

What is the aim of DeMarine-Security?

The motivation to start DeMarine Security is to show fields of application for the planned GMES marine services concerning safety and security in coastal and sea traffic as well as coastal protection.

First areas of application are in the field of detection of ships or man made objects and in the field of improving the forecasting to prevent vessels from extreme sea conditions, e. g. parametric rolling. In these fields of application the high resolution German satellite system TerraSAR-X is used.

Coordination / User Bureau



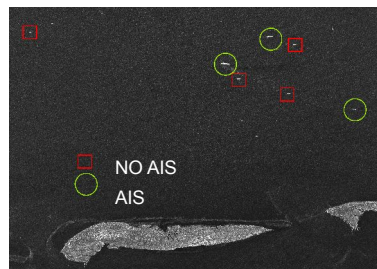
Parametric rolling



This project aims to improve maritime safety within civil shipping, in particular by reducing the risk faced by ships regarding parametric rolling. The goal of the project is to derive the sea state from model data supported by satellite-based measurements and to analyse if dangerous conditions might occur for the ship travelling in the area concerned. A critical combination of sea state and direction of travel could result in the loss of cargo or the entire ship.



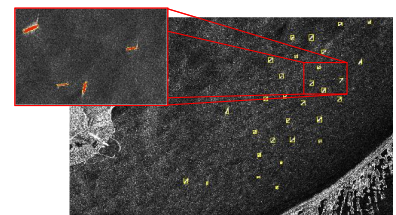
Ship detection



Ship Detection is in the field of maritime surveillance, integrating the Earth Observation (EO) data from radar satellites (TerraSAR-X) with Automatic Identification System (AIS) data over the same geographical area. The main focus is on the development of SAR processing algorithms specifically tailored to detect ships and the integration of this EO data with AIS data, validated in representative test scenarios.



Detection of man-made objects



The first aim of this project is to combine optical remote sensing data and TerraSAR-X data to improve detection of objects in the maritime environment. Other goals are the interferometric detection of moving objects and the development of feature based detection methods for polarimetric data.



Contact: DeMarine-Security User Bureau
GAUSS mbH
Werderstraße 73
28199 Bremen
Tel: 0421-5905-4871/3
Fax: 0421-5905-4851
E-Mail: info@demarine-sicherheit.de

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Further information under www.demarine-sicherheit.de