerized import trade. CSI is a keystone to the effective international implementation of the advanced screening and inspection of U.S. containerized cargo that presents security questions.

It is only through these cooperative Customs-to-Customs data sharing and container inspection efforts that overseas container inspection can occur. Those cooperative government-to-government relationships need to be cultivated, not dictated.

The SFI container inspection pilot programs should help shed further light on how foreign Customs authorities view the idea of 100% container inspection at their ports, the resources necessary to satisfactorily undertake such a task, the differences that exist in various jurisdictions, the expectations of reciprocity that such governments may have, and the issue of which government is expected to bear what costs in undertaking such a program.

Cargo Risk Assessment

CBP employs a multi-faceted containerized cargo risk assessment and screening system, so that it can identify those cargo shipments that warrant further review, rather than those that are low risk and should be allowed to be transported without delay. WSC supports this risk assessment strategy. The improvement of those risk assessment capabilities is an important CBP strategy, and the government needs to reconcile the strategy of cargo risk assessment and inspection of cargo shipments that the risk assessment finds warrant a further review, and the proposed "*9/11 Recommendations*" legislation's statutory strategy of the 100% overseas container inspection concept.[1]

An important element of CBP's cargo risk assessment system is the receipt and analysis of pertinent advance information about cargo shipments before vessel loading. This program began soon after September 11th, under which carriers provide CBP with the advance shipment manifest information they possess 24 hours before vessel loading in a foreign port for risk screening (the "24 Hour Rule"). The Council has fully supported

[1] We note for the record the 9/11 Commission did not recommend 100% overseas pre-vessel loading container inspection.

this regulation and this strategy, which allows CBP to perform advance container risk assessment.

While the 24 Hour Rule has been a logical and sound effort, more effective advance cargo security screening will require more data than the information provided by carriers via the 24 Hour Rule. Recognizing both this need for enhanced container security targeting and the existing limits of information provided in carriers' bills of lading, the SAFE Port Act sets forth the following requirement to enhance the capability of CBP's Automated Targeting System:

> "Section 203(b): Requirement. The Secretary, acting through the Commissioner, shall require the electronic transmission to the Department of additional data elements for improved high-risk targeting, including appropriate elements of entry data ... to be provided as advanced information with respect to cargo destined for importation into the United States *prior to loading of such cargo on vessels at foreign ports.*"

In January, CBP issued a Notice of Proposed Rulemaking (NPRM) that would require U.S. importers or cargo owners to file ten additional data elements[2] with CBP 24 hours prior to vessel loading, and to require ocean carriers to provide two additional sources of operational data – vessel stowage plans prior to arrival in the U.S., as well copies of electronic container status messages. This is referred to as the "10 plus 2" initiative.

CBP's strategic security objective in this NPRM is to enhance the government's containerized cargo risk screening and targeting capabilities, so that it can more effectively determine which cargo shipments warrant further screening. This is a significant undertaking by CBP, but one that the World Shipping Council believes is strategically correct. The Council filed detailed comments with CBP on this NPRM on March 3rd and supports CBP in this effort. We discuss this issue here to reinforce the point that, simply because a container has not passed through radiation or x-ray scanning equipment, does not mean it has not been screened by CBP for security purposes before vessel loading, nor does it mean that CBP is not currently enhancing its competencies in this regard.

Containerized Cargo Screening and Inspection

It is also relevant to note that CBP has a well established strategy to undertake radiation scanning of all containers entering the U.S. before they leave a U.S. port. CBP has deployed 1,060 container radiation portal monitors with the objective of performing radiation scanning on virtually 100% of all inbound containers at U.S. ports of discharge.

[2] The ten cargo data elements of the new Security Filing have been identified by CBP as: 1) Manufacturer (or Supplier) Name and Address, 2) Seller (or Owner) Name and Address, 3) Buyer (or Owner) Name and Address, 4) Ship To Name and Address, 5) Container Stuffing Location(s), 6) Consolidator (or Stuffer) Name and Address, 7) Importer of Record Number, 8) Consignee Number, 9) Country of Origin, and 10) Commodity 6-Digit HTS Code.

Further, CBP not only has the capability to issue an ocean carrier a Do Not Load message at a foreign port of lading to stop and inspect any cargo that is considered to be high risk, but it also undertakes non-intrusive inspection technology (NII) or physical inspection of 100% of all arriving containers that are determined to pose a significant law enforcement or security question. CBP has deployed 192 large-scale NII systems nationwide. CBP does not have the capability, however, to undertake NII scanning of every arriving container here in the United States, let alone at every port around the world. Nor is it clear that it has a security need to do so.

The present and future SFI pilot projects at foreign ports can help generate valuable insights when considering the issues associated with potentially broader application of pre-vessel loading container inspection efforts.[3] We applaud this effort and hope that such pilots can help shed further light on some of the issues that were left unaddressed by the "Implementing the 9/11 Commission Recommendations Act" and its provision requiring that by 2012 100% of the containers imported into the United States be "scanned" before being loaded aboard vessels destined for the United States. While we are confident that many lessons may be derived from these pilots, we would hope that the current and future pilots might also be able to provide useful insights on the following questions.

First, the statute provides that containers are expected to be run through radiation detection equipment *and* non-intrusive imaging equipment before vessel loading. What, if anything, would be done with the images or data produced by those scannings was not addressed by the statute. These and future SFI pilots can help identify and address this set of issues, including relations between the host government and the U.S. government, identification of how and where the data is to be electronically transmitted, and what information technology and information systems issues arise in the collection, transmission and storage of the significant quantity of resulting data.

Second the pilot projects can help identify another issue left unaddressed by the terms of the statute, namely who is to perform the screening data analysis task. In some places, this may be CBP. In some places this may be the foreign Customs authority. We understand that the SFI pilot in Port Qasim uses U.S. government contractors to perform the remote screening and transmittal of data back to CBP's national targeting center.

Third, it is our understanding that the Congress did not intend that the overseas container scanning function was to be left to foreign companies to perform, but was to be a function of either the U.S. government or the sovereign government of a trusted trading partner. These and future SFI pilots can help identify the capital and the operating costs of establishing the necessary capability to perform the task of 100% container scanning, and what portion of the costs is to be borne by CBP, what portion is to be borne by the U.S. Department of Energy, and what portion is to be borne by foreign governments. The entire set of necessary "system" costs can be further analyzed and understood through such SFI pilots. For example, we understand that in

[3] DHS has established three full scale container scanning pilots in co-operation with host governments at Southampton, U.K.; Puerto Cortes, Honduras and Port Qasim, Pakistan. Three other smaller scale pilots are under development at port facilities in Busan, South Korea (Gamman Terminal); Salalah, Oman; and Singapore.

one of the second set of SFI pilots currently underway, it has been estimated that the cost of simply transmitting the data files to the U.S. amounts to $500,000.00 per month.

Fourth, these and future SFI pilot programs may shed additional light on the extent to which the government of the United States' trading partners will expect the U.S. government to perform such scanning of its own export containerized cargo on a reciprocal basis. We note that no pilots have yet been established to test the effects of such a concept at U.S. ports.

Fifth, we recognize that the first three SFI pilot programs chosen were at relatively low volume ports with little, if any, transshipped containers. While the Council understands and has no criticism of starting these SFI pilots with low volume ports whose trade flows are relatively simple, these pilots will not shed light on what kinds of issues would be encountered at high volume ports or at ports with significant volumes of transshipped containers that do not pass through the marine terminal gates.

How 100% container scanning could be performed on transshipped containers remains an unanswered question, but one that is of critical interest in major transshipment ports, such as Singapore and Rotterdam. The container volumes being handled at major transhipment terminals can approach 10,000 containers per day on peak days. Furthermore, when a container that is to be transshipped onto a U.S. destination vessel is discharged into a port facility, that facility does not knows with certainty that the container will be U.S. destined cargo, creating significant operational uncertainties and challenges. The "lessons learned" from the initial SFI pilots will not be sufficient to address those challenges.

The point of these observations is not to criticize the existing or planned SFI pilots in any way, but to note that care must be applied in determining what the "lessons learned" are from these initial pilots, and to note that simply because a small scale pilot at one port may encounter no substantial difficulties does not mean that the concept of 100% container scanning is ready for implementation at all ports. Even for containers entering a terminal by road, the container screening capacity has to be gauged to the size of the terminal, the peak periods, and the opening hours – all of which has a significant impact on the number of hourly truck visits the facility will have. In addition, the response time has to very short. The processing time of the truck will determine how many gate lanes and screening portals will have to be installed.

Sixth, we note that there is some ambiguity in the 100% container scanning statutory language, about whether the non-intrusive container scanning of all containers is a requirement, or whether the statute might be construed in such a way as to require 100% radiation scanning only. In this regard, we note that the World Customs Organization Secretary General, in a December 13, 2007 letter to Senator Lieberman, Chairman of the Senate Committee on Homeland Security and Governmental Affairs supported "well-reasoned risk management systems" and the use of NII scanning to assess the potential risk of containerized cargo which has been identified as questionable by such risk management systems, in contrast to NII scanning of all containerized cargo. He went on to note that: "the WCO raises no objection to another requirement present in the new United States law, namely that all containerized maritime cargoes be subjected to radiation detection processes prior to shipment." The Secretary General appears to be suggesting that 100% radiation scanning of containerized cargo

might be an appropriate alternative strategic vision, when backed up by NII inspection of those cargo shipments that have been determined through risk assessment to present security questions. This is a proposition that warrants further consideration.

Seventh, we note that U.S. statutes and regulations do not specify the technical standards that either the radiation or the non-intrusive scanning technologies must meet. We would expect that this issue is one that the present and future SFI pilots could further develop. We also note that in major transshipment ports, 100% container radiation scanning may require the use of crane mounted scanning equipment. Future SFI pilots might be an appropriate mechanism to explore such technology and provide technology vendors greater clarity about the technical specifications that such crane mounted, radiation scanning equipment would need to meet.

