



Environmental Crimes: Detecting & Preventing Illegal Fishing



OVERVIEW

In June of 2020, OPT/NET was awarded a contract by the European Space Agency to research the technical and commercial feasibility of the proposed solution to illegal fishing. Early results of the project are extremely promising.

The developed AI powered solution - MONITORED AI - integrates Synthetic Aperture Radar (SAR) satellite imagery and Automatic Identification System (AIS) data to autonomously detect dark vessels (no AIS transmission) and spot suspicious behaviour.

THE PROBLEM

The global illegal fishing market is valued at between \$10-23.5 Billion, or 15% of total global supply. Illegal fishing occurs when maritime laws & regulations are blatantly disregarded by exceeding quotas; using unlawful fishing methods; fishing in protected areas/species; or fishing in forbidden periods. Currently, these crimes are attractive since they are highly lucrative while low in risk, as they are extremely hard to detect. As such, illegal fishing continues and convictions for offenders are rare.

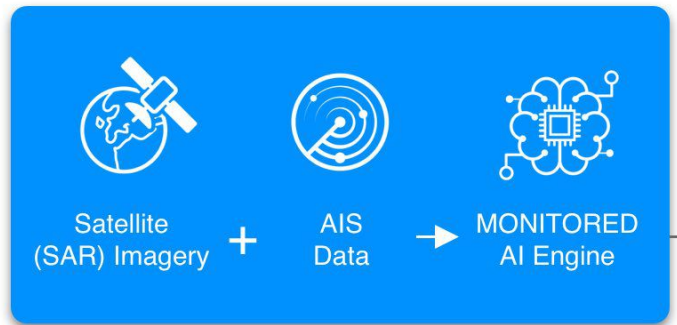
Currently, methods for preventing these crimes are surface (sea) based, extremely localised and manually driven. Satellite imagery is used, although organisations report understaffing and a lack of trained analysts inhibiting it from being used proactively.

THE SOLUTION

MONITORED AI, the AI powered solution developed in the scope of this project, integrates Synthetic Aperture Radar (SAR) satellite imagery and Automatic Identification System (AIS) data, providing fishing vessels' locations on a wide range of temporal and spatial scales.

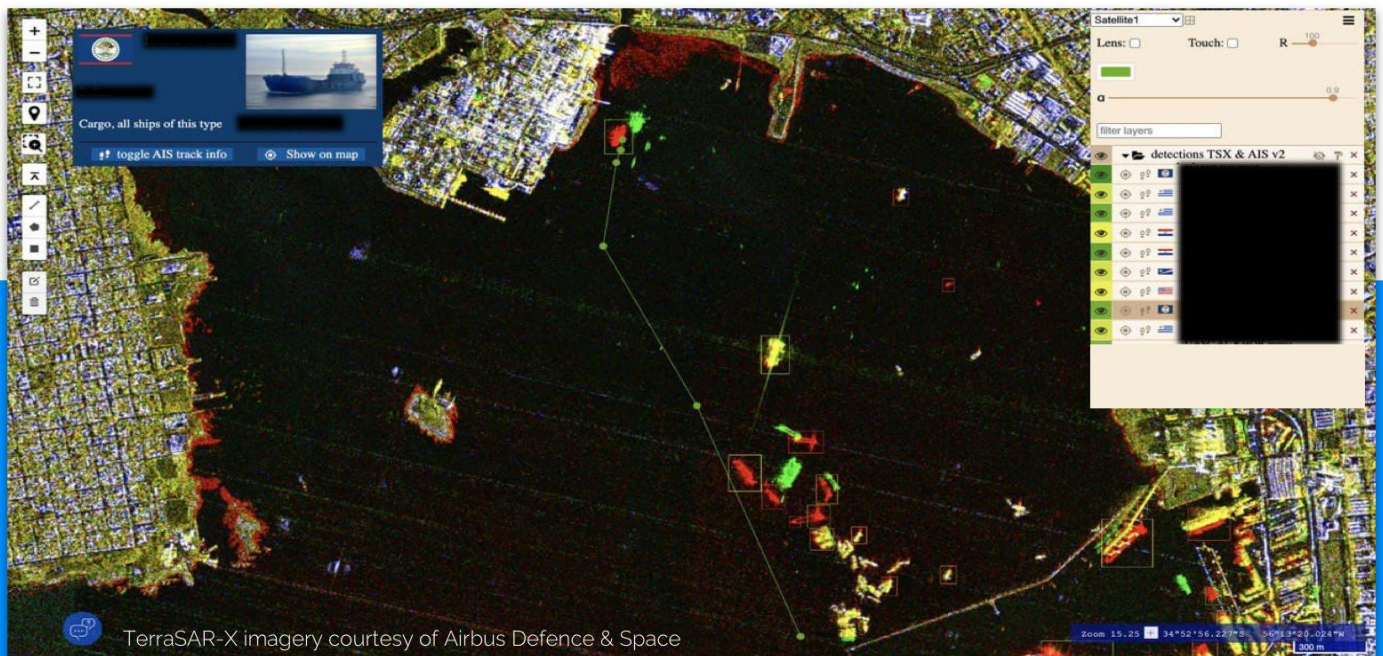
By detecting patterns in large amounts of EO and AIS data, and flagging targets for review by human analysts, the platform combines the processing and automation capabilities of AI with the natural problem-solving abilities of humans.

If any fishing vessel has manipulated their reported location, is using illegal methods



or are fishing in protected areas, our AI platform will detect this and autonomously report the alleged crime.

Insights derived from the ship detection model can be explored through a user-friendly web interface, providing a host of insights pertaining to various sea conditions, ship types, & geographical areas.



MONITORED AI User Dashboard

CURRENT STATUS

Currently, an MVP has been developed which autonomously detects dark vessels based on SAR images and AIS Ship Tracking Data. The platform is equipped with a powerful cloud based graphical UI, that is highly intuitive for all user-groups, facilitates data exploration through visual analytics and removes the data bottleneck of individual analysis; ultimately reducing the discovery time. OPT/NET is currently looking for potential users who would be willing to partake in early testing and user studies. Parties can contribute by providing their requirements, test sites and/or existing data to verify the early results.

ABOUT OPT/NET B.V.

OPT/NET develops AI driven products with a focus on rapidly processing both structured & unstructured time-series data to produce actionable intelligence. OPT/NET currently offers solutions to the telecom, agriculture, and security industries.

For more information, visit: www.opt-net.nl