

L-3: protecting commerce intelligently



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Our economic security depends on companies and individuals having access to a safe, secure and efficient global supply chain. The likelihood of disruption increases, as does the risk to economic security, when the global supply chain grows in complexity.

Cargo security professionals face the challenge of keeping their countries safe and keeping up with the demands of today's commercial expectations. These professionals are constantly challenged to improve safety and efficiency, while reducing costs. Minimising the impact on the flow of commerce continues to be a daunting goal in today's security environment.

Over the past 15 years, government and private industry have made substantial investments in cargo security infrastructure. However, most of this infrastructure remains largely unconnected. The result is a number of missed opportunities that put economic security at risk. This lack of connectivity stems from the way this infrastructure was initially purchased: each new technology and system was thought of as independent and procured to solve a specific problem. This pattern of procurement resulted in a patchwork of detection technologies and software systems from many different manufacturers, and each technology was delivered with its own software and operational concerns. Operators had to be trained on how to use the different equipment and their different interfaces, which led to a breakdown in most effectively leveraging the very systems designed to keep us safe. We put the full burden of sorting information, identifying issues, and determining the correct course of action squarely on those operators, who were clearly at a disadvantage.

Looking at the big picture

A customs organisation has to look at the bigger picture of national security. When different points of entry have different strengths and weaknesses, national oversight is put at risk. It is the duty of a customs organisation to address each weak point. Appropriate high levels of scrutiny are necessary at each entry point to ensure the safety of the country. Potential dangers that are undocumented must not be allowed to penetrate a country's borders. But we also need to be mindful of the risk of interrupting legitimate commerce.

Existing non-intrusive inspection (NII) technologies have been deployed for more than 15 years. Each NII technology has its own unique algorithms and capabilities. However, an NII technology deployed in 2005 will not provide operators with the same imaging performance as a similar NII system deployed in 2013. Resources need to be fluid and adaptable for an operation to properly respond to changing requirements, which could be due to anything from a catastrophic event to short- or medium-term traffic demands.

The networking solution

L-3 Security & Detection Systems (L-3 SDS) developed the ClearView™ software solution specifically for port, border and other security applications. ClearView allows customs and security operations to leverage their existing infrastructure, increase efficiency, lower resource costs and extend the useful life of diverse multi-vendor legacy screening systems.

The ClearView software solution is both networkable and scalable. Imagine all points of entry linked to a central command. This central command has oversight and recall capabilities. It can either assist with the decision-making

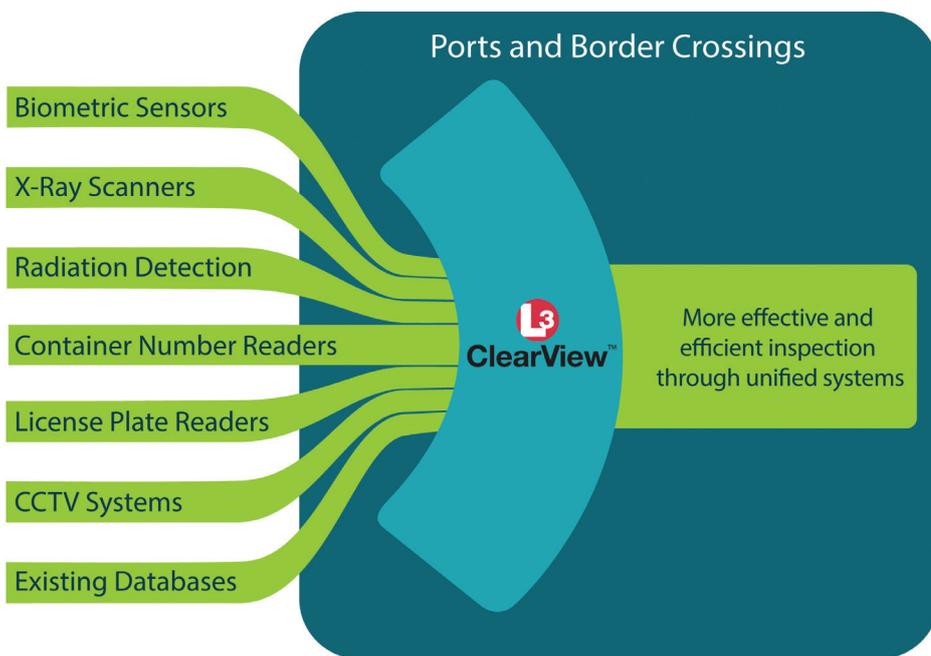
process, or can serve as a pool of additional resources to be called upon to assist in image interpretation efforts when satellite locations are understaffed or running at peak hours.

