SCANNER & D-TECT NEWSLETTER

Non-intrusive inspection services

January 2025 | Issue # 2

Contents

P2. D-TECT Cargo V2.1: Delivering AI human-centric UX/UI
P3. D-TECT's integration capabilities presented at WCO TEG-NII's 11th session in Brussels
P4. AI TECH-Talk at 2024 WCO Technology Conference & Exhibition in Rio de Janeiro
P.6 SGS D-TECT supercharged: The power of partnerships

SGS

D-TECT Cargo V2.1: Delivering AI human-centric UX/UI

In October 2024, we launched a significant upgrade to D-TECT Cargo, introducing version 2.1 with a focus on delivering a more intuitive, AI-driven user interface (UI) and user experience (UX). This evolution comes as part of our ongoing commitment to enhancing the technical capabilities of our products and services.

Until mid-2023, our AI was integrated with other business functionalities within D-TECT Cargo, which limited its performance and scalability. However, with the dockerization of the solution, we have made it possible for other applications to consume our AI through APIs, transforming it into a standalone solution. This move enhances flexibility and unlocks new possibilities for performance optimization and integration with other systems.

As part of this transition, we took the opportunity to refresh and update the D-TECT Cargo UI/UX. Previously, AI outputs were displayed in tabular forms with classes and percentages, which were often not intuitive for the user. With AI now generating its own declaration assessments, the display needed to be redesigned to deliver more comprehensible and actionable output. The updated design offers a clearer and more user-friendly interface that aligns better with our AI-first vision.

The upgrade to D-TECT Cargo V2.1 was completed and deployed in Bahrain in the summer of 2024, with the next phase of deployments underway in Cameroon, Madagascar, Tanzania, Zambia and Togo. We expect to complete these deployments in December 2024. As part of our evolutive maintenance services, this upgrade is provided at no additional cost to our existing clients.

The new version includes several important functional improvements, such as a redesigned navigation structure that better aligns with modern customs processes and standards. We've also made the system faster, with quicker image analysis that ensures the right information is displayed at the right time. The data is now grouped and displayed in a more intelligible way, improving usability. Additionally, AI outputs are more intuitive, helping users make better decisions faster.

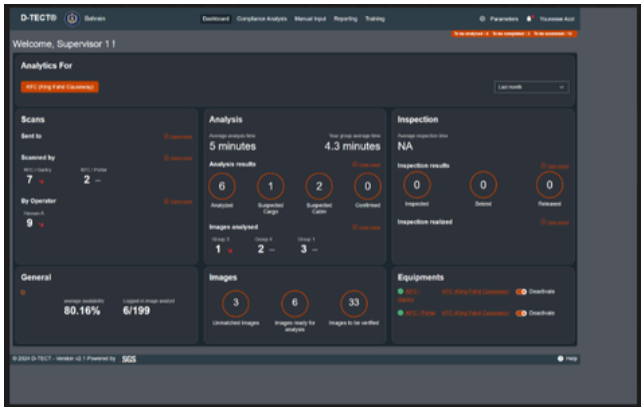

Figure 1: D-TECT New Dashboard

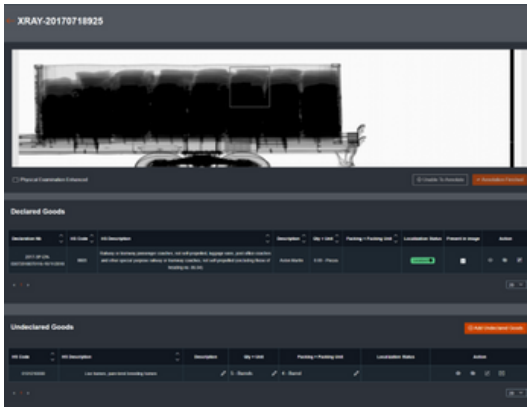

Figure 2: New AI labelling feature in D-TECT

The technical upgrades also bring the latest technologies to ensure continued compatibility and performance. With greater flexibility in managing technical upgrades and enhancing system security, D-TECT Cargo V2.1 is built to be reliable and secure for long-term use.

