

OCIANA[®]: Your Port's Platform for Risk Mitigation and Operational Optimisation

As global trade continues to expand, ports face increasing pressure to efficiently manage the vessels entering their facilities. Due to recent regulatory framework changes, there is a need for extended security at ports. OCIANA[®] is a comprehensive solution for risk mitigation at ports. The platform delivers comprehensive commercial, environmental and security risk prediction for vessels of interest and thereby enables the mitigation of illegal activity. OCIANA's proactive approach enables ports to allocate their resources more effectively to prevent risks once identified. OCIANA[®] leverages real time analytics thus facilitating decision making on a digitalised platform.

OCIANA[®] provides:

Dark Vessel Detection via Multi-Sensor Fusion, including:

- Satellite AIS data fusion: Synthetic Aperture Radar (SAR) and optical imagery correlation

Predictive Identification of Security Threats, including:

- Sanction violations
- Illicit trafficking, illegal transshipments and unauthorised rendezvous
- Illegal fishing activity

Advanced Multi-Factor Threat Modeling:

- Behavioral analysis of vessel traffic patterns using real-time AIS, port visit history, and anomaly detection

Intelligent Geofencing:

- Advanced triggers combined with ETA predictions

Cyber-Physical Threat Detection:

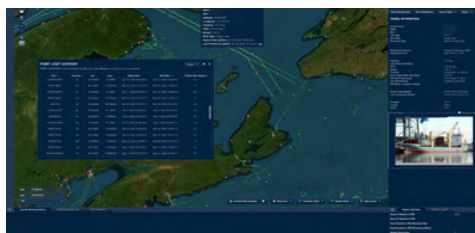
- Enhancing maritime situational awareness, leveraging AVI (Advanced Vessel Identity) models and pattern-of-life analytics

Grounding Risk Assessment and Prevention:

- Near-miss incident detection reports

Port Visit History

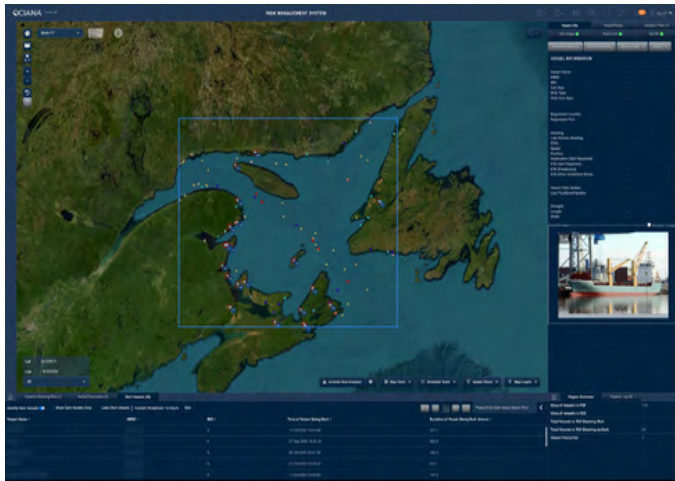
OCIANA[®] constantly tracks worldwide vessel activities and leverages data analysis to empower users in making informed decisions. OCIANA's port visit history feature allows users to assess the potential risk associated with vessels arriving at the port. By examining a vessel's recent activity and its history of visiting different ports over the past two years, users gain insights into its frequency of visits and length of stay at all ports around the world. Additionally, users can set up geofences to receive notifications when a vessel had visited specific ports the user may flag, allowing for proactive risk assessment.



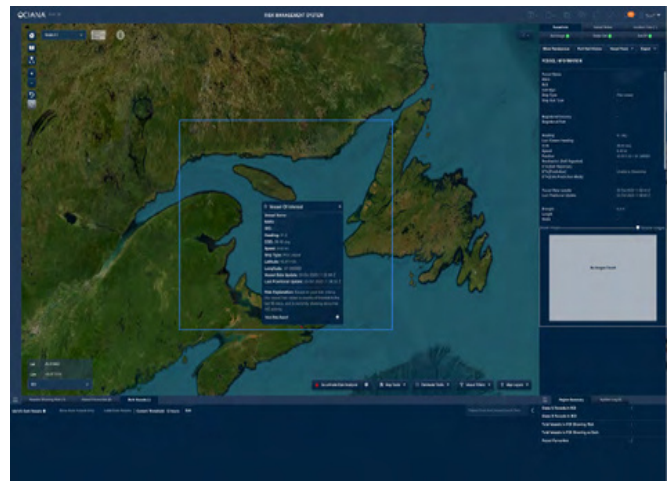
Port Visit History

Enhanced AIS Anomaly Detection

A vessel turning off its AIS, known as going dark, can be a red flag for potential illicit activities. OCIANA® addresses this challenge by offering enhanced AIS anomaly detection. Rather than flagging all vessels that temporarily disable their AIS, OCIANA® analyses individual vessel's historical behavior and the regions it has visited. This approach reduces false alarms and focuses on vessels that genuinely exhibit abnormal behavior.



