MEETING REPORT

Frontex Industry Days: Maritime Analytical Tools 21 March 2024

Responsible Unit: Research and Innovation Unit (RIU)

Place of meeting: Online Webex presentations

Background

Frontex assists the EU Member States in supporting the development of modern technologies for the European Border and Coast Guard Community. As part of its mandate, Frontex regularly meets with industry, researchers, and experts from the Member States to provide a platform for discussion and help to develop new technologies and innovations related to border control.

In this context, Frontex Industry Days (I-Days) are meetings with industry, organised to increase awareness among Frontex staff and stakeholders on the current and developing market offer in innovative technology and solutions applicable for border management. The Industry Day on Maritime Analytical Tools that took place on Webex, on 21 March 2024, comprised one day of scheduled, online meetings with industry where Frontex experts could see presentations and live demonstrations of commercial solutions and interact with industry representatives.

Following the publication of a dedicated announcement, 7 companies presented their solutions to Frontex internal units in an online meeting format. The objective of the call was to attract companies at the forefront of technological innovations in the maritime domain. The Industry Day was dedicated to companies specialising in Maritime Domain Awareness and relevant analytical tools. The event was designed to provide a platform for industry to present their innovative solutions aimed at identifying risks, patterns, and trends in the maritime domain. Frontex was particularly interested in solutions that address the following: capturing, storing, and managing global positional data from ship reporting systems covering at least the last five years; applying user-friendly advanced search rules and queries based on specific ship behaviour in a sequential order of events; delivering advanced analytical capabilities supported by the state-of-the-art technology; fusing historical, static, and dynamic vessel data for a more comprehensive analytical approach. The meetings enabled a direct and comprehensive discussion on the solutions included in the submissions, between the providers and Frontex Risk Analysis and Coast Guard Sector’s experts.
Industry presentations

Each company had 40 minutes to present their solution, live demonstration and to answer attendees’ questions. The following service providers were invited to present:

Starboard Maritime Intelligence (New Zealand)

Starboard Maritime Intelligence presented their maritime domain awareness software which integrates approximately twenty-five data sources for detailed analysis. Some of the main sources are customers’ information, vessel position data, AIS (satellite, vessel, terrestrial), fishing information, vessel databases, NGO reports, satellite data, and environmental data amongst others. Some of its key features are patterns of life analysis for vessels, network analysis which identifies relationships between vessels, interface delivery (web app, API access, email alerts, manual data download) and a responsive web app accessible on any internet-connected device. Regarding risk analysis, the software combines expert input with automated risk indicators, and provides behavioural analysis flagging anomalous movements and atypical vessel behaviour.

IPS S.p.A. (Italy)

IPS is a global provider of cyber intelligence solutions for government entities and law enforcement agencies. They presented their maritime intelligence platform, Aqua, developed to provide a centralised system to analyse diverse data for maritime activity insights. The platform integrates various data sources (AIS, radar, satellite communications, etc.,) with AI algorithms to generate precise alarms for vessel activities and behaviours. Some of its key features are the availability of real-time and historical AIS data integration, correlation of various data sources for enriched situational awareness, advanced machine learning algorithms for pattern identification and threat detection, and the provision of actionable intelligence for maritime authorities to proactively address challenges.

CLS (France)

CLS presented Themis SAR, their digital platform for aiding maritime authorities and first responders in search and rescue (SAR) operations. The platform fuses multisource data (AIS, VMS from fishing vessels, LRIT, SPIDER-TRIBES personal tracker, helicopter radar imagery) for analysis. In addition, it utilises meteorology and oceanography data for a comprehensive maritime picture. The platform defines search areas and optimal search patterns based on available deployment needs to enhance the chance of finding individuals in need. They also presented their software for maritime surveillance for law enforcement intelligence and screening activities (MAS). Utilising multiple data sources, it implements machine learning for behavioural analysis, detecting abnormal and suspicious activities. Some of the key features of the platform are real-time global fleet monitoring, risk profiling and assessment features for vessels based on behavioural and historical data.

Windward (Israel)

Windward is an AI and maritime solutions company with a focus on providing a common operating picture for complex organisational needs. Windward aims to provide solutions for emerging maritime problems by discovering unknowns and adapting to new criminal practices with a low-maintenance SaaS (Software as a Service) model. It offers customisable behaviour models based on client-specific problems and experiences; it combines data sets for a reliable operational picture. In addition, it offers capabilities such as sequence search to create specific queries based on sequential orders of behaviours, early detection model to identify activities and outliers in real-time. Overall, the software can generate leads and conduct investigations within a single platform, facilitating and end-to-end workflow.

GMV (Spain)

GMV presented four different solutions aimed at enhancing maritime awareness. Socrates Operational Center: a multi-domain command and control application offering functionalities for maritime and land
border surveillance, vessel tracking, multimedia streaming, and AI-powered behavioural analysis and anomaly detection. It allows data fusion, integration of observation services, and WMS layers. Socrates is deployed in various organisations and is compliant with interoperability standards. ShipLocus Suite: it enhances real-time ship management and port planning activities, it processes AIS signals for tracking vessels, generating reports, and managing gas emission data. Deployed in Spanish ports. Simons: serves as a backend for vessel detection, working independently or integrated with Socrates. It processes data from various sensors and AIS, categorising vessels into seven categories. Simons has been tested globally and is used for purposes like fishery migration, piracy, and border monitoring. Lastly, Business Intelligence Analytics Tool, a conceptual tool for managing multiple data types, customisable to specific needs. It features data storage, analysis, and collaboration tools, including GIS modules and text mining functionalities.

DefSecIntel Solutions OÜ (Estonia)

DefSecIntel Solutions specialises in innovative mobile surveillance solutions for ground, air, and maritime environments. DefSecIntel aims to automate surveillance processes for users through advanced AI algorithms, simplifying operations across various sectors including police, military, and coastal protection. Multiple integrated systems were presented; surveillance towers equipped with radars and cameras for coastal, maritime, and land protection, vehicle-based platforms for enhanced mobility in surveillance, also equipped with radars and cameras for a range of applications including coastal monitoring and security, a proprietary C2 software enabling operators to create profiles and missions with analytic tools for detecting and predicting the movements of ground, aerial, and maritime objects. The software minimises manual intervention by automating various surveillance processes. DefSecIntel Solutions’ software supports integration with third-party systems, allowing for flexible information sharing and command centre operations.

Global Vigilance (US)

Global Vigilance presented three software solutions: Vessel Selection System (VSS/CAMTES), Container Targeting System (CTS), and a passenger risk assessment solution for airlines. These solutions are all built on a common platform, enabling shared infrastructure and components. VSS aggregates maritime data, including AIS feeds, to create a comprehensive maritime picture. It stores up to five years of AIS data, encompassing over fifty-eight billion position reports. Furthermore, it provides automated risk assessment with customisable rule sets, enabling users to generate and receive alerts based on specified criteria. The software has multiple capabilities such as advanced search and filter options for vessel data, detailed tracking and historical analysis of vessel movements and behaviours. Lastly, it allows users to set up automated alerts for vessels meeting specific criteria and to collaborate with other users by sharing information on vessels of interest.