



Marine and coastal satellite services to track environmental crime activities (MASTREC)



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Environmental crime is a global threat to the security, economy, environment and sustainable development. Its value is estimated to be ca. 91–258 billion USD annually with a 5–7% annual growth rate, which is 2–3 times the percentage increase of the global economy. Environmental crime is often understood as acts or activities that are in violation of environmental legislation and cause significant harm to the environment and human health. They provide high profits for perpetrators and relatively low risks of detection. Profits from the illegal exploitation of natural resources are often funneled into organized criminal and terrorist organizations.

What is MASTREC?

MASTREC is a collaborative, international project aimed at promoting an innovative use of Earth Observation products as an efficient intelligence and surveillance tool to support effective coordination of law enforcement actions for environmental crime. It uses combined data from Automatic Information Systems (AIS), satellite, Synthetic Aperture Radar (SAR) and optical images to detect and report suspicious activities in the environmental sphere. This project is funded by the European Space Agency.

Objectives

- Promote the innovative use of Earth Observation products as an efficient surveillance and intelligence tool for a rapid and efficient response to environmental crime;
- Support intelligence reports for law enforcement agencies.

Project Partners

- “Collecte Localisation Satellites” (CLS)
- GRID-Arendal, a centre collaborating with the United Nations Environment Programme



Focus

The MASTREC project focuses on the detection of trafficking of illegal rosewood from Madagascar and illegal charcoal from Somalia/Kenya, conducting 2 service trials on each region.



Credit: CLS

How it works

Satellite radar imagery and the use of AIS can help track vessels and monitor illegal activities. AIS installed on the vessels transmit their position, speed, and destination to shore based users. The satellite radar or optical data shows all ships present in a certain area. When this information is combined, ships with switched-off AIS transmitter or with a deceptive AIS can be traced. When suspicious vessels are spotted, the ship's information and travelling pattern can be inspected. Furthermore, AIS is not weather or daylight dependent and can be acquired in near real time, allowing detection of non-cooperative vessels. High resolution images can be used for the detection of loading and unloading of illegal cargo.

Further Information

MASTREC Website

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