Eighth, we note that significant questions exist regarding the timing and availability of data to facilitate the NII screening of containers. The NII images created are assessed, analyzed and matched against manifest information and other pertinent information that may be available. Manifest information may not be available when the container arrives at the port terminal location where the scanning is completed. This issue should be addressed more fully in the pilots.

Ninth, additional SFI pilots may help address the challenges that will arise at many ports of segregating U.S. destination containers from non-U.S. destination containers that will not need to undergo the container scanning.

Tenth, additional SFI pilots will allow CBP to obtain better information about the impacts on port terminal productivity and about delays to cargo shipments arising from 100% container inspection.

Eleventh, the SFI pilots will need to address the issues of who needs to know that the container has been scanned, and how would they know it.

Finally, we understand that in trying to determine how one would actually perform 100% NII screening of containers, some consideration may be given to performing this function at a place or facility that is separate from the port of loading. We recommend that any pilots considering this approach should do so with some care and clarity, as this approach could add another layer of costs, delays and operational difficulties above and beyond the scanning of the box, including additional drayage, and including additional layers of security measures to be applied from that remote scanning location to the port of lading. The ancillary costs and operational complications from these issues could be at least as significant if not greater than the problems and costs arising from the scanning of the cargo shipments.

Conclusion

The continued ability to transport commerce efficiently, predictably and reliably – as well as safely and securely – is of great importance to the economy of the United States and its trading partners.

The shipping industry's customers -- the hundreds of thousands of U.S. importers and exporters who use containers to transport their cargo – as well as ocean carriers

and marine terminal operators are all concerned about the meaning and potential effects of this "100% container inspection" law. We are aware that the governments of the United States' tracing partners also have significant interest and concerns about the strategy the United Stated intends to pursue with respect to these issues. The fact that the "100% container inspection" statute failed to address many serious and unavoidable issues relating to this concept does not help.

The efforts of CBP and its partner foreign governments to conduct the existing and future SFI pilots is a necessary and commendable cooperative effort to provide necessary perspectives on this challenge. It is clear that there will be a need to extend the pilots to more challenging locations in order to develop additional "lessons learned" that can be applied to future analyses.

CERES

Ceres Terminals Incorporated

Richard Di Nucci, Director
Secure Freight Initiative
U.S. Customs and Border Protection
U.S. Department of Homeland Security
Washington, D.C. 20229

March 4, 2008

Dear Mr. DiNucci:

Thank you for the opportunity to comment on the progress of the Secure Freight Initiative (SFI) as it relates to marine terminal and stevedoring operations.

The role of the marine terminal operator in the transportation chain of international commerce is to provide services that will efficiently move cargo from the vessels to the inland carriers. The efficiency of this effort is often referred to as "velocity". The faster the cargo moves from vessel to the inland carrier, the better we facilitate efficient global trade.

The practice of extending our borders to foreign terminals and performing security screening at the point of entry into a secure transportation network; has reduced the burden at US Ports of Entry and allowed the velocity of cargo to continue and improve. The expansion of the SFI initiative in all foreign ports is essential to continued velocity improvements at US ports. I would encourage your efforts, with support of the U.S. State Department, to expand to all possible foreign ports. Although the world's political environment sometimes makes this extremely difficult, the rewards warrant a persistent effort.

We support the continued need for technological advancements in radiation and other commodity threat detection. The current equipment provides screening that result in false positives at a frequency that slows the terminal velocity as well as taxes the assets of CBP. Recently, procedures have been instituted that stop the outbound flow of cargo when two containers are in line for secondary screening. To stop the cargo flow at any point, other than critical security incidents, demonstrates our need for improved technology, additional assets, or both.

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CERES

Ceres Terminals Incorporated

As this initiative continues and as the 10+2 program demonstrates its value for targeting, the marine terminals should experience fewer broad sweep screening practices. The initiatives and performance of CBP at the national level are providing an improved means of security data collection and threat analysis. However, when this analysis requires action at a U.S. marine terminal there is a need for improved coordination with marine terminal operators. We understand the requirement for secure enforcement actions; however, we feel that communications with vetted marine terminal managers would allow us the opportunity to provide input on how best to accomplish the task on our facilities. Without raising suspicions, action could be taken to facilitate the actions of enforcement. I suggest that each local CBP command establish secure communication connections with each local marine terminal and stevedore. These persons could be used as an advisory team as well as an action partner if necessary. The Ceres Management Team is available to help when called upon.

The mission given CBP by Congress is being accomplished with the efficiency allowed by the assets given them. Without the continued support of Congress in the future, the mission will stall or fail. The latter is not acceptable in our international business environment.

I look forward to working with your group and all members of the International Cargo Security Team. Please feel free to call upon me at any time.

Sincerely,

Stephen R. Crouch

Stephen R. Crouch
Vice President, Environment, Security & Safety
Ceres Terminals Incorporated
NYK Group Americas

Cc: Dan Hall, Sr. V.P. Ceres Terminals, Inc.
Bill Ferguson, NYK Line (North America) Inc.

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NOL GROUP

March 6, 2008

Mr. Richard DiNucci
Director, Secure Freight Initiative
US Department of Homeland Security
US Customs and Border Protection
1300 Pennsylvania Ave
Washington, DC 20220

Dear Mr. DiNucci:

Thank you for asking APL to submit its views on the Secure Freight Initiative (SFI) which will be included in the appendix to your April 13th report to Congress.

BACKGROUND

APL and APL Logistics (collectively referred to as APL in this letter) operate vessels, marine terminals and transport freight across continents. APL also stores, packs, unpacks and delivers goods to our customers' doors. In addition, APL is a key U.S. Flag carrier providing important logistical support carrying cargo for the U.S. military.

APL is dedicated to assisting both Federal and local law enforcement agencies in meeting their goals of securing our borders. We believe that being a thoughtful leader and being part of the solution is critically important. In the context of CBP, APL is actively involved in COAC, CESAC and TSN. In the context of the USCG, we are active in both AMSC at the local levels and NMSAC at the Federal level. We advise international organizations such as ASEAN and APEC and in fact, will be participating in the upcoming APEC Trade Recovery Program (TRP) this summer in which DHS is involved.

And finally, as you know, we are and have been a supporter of SFI. In this context our "on the ground" SFI experience is with the Singapore pilot. Since that pilot has yet to begin, our comments here will not incorporate any performance metrics.

SAFE PORT ACT/SFI: WHAT WE LIKE

Notwithstanding APL's objection to the 100% radiation scanning and image capture mandate ("integrated scanning"), APL does believe that intelligently expanding the capability of scanning containers before vessel load, using proven technology based on appropriate threat assessments, makes sense.

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USA

APL believes that the SAFE Port Act represents an intelligent approach to complicated supply chain security issues. The Act charges DHS, for example, to work with the private sector and foreign governments to develop effective processes and procedures and to determine the probability of detection regarding the integrated scanning. The Act also charges DHS with developing a set of "lessons learned" findings.

APL agrees with the SFI approach that terminal operators should not have any role in resolving radiation alarms, nor should they have any access to the information generated by the integrated set of radiation and radiographic equipment. We believe that the integrated scanning function is a law enforcement/government function, and that Congress intended this to be a sovereign nation function and not one to be performed by the many different private port facility operators around the world.

APL agrees with the SFI philosophy that the success of the program rests with improving security while assuring negligible interruption to trade. Given these two goals, we agree that SFI represents a good initial step.

APL supports the SFI approach of gradually extending the pilots to more challenging locations developing a set of "lessons learned" that can be applied to future efforts.

100% INTEGRATED SCANNING

Even though mandating 100% scanning may sound like an appealing objective, there are many pragmatic issues and obstacles that would need to be addressed in pursuing such an aggressive goal. The *Implementing the 9/11 Commission Recommendations Act*, mandating 100% container inspection, was regrettably passed before the SAFE Port Act pilots were completed.

Some of the outstanding considerations that need to be addressed and/or resolved include:

- Manpower and financial resources for capital, operating, and information technology directly associated with this mandate need to be clearly identified.
- The existing technology's effectiveness in identifying shielded radioactive material needs to be demonstrated to the international community.
- International technology and operating performance standards for the integrated scanning equipment need to be developed prior to implementing this mandate.
- Development of an automated process to reliably analyze the non intrusive inspection (NII) images is critical.
- Health and safety issues must be addressed separately for each location.
- Assessment of sovereign nations as to how they will respond and whether reciprocal screenings will be required for U.S. export cargo is needed.

According to the Congressional Budget Office, the US imports from over 600 foreign ports and that 95% of the containers come from only 80 of these ports. APL believes the US should leverage this concentration of volume and focus on those larger locations that represent the greatest risks through Government to Government negotiations – not unilateral action.

And let's not forget, in addition to a myriad of other layers of security put in place by CBP, USCG, DOE and other agencies, virtually all containers already undergo a radiation scan at US ports of discharge before entering US commerce.

SECURE FREIGHT INITIATIVE – CAUTIONS TO KEEP IN MIND

Even though we are supporters of SFI, we do have some concerns that we would like to highlight.

Testing smaller ports in Phase 1 represents a relatively modest degree of difficulty and may provide misleading results. The Pakistani presentation delivered at the last Trade Symposium and at the last C-TPAT Training Seminar is a good example. The pilot results of this relatively small port were impressive; however, extending the outcome of the Pakistani pilot to a larger transhipment port such as Singapore would be a major mistake. APL does not have a problem with starting modestly. Our concern is that these results might lead to incorrect conclusions.

The images created are assessed, analyzed and matched against manifest information and other pertinent information that may be available. Unfortunately, not all manifest information is available when the container arrives at the terminal location where the scanning is completed. Lacking this information, proper vetting cannot be accomplished without significant impact to terminal and vessel operations, costs and productivity. This important issue needs to be addressed more fully.

SINGAPORE SFI PILOT

In Singapore's case, the lack of manifest information described above became evident very quickly during the planning stages. CBP requested that APL provide this missing manifest information earlier than what is now required by law. The lack of this information represented a critical flaw prohibiting the proper vetting of the scanned containers. APL, in the spirit of cooperation, agreed to provide the SFI team with this data. However, we are still concerned that providing this data will skew the results of the Singapore SFI pilot.

