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Making waves

European maritime affairs commissioner Maria Damanaki talks tourism, coastal development and blue growth ahead of 2013's EU maritime day

EU-Japan trade
Kojiro Shiojiri, Johannes Cornelis van Baalen and Metin Kazak

Single seat
Tête-à-tête with Joseph Daul and Edward McMillan-Scott, Ashley Fox and Gerald Häfner

Plus:
Kristalina Georgieva on the EU's new emergency response centre
Nessa Childers on alcohol related harm
Monica Macovei interview on seizing criminal assets and elections in Guinea

SOCIB: the role of new Marine Research Infrastructures responding to Science, Technology and Society needs Multi-platform integrated observing and forecasting systems

Experts at SOCIB, the Balearic Islands Coastal Observing and Forecasting System are revolutionizing our understanding of key questions on ocean processes, marine safety, climatic change, ecosystem variability and environmental management.

The Balearic Islands Coastal Observing and Forecasting System (SOCIB) is an example of a new type of marine research infrastructures worldwide, which are contributing to increase our understanding of ocean and coastal processes essential for sound and knowledge based coastal and ocean sustainable management.

Dr. Joaquín Tintoré, Permanent Research Professor at the Spanish Council for Scientific Research and Director of SOCIB, is enthusiastic about their prospects: "This work will lead to major scientific breakthroughs, innovations in oceanographic instrumentation and create new pathways down which, science-based coastal and ocean management can develop".

BUILDING ON TECHNOLOGICAL ADVANCES

Historically, developing an understanding of the oceans and coasts was based on data gathered from single observation platforms (ships). Today, a whole host of platforms are available to researchers, including satellites, profilers, HF radar, gliders and buoys among others. The advent of advanced computer and communication technologies has meant that marine observation systems have very rapidly become multiplatform, integrated and accessible in quasi-real time.

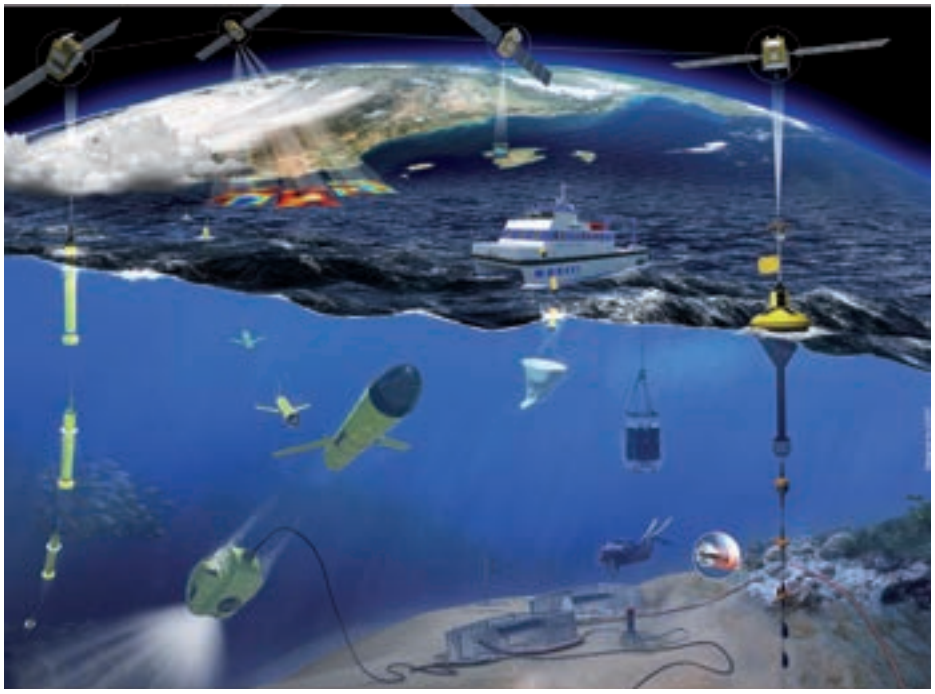
SOCIB takes full advantage of all available observation techniques to deliver cutting-edge marine information. Until recently, only small teams of researchers were able to access observation data, however this information is now directly available to all the scientific community as well as to a wide range of global stakeholders in near real-time. As Tintoré explains: "Today, the data is quality controlled and made available in quasi real-time, which means scientists and stakeholders can have direct access to this information. This significantly increased accessibility is having a major impact upon the ocean observing community". The real benefit that comes with the development of these new tools is that far more effective knowledge-based decision support is provided for oceans and coastal management.

