



# MULTIPLE-ANTENNA CONCEPT FOR DETECTING AIS SIGNALS

*Innovative concept combining a system of non-geostationary satellites and their AIS (Automatic Identification System) payloads with a maritime AIS navigation system*

## Technological advantages

### A high-performance, multiple-antenna concept

The area for detection of AIS signals is extended beyond the coasts

Adaptation of the antenna beam to the flyover area

Formation of multiple beams on the ground to ensure optimal performance

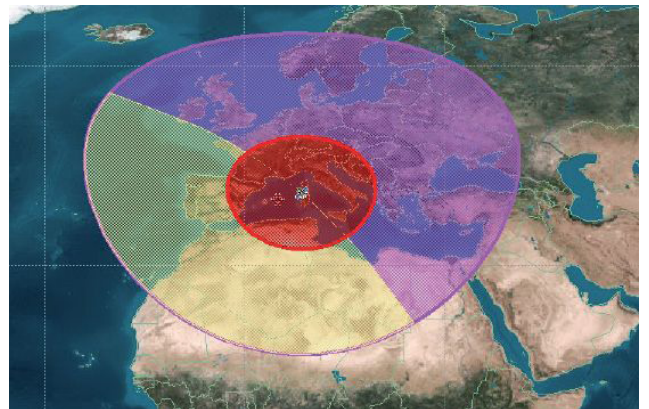
The number of antennas can be varied as needed

### Adaptable system in case of no AIS signal collision

Signals demodulated on board the satellite

Low-speed L-band link at low cost: <100kbit/s

Possible to install small ground receiving stations in areas of strategic interest: near real-time link



Example of an antenna pattern adapted to the observed area: focus on limited area (shown in red) or de-pointing to area of interest (shown in yellow)

## Overview of invention

System of non-geostationary satellites equipped with AIS system for large-scale maritime surveillance

Payload of a non-geostationary satellite with network of antennas for receiving AIS signals and a receiver so they can be processed onboard and transferred to ground station via low-speed links in near real-time

## Potential applications

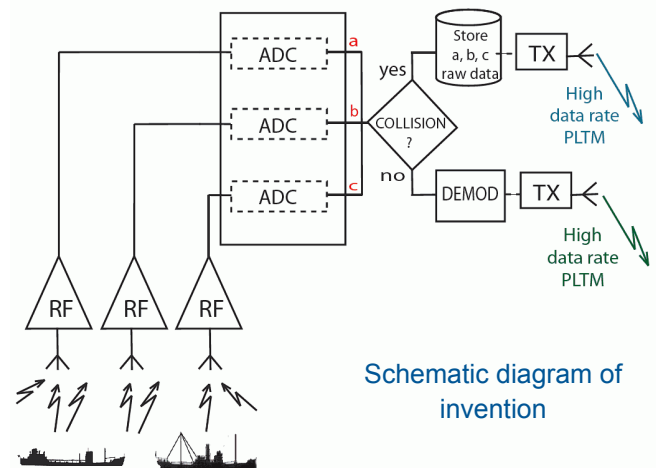
### Used as part of an institutional system of global maritime surveillance:

- Ensure security for shipping lanes
- Monitoring fishing activities
- War against illegal trafficking
- Sea rescues

### Provide support for institutions involved in maritime security:

- European agencies
- State leaders: Maritime Prefecture, CROSS

### Surveillance drones



Schematic diagram of invention

Patented invention, available under license