In Singapore's case, due to its size and absence of technology designed to handle a large transshipment port, the pilot was limited to just one terminal (Brani) operated by the Port of Singapore Authority (PSA) and one ocean carrier (APL). By scanning only APL containers and not containers of other vessel operators, certain cost and competitive liabilities accrue only to one carrier (APL). By way of example, it is likely that suspect containers that require additional inspections may miss their intended ship. These misconnections could result in up to a week's delay for those containers. Furthermore, this delay could possibly cause a chain reaction adversely impacting other containers originally scheduled for subsequent vessels.

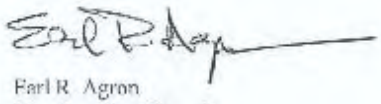
APL also believes this limited set up in Singapore will mask the challenges of expanding 100% integrated scanning more fully in that location. More specifically, the Singapore pilot may not accurately or adequately reflect problems such as:

- issues related to sorting US from non US containers
- infrastructure limitations and challenges
- marine terminal operating inefficiencies/costs
- trade impacts
- challenges associated with performing integrated scanning for those containers that do not flow through marine terminal gates (e.g. transhipment containers from feeder vessels). APL believes that more effort needs to be focused on developing alternative technology such as crane mounted solutions better suited for containers that do not flow through marine terminal gates.

CONCLUSION

APL supports CBP's efforts to reach out to the international community conducting the SFI pilots. We also believe that equal importance must be assigned to developing alternative technology that can effectively address scanning containers that do not transit marine terminal gates. Finally, the conclusions of these pilots should be independent of the *Implementing the 9/11 Commission Recommendations Act* mandate to scan 100% of all containers. This is extremely important given the intrusive nature of this mandate on other sovereign nations and given the potentially large impact on supply chain security.

Respectfully submitted,



Earl R. Agron
Vice President Security
APL Limited

National Retail Federation
The Voice of Retail Worldwide

March 10, 2008

Mr. Rich DiNucci
Director, Secure Freight Initiative Office
U.S. Customs and Border Protection
1300 Pennsylvania Avenue, NW
Washington, DC 20229

RE: CBP Congressional Report on 100 Percent Scanning Pilot Program (Sec. 231d, P.L. 109-347)

Dear Director DiNucci:

On behalf of the National Retail Federation (NRF), we are pleased to provide our comments on the current pilot program under the Secure Freight Initiative (SFI) which are evaluating the operational feasibility of conducting 100 percent scanning of cargo containers overseas. As you are aware, NRF and its members strongly supported the SAFE Port Act (P.L. 109-347) as it moved through Congress, including the provision to conduct a pilot program to test the efficacy of 100 percent scanning at overseas ports. While we supported this provision, we still have many concerns about conducting 100 percent scanning overseas. Our hope is that the reports due to Congress will highlight the multitude of issues that we believe face U.S. Customs and Border Protection (CBP), industry and our trading partners in making 100 percent scanning fully operational.

By way of background, the National Retail Federation is the world's largest retail trade association, with membership that comprises all retail formats and channels of distribution including department, specialty, discount, catalog, Internet, independent stores, chain restaurants, drug stores and grocery stores as well as the industry's key trading partners of retail goods and services. NRF represents an industry with more than 1.6 million U.S. retail companies, more than 25 million employees - about one in five American workers - and 2007 sales of $4.5 trillion. As the industry umbrella group, NRF also represents over 100 state, national and international retail associations.

NRF strongly supports CBP's current multi-layered risk-based approach to supply chain security. While we support the current pilot program to test 100 percent scanning, we continue to have some concerns that we hope the Congressional report will address with regards to moving any such program beyond the current test sites. These concerns include:

- Limited Scale of Pilot Program;
- Appropriate Staffing Levels and Required Training;
- Foreign government cooperation; and
- Cost to Industry

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Limited Scale of Pilot Program

The current pilot program test sites of Puerto Cortes, Honduras; Qasim, Pakistan; and Southhampton, United Kingdom provide a good first step to test 100 percent scanning. We know that CBP is also in the process of testing SFI in a limited capacity at four additional ports with additional cargo flows. The biggest concern, however, is that the three ports that are conducting 100 percent scanning represent very small cargo flows to the United States. Results from larger ports will be very different. Results from these three ports cannot truly reflect potential results from other larger ports.

Congress must recognize that there will be different operational challenges at each port where this program is rolled out. No two ports are the same and that needs to be appreciated. As CBP is well aware, there are different operational issues at each port and our hope is that this report will highlight each one of those operational issues. This is not a program that can be replicated through a cookie cutter approach at each port. As the January 2008 GAO Report "*Supply Chain Security – Examinations of High-Risk Cargo at Foreign Seaports Have Increased, but Improved Data Collection and Performance Measures are Needed*" (GAO-08-187) points out, "*many seaports are densely packed with equipment and personnel, which can make it difficult for host government customs officials to examine container cargo.*" In addition, "*...scanning equipment and examination sites were placed several miles from where container cargo is unloaded, loaded, or stored. According to CBP officials, this adds to the costs and time required for examination and may result in logistical difficulties in having high-risk U.S.-bound containers examined before being loaded onto the shipping vessel.*" This is a critical point that must be addressed.

Because of the small volume of U.S. bound cargo from the three participating ports, as well as the additional four limited testing ports, NRF's members have seen very limited impact to their cargo flows and supply chains. However, this will surely change if such a program is rolled out to larger ports that have greater cargo flows to the U.S. and other trading partners.

Appropriate Staffing Levels and Required Training

While the pilot programs are looking at limited capability at a small number of ports, we question whether or not the full impact of staffing requirements are being considered for moving forward from a pilot project. In addition, are considerations being given to the types of individuals that will be required for full implementation and the type of training they require?

The same GAO report stated that CBP was having difficulty in "*hiring and deploying qualified staff*" for the Container Security Initiative (CSI) program that is currently active at 58 ports. The report notes that CBP continues to face challenges "*in obtaining sufficient numbers of qualified officers to be permanently deployed at CSI seaports.*" If this is the case for the 58 CSI ports, what will be the case for the more than 700 ports that ship cargo to the U.S. where 100 percent scanning will be required? Has CBP conducted a staffing analysis to determine how many CBP officers will be required to perform 100 percent scanning? The GAO report also points out that many host governments are currently limiting the number of CBP officers allowed. How will this be handled?

This also leads to the question of who is actually conducting the scanning and who is responsible for reviewing the images. While CBP is doing this during the limited test, will this be the case when the pilot programs are concluded? Will the images be reviewed and analyzed in a real time environment or will they just be used for forensic evidence if an incident were to occur? How long does it take a qualified CBP officer to conduct the image review? Are the

foreign counterparts in the participating seaports able to conduct reviews in the same amount of time?

Foreign government cooperation
Another critical component of this pilot is the amount of collaboration from the host foreign government. It is imperative that DHS/CBP and Congress recognize that these are sovereign nations that we are asking to partner with us on these initiatives. As the GAO report points out, '*...in some locations, a country may have laws that hinder the collaboration of host government officials*'. This may include laws and regulations that prohibit the use of scanning equipment because of health and safety concerns. There may be some countries where drivers, because of union rules, won't drive through the SFI system because of these concerns. This would create serious delays in conducting the scans of each container. Has this been considered under the current pilot program?

It is still unclear as to who exactly will be reading the scanned images and making the determination that a container possibly poses a threat. Is it CBP? Is it the host government Customs? Is it done jointly? Are the host Customs officials properly trained on the equipment? We are aware of many countries that have weighed in with their concerns on the pilot program and the new 100 percent scanning requirements. It is critical that these concerns be addressed before moving forwards.

Cost to Industry
The final concern is the actual cost of the SFI program to industry and the eventual cost of conducting 100 percent scanning. Who is ultimately responsible for funding this initiative? The funding issues were not addressed in either the SAFE Port Act or the 9/11 Recommendations Act. This is a critical issue that needs to be addressed.

We have not seen a true cost assessment of this program to the U.S. government, the cost for foreign governments or the cost to industry. We need to know the costs for equipment, personnel, infrastructure, etc. After the pilot program, how much will the terminal operators charge for the scanning of each container? If ports must be redesigned to install the scanning equipment, how much will that cost? Who is going to be responsible for paying for those redesigns? How will non-U.S. bound cargo be treated? Will those containers be charged a fee?

Conclusion
NRF appreciates the opportunity to submit comments on the Secure Freight Initiative Pilot Program. While we support the pilot program, we hope the questions raised by NRF and others are fully addressed before such a program is rolled out beyond those ports participating in the pilot project.

Sincerely,

Jonathan Gold
Vice President, Supply Chain and Customs Policy

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March 17, 2008

Mr. Richard DiNucci
Director, Secure Freight
U.S. Department of Homeland Security
U.S. Customs and Border Protection
1300 Pennsylvania Ave
Washington, D.C. 20220

Dear Mr. DiNucci,

On behalf of the Retail Industry Leaders Association (RILA), thank you for allowing us to submit comments on the Secure Freight Initiative report due to Congress on April 13, 2008.

By way of background, RILA represents the largest and fastest growing companies in the retail industry. Its members include retailers, product manufacturers, and service suppliers, which together account for more than $1.5 trillion in annual sales. RILA members operate more than 100,000 stores, manufacturing facilities and distribution centers, have facilities in all 50 states, and provide millions of jobs domestically and worldwide.

We are proud of our industry's long standing partnership with Department of Homeland Security (DHS), Customs and Border Protection (CBP), and Congress. RILA companies were original participants in the Customs-Trade Partnership Against Terrorism (C-TPAT). This program has resulted in a successful security partnership between industry stakeholders and law enforcement. Building off of our shared commitment to security, RILA companies participated in the Secure Freight Initiative (SFI).