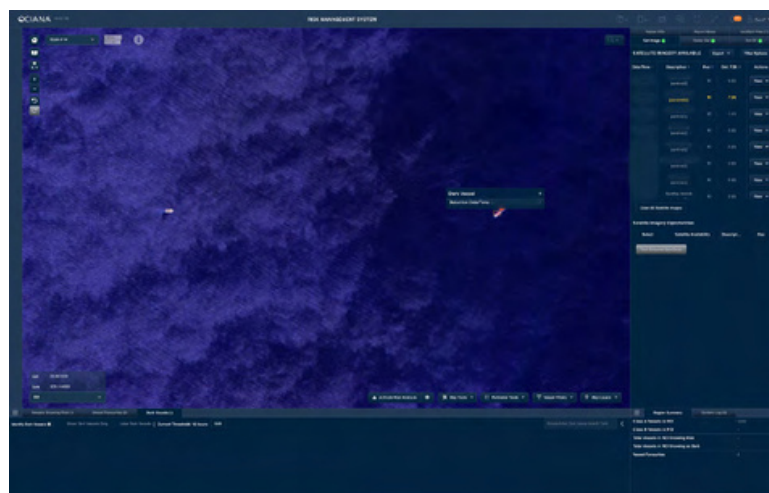
Dark Vessels with 12 Hours Threshold



Anomalous AIS Reporting

Satellite Imaging and Dark Vessel Identification

With the increasing availability of satellite imagery, it has become harder for vessels to conceal their positions. OCIANA® integrates true color and Synthetic Aperture Radar (SAR) imagery for ports, providing a comprehensive overhead view of the entire area. A machine learning model is applied to identify vessels in these images, and their positions are cross referenced with AIS data. This allows OCIANA® to flag dark vessels that are not reporting their positions despite being detected in the imagery, prompting further investigation.



Dark Vessel Detection from Imagery

Customised Risk Reports

OCIANA® goes a step further in enhancing port security by offering users the capability to generate a variety of custom risk reports. These reports can be based on countries of interest, vessel rendezvous, AIS anomaly and other user specific needs and preferences. The platform then compiles comprehensive risk reports in PDF format thus facilitating a valuable resource for informed decision-making and information sharing. These reports not only highlight vessels that have been flagged as risks but also provide detailed explanations for each vessel, outlining the specific reasons and contributing factors behind the risk designation. This transparency in risk assessment empowers users to make strategic decisions and fosters efficient communication among stakeholders, ensuring that all stakeholders are on the same page regarding potential security and safety concerns.

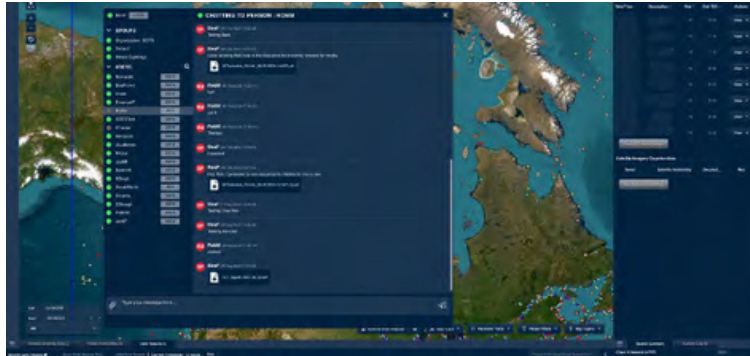


Vessels of Interest in Canadian Region of Interest										
Name	IMO	MMSI	Callsign	Type	LON	LAT	Last Message	Visit Time	ID Change	Dark Vessel
Owned/Operated										
				Fishing	-46.767	46.5084	2023-10-23 12:38:59	NA	No	No
TOTAL	1	—	—	—	—	—	—	—	0	0

Sample Risk Reports in OCIANA®

Advanced Chat and Collaboration Tools

OCIANA® serves as a collaborative platform, facilitating communication and information sharing among users from different organisations. It supports features like chat, data sharing, incident reporting, and notifications regarding vessels of interest. This capability is especially beneficial for collaboration between security agencies and ports. Using OCIANA®, all stakeholders can collaborate effectively by sharing vessel information, adding notes, and forwarding findings to relevant parties. This seamless cross-organizational cooperation ensures that critical information is disseminated promptly to the appropriate authorities when a concerning vessel is identified.



OCIANA® Chat Functionality

Vessel Documentation Check

OCIANA® also streamlines communication between ships and ports. Vessel credentials can be uploaded into the platform, allowing ports to quickly verify the status and validity of required documentation. This not only expedites the port monitoring process but also flags vessels with outdated or missing credentials, necessitating further investigation prior to port entry.

Schedule Optimisation Planner

In situations where a flagged vessel requires thorough inspection, it can strain port resources and disrupt operations. OCIANA's Schedule Optimisation Planner empowers port users to plan the sequence for incoming vessels when a berth is allocated for inspection. This planning approach ensures continuous vessel throughput and minimises disruptions to port operations when searches are necessary.



OCIANA® Schedule Optimisation Planner

In conclusion, OCIANA® offers a comprehensive suite of capabilities to enhance port safety and security. By enabling the identification of vessels in need of further investigation based on their activity, monitoring, and history, it aids in mitigating disruptions and risks to port operations.

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