

Linking ship to shore

by Alexa Ivy

Port State Control (PSC) has long been a critical way for countries to ensure maritime safety and environmental protection. Established through regional agreements, like the Paris Memorandum of Understanding (MoU) and Tokyo MoU, PSC is the process by which authorities inspect foreign-flagged vessels visiting their ports to ensure compliance with international conventions (such as Safety of Life at Sea, Prevention of Pollution from Ships, and Standards of Training, Certification and Watchkeeping for Seafarers). Any vessels which fall foul of PSC can face deficiencies, detentions, or even bans from certain regions. The PSC's effectiveness in reducing substandard shipping has led to continuous refinements in its implementation, requiring more efficient tools for vessel operators to ensure compliance.

Traditionally, PSC inspections (PSCI) have involved standardised checklists and manual processes, which, while effective, often lead to inefficiencies and reactive measures which can only be implemented once the PSCI has been completed. The introduction of more dynamic frameworks, such as SIRE 2.0, has marked a significant shift towards real-time assessments and continuous improvement in vessel operations.

The Ship Inspection Report Programme (SIRE) was originally developed by the Oil Companies International Marine Forum to assess the quality and safety of tankers. Introducing SIRE 2.0 in 2024 then modernised the process by incorporating digital checklists, risk-based assessments, and more comprehensive vessel performance monitoring, leading to a demand for increased transparency and accountability in the industry.

Extra burden

However, these advancements also highlighted challenges, including the need for more preparation, coordination, and the integration of technology to manage the increased complexity of inspections.

The maritime industry has recognised the necessity for innovative solutions that can streamline processes, enhance accuracy, and promote proactive compliance strategies. Then again, this has increased the proof and responsibility of the front-line crew, adding an extra burden to their daily duties.

Seafarers are often at the forefront, dealing with compliance issues and regulatory form-filling, and this can take an inordinate amount of time and energy when they are often overworked and don't have the right tools to help them do the job. This is where mistakes can happen, and rules and procedures are not followed, which can have a disastrous effect on business. Sometimes, as a result, a blame culture can emerge where faults due to human error are exacerbated by tiredness and a lack of support for crew tasked with a multitude of jobs on a daily basis.

The cutting out of lengthy spreadsheets

In response to this and following a series of visits to vessels and discussions with shipowners, seafarers, onshore teams and PSC authorities, in February this year, Kaiko Systems and RISK4SEA announced a groundbreaking collaboration to enhance PSC preparations through a dynamic, mobile-first digital solution. This partnership combines Kaiko's advanced data collection and analysis platform with RISK4SEA's extensive database of prioritised PSC risks, offering a tailored approach to maritime compliance and safety.

This mobile-first solution provides customised checklists tailored to each vessel's port risk profile, considering factors such as MoU history, detention records, vessel type, and the company's compliance track record to ensure no generic, one-size-fits-all questions appear.

These checklists achieve over 90% accuracy in predicting potential reasons for detention, enabling proactive measures before the ship arrives at the port. This high level of precision allows crews to focus on critical inspection areas, reducing the likelihood of unexpected findings and associated delays.

This is the first front-line intelligence platform to enable direct communication within the crew, making the entire process more predictable and transparent. First, the vessel updates its next port of call through AIS, automatically triggering RISK4SEA's system to capture the data, assess PSCI probability & severity, and generate a tailored PSC checklist according to a group of policies set in advance. Kaiko Systems then receives this checklist and instantly notifies the vessel via email. Crew members can open the mobile app to complete it and submit their findings. Finally, the shore-based team reviews the incoming results on a centralised dashboard, proactively addressing any issues well before the vessel reaches port.

The checklist, fully integrated into Kaiko's software platform, presents high-risk items first, ensuring the crew focus on the most critical inspection areas upfront. They are offered as simplified, user-friendly forms in the mobile app, with the results summarised in the online dashboard with advanced business logic to efficiently manage findings and make it



Photo: Canva

easier for shore teams to collect feedback and streamline PSC preparation.

The mobile app also offers simplified, user-friendly forms that can be completed offline, accommodating areas without network coverage. This feature eliminates the need for printed materials or handwritten notes, streamlining the reporting process and reducing administrative burden (and saving trees). Shore-based teams can view the preparation status of the entire fleet by using a centralised dashboard. This transparency enhances time efficiency by facilitating direct communication between onboard crews and shore teams, ensuring that any findings are promptly addressed.

“For the first time, crew and shore teams are able to easily pre-plan in a collaborative fashion before the ship enters the port to ensure the correct checks are made and avoid lengthy inspections by PSC Officers. This is revolutionary for the shipping industry and a testament to how digitalisation works for both onshore teams and at-sea crew by cutting out lengthy back-and-forth sending of Excel spreadsheets via email and reducing surprises,” explains Fabian Füsseck, Co-Founder & CEO of Kaiko Systems.

Next-level culture

The introduction of this digital solution signifies a transformative step in maritime operations with several notable implications. Enhanced safety and compliance are achieved by providing tailored checklists and facilitating proactive measures. Crews are

better prepared for inspections, reducing the risk of detentions and associated penalties.

Operational efficiency is improved, too, through streamlined communication and reporting processes, easing administrative workload and allowing crews and shore teams to focus on their core tasks.

Next, the platform’s ability to collect and analyse data enables data-driven decision-making, helping operators identify trends, anticipate potential issues, and implement continuous improvement strategies.

Adaptation to regulatory changes is also supported, as the digital solution’s dynamic nature allows for updates in response to new regulations or inspection criteria, maintaining alignment with industry standards.

Apo Belokas, Founder & CEO of RISK4SEA, highlights, “This partnership

makes it easier than ever for crews and shore teams to complete, track, and follow up on critical PSC-readiness tasks. By matching RISK4SEA’s deep analytics and prioritisation with Kaiko Systems’ mobile-first capabilities, we’re empowering the industry to proactively address potential issues, ultimately enhancing safety, compliance, and efficiency across the board.”

By leveraging technology to provide tailored, accurate, and user-friendly tools, the Kaiko Systems-RISK4SEA collaboration addresses longstanding challenges in PSC preparations. This innovative approach not only enhances compliance and safety but also promotes a culture of continuous improvement and operational excellence within the maritime industry. ■



KAIKO SYSTEMS The Berlin-headquartered Kaiko Systems provide AI-powered front-line intelligence solutions for maritime and other heavy-asset industries. By combining mobile-first data capture, predictive analytics, and intelligent automation, the company enables operators to enhance safety, streamline compliance, and optimise maintenance. The company supports over a thousand vessels worldwide, preventing costly failures and regulatory penalties while enhancing operational efficiency. Click [kaikosystems.com](https://www.kaikosystems.com) to learn more.



RISK4SEA RISK4SEA is a Software-as-a-Service (SaaS) platform providing Port State Control (PSC) intelligence, offering tools for preparing for inspections, benchmarking performance, and automating PSC functions to minimise detentions and operational costs. It hosts the largest and most comprehensive PSC intelligence database, going beyond just PSC inspections and deficiencies. The company’s platform offers deep insights into actual inspections, from calculating PSCI windows for every port call to generating tailored checklists for specific ports, ships, and managers – ensuring everything is prepared efficiently and effectively. Go to [risk4sea.com](https://www.risk4sea.com) to discover more.