RILA objected to the 100 percent container scanning mandate included in The Implementing the 9/11 Commission Recommendations Act. We do, however, feel that an enhanced scanning capability integrated within the risk-based policies practiced by our government since 9/11, can improve supply chain security. But we recognize that even a modest increase in the percentage of containers scanned will pose significant diplomatic, financial, and staffing challenges. We are grateful that SFI has allowed those challenges to be discovered.

Challenges Ahead

RILA companies were privileged to receive a presentation from the Pakistani government on the pilot project at the Port of Qasim. All stakeholders involved in the project should be commended as it has shown that high-percentage scanning in limited circumstances can improve security. But the results of the Port Qasim project should not be interpreted that this can occur at high-volume foreign ports, or large transshipment ports. In fact, Pakistan has shown why high-volume scanning can only occur within a risk-based approach. We say this because of the

diplomatic, operational, and financial challenges associated with requiring all U.S. bound containers to be scanned.

Diplomatic

The Container Security Initiative (CSI) has been a successful endeavor not only due to its risk-based approach, but also because it allows U.S. Customs and Border Protection inspectors to develop a cooperative relationship with their foreign counterparts to assess the risk of a container and take preventive action before a container is loaded on ship at a foreign port. The U.S. government and foreign governments have spent the last five years improving the relationship, which in turn improves container security. Any new effort on container scanning must take into account that our trading partners are sovereign nations that have already committed significant resources to partner with the U.S. government. Failure to do so will jeopardize this relationship and therefore could weaken container security.

Operational

The operational challenges that have been discovered through SFI are the greatest challenge to reaching the 100 percent container scanning mandate and would need to be resolved going forward. The manpower and equipment demands are significant. Adding to the challenge is the fact that many ports, especially transshipment ports, are constrained by space. This challenge will make it difficult to outfit all lanes with scanning equipment and have adequate inspection stations. The space constraints also cause ports to put a premium on efficiency, which will be strained by a 100 percent scanning requirement. Significant challenges remain in integrating the scanning image, with container manifest data in a real-time fashion. If this integration does not occur, it is very likely that many containers would be delayed by a minimum of a week as sailing windows would be missed, even though they could be assessed as low-risk. The health and safety issues associated with increased scanning must also be addressed. Any effort to increase the percentage of containers that are scanned must have a concept of operations that is developed by the U.S. government, foreign governments and industry stakeholders. Another critical component to operational success will include effective scanning equipment. There must be transparency in regards to the operational effectiveness of the scanning equipment, and any deficiencies should be addressed.

Financial

An increase in the percentage of containers scanning will also have significant financial costs to the private sector, to the US government and to the host governments depending on how costs are allocated among the parties. The staffing increases required will necessitate foreign governments to increase the budgets of their foreign customs service. The foreign port or the foreign governments will incur costs to purchase equipment that can achieve scanning while making it easier for their personnel identify dangerous cargo. These costs will be daunting for smaller and lesser developed countries. The U.S. Government will also incur costs. We assume these costs will be estimated in your report. One key question rests with an analysis that indicates whether the costs associated with 100% scanning based on the threat / risk warrant such

an investment in resources and if there are alternative and more effective uses for these "security" dollars.

RILA looks forward to working with you to improve supply chain security. This is not an easy task but through partnership and collaboration, CBP can develop policies that facilitate trade and enhance supply chain security. If you have any questions please contact Allen Thompson, Vice President of Global Supply Chain Policy (allen.thompson@retail-leaders.org).

Sincerely,

Allen L. Thompson, III
Vice President Global Supply Chain Policy

Appendix E

Foreign Government Correspondence Regarding SFI

WORLD CUSTOMS ORGANIZATION
ORGANISATION MONDIALE DES DOUANES

The Secretary General

07.EL-0033E/L.B.

Brussels, 29 January 2007.

Dear Commissioner Basham,

I am writing to you concerning the potential impact of a legislative proposal currently awaiting consideration in the Senate of the United States. This Bill, designated as H.R.1 and entitled Implementing the 9/11 Commission Recommendations Act of 2007, contains provisions in its section 502 which give me cause for serious concern. The United States House of Representatives has recently approved the provision in question. I am aware that the European Union has recently expressed various concerns regarding this Bill, and indeed I am in accord with many of them.

Since shortly after the tragic events of 11 September 2001, I have been directing the considerable efforts of the Secretariat of the World Customs Organization (WCO) in working very closely with our Member Customs administrations to identify and address weaknesses in the global trade supply chain which might be subjected to terrorist activity. The United States, a valued Member of the WCO, was very instrumental in our efforts to develop standards for cargo security which would be universally applicable. Our combined efforts have resulted in the development of the SAFE Framework of Standards which thus far 144 of our 171 Members have indicated the intent to implement. The United States was among the very first of our Members to so indicate.

Ever since finalization of the WCO SAFE Framework of Standards, United States Customs and Border Protection has been one of its foremost proponents and is currently assisting generously in the global SAFE Framework implementation effort. One of the key standards of the Framework is the establishment of a risk management system to identify potentially high risk shipments. The use of non-intrusive inspection equipment is also strongly advocated, but in accordance with these risk assessment techniques.

./...

Mr. W.R. BASHAM,
Commissioner,
Office of International Affairs and Trade
Relations,
U.S. Customs and Border Protection,
Department of Homeland Security,
1300 Pennsylvania Ave., NW,
WASHINGTON, DC 20229 - Etats-Unis.

Rue du Marché, 30, B-1210 Bruxelles, Belgique

As you know, the WCO is heavily involved in assisting Members' efforts to implement the SAFE Framework, and a large and important focus of this Capacity Building programme is related to enhancement of risk management techniques. At a time when the WCO is actively encouraging all its Members to employ risk management techniques, which to many is a relatively new concept, the proposed 100 % non-intrusive scanning approach of H.R.1 threatens to undermine our work in this area.

The United States is also a signatory to the Revised Kyoto Convention (RKC) on the simplification and harmonization of Customs procedures. The Convention underpins many of the concepts, such as risk management, that are found in the SAFE Framework of Standards. Under RKC Standard 6.3 in the obligatory General Annex it is required that "In the application of Customs control, the Customs shall use risk management." Further, RKC Standard 6.4 provides that "The Customs shall use risk analysis to determine which persons and which goods, including means of transport, should be examined and the extent of that examination."

The Revised Kyoto Convention provisions cited above, as well as the SAFE Framework itself, were promulgated in recognition of the immutable fact that current technology and Customs staffing levels do not permit 100 % scanning of international cargo. Therefore, the sole means by which the safety of the trade supply chain may be secured without imposition of crippling impacts on the necessary flow of legitimate international trade is through the application of well reasoned and applied risk management regimes.

Inevitably, trade volumes grow and security needs continue to increase. It has long been apparent to Customs administrations that there are no physical security processes, including even unlimited additional manpower allocations, which can be successfully applied to match an ever expanding threat potential. Only through working in a smarter manner by applying risk analysis principles against available cargo data can we keep apace of the situation. The means available to mobilize this effort by Customs is the globally applicable SAFE Framework of Standards. This document identifies the specific data elements required for robust security screening, as well as, the required timing for their submission to Customs authorities.

I wish to raise one additional area of concern. This relates to changes that United States Customs and Border Protection may be contemplating to the list of agreed upon data elements required for advance cargo screening and targeting which could adversely impact upon the SAFE Framework. Legal authority for such additions, as appropriate, was made available to CBP by Section 203(b) of the Safe Port Act of 2006.

The objective of specifying data elements in the WCO SAFE Framework was to encourage harmonization at a global level, thereby facilitating the important aim of mutual recognition amongst Customs administrations of risk assessment control results. It is therefore of concern to the WCO and its Members that the United States is considering the addition of data elements beyond the parameters of the SAFE Framework as part of a programme known as 10+2 or Security Filing. I do hope that the United States will engage in a full dialogue with our Members and trade representatives before implementing new data elements, and will in the end agree to make any changes in this regard only in a manner agreed upon by its fellow WCO Members in order that the US position may remain consistent with the SAFE Framework.

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I appreciate having the opportunity to bring these concerns to your attention and hope you understand that I do so in the spirit of our joint concerns regarding cargo security. If you wish you may share this letter with DHS Secretary Michael Chertoff and any appropriate Congressional Committees. I look forward to the continued close and fruitful co-operation we have always enjoyed with our colleagues from the United States. Indeed, I look forward to seeing you at the last High Level Strategic Group meeting this coming April.

Yours sincerely,

Michel Danet.

JOINT RESOLUTION OF THE CUSTOMS CO-OPERATION COUNCIL'S[1] POLICY COMMISSION AND THE PRIVATE SECTOR CONSULTATIVE GROUP CONCERNING THE WCO SAFE FRAMEWORK OF STANDARDS AND THE UNITED STATES LEGAL REQUIREMENTS FOR 100 PERCENT CONTAINER SCANNING[2] AT EXPORT

THE POLICY COMMISSION OF THE CUSTOMS CO-OPERATION COUNCIL[1] AND THE WCO PRIVATE SECTOR CONSULTATIVE GROUP,

NOTING THAT :

- the World Customs Organization (WCO) is the intergovernmental organization competent in Customs matters and that it represents 171 Customs administrations world-wide;
- the Council of the World Customs Organization unanimously adopted the WCO Framework of Standards to Secure and Facilitate Global Trade in June 2005;
- the objective of the WCO SAFE Framework of Standards is to establish standards that provide supply chain security and facilitation at a global level to promote certainty and predictability.

FURTHER NOTING :

- that the US Law "Implementing Recommendations of the 9/11 Commission Act" of 2007 requires the 100 percent scanning of US-bound containers at a foreign port.

[1] Customs Co-operation Council is the official name of the World Customs Organization (WCO).

[2] Reference to image scanning only.

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CONCERNED that the implementation of the requirement for 100 percent container scanning at export :

- would be detrimental to world trade, as well as economic and social development at national and global level;
- would introduce a significant non-tariff trade barrier and bring about disproportionate infrastructure, operational and inventory costs to both trade and economies;
- would deviate from trade facilitation and logistical efficiency and result in unreasonable delays, increased storage demands and port congestion;
- would present severe international trading difficulties to everybody, including small and medium sized enterprises in the United States and other countries.