A key feature of the upgrade is the new annotation module, designed to support the AI-first needs of our users. This module allows end-users to provide feedback on AI predictions by comparing them with assessments made during physical examinations. This machine-to-human interface enriches our existing model, enabling continuous AI learning and improvement while accelerating the training process.

Looking ahead, we are focused on continuing to improve the interactions between AI outputs and end-users. One of our next big challenges is to develop a full web-based 2D and 3D viewer that will remove the need for desktop applications. This will make D-TECT more efficient in environments with limited local networks and provide users with a seamless experience without the need for additional installations. We're excited to be one of the first in the market to offer a full web viewer with such advanced capabilities, with the design already underway and completion expected in the second half of 2025.

With the release of D-TECT Cargo V2.1, we are reaffirming our commitment to delivering cutting-edge, user-centric solutions. By continuing to evolve our AI capabilities and improve the overall user experience, we are enabling customs administrations worldwide to operate more efficiently, securely and intuitively.

Mamadou Diop
D-TECT Global BRM
mamadou.diop@sgs.com

D-TECT's integration capabilities presented at WCO TEG-NII's 11th session in Brussels

With our partner, the Center for Adaptive Security Research Applications (CASRA), we participated in the 11th session of the World Customs Organization (WCO) Technical Experts Group on Non-Intrusive Inspection (TEG-NII) in Brussels on September 30 and October 1, 2024. Over the two-day session, the D-TECT team collaborated with customs organizations, scanner manufacturers, and other industry leaders to discuss the development and harmonization of non-intrusive inspection (NII) technologies, particularly through the adoption of the unified file format (UFF).

The team showcased D-TECT's strengths as an integration solution, highlighting its ability to leverage AI and effectively manage multi-source scanner data. This practical demonstration underscored the importance of UFF standardization for the industry. Customs administrations must maximize the value of scanner data, regardless of the equipment they use, making UFF a key enabler for streamlined operations and data-driven decision-making.

We also shared insights from our experience in integrating NII systems with automated customs clearance systems. Our presentation addressed challenges in multi-vendor environments, such as ensuring data consistency and centralizing information to provide actionable insights.

UFF V3, now approved by the WCO Framework Committee, marks a milestone for the industry. The TEG-NII's progress in advancing UFF V3 harmonization is well aligned with our vision. Through our TECH-TALK, we demonstrated how enabling customs to manage and analyze data from diverse scanning technologies can enhance operational efficiency and decision-making capabilities.

Looking ahead to 2025, the TEG-NII plans to roll out an API solution, a development we eagerly anticipate testing in live operations. These advancements will further optimize customs and border processes globally.

Our experts also presented the latest progress on SilentBorder, an EU-funded initiative aimed at developing a Muon scanner that promises to redefine non- intrusive inspection capabilities for customs and border forces. In this project, we play a key role in integrating Muon readings with X-ray images, unlocking new possibilities, including secondary inspections with AI-based detection capabilities.

Since 2015, we have been at the forefront of supporting customs administrations worldwide by integrating and processing data from leading scanner manufacturers. Our active participation at this year's WCO session further highlights our commitment to driving innovation and contributing to the WCO's efforts to establish a unified global framework for NII systems.

Gautier Huysentruyt
Global D-TECT Product Manager
Gautier.Huysentruyt@sgs.com

WCO Technology Conference & Exhibition: Rio de Janeiro, Brazil

This year, we participated in the 2024 WCO Technology Conference in Rio de Janeiro, Brazil, held from November 12 to 14. This prestigious event gathered over 1,200 participants from customs authorities, technology providers and the broader business community under the theme "Digital Frontiers: Customs Embracing Innovation with Traditional and New Partners."

As a key player in the customs and trade sector, we are committed to demonstrating how AI is enhancing customs operations and facilitating smoother international trade. This aligns perfectly with our ongoing efforts to integrate advanced technologies into our operations and those of our partners.

