PROJECT FACTSHEET

TransparentSea

Monitoring the maritime traffic of the Mexican coastline

AIS: 345050700
Fishing Vessel
79.05m × 13.65m
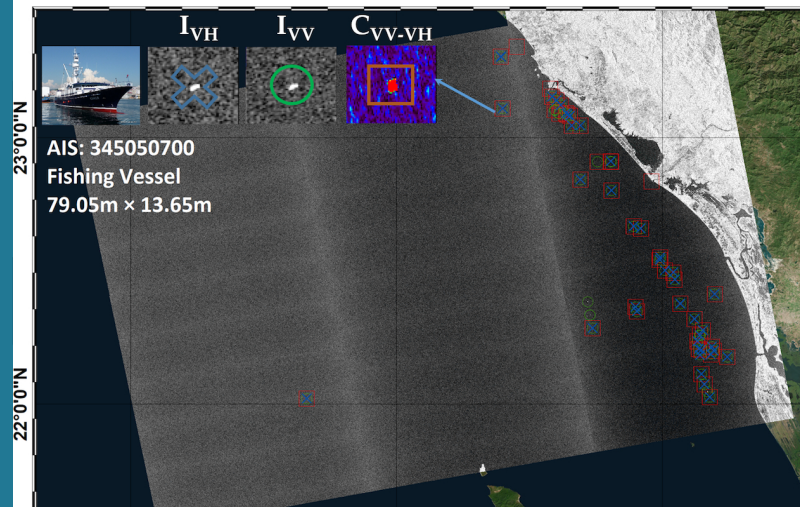
Inspiration

Facing illegal fishery, the Mexican authorities aims to implement an accurate monitoring of their coastline waters in order to restrain the situation. Good practices would be rewarded by an official license, whereas vessels that would not follow the rules would be punished. However, the methods currently used by the Mexican authorities cannot provide an accurate analyse of the maritime traffic due to a lack of data sources, such as an underrepresenting number of stations to perform efficient Automatic Identification System (AIS). In addition, this cooperative system-based touches its boundaries when it comes to monitor vessels turning off their transmitter. Therefore, there is a need to provide complementary tools and methodologies enabling to improve the analyse of the Mexican maritime traffic.

Innovation

TransparentSea aims to provide a better monitoring and understanding of the vessels sailing near by the Mexican coastline. To do so, LIST is developing a new approach that couples several data sources such as earth observation data and AIS data for an accurate and direct ship detection.

The Synthetic Aperture Radar (SAR) images from the satellites will allow to easily and directly detect the vessels in a large region, with a spatial image resolution of 20 meters. As this methodology cannot properly track the positions of the smaller vessels, LIST researchers will also work with optical data that enable a spatial resolution superior to 10meters.

In the framework of the FNR funded SKUA project running in parallel, LIST researchers have already developed a functional model that will be adapted to the Mexican coastline conditions. The information from the different data sources will be integrated and analysed by the model in order to improve the accuracy of the results, but also reduce the uncertainties of the detections.

Impact

TransparentSea will enable an accurate monitoring of the maritime traffic near by the Mexican coastline thanks to the model analyse of combined data sources from both earth observation and AIS. This innovative methodology will enable to improve the existent model developed by LIST and will induce the reduction of the detection uncertainties.

As the statistics are based on a large number of vessels, the result accuracy of the ship detection and modelling will be significantly increased, and will improve the actual state-of-art.

Image caption: I_VH, I_VV and C_VV-VH represent different SAR detection methodologies defined depending on the SAR polarization characteristics

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European Space Agency

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