NOTING ALSO :

- the core elements of the WCO SAFE Framework of Standards :
  - advance electronic cargo information,
  - use of a consistent risk management approach to address security threats,
  - selective intelligent outbound inspection of high-risk containers and cargo using non-intrusive detection equipment, such as scanners and detectors, based on international Customs co-operation and risk analysis,
  - provision of benefits to businesses that comply with supply chain security standards;

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- the provisions on trade facilitation and risk management in the WCO Convention on the Simplification and Harmonization of Customs Procedures, known as the "Revised Kyoto Convention", to which the United States is a Contracting Party, as well as the recommendations related to the mutual recognition of control standards and a multi-layered risk-based approach in line with the WCO SAFE Framework of Standards;

- the security provided by authorization of companies through trade partnership programmes.

GATHERING :

- the expertise of governments, Customs administrations, private sector operators active in international trade and relevant international organizations.

RESOLVES :

- To express its opposition to 100 percent scanning of containers at export and its impact on world trade.

- To petition the United States Congress to take all appropriate steps to review the requirement of 100 percent scanning legislation, and to reconsider its implementation.

- To recommend the United States Congress to support the WCO SAFE Framework of Standards as well as capacity building to ensure implementation.

Done at Almaty on 6 December 2007.

Tapan Erling
Chairperson of the WCO Council

Renee E. Stein

Renée Stein
Chairperson of the Private Sector Consultative Group

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ORGANISATION MONDIALE DES DOUANES

WORLD CUSTOMS ORGANIZATION
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Established in 1952 as the Customs Co-operation Council
Créée en 1952 sous le nom de Conseil de coopération douanière

The Secretary General

07-SL.0340

Brussels, 14 November 2007.

Dear Commissioner, Dear Ralph,

I am writing to you to let you know of my concerns regarding the impact of the "Implementing the 9/11 Commission Recommendations Act of 2007" on the security and facilitation of trade and the adverse effects this will have.

As you know, Section 1701 of the Act amends the US Code and denies entry to US territory to any maritime container and its contents unless that container has been scanned using non-intrusive X-ray imaging equipment before being loaded on the vessel in a foreign country. The Act does not provide for any exception, apart from that granted to military cargo. The Act is scheduled to enter into force in July 2012 with the possibility of a two-year deferral at the discretion of the Secretary of the DHS.

I do not propose here again to raise the issues concerning the unilateral nature of the Act, its extraterritoriality which imposes new commercial and administrative practices on independent sovereign States, or its incompatibility with the international commitments entered into by the Government of the United States, most notably with regard to my Organization : the Revised Kyoto Convention, ratified by the United States on 6 December 2005, and the SAFE Framework on the security and facilitation of trade, adopted unanimously by the Council in June 2005. All these arguments were put forward before the Act was passed and they failed to sway the US legislature. That is a pity, but that is the reality of the situation.

.../...

Commissioner W. Ralph BASHAM
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Department of Homeland Security,
1300 Pennsylvania Ave., NW,
WASHINGTON, DC 20229 – United States

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.../...

I have to say that a careful reading of the Act and analysis of its content raises a significant number of questions that tend to reinforce my concerns.

(1) The Act arrives at a time when all economists are predicting that the world economy will be less robust in 2008, and the IMF in particular has reduced its growth forecast for world Gross Domestic Product (GDP) to 4.8% as compared with its previous estimate of 5.2%. This situation is linked to this summer's stock market crisis (sub-primes), the fall in the dollar, the sharp rise in the euro and the soaring price of a barrel of crude. I am concerned about the effects of the new US Act on the world economy, that of the rich countries, that of the emerging countries, that of the developing countries, and even that of the United States. I have asked for an academic study on this general topic and will forward the report to you as soon as I receive it.

(2) I wonder what the attitude of the US Government would be if a State wished to introduce the same requirements on the basis of reciprocity. I have no information about the possible response to a request of this nature, but in the event of a US refusal I fear that the WTO would be faced with a trade policy battle which, to say the least, would be detrimental to the development of trade.

(3) I cannot tell, at this stage, how technology will be able to meet this challenge. Are modern scanners technically capable of meeting the requirements of the US Act ? Can it be assumed that the transmission technology already exists at a price affordable by every operator ? Will the scanner manufacturers be able to deliver on time the equipment needed to scan the more than 17 million containers arriving in the United States from some 600 to 700 different ports ? The pilot projects requested by the US legislature will of course be useful. However, the choice of these projects should be based on precise criteria familiar to the international community and representative of a range of ports that trade with US ports. The choices so far announced, of Southampton (UK), Puerto Cortes (Honduras) and Port Qasim (Pakistan), are puzzling. The choice of larger ports that might be associated with this pilot project, such as Hong Kong, Salalah (Oman), Port Susan (Korea) and Singapore, would complete the range of different options to be considered, taking into account the nature of the commercial operations carried out. It will be necessary to study the consequences of the mechanisms recommended by the US Act for the integrated supply chains of economic operators. The "time" factor would seem particularly crucial since, depending on the response, the entire global logistics of the maritime sector will be concerned, with the resulting substantial financial implications. It will also be necessary to see how containers in transhipment can be dealt with, as well as to consider the treatment of containers loaded in another port that do not leave the vessel. Moreover, your choice is not neutral, since it gives the chosen ports an undeniable commercial and technical advantage over their competitors. What lessons can be learned from a pilot using detection equipment installed in ports and having certain technical characteristics, e.g. penetration, that differ from one port to another ? It will be necessary to establish global standards for such a system to have a modest chance of functioning properly.

.../...

(4) Is the new US Act based on a study of the costs (direct and indirect) it will generate ? These costs are linked with the purchase of the equipment, very expensive in itself, with the upgrading of port facilities for presenting containers, and, above all, with the recruitment of the necessary personnel. I have no idea how many officers will be needed to implement the project. I do not know what choices have been made in the United States, but I do not think that governments today are willing or able to make such significant increases in the number of civil service personnel. It will therefore be necessary to resort to private companies and staff who, it seems to me, currently lack the necessary skills, which will mean an extensive training programme. I understand that the security of the homeland, the American people and US trade is a priority for the US legislature. However, providing this security for US interests comes at a high price. Only the voting of a new "Marshall Plan" could make it possible to meet this huge challenge.

(5) Over and above the inconsistency of the new arrangements with the substance and provisions of the Revised Kyoto Convention and the WCO's SAFE Framework of Standards, the US initiative has dented the enthusiasm of the international community for the new approach to security. Your predecessor and you yourself, with the able assistance of the experts of the USCBP, succeeded in persuading the 170 other Members of the WCO to take this path with a view to protecting global trade from terrorist attacks that could be launched anywhere in the world, thus working for the "global public good". You strove to develop a number of principles – advance data transmission, risk analysis, use of non-intrusive equipment – in close partnership with the private sector. You were able to convince businesses all over the world to invest in security to earn a "label", the status of Authorized Economic Operator (AEO), with obligations and benefits. Through the excellence of the security teams, you showed how important it is to develop intelligence in order to organize a risk analysis appropriate to the threat. All this work which established a vision of the movement of goods has now been called into question. Conceptually, this seems to me to be a regrettable step backwards.

(6) Paradoxically, the new US Act is ushering in a transitional period full of uncertainties. It is a sword of Damocles suspended above governments, businesses and investors. Uncertainty is what those engaged in international trade fear the most. None of the approaches recommended by the SAFE Framework, the Revised Kyoto Convention or the CSI and C-TPAT programmes seems relevant any more. Why should public and private operators commit themselves to a provisional implementation requiring substantial changes when, in four years time, everything will be called into question ? Why invest today in an AEO status that will be obsolete four years from now ? How should we respond to the anguish – perhaps the term is too strong – of the ports in developing countries that trade with the United States but will not be able to meet the requirements of the US Act ?

(7) I am extremely concerned about the difficulties and financial, economic and social costs with which trade facilitation will be faced. The all-out approach to security proposed unilaterally as the appropriate response to an existing threat will have even more devastating effects around the world. My legal background leads me to believe that the new US Act will be implemented and will enter into force, particularly if trade is affected by a terrorist outrage in the coming months.

It seems to me that there is an urgent need for a wide-ranging debate, a broad confrontation of ideas under the auspices of an international organization. Accordingly, I am placing at the disposal of your services the various WCO bodies,

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both policy bodies (Policy Commission, Council) and technical bodies (SAFE Group, Revised Kyoto Convention Management Committee, Permanent Technical Committee), to collect and collate, before April 2008, all the questions raised by the US Act in order to arrive at a harmonized and global interpretation of its mode of implementation. I will also endeavour to present to the Policy Commission in Almaty in December 2007 new orientations on non-intrusive technology standards and rationalized training for the staff who will be responsible for performing these tasks.

Please excuse the length of this letter but I consider it my responsibility to anticipate the introduction of these new arrangements by assessing the impact they are likely to have on our 170 other Members for whom world trade remains one of the keys to progress and growth.

Yours sincerely,

Michel Danet.

WORLD CUSTOMS ORGANIZATION
ORGANISATION MONDIALE DES DOUANES

The Secretary General

07.EL-0259E/L.B.

Brussels, 13 December 2007.

Dear Mr. Chairman,

I am writing to you, in my capacity as Secretary General of the World Customs Organization (WCO), an independent intergovernmental body whose mission is to enhance the efficiency and effectiveness of Customs administrations world-wide thereby assisting them to contribute successfully to national development goals, particularly in the areas of trade facilitation, revenue collection, community protection and national security. The WCO's membership consists of 171 Governments world-wide.

