

# Fisheries Monitoring and Surveillance

**Comprehensive and near real-time monitoring of fishing activity using a combination of vessel identification systems and radar satellite data**

Fisheries Monitoring and Surveillance (FMS) is a service from NextOcean that detects vessels from satellite data and overlays this with vessel identification system data to identify vessels that may have deactivated that system. In this way, FMS can suggest vessels that may be involved in illegal activities, offering a cost-effective solution for monitoring vessel traffic over a large area.

The Fisheries Monitoring and Surveillance service can benefit the following users:

## Coastguard/ Maritime Police


- ✔ Monitor and identify suspicious vessel behaviour to investigate, helping to focus efforts against illegal, unreported or unregulated (IUU) fishing or at least enforce the correct use of AIS.
- ✔ A quicker and more cost-effective solution to monitoring a very large area in near real-time.

## Fisheries Management Organisations

- ✔ Gain a better insight into suspected IUU fishing in the organisation's area of jurisdiction, and to help inform policies and actions designed to reduce it.

## Conservation Organisations

- ✔ Target protection efforts to the areas most at risk of overexploitation from IUU fishing.



*Fisheries Monitoring and Surveillance can identify potential illegal activity*



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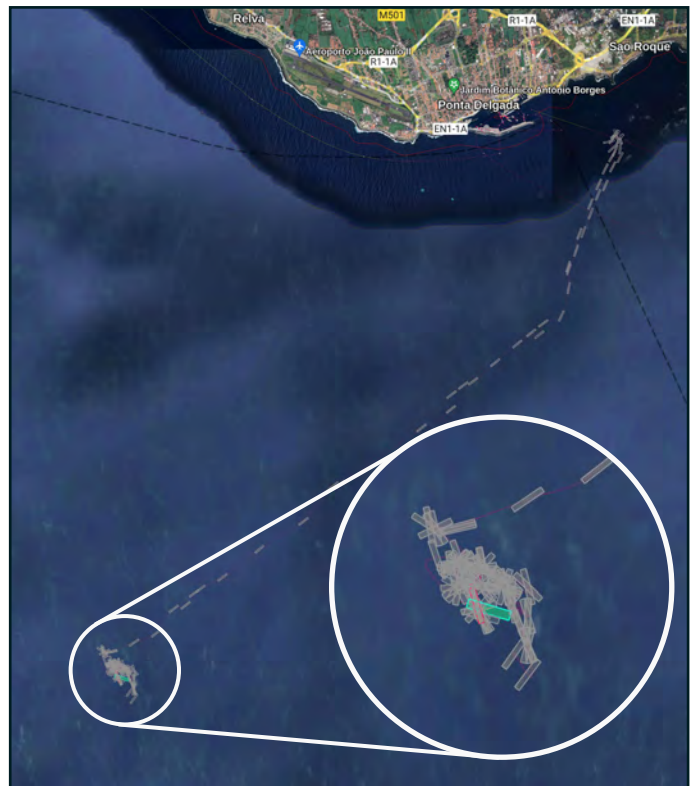
## Service specifications

Key specifications	Fisheries Monitoring and Surveillance
Temporal coverage	Available in near real-time (8-12 hours after satellite overpass)
Temporal resolution	Repeat observations every 2 to 12 days
Spatial coverage	Data instantly available for waters off Ghana, Azores EEZ and East Java, other areas globally available on request
Spatial resolution	Vessels with a length of at least 10m can be located to within 20m. Up to 1 metre spatial resolution is possible using commercial satellite data.
Downloadable data files from NextOcean store	Yes - KML format
Visualisation in NextOcean portal	Available
Data feed via API	Currently available
Data used	Sentinel-1A synthetic aperture radar (SAR) sensor data AIS data

An example of output from the Fisheries Monitoring and Surveillance service is shown (right). The image shows the position of a vessel detected by SAR in green and the position reported by AIS at the same time in red. The grey rectangles show the movement of the vessel before and after SAR capture.

The Fisheries Monitoring and Surveillance service uses Synthetic Aperture Radar (SAR) satellite data which detects all vessels over 10m in length. Combining this with Automatic Identification System (AIS) data for vessels in the area can identify those that are not using AIS and therefore potentially involved in illegal fishing activities.

The output data can be visualised in the NextOcean portal as well as downloaded in KML format (viewable in Google Earth). Individual vessel information is also provided. The service can be used to access historical data as well as for regular ongoing monitoring.



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