

About ESA's TEP initiative

For more than 20 years, "Earth Observation" (EO) satellites developed or operated by ESA have provided a wealth of data. Actually the Sentinel missions, along with the Copernicus Contributing Missions as well as Earth Explorers and other, Third Party missions provide routine monitoring of our environment at the global scale, thereby delivering an unprecedented amount of data.

While the availability of the growing volume of environmental data from space represents a unique opportunity for science and applications, it also poses a major challenge to achieve its full potential in terms of data exploitation.

In this context ESA has started in 2014 the EO Exploitation Platforms (EPs) initiative. In short, an EO exploitation platform is a collaborative, virtual work environment providing access to EO data and the tools, processors, and Information and Communication Technology resources required to work with them, through one coherent interface.

Coastal Environment

The "Community"

- Public authorities
- Researchers
- Service providers (e.g. serving the previous twos)
- Education

Coastal "risks"



Hydrocarbons spilling



Sea surge

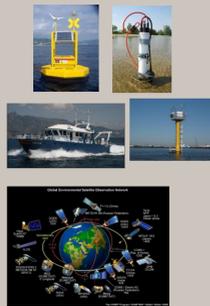


Harmful algal bloom

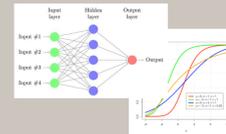


Coastal erosion

The Needs



To use information available from traditional instruments.



To use consolidated algorithms, models and tools or to develop and test new and innovative ones.

To exploit large quantity of EO data.



To make network among researchers.

...in a virtual environment embedding all these elements, not linked and limited by traditional "single workstation" approach and manual download of data.

Thematic Exploitation Platforms

A shared virtual environment for finding and using Earth Observation data!



COSTELab: Italian Coastal TEP

- Close to Italian CGS
- Virtual Development Environment (*laboratory*)
- Innovative products

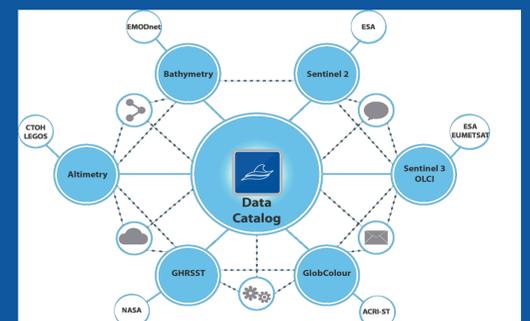


| Products | Golfo di Napoli | Alto Adriatico | Petacciato | Isola di Pianosa | Canale di Sicilia |
|-------------------------------------|-----------------|----------------|------------|------------------|-------------------|
| State and change maps | | | | | |
| Coastline | | X | X | X | |
| Sea defence works | X | X | | | |
| Land use | X | X | X | | |
| Soil sealing | X | X | | | |
| Sea level | | | X | | X |
| Sea state | | | X | | X |
| Subsidence | | X | | | |
| Landslides inventory | X | | | | |
| Wind fields | | | X | | X |
| Sea and coastal habitats | X | | | X | |
| Marine ecosystem | | X | | X | |
| Daily cycle SST | | X | | X | |
| Damage maps | | | | | |
| Flooding | | X | X | | |
| Hydrocarbons spilling | | X | | | X |
| Anomalies maps | | | | | |
| HAB and water quality anomalies map | X | X | X | X | X |
| Hazard maps | | | | | |
| Flooding | | X | X | | |
| Erosion | | X | X | X | |
| Pollution | | | | | X |

C-TEP: Coastal Thematic Exploitation Platform

Objective: to provide a virtual platform where EO data and in-situ coastal data may be accessed, processed, analysed and shared for the enhancement of our maritime management, research and R&D sectors.

- Over 20 years of archived and Near Real Time satellite-derived EO data
- Virtual computing/processing tools and Big Data exploitation methods
- Support services and a community of practice
- Forums and professional networks focused on open community collaboration



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