The specific purpose of this letter is to transmit to you a Resolution adopted jointly by the WCO Policy Commission and the WCO Private Sector Consultative Group (PSCG) at their recently concluded meeting in Almaty, Kazakhstan. For understandable reasons the delegation representing the United States abstained from the deliberations which led to the unanimous adoption of this instrument. The Resolution, dated 6 December 2007, expresses the considerable concerns shared by WCO Members and our private sector partners regarding the newly enacted requirement that, beginning in July 2012, all containerized maritime cargoes must undergo X-ray scanning in foreign ports prior to being shipped to the United States.

Let me make it absolutely clear at this point that the WCO, of which the United States is an important Member of long standing, does recognize a legitimate role for the use of X-ray scanning in assessing the potential risks posed by containerized maritime cargoes. I will address the parameters of that role later in this letter. I should also make it clear that the WCO raises no objection to another requirement present in the new United States law, namely that all containerized maritime cargoes be subjected to radiation detection processes prior to shipment.

../..

Senator Joseph LIEBERMAN,
Chairman,
Senate Committee on Homeland Security
and Governmental Affairs,
706 Hart Senate Office Building,
WASHINGTON, D.C. 20510-0703.

Rue du Marché 30 B-1210 Brussels

The WCO's concerns revolve around the major adverse impacts which the new legal requirement for X-ray scanning will have on several of the Organization's core processes and instruments. Prominent amongst these is the Revised Kyoto Convention (RKC), an international Customs agreement to which the United States and 52 other nations, plus the European Communities, have already acceded. It is in the RKC that we first see defined the proper role of cargo scanning as a tool to be applied as an element of well-reasoned risk management systems. Such systems have proven their value in providing assessments of risk potential. Implementation of the new United States requirement will be tantamount to abandonment of these fundamental principles and systems.

In the WCO SAFE Framework of Standards to Secure and Facilitate Global Trade (adopted in June 2005), the role of cargo scanning as provided in the RKC is further advanced and upheld. In signing a Letter of Intent to implement these Standards, the United States has also acknowledged the propriety of the proper use of cargo scanning as one tool, amongst others, in the arsenal available to assess risks from containerized cargo shipments. As in the case of the RKC, we view the prospect of 100 % X-ray scanning of containerized cargo in foreign ports as anathema to - and ultimately destructive of - the SAFE Framework of Standards, to which the United States has committed itself.

Regrettably, the same fate may befall the Authorized Economic Operator (AEO) programme which is incorporated as part of the SAFE Framework of Standards. Prospective AEOs are currently undertaking major expenditure in order to meet the stringent security standards imposed by the WCO SAFE Framework. The standards and requirements of the AEO programme will intermesh with one another to form a cargo security programme which the vast majority of the Customs administrations of the world have chosen to implement, and in which businesses across the entire spectrum of trade are willing to invest heavily. Our business partners may now legitimately question the need for these robust programmes and heavy investments if the risk management which underpins the WCO programmes is shortly to be undermined by looming requirements from the United States which abandon proven risk management principles.

We would urge you and your fellow legislators in the United States to take account of the points raised in this letter, as well as the sentiments embodied in the accompanying Resolution, when considering the future implementation of the new X-ray scanning law. There is solid and pragmatic reasoning behind the decisions of 149 of our 171 Members to implement and rely upon the principles of risk management as embodied in the programmes and instruments formulated by the WCO. My staff stand ready to assist you should you require any further information or clarification, in order to better inform your deliberations regarding possible implementation of the new X-ray scanning law by the United States.

Yours sincerely,

Michel Danet.

EMBASSY OF JAPAN
WASHINGTON, D. C.

October 1, 2007

Dear Secretary of State Rice,

With the enactment of the "Implementing Recommendations of the 9/11 Commission Act of 2007", I would like to reaffirm the Japanese Government's commitment to fighting terrorism hand in hand with the United States. However, I would like to express my concern about Section 1701 of the Act, which requires 100 percent scanning of containers bound for the United States at foreign ports before they are loaded onto vessels. This provision, if it were to be implemented as such, would severely disrupt international trade and cause tremendous damage to the economies of both Japan and the United States.

I would also like to express my concern about Section 1602 of the Act, which mandates the Secretary of Homeland Security to establish a system to screen 100 percent of cargo on passenger aircraft. Rules that need to be made to implement this provision could hinder efficient air transportation from foreign countries to the United States.

While I fully understand the importance of enhancing the security of global supply chains, I would like to emphasize that it is essential to implement security measures in a way that does not undermine the smooth flow of goods. Simply scanning all containers would only provide marginal improvements in security, while it would significantly disrupt global trade. At the last summit meeting in April, Prime Minister Abe and President Bush endorsed bilateral efforts to make trade flows more secure and more efficient. Based on this endorsement by the two leaders, the Governments of Japan and the United States have established the Study Group on Secure and Efficient Trade Coordination, through which we have been maintaining close contact with each other. Additionally, our two governments have been successfully cooperating on the Container Security Initiative and have been conducting meaningful discussions on mutual recognition of Authorized Economic Operators (AEOs). I firmly believe that ongoing efforts such

as these between the two governments are more effective and practical ways of achieving the twin goals of improving security while facilitating legitimate trade.

I would also like to address that the requirement of 100 percent scanning mentioned in Section 1701 of the Act would be inconsistent with the Framework of Standards adopted by the World Customs Organization (WCO). To address security threats, the Framework of Standards espouses the risk management approach, which aims to identify and target high-risk cargoes rather than conducting indiscriminate inspections. As members of the WCO, our two governments share the basic principle of this widely-accepted risk-based approach.

I would appreciate it if you could give further consideration to these particular issues for the mutual benefit of our two countries.

I look forward to continuing constructive dialogue with your government on how we can cooperate to further secure and facilitate global trade.

Sincerely,

Ryozo Kato
Ambassador of Japan

EUROPEAN COMMISSION
DIRECTORATE-GENERAL
TAXATION AND CUSTOMS UNION

The Director-General

Brussels, 4 April 2008

TAXUD/SM/D(2008) 12145

Mr. Ralph Basham
Commissioner of United States Customs
and Border Protection
Department of Homeland Security
1300 Pennsylvania Avenue, N.W.
Washington, D.C. 20229

Dear Mr. Basham, dear Commissioner,

At the meeting of the EC-U.S.-Joint Customs Cooperation Committee on 6 March 2008 CBP indicated it would submit a comprehensive report on 100% scanning to Congress in mid April 2008.
As promised at the JCCC, I am providing you with the Commission's comments on this issue (enclosed).
I would be grateful if you could take these comments into account when presenting your report to Congress. I would appreciate it if you could send me a copy of the report.

Yours sincerely,

Robert Verrue
(signed)

Annex: Commission comments on 100 % scanning

Comments on 100% scanning

The purpose of this paper is to inform the United States Administration of the European Commission's strongest concerns about the prospect of imposing 100% scanning in foreign ports of containers bound to the USA[i]. These concerns are about the effectiveness of this measure in improving security as well as its economic efficiency. They are widely shared by the EU Member States and economic stakeholders in Europe.

1. Overall assessment

Since 9/11 and other terrorist attacks in Europe and elsewhere, security has become a top priority for European Customs. Customs administrations throughout the European Union have taken action to overhaul control procedures, techniques, resources and the relevant legislative tools. Customs policy is a European Union competence: the Member States of the European Union follow a common approach. The "security amendment" to the European Community Customs Code entered into force in December 2006; the full range of security measures will effectively come into play in July 2009[ii].

The European Union complies with the International Ship and Port Facility Security (ISPS) Code and enforces security standards for all ships flying the flag of a Member State, and all other vessels sailing in European waters. Member States are required to carry out systematic checks on port facilities, vessels and their cargoes, in ports throughout the Union. Since 2004 the European Union has been implementing one of the strictest legislations worldwide in maritime security[iii] and its successful implementation has been demonstrated by more than 100 inspections[iv].

The United States and the European Union have a long record of Customs cooperation and mutual assistance in customs matters: from our first agreement in 1997[v], to EU early participation in the Container Security Initiative (CSI) under the specific agreement we concluded in 2004[vi]. The objective of this cooperation has been to ensure our mutual security combined with facilitation of legitimate trade. Ten Member States are actively participating in

the CSI, which implies the targeting and pre-screening of containers and the development of additional investigative leads related to the terrorist threat to cargo destined to the U.S.[vii]

We have also worked together to develop a framework of security and control standards at international level. These efforts have resulted in the adoption of the internationally agreed recommendations of the World Customs Organisation (SAFE Framework of Standards)[viii] as well of the International Ship and Port facility Security Code (ISPS Code) of the International Maritime Organization, which, together with numerous other nations, we have agreed to apply.

In recent years we have extended our cooperation further. We have engaged a process of establishing equivalent levels and standards of controls for US and EU economic operators. The mutual recognition of our respective trade partnership programmes (US C-TPAT and EU Authorised Economic Operator) is the first step in this direction. In November 2007, in the Transatlantic Economic Council[ix], we confirmed our intention to achieve this within 2009. The roadmap to mutual recognition of C-TPAT and AEO programmes was formally approved by the US-EC Joint Customs Cooperation Committee on 6 March 2008.

It is, therefore, with great apprehension that we regard the recent US legislation on 100% scanning of maritime container cargo in foreign ports. The Security and Accountability for Every Port Act, in 2006, required the Department of Homeland Security to carry out pilot projects in foreign ports to test the feasibility of 100% scanning. It is to be regretted that the USA did not await the results of the pilot actions, including the European pilot in the port of Southampton, which are currently performed in connection with the US Secure Freight Initiative, before pressing ahead with this legislation.

There are two main reasons why we fundamentally disagree with the 100% scanning approach and we do not contemplate 100% scanning in Europe:

- Firstly, 100% scanning is unlikely to improve security; it might even create a false sense of security and undermine security by diverting scarce resources from other essential measures.

Even on the hypothetical assumption that it was positive for US security, it would be extremely difficult to argue the case for European security.

- Secondly, 100% scanning has a high potential to disrupt trade and transport, within the EU and worldwide, unnecessarily, at high cost.

