



The Copernicus Maritime Surveillance service (CMS) offers support to the fisheries control activities of the European Fisheries Control Agency (EFCA) and relevant Member State administrations by providing satellite monitoring in EU, third country and international waters. CMS is a valuable additional instrument for combatting Illegal, Unreported and Unregulated (IUU) fisheries. Effective fisheries monitoring, control and surveillance contributes to sustainable fisheries, protecting both the marine environment and the final consumer.



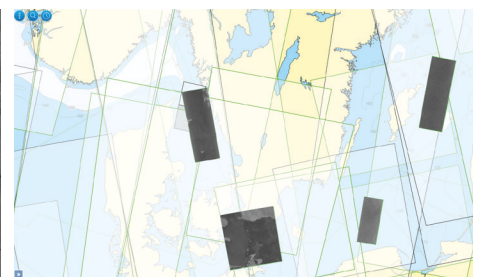
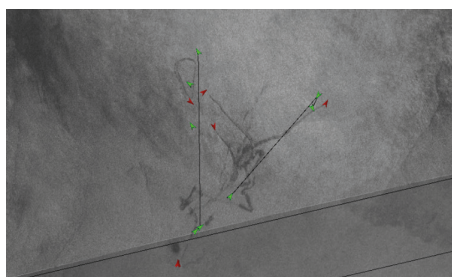
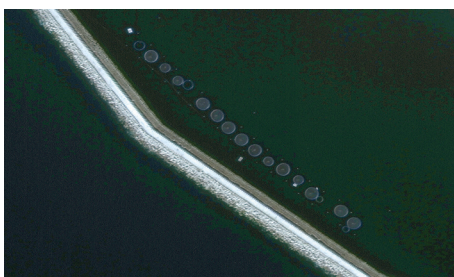
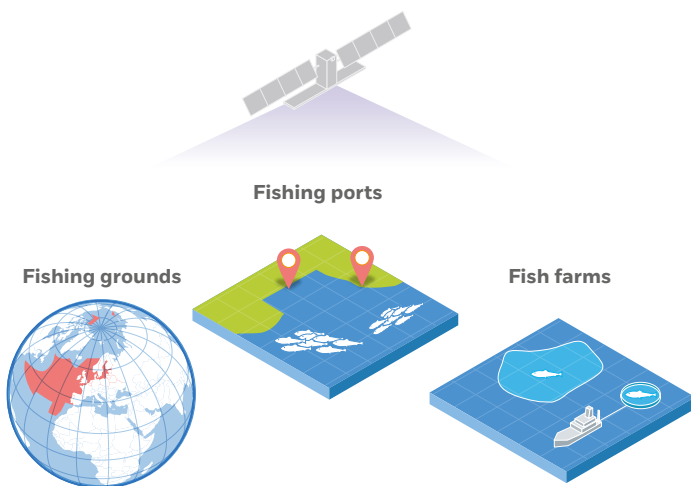
### CMS SUPPORTS FISHERIES CONTROL ACTIVITIES THROUGH:

- completing the integrated maritime picture through wide area surveillance using synthetic aperture radar (SAR) imagery
- providing vessel detection services using correlation algorithms for the identification of potential inspection targets
- provision of high resolution SAR and optical imagery in support of specific operations.

The EU fishing industry supplies over 6.4 million tonnes of fish each year to consumers. The EU fishing fleet has almost 84,000 vessels, engaged in coastal and deep seas fisheries. In addition, the fight against IUU fishing extends beyond EU waters and fleets. Fishing grounds are often remote and access is strictly regulated. Deployment of traditional inspection means in those areas can be complex and not always cost-efficient.

Earth observation products provide additional situational awareness information for the monitoring and surveillance of fishery related activities. Combining SAR satellite imagery with ship position and other vessel information provides fishery control authorities with an enhanced view of vessel presence in remote areas. Correlating SAR detections with position information allows for differentiating identifiable from non-identifiable vessels. Adding yet more information, such as catch data and bathymetric map layers, improves situational awareness and the identification of potential inspection targets.