We are particularly proud to have attended the event alongside the EU Horizon 2020 project SilentBorder, which aims to foster innovation in customs procedures across Europe through the development of a new type of cargo scanner using the harmless muon radiation present in the atmosphere. This partnership underscores our commitment to leveraging cutting-edge technology to address the emerging challenges in global trade. Together, we showcased how innovation, AI and data analytics are poised to revolutionize customs operations by improving efficiency, enhancing risk management, and facilitating seamless cross-border transactions.

The WCO Technology Conference provides an invaluable platform for networking and collaboration, highlighting opportunities that we often underestimate in our day-to-day business. This forum allowed us to engage with leaders from various sectors, including representatives from customs administrations, academia and technology providers. Notable speakers included Cláudia Thomaz, Undersecretary for Customs Administration of Brazil, Ian Saunders, Secretary General of the WCO, and our own Barbara Soto, who chaired a compelling panel on: 'AI at the Border: Revolutionizing Customs with Intelligent Non-Intrusive Inspection (NII) Data Analysis.' Their insights into reshaping customs processes through innovation have been instrumental in helping us explore strategies for integrating AI into our services.

One of the standout moments of the conference was when our expert, data scientist Edmond Jacoupeau, confidently took to the stage to delve into the advancements in image captioning powered by AI. While this was not the event's first presentation on the topic of AI, it certainly emerged as one of the best attended and most insightful, as commended by many attendees. Edmond explored how recent developments in deep learning, particularly the integration of convolutional neural networks (CNNs) and recurrent neural networks (RNNs), have significantly enhanced the accuracy and efficiency of image captioning systems. The presentation emphasized practical applications, such as improving accessibility for visually impaired individuals through AI-generated descriptions and highlighted emerging trends like transformer models that are revolutionizing the interaction between image and text.

The agenda included engaging and informative panel discussions on the impact of emerging technologies like blockchain and IoT on customs operations, innovations in transport logistics that streamline trade facilitation, and strategies for effective data exchange among customs authorities. By being visible and participating in these discussions, we aim to contribute our expertise while learning from others about best practices in utilizing technology for improved customs efficiency.

Michael Knox
IT Infrastructure and Compliance Manager
Michael.Knox@sgs.com

D-TECT supercharged: The power of partnerships

The D-TECT team recognizes the vital role played by all stakeholders in the industry and remains steadfast in its commitment to developing the most effective solutions for both governments and the private sector in managing customs-related processes.

In 2023, we formed a partnership with the Center for Adaptive Security Research and Applications (CASRA). This collaboration represents a global effort to strengthen mutual capabilities, particularly in screening training solutions and the seamless integration of operational imaging and data analysis. By combining expertise, we have enhanced our value proposition to deliver innovative solutions to clients worldwide.

CASRA is a globally recognized leader in aviation security and customs training, with an impressive track record of over 900 airport references. Their expertise ensures top-tier training solutions that align with the evolving security and compliance needs of our clients.

In 2024, we launched D-TECT Parcel for Postal and Customs process jointly with Hurricane, a leading AI-powered data solution for global trade. Hurricane's unique AI solution is the result of collaboration between logistics experts, data scientists and compliance professionals. It offers unparalleled breadth and depth of content, leveraging data from over 190 countries to provide critical insights on tariffs, currencies and languages.

Hurricane's advanced API one-call solution integrates seamlessly with SGS D-TECT Parcel, enabling precise compliance assessments by correlating transactional data with X-ray images. This ensures accuracy, efficiency and transparency in global trade operations.

The partnerships with CASRA and Hurricane have propelled D-TECT to new heights. Together, these collaborations empower us to offer a truly end-to-end solution, spanning everything from effective operations to smart capacity building. By integrating world-class technology, training, and data-driven insights, we are helping customers across the globe optimize their customs processes while ensuring compliance and operational excellence.

Barbara Soto
Business Development Director
Non-Intrusive Inspection Services
Barbara.Soto@sgs.com

Contact us

dtect@sgs.com
sgs.com/trade
sgs.com/linkedinconsumer

When you need to be sure