The US 100% scanning initiative is unilateral and implies extraterritoriality. If it were pressed on with, it would tend to undermine the process of mutual recognition of US-EU security standards and controls which we consider to be at the heart of our current cooperation to raise transatlantic security standards and promote legitimate trade. It would also tend to undermine the development and implementation of an international consensus on higher standards worldwide.

To our knowledge, the US 100% scanning legislation is not based on a proper assessment of its impact, and, currently, there is not enough evidence to measure it. The European Commission, in close cooperation with the EU Member States will continue to investigate the issue and further analyse its potential impact on security, transport and trade.

2. A false sense of security at high cost

The experience with the Southampton pilot project and preliminary contributions from EU Member States and other European stakeholders show that 100% scanning does not appear to be cost-effective compared to alternative approaches that would produce benefits to security.

In Southampton, three Radiation Portal Monitors, one Advanced Spectrographic Portal and one X-ray scanner (NII) were used. Data on US bound containers gathered by the scanner were transmitted to the US for risk analysis and targeting: if a container raised concerns, it was signaled by US CBP officers to the UK customs authorities for further inspection. The total cost is estimated at $18 million[x] for scanning around 5,500 US bound containers over a period of six months[xi].

Results show that:

- For relatively small ports, the introduction of 100% scanning would require very high initial investments and important human resources devoted to it. In the case of Southampton a simple calculation[xii] of total cost relative to the number of scanned US bound containers gives an average cost/container that exceeds $500.

- In Southampton, there is quasi absence of multimodal incoming traffic: truck-borne containers are much simpler and cheaper to scan than those arriving by rail, barge or feeder vessel[xiii]. The presence of multimodal incoming container traffic needing increased handling (unloading, transporting, and reloading) and transhipment would pose tough challenges for 100% scanning in many ports.

- In Southampton, only limited infrastructural adaptations were required to allow for the scanning, and no bottlenecks or delays were created. In European ports shipping 10 or 15 times that amount of containers, congestion would be a much more likely outcome, unless major changes and investments in infrastructures were introduced. Such changes would often require expansion into nearby land side areas that would be very expensive or unavailable.

In seeking 100% coverage much less favourable situations than that of Southampton would have to be tackled: "diseconomies of scale" would come into play in trying to approach the 100% target.

At present, a majority of EU ports have scanning devices on their premises, mainly used to scan imported containers (and in some cases exported ones), under the current risk-based targeting approach, sometimes also within the CSI agreement. The share of containers scanned ranges from 0.1% in bigger ports to 3% in smaller ones. Scaling up Southampton's pilot action to 100% of European ports shipping containers to the US and to 100% of container shipments within these ports would be a huge challenge, which cannot be met at current levels of resources or with limited increases thereof.

A relevant share of the EU container traffic comes in on other vectors than trucks – trains, barges and increasingly feeder vessels – and require specific procedures to handle the containers before, during and after the scan. These vectors have a batch-flow nature, as opposed to the smoother inflow of trucks: when feeder vessels arrive and are transhipped onto oceanic vessels, either resources would have to be readily available to perform the scan near the vessels, or the US bound containers would have to be stacked in extra storage area, and wait for the scan, raising costs significantly.

In the case of transhipped containers – the fastest growing segment of container trade – there would be additional operations involving in-port long-distance movement of containers or of customs officers and scanners. Aside from the issues of lower efficiency (of "mobile" personnel and equipment), and of data storage and transmission, scanning transhipped containers is likely to lengthen the average waiting time significantly. The need to secure the scanned containers until they are loaded on the final carrier vessel adds extra costs[xiv]. Preliminary feedback from large EU ports offers cost indications in excess of $300/container for moving stacked containers to scanning stations, as well as insights on the complex organisation of large ports having numerous terminals shipping to the US, operated by different companies, and dealing with all transport modes[xv]. Unit costs would rise as the more difficult and costly types of traffic (rail, barge, feeder vessel) in the less favourable ports (those with tighter physical constraints) would have to be targeted to reach 100% coverage[xvi].

While attempts have been made to estimate some of the direct costs of upgrading security equipment, procedures and resources[xvii] and of additional time spent by containers waiting at and before port, no quantification of indirect costs stemming from the impact of 100% scanning on the reorganisation of port infrastructures, on congestion and diversion of transport routes and on slowing down commercial exchanges[xviii] between Europe and the United States is available at this stage (points 3 and 4 below). Such costs could amount to billions of dollars annually. Clearly, any estimate limited to some cost components cannot be representative of the cost of 100% scanning in Europe.

The US legislation does not contain any financial clause or spending authorization for equipping foreign ports. Costs for the installation of the necessary equipment and adaptation of infrastructures, as well as operational costs would have to be borne by the respective ports, shipping companies and/or foreign administrations which would have to implement and enforce the unilateral extraterritorial requirements.

It might be argued that cost should not be a decisive issue when it comes to improving security. Such a line of thinking would assume that 100% scanning was superior to alternative measures for improving security. No such demonstration exists.

The 100% scanning legislation goes against the currently practiced multi-layered risk-based approach agreed by the US Administration and the European Union. Compared to existing risk-based assessment and targeting of containers to be scanned, 100% scanning would come out as less effective overall (let alone cost-effective). For one, to be credible, 100% scanning would need to apply 100%. Container traffic is only one quarter of cargo shipped worldwide[xix]. The 100% requirement leaves aside – out of sight of customs and security officials busy with scanning containers – many other maritime transport vectors (bulk cargo ships, ro-ro ships, passenger ferries, cruise ships and yachts) which may carry weapons of mass destruction or their components. Scanning is also of little use in detecting other security risks such as chemical and biological weapons. The possibility of tampering with cargo after the scan was performed would not be eliminated.

The relevant staff increases demanded by 100% scanning could not be met by many EU Customs administrations. Staff would probably have to be reallocated from other tasks. The direct cost of this reallocation, including training, re-location, and organisational changes, may be limited but new questions, such as health and safety concerns would arise. The impact on other customs operations (e.g. fight against fraud, smuggling, and counterfeit) would be very significant, not only in terms of cost (missed customs revenue), but also in terms of negative effects for other security measures. Having highly skilled officials trying to make a meaningful interpretation of the millions of images of innocent cargo does not seem to be an effective use of taxpayers' money.

Overall, 100% scanning could actually instil a false sense of security in the concerned authorities and in the public, based on an excessive reliance on technology and potentially leading to complacency. Compared to the current risk-based approach, 100% scanning might reduce the security of international trade.

From a European perspective, it would be difficult for Customs administrations to set sovereignty issues aside in order to implement the US legislation, to invest massively in a measure designed to protect the US, and to divert resources away from measures designed to strengthen security in the EU as well as that of international trade. It would also be difficult to imagine a situation where the 100% scanning requirement would be applied in one direction, to US bound containers only. Finally, 100% scanning would imply systematic transfer of sensitive information which could only take place in the context of a new international agreement between the USA and the EU.

The EU priority is to work together with the USA and other nations in an effort to further develop and implement the WCO SAFE Framework of Standards. Particular attention should be given to strengthening risk analysis including through a review of data requirements for advance declarations. Greater emphasis on selective scanning may be one of many ways to improve the current multilayered system for targeting and inspecting dangerous cargo.

In addition, it is important to redouble joint efforts in the direction of transatlantic 'secure trade', notably through mutual recognition between the USA and the EU of security standards and controls. This would effectively increase the resources jointly mobilised to combat terrorism and criminality in transatlantic trade as well as help to strengthen implementation of security standards worldwide.

3. A diversion of transport flows

The 100% scanning initiative would have serious repercussions for EU-US maritime transport and trade without any clear benefits in terms of enhanced security.

Worldwide more than 700 ports with direct exports to the US will be concerned, of which many are European ports with both direct traffic to the US and feeder traffic. Investments into scanning equipment will be costly and the supply chain will be slowed down due to the time needed for scanning operations. Moreover, 100% scanning has the potential to induce an important reorientation of transport flows worldwide and in the EU and would risk undermining the European Union's port policy.

Scanning cost would be a sizeable additional burden on direct freight costs as 100% scanning would increase freight costs significantly, hitting a sector characterised by tight margins and fierce worldwide competition.

Moreover, 100% container scanning would slow down container transport and increase inventory requirements and land--use. It would considerably increase port and hinterland congestion. European transportation and environmental protection policies aim to promote multimodality in transport, and a better use of maritime capacities, in order to reduce the growth of road transport. Road transport is a major source of health and environment problems, with its congestion, high carbon footprint, pollution and accidents problems. Increased congestion induced by an obligation of 100% scanning would not only affect the port and its immediate hinterland but would also have wider effects on traffic flows for which road transport remains an attractive option even at today's fuel prices.

In addition, 100% scanning would tend to divert transport flows towards those ports –mostly the larger ones- with the necessary financial leverage and container traffic volume to amortise the additional 100% scanning costs. This in turn would further increase congestion problems in and outside ports: to reach the ports capable of increasing their traffic, US bound containers would be shipped by feeder vessels or transported inland by truck on already nearly congested roads.

The tendency to reallocate EU exports to the US to a limited number of larger ports or newly developing hubs would be to the detriment of smaller ports and their hinterland. The

consequence could be a competitive disadvantage for certain regions and further road and port congestion with negative environmental and regional development consequences within the EU.

With the aim of reducing barriers to trade, the EU has promoted uniform regulations across economic operators, such as the port security regulations. The uneven impact that 100% scanning would have on the European maritime transport operators would tend to create a distortion of competition in this sector. Distortions would not only occur between small and large ports, but also between port facilities in the same port.

Transport-diversion effects may also arise between Europe and the other US trade partners and could give a competitive advantage to alternative suppliers of US imported goods.

4. A potential new trade barrier

The potential share-out of the additional cost of 100% scanning between EU ports business and governments, EU and US business, and US taxpayers and consumers is a complicated issue that has not yet been examined. In any case, traders, logistics operators (shippers, consolidators, terminal operators), and the whole up- and down-stream supply chain involved in exporting goods to the US via maritime containers would bear at least part of the cost.

