THE POTENTIAL OF A PRE-COMMERCIAL PROCUREMENT APPROACH IN EARTH OBSERVATION

A Horizon 2020 funded project aimed at developing customised solutions based on Copernicus Downstream Services for Marine Monitoring and Security.

The challenge

The Marine-EO project teams up a group of five maritime authorities (the Buyers Group) and four scientific and technical organisations with significant experience in Earth Observation and maritime matters. These institutions face a common challenge which is to develop, test and validate a bundle of innovative EO downstream services, bringing incremental or radical innovations in the field of maritime awareness, leveraging on the existing Copernicus Services (i.e. CMEMS, Security) and other products from the Copernicus portfolio. At the end of the PCP process, the services that will be procured are expected to contribute to the Common Information Sharing Environment (CISE) and other relevant frameworks related to maritime awareness.

The space based solution

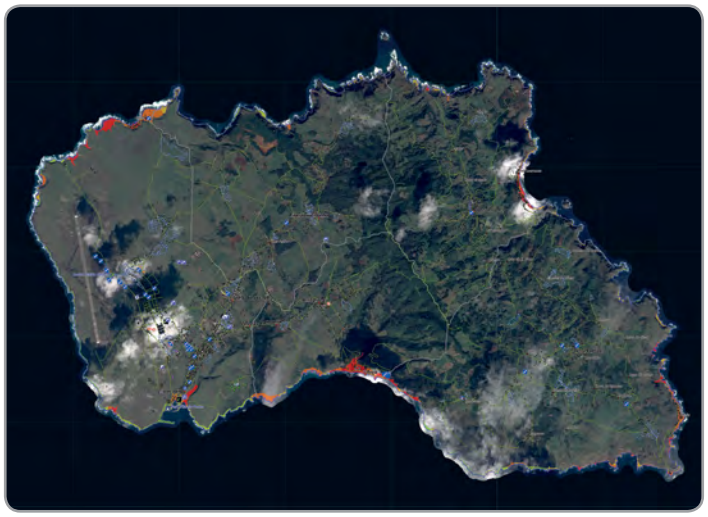
The Marine-EO project seeks to establish EO-based services, covering sea-basins of the Mediterranean, Atlantic, and Arctic, by adapting Copernicus data and information regarding the Marine Environment, to meet the demand of the procurers.

The innovative services are divided into two thematic areas:

- Thematic Area 1 – Copernicus Marine Environment Monitoring and Climate Change: The SATOCEAN service provides information about ocean parameters variability in time and space, best probable fishing areas, fish farm locations, and water quality. It also incorporates sea ice extent for safe navigation and maritime operations in the Arctic.
- Thematic Area 2 – Copernicus Security: The SATSURVEILLANCE service contributes to the development of EUROSUR regulation, by providing services in response to Europe's security challenges in the domains of Border Security, as the monitoring of unusual/ irregular activity around a Critical Infrastructure and the enhanced change detection for evidence of embarking or disembarking of irregular immigrants.

Benefits to Citizens

Overall, the project will contribute to European society by meeting the objectives defined in the Commission Communication on Space Industrial Policy whilst simultaneously increasing the visibility of one of the main EU space flagships: Earth Observation. Marine-EO will ensure that Europe's investment in space infrastructure is exploited to the benefit of citizens and supported by European space science. Furthermore, the Marine-EO project will promote the development of innovative products and services based on remote



The map shows the coastal erosion susceptibility status in Santa Maria Island (Azores) and aims to provide comprehensive knowledge of the potential impact on Azores islands of different natural disasters as well as identify assets at risk. The map was produced on 22/12/2015 by GEOAPINOKISIS (EL) – NOA (EL) –CIMA (IT)-ALTAMIRA (ES) under the service contract nr. 259811 of the EC.
Credit: Contain Copernicus Sentinel data [2015]

Thematic Area: BIODIVERSITY AND ENVIRONMENTAL PROTECTION

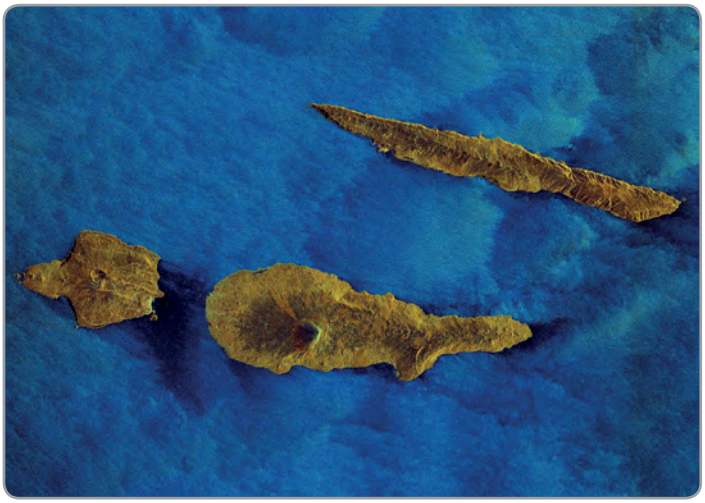
Region of Application: AZORES ARCHIPELAGO

Sentinel mission used: –

Copernicus Service used: CMEMS, SECURITY

Usage Maturity Level: 1

sensing, geo-positioning or other types of satellite-enabled data as well as geo-information already generated by services such as authorities to pursue a shared and comprehensive approach to maritime security risk analysis and to make informed decisions in operationally relevant timelines by increasingly supplying them with diverse imagery, intelligence products, and services. A more effective marine monitoring service will be beneficial for the Portuguese, Spanish, Norwegian and Greek citizens in regards to some of their more precious natural resources. The Mediterranean Sea based Public Authorities, working on security, will be able to access new services and subsequently take more accurate action as well as protect their assets.



This Sentinel-1A radar image was processed to depict water in blue and land in earthen colours. It features some of the Azores islands and highlights the differences in the relief of the islands, with volcanoes and mountains clearly standing out.
Credit: Contain Copernicus Sentinel data [2015]/ESA, CC BY-SA 3.0 IGO released on 09/10/2015

> "Marine-EO will provide relevant new tools for monitoring one of the biggest EEZ in Europe: The Azores archipelago."
>
> ***Filipe Porteiro,***
> ***Regional Director of Maritime Affairs***

Outlook to the future

After a successful implementation of the Pre-Commercial Procurement, the buyers' group will apply a dedicated plan to support large-scale deployment of innovative solutions. This process will link to the use of European Structural and Investment Funds (ESIF). Several "High-Level Scenarios," which will primarily form the EU cooperation umbrella in the EO services for maritime surveillance, will be prepared for the post Marine-EO period. The potential continuation of Marine-EO activities through a Public Procurement of Innovative Solutions (PPI), the reinforcement of EU cooperation and the interaction with the Copernicus services about future initiatives, will be addressed.

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ABOUT COPERNICUS4REGIONS

This Copernicus User Story is extracted from the publication "**The Ever Growing use of Copernicus across Europe's Regions: a selection of 99 user stories by local and regional authorities**", 2018, Edited by NEREUS, the European Space Agency and the European Commission.
The model cases focus on local and regional authorities who successfully applied Copernicus data in 8 major public policy domains.

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