ClearView ensures that all raw data collected by multiple deployed assets, regardless of the manufacturer or year, is filtered through the same industry-leading features and algorithms, as well as the same interface. This ensures that consistent, actionable information is presented to the people making critical decisions.

Instead of looking at the infrastructure as a patchwork of standalone detection technologies from multiple suppliers, we need to look at it as a series of resources in which sensors upload important data to a larger network so that trained professionals can take appropriate action in a timely manner based on the information available to them. This larger network ensures accessibility and enables efficiencies. It also connects people, providing valuable insight shared by users and supervisors or from organisation to organisation. The ClearView networking software solution brings all relevant pieces of information into the same interface so that an operator can make informed decisions.

Networking technology is essential to getting the most out of the resources already deployed. Adding either a wired or wireless connection allows data to be collected, managed and distributed. Once all the sensors are connected, the next step is to display the resulting data in a coherent and organised fashion. In a networked environment, data can be viewed on any number of devices, such as desktops, laptops, tablets or smartphones.

Using a networked solution, the power of many different sensors is available to aid



in inspection through a unified system. As shown in the image, ClearView connects all methods of detection and identification, leading to a streamlined, unified solution.

Benefits of networking

A networked solution drives efficiency among customs officials. When all members of the team are working with the same information, tasks get accomplished with greater effectiveness. Having a connected system lends itself to a baseline level of scrutiny, where each possible threat is treated to the same rigorous evaluation. In short, connecting all facets of the screening process gives customs operators the ability to be completely vigilant regarding potential threats, while not impeding the flow of commerce.

A flexible architecture offers a number of advantages over existing standalone inspection systems, including:

- Workload leveling – inspectors can be shared between scanning systems without having to be located at the system
- Simplified training – a common imaging workstation is used for all equipment, allowing inspectors to analyse images from any system without requiring additional vendor-specific training
- Enhanced probability of detection – ability to develop algorithms specific to the customer and for deployment enterprise-wide
- Enhanced probability of detection – allows threat intelligence to be shared between analysts at different locations
- Regional management of inspection assets – command center monitoring

of usage, staffing, maintenance cycles and direct video chat over a secure network with assets located anywhere on the network

- Continuous improvement – applies Big Data techniques and metrics to improve the process and direct training
- Scalability and workload leveling – the number of inspections drives the image analyst resource requirement
- Human performance improvements – computer-based training
- Increased system availability – enterprise-wide system health monitoring

Actionable information

ClearView is a scalable platform of secure, networked applications that optimises access to information across multiple NII technologies, including cargo scanners, radiation portals, baggage scanners, hand-carry X-ray systems and CCTV equipment – all accessed from centralised command centers. ClearView enhances overall security by providing a comprehensive means to access data from multiple sensor types and locations from a single command center using a common interface.

In 2014, L-3 SDS supplied the Port of Rotterdam with a networked hardware and software solution that permits a unified and customised view of the critical information analysts need to assess cargo contents. Key to the installation was the implementation of L-3’s ClearView automation software tracks container status and disposition to optimise scanning systems utilisation and analyst resources.

Analysts are able to quickly view enhanced Big Data provided with any container scan taken from trucks, automated guided vehicles (AGVs) and rail cars. All incoming and outgoing cargo scan data is subject to review by analysts. Using only ClearView Enterprise software, images are displayed from any location, local and/or remote, seamlessly integrating data from multiple sensors, including those from other vendors. The benefits of this common user interface for all systems have shown greater operational efficiency, higher throughput and increased probability of detection.

About the author

Paul Simpson holds the position of Vice President and General Manager of the Cargo Solutions business at L-3 Security & Detection Systems. He has held a variety of senior positions in management and international business development in the defence, aerospace and security sectors. Mr Simpson received a Bachelor of Science degree from Heriot-Watt University in Edinburgh, Scotland.

About the organisation



With more than 50,000 systems deployed and supported around the globe, L-3 Security & Detection Systems (L-3 SDS) is a leading supplier of security screening solutions. For over 30 years, L-3 SDS has developed and manufactured cutting-edge products using advanced technologies that include advanced networking; 3-D computed tomography; automated, conventional and high-energy X-ray; radiation detection; active millimeter wave imaging; metal detection; and energetic trace explosives detection. Applications include the screening of people, vehicles, baggage, cargo and packages for explosives, firearms, drugs, contraband and corporate assets.

Enquiries

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