Many factors would influence the direction and intensity of the effects on trade flows and prices. An additional "transaction cost" to international trade would raise transport prices and depress growth (via reductions of imports/exports) without offering any real security benefit.

Developing countries (including emerging economies and less developed countries) handle about two thirds of the world port container throughput. 100% scanning can be expected to hit some harder than others. In many less developed countries 100% scanning would hinder the development of freight container operations in domestic ports and of the related shipping, logistics and trading sectors.

Finally, the US 100% scanning initiative assumes compatibility with WTO rules which is not established.

5. Conclusion

The unilateral US initiative imposing 100% scanning in European ports of US bound containers is a high cost option compared to alternative approaches that would produce benefits to security. It would tend to divert scarce resources from other essential measures and might create a false sense of security and complacency. It would call for a shift of European resources away from European security requirements. It could have serious repercussions for EU-US maritime transport and trade, and on transport organisation within the EU and worldwide, without any clear benefits in terms of enhanced security.

Priority should be given to strengthening the current multilayered system and risk analysis for targeting and inspecting dangerous cargo. This may require a widening of information systems and greater emphasis on selective scanning. US-EU cooperation is critical in achieving transatlantic 'secure trade' and strengthening security conditions for world trade.

Annex – Container transport statistics

US bound container shipping is highly concentrated in a relatively small number of EU ports. According to available EU statistics for 2006, a total of 2.6 million TEU were shipped to the US from 64 different ports. Only 23 ports ship more than 10,000 containers to the US.

When the total container traffic is considered, EU ports ship around 36.5 million TEU worldwide, including within the EU. The share of US bound traffic varies considerably from port to port (see last column in the table below). "Feeder ports" that do not ship containers to the US directly but use a "hub port" instead, are not represented in the table below. These are typically small to medium sized ports, often located at seas further away from the US, like the Baltic Sea or the Black Sea.

Beside the size element[xx], EU ports can be distinguished according to other factors, such as whether containers mainly come from inland road transport, or use different modes, from rail to barge, to transhipment from feeder vessels. All three major ports handle multimodal incoming transport, while lower sized ones differ in this respect. Some are located on navigable rivers (e.g. Le Havre, Hamburg) while others deal essentially with truck traffic (e.g. Southampton, Genoa). Some ports mainly act as transhipment hubs (Valencia, Gioia Tauro, Cagliari).

Table 1 - Main EU ports for container traffic with US
(> 10,000 TEU shipped to the US, 2006. Source: EUROSTAT)

Rank	Port	Country	U.S.-bound		Total TEU	% U.S. / Tot
			TEU	%		
1	Bremerhaven	Germany	573.105	21,9%	2.343.650	24,5%
2	Antwerpen	Belgium	447.667	17,1%	3.405.005	13,1%
3	Rotterdam	Netherlands	400.343	15,3%	4.643.734	8,6%
4	La Spezia	Italy	143.551	5,5%	535.570	26,8%
5	Le Havre	France	114.698	4,4%	1.056.545	10,9%
6	Valencia	Spain	114.469	4,4%	1.285.869	8,9%
7	Hamburg	Germany	109.973	4,2%	4.261.958	2,6%
8	Barcelona	Spain	80.131	3,1%	1.150.696	7,0%
9	Liverpool	United Kingdom	80.019	3,1%	316.194	25,3%
10	Felixstowe	United Kingdom	75.083	2,9%	1.476.789	5,1%
11	Algeciras	Spain	73.660	2,8%	1.632.074	4,5%
12	Gioia Tauro	Italy	64.541	2,5%	1.383.745	4,7%
13	Livorno	Italy	44.424	1,7%	242.932	18,3%
14	Genova	Italy	43.142	1,7%	532.833	8,1%
15	Bilbao	Spain	36.917	1,4%	455.450	8,1%
16	Marseille	France	32.897	1,3%	463.434	7,1%
17	Southampton	United Kingdom	32.258	1,2%	725.561	4,4%
18	Medway	United Kingdom	20.052	0,8%	295.459	6,8%
19	Goteborg	Sweden	18.367	0,7%	404.094	4,5%
20	Lisboa	Portugal	17.568	0,7%	256.558	6,8%
21	Napoli	Italy	16.889	0,6%	90.713	18,6%
22	Piraeus	Greece	13.140	0,5%	691.878	1,9%
23	Cagliari	Italy	12.418	0,5%	229.597	5,4%
	Subtotal		*2.565.312*	*98,1%*	27.880.338	9,2%

	TOTAL EU		**2.614.316**	**100,0%**	**36.510.876**	**7,2%**

[i] In August 2007, the Homeland Security Bill came into force. It stipulates that all cargo which is loaded in a foreign port on a ship bound for the United States must be scanned before leaving for the USA. The devices to be used include X- or gamma-ray imaging systems providing an internal "picture" of the container's contents, and radiation-detection systems that provide a passive, non-intrusive means of spotting nuclear devices. All foreign ports shipping containers to the United States will have to install and use both types of equipment by 2012 at the latest.

[ii] The implementing provisions of the security amendment (EC Regulation 1875/2006) entered into force in December 2006 and apply within the following timeframe: since early 2007 a common risk management framework has been used to support improved risk based controls by customs authorities. The risk management system will be fully computerised by 2009. The provisions for the Authorised Economic Operator programme (AEO) entered into force on 1 January 2008. The AEO programme aims to increase security requirements and facilitate compliant traders. In July 2009 it will become mandatory for traders to provide customs authorities with advance information on goods brought into, or taken out of the customs territory of the European Community.

[iii] Regulation (EC) 725/2004 of the European Parliament and of the Council on enhancing ship and port facility security and Directive 2005/65/EC of the European Parliament and of the Council on enhancing port security.

[iv] Since the adoption of the relevant legislation in 2004, the European Commission has carried out over 100 inspections of port facilities, ships, companies, recognised security organisations and national authorities in charge of maritime security, to complement Member States' own inspections and ensure correct application of the rules throughout the EU. Container terminals and ships have high levels of physical protection against unauthorised entry.

[v] Agreement between the European Community and the United States of America on customs cooperation and mutual assistance in customs matters, Official Journal L 222, 12/08/1997.

[vi] Agreement between the European Community and the United States of America on intensifying and broadening the Agreement on customs cooperation and mutual assistance in customs matters to include cooperation on container security and related matters, Official Journal L 304/34, 30/09/2004.

[vii] After the terrorist attacks on September 11, 2001, U.S. Customs Service began developing antiterrorism programmes to help secure the United States. Within months of these attacks, U.S.

Customs Service had created the Container Security Initiative (CSI). CSI addresses the threat to border security and global trade posed by the potential for terrorist use of a maritime container to deliver a weapon. CSI proposes a security regime to ensure all containers that pose a potential risk for terrorism are identified and inspected at foreign ports before they are placed on vessels destined for the United States. CBP has stationed multidisciplinary teams of U.S. officers from both CBP and Immigration and Customs Enforcement (ICE) to work together with foreign government counterparts.

[viii] In June 2006 WCO Council adopted the SAFE Framework of Standards to secure and facilitate global trade.

[ix] In November 2007, a progress report on the state of play on mutual recognition, including on the establishment of the joint roadmap, was presented to the Transatlantic Economic Council (TEC), thereby emphasising the high political importance of this issue. As a conclusion, a joint road map was agreed, setting out the key performance-based stages required to reach mutual recognition of US and EU Customs-Trade partnership programmes in 2009 or to report fully if there are serious difficulties preventing this.

[x] Total cost to the US for buying and sending the equipment to Southampton, for building the infrastructure, and for paying for the US personnel to run the six months trial – the UK Customs and Port personnel costs are not included in this amount.

[xi] Over the 6-month pilot action, 90,000 containers were checked for radiation at the port gates and 5,500 US bound containers were X-rayed for non-intrusive imaging of the container contents.

[xii] Assuming a 5-year constant depreciation of the $18m initial investment, and projecting on an annual basis the human resources expenditure needed to scan the 5,500 containers for the duration of the pilot action.

[xiii] The scanning of transhipped containers required a dedicated area in the terminal, the double handling of containers, and the use of mobile scanners at a remote site.

[xiv] The more the scanning operation is centralised in the port (terminal), the higher the need to move containers to and from the scanner, and to store them in secure areas and comply with the ISPS code.

[xv] In Rotterdam, for instance, 47% of US bound containers arrive on feeder vessels or barges and are transhipped.

[xvi] The most difficult targets have higher fixed costs; hence, the average cost of scanning one container grows more than proportionally towards the 100% target: in relative terms, the

additional effort needed to reach the last small percentage points of coverage will likely cost more than the first 90-or-so percent.

[xvii] A hypothetical single stationary scan installation operating at full capacity reportedly costs $18m and has a maximum nominal annual capacity of 80.000 containers. Assuming a 5-year constant depreciation, an $18m fixed investment spread over 80,000 US bound containers per year, represents $45 per container; this is the bottom figure for the fixed cost. Adding variable costs for a 30-person staff devoted to service the equipment would raise the cost to roughly $75 per container scanned and sent forward to the loading area (between $2.25-3.5 million annually). This would increase to about $85 once the cost of false inspections was taken into account under ideal conditions (2% as in the Southampton trial. The direct cost of $85 to scan a container in the ideal conditions so far examined would increase steeply in smaller ports with lower-than-optimal traffic volumes. (Ports shipping less than 80,000 containers annually).

[xviii] According to a study made by Professor D. Hummel of Purdue University in the USA (2001) the cost of any additional day of transport is on average worth 0.8% of the value of the good.

[xix] Although growing at a fast pace, containerised cargo is not yet predominant in world shipping. The share of containerised cargo in the world's total dry cargo (in tonnage) is estimated by Clarkson Research Services at 24%. Overall, dry cargo (76% of which –bulk and break bulk cargo– currently escape scanning) represents two thirds of total cargo, the rest being oil and related products (see UNCTAD Review of Maritime Transport 2007).

[xx] Only US bound container traffic is considered here: this entails an underestimate of problems for ports like Hamburg that handle several million containers per year, only few of which US bound.