AN ARRAY OF TECHNICAL SUPPORT AND FACILITIES

The SOCIB team has developed a number of observing facilities to support delivery of their monitoring programme. Seven major new Observing Facilities are now operational from the open ocean waters to the Balearic beaches, including open ocean moorings, a technologically advanced catamaran, a long-range high-frequency radar system in the Ibiza channel, gliders, coastal moorings, Argo profilers, surface drifters and nearshore monitoring system of beaches. These facilities deliver a variety of data, such as surface currents, biogeochemical measurements, water temperature, hydrodynamics and sediment transport. Backup for all the systems is provided by a highly skilled Engineering and Technology Development Division, who provide the technical 'backbone' for all the application, development and testing of both existing technologies and those future systems currently in planning.

The SOCIB Modeling and Forecasting facility offers a range of modeling products to help advance the understanding of the processes that are taking place within the western Mediterranean. The Modeling subsystem is presently running an operational model for ocean currents, which is nested to the wider MONGOOS system. A coastal waves operational system has been also implemented, together with "Puertos del Estado", for the southern coast of Mallorca and the Palma harbor entrance. In addition, a pre-operational meteo-tsunami system is in operation to support the Balearic harbors authority when strong sea level oscillations occur, mostly at Ciutadella harbor in Menorca.

The Data Center is at the very core of SOCIB; we work developing and implementing a general data management system to guarantee international standards; quality assurance and interoperability are core outputs. This Center is performing specific developments and tools for the different facilities when required, as Tintoré highlights:



"Its main functions and capabilities range from data reception to its distribution and visualization, via web services and THREDDS/ OPeNDAP protocols, passing through processing, quality control, documentation, standardization, archiving and data discovery". The facility is responsible for all cataloguing and distribution of the data generated by SOCIB observations and forecasting.

CONTRIBUTING TO A WIDER OBSERVATION COMMUNITY

From Tintoré's perspective their role is to support the best research and management decisions possible by delivering high-quality data, products and services. They reach out to stakeholders in a number of ways. A website and smartphone apps have been developed which offers visitors access to a range of material as well as information on the latest news and communications from SOCIB contributors. Also, workshops are regularly organized to help share in new tools and processes being developed at SOCIB.

CONTRIBUTING TO MSFD Implementation and Integrated Maritime Policy

It is also important to mention the impact of theses new multi-platform systems or marine infrastructures on society driven objectives such as for example the monitoring programs requested by the implementation of the Marine Strategy Framework Directive (MSFD), the marine pillar of the EU Integrated Maritime Policy. MSFD requires (1) an Initial Assessment of the present status (already carried out in 2012) to guarantee the achievement of (2) Good Environmental Status by means of specific actions that include (3) Monitoring Programs (to be implemented in 2014) and detailed (4) Programs of management measures (2014). Multi-platform systems, such as SOCIB, by integrating different types of monitoring platforms at different scales, and by this, providing data and developing decision support tools, contribute to the characterization of MSFD pressures and states indicators.

Unión Europea

Govern de les Illes Balears

SOCIB Balearic Islands Coastal Observing and Forecasting System

INFORMATION

OBJECTIVES

A multiplatform distributed and integrated system that provides streams of oceanographic data and modeling services to support (in line with EuroGOOS) operational oceanography in a European and international framework, therefore also contributing to the needs of marine and coastal research in a global change context.

PARTNERS

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BIO

JOAQUIN TINTORE is professor of physical oceanography from CSIC (Spanish Council for Scientific Research) at IMEDEA (CSIC-UIB) and Director of SOCIB, a Spanish Large Scale Marine Infrastructure (**B**alearic **I**slands **C**oastal **O**cean Observing and Forecasting **S**ystem), a new multi-platform facility of facilities that responds to scientific, technological and strategic society priorities related to the role of the oceans in climate change. He has extensive international experience with up to 120 peer-reviewed publications having also leaded 42 research projects (2 coordinated at EU level).

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