CMS can provide support ranging from a single image to the monitoring of large areas over several months. Detailed information from optical images can provide additional evidence of fishing activity or potential transshipment activities. If needed, some services can be delivered in near-real-time to the end users (i.e. 30 minutes after satellite overpass).



## USE CASE: REQUEST TO SUPPORT MONITORING OF A TUG IN THE MEDITERRANEAN SEA

In June 2017 EFCA requested CMS support to monitor a vessel towing a fish cage. Bluefin tuna caught at sea are transferred to cages, which are then towed by tugboats to fish farms for fattening. Since a dramatic stock decline in the 1990s, this industry is strictly regulated. Continuous monitoring, surveillance and control of the fishing activity, stock uptake and reporting obligations are therefore essential.

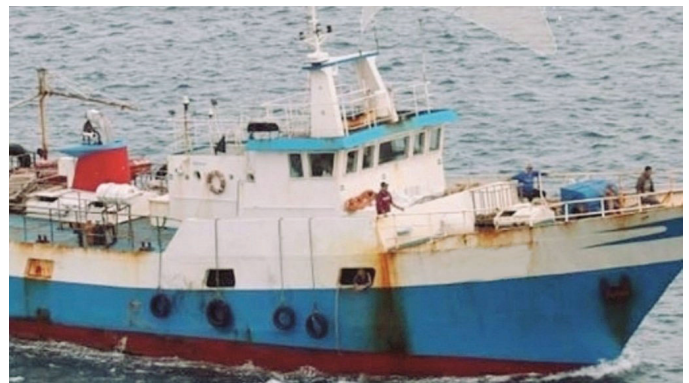
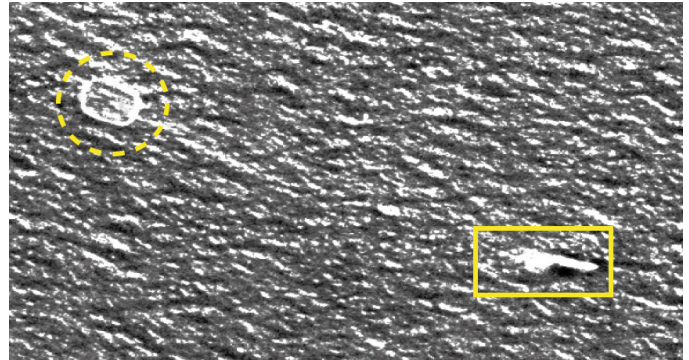
CMS products were ordered:

- to check that the vessel was indeed transiting the area in accordance with the reported route and destination;
- to confirm the number of cages the vessel reported it was towing.

EMSA placed a short notice acquisition for an optical image with the option of pinpointing. Under this planning mode, CMS is able to 'pinpoint' (adjust the location of acquisition of) the image just before acquisition. EFCA defined a narrow area of interest the day before the planned acquisition, and then, with just a couple of hours' notice, gave a precise location where the vessel was expected to be. The optical image covered an area of just over 100 km<sup>2</sup>, with a resolution of 50 cm.

The image acquired showed a vessel towing one fish cage, confirming that the target vessel was in compliance with EU legislation regarding its reporting obligations and that indeed it was at the reported location.

*Copernicus, the European Union's Earth Observation Programme, delivers operational data and information services to support a broad range of environmental and security applications. The European Maritime Safety Agency (EMSA) is responsible for implementing the Copernicus Maritime Surveillance Service.*



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## Get in touch for more information

### Copernicus Maritime Surveillance

Twitter CopernicusCMS / copernicus@emsa.europa.eu

### Copernicus

Twitter CopernicusEU / Facebook Copernicus EU

### European Maritime Safety Agency

Praça Europa 4  
1249-206 Lisboa Portugal

Tel +351 21 1209 200 / Fax +351 21 1209 210  
[msa.europa.eu](https://msa.europa.eu) / Twitter EMSA\_Lisbon

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