

Palma, February 7, 2017

Dr. Glenn Nolan
Secretary General
EuroGOOS - European Global Ocean Observing System
Avenue Louise 231,
1050 Brussels, Belgium

Subject: SOCIB application for EuroGOOS membership

Dear Sir,

For long time I have known and collaborated with EuroGOOS members in supporting science based operational oceanography.

I believe it is now time to go one step forward and given the status reached by SOCIB, the Balearic Islands Observing and Forecasting System, I would like to submit for your consideration this formal application of SOCIB to EuroGOOS.

SOCIB initiated its activity in 2009 with the Design phase, which was continued after approval by the Board of Trustees in July 2010 by the Construction phase and then later in 2013-2014 by the Operational phase. SOCIB has strong links with EuroGOOS members, both in Spain with Puertos del Estado, IEO and AZTI and in Europe, in the Mediterranean (IFREMER, INGV, CMCC, HCMR, etc...) and we are also active members in MonGOOS and now formal members of Euro-ARGO ERIC.

All SOCIB activities, Strategic Plan, news, etc. are available on our web site, www.socib.es. However, to facilitate your review, we have prepared:

- A SOCIB description in 3 pages
- A SOCIB team research record

I believe our activities are fully aligned with EuroGOOS objectives and as a result believe it would be very good for SOCIB to be accepted as member of EuroGOOS.



Yours sincerely,

Joaquín Tintoré
Director of SOCIB

SOCIB DESCRIPTION FOR EuroGOOS

SOCIB Commitments:

Scientific Excellence with Impact on Society

Science-Society Engagement contributing to Bridge the Science-Policy Gap

Responsible Research and Innovation for Healthy Oceans in a Sustainable Planet

What is SOCIB?

SOCIB, the Balearic Islands Coastal Ocean Observing and Forecasting System is a Marine Research Infrastructure included in the [Spanish Large Scientific and Technical Infrastructures Network](#) since 2013. SOCIB is a multi-platform ocean observing system that provides streams of data and forecasting services that resolve coastal ocean processes across a range of temporal and spatial scales by this supporting operational oceanography and contributing to establish and understand the services that the coastal ocean is providing and that yield both ecological and economic benefits. In line with EuroGOOS, operational oceanography is here understood in a wide sense, including both the systematic long-term measurements of the seas and their interpretation and dissemination, and also the sustained supply of multidisciplinary data to cover the needs of a wide range of scientific research and societal priorities. This will allow a quantitative increase in our understanding of key questions on oceans and climate change, coastal ocean processes, ecosystem variability, sea level rise, etc. and will also drive us towards a more science based coastal and ocean management. SOCIB detailed description and on-going Strategic Plan are available at [SOCIB web site](#).

SOCIB responds to 3 drivers: scientific excellence, technological development and strategic societal priorities related to the role of the oceans and the coasts in a global climate change context. SOCIB is a facility of facilities that has evolved, and continues to evolve, to promote the paradigm shift that has occurred in ocean observation and data availability: from the historical, single platform ship based observation with delayed mode data availability to the current multi-platform, integrated and multidisciplinary observing systems that supply opendata real time or quasi real time and quality controlled data and state of the art ocean forecasting. This type of Marine Research Infrastructures are being progressively implemented in oceans and seas. These new observing systems, such as IMOS (Australia), OOI and IOOS (USA), VENUS/NEPTUNE (Canada), among others, provide sustained and reliable multidisciplinary ocean and coastal data that are available for science and society in quasi real time, by this delivering new insight into ocean variability.

What does SOCIB do?

SOCIB operates a complex network of observing platforms for long-term monitoring of physical and biogeochemical processes in the Western Mediterranean. The network of platforms includes surface drifters, profiling drifters, moorings, coastal stations, satellites, research vessel, high-frequency radar, autonomous underwater gliders, sea turtles, etc, all continuously recording multi-disciplinary data that are transmitted to SOCIB Data Center that makes them available for for scientists and society. The know-how, data, tools and products already developed are a clear performance indicator of SOCIB achievements and innovations in a new era of ocean observation. As an extension

to its scientific and operational activities, the SOCIB Outreach Service is committed to disseminate at different levels of our society the advances of operational oceanography and progress towards society real engagement in SOCIB activities.

SOCIB Scientific Excellence

SOCIB activities also include developing state of the art research in the nearshore, coastal and open ocean, implementing new monitoring technologies and developing tools for science-based coastal and ocean management. Significant training, outreach and education activities are also carried out, bringing ocean data and ocean science concepts to classrooms and citizens, and contributing to bridge the science-policy gap. SOCIB is a key research infrastructure to guarantee healthy and sustainable oceans. SOCIB focuses on scientific excellence with relevance and impact on society, opening a new era of ocean observation; science with and for society.

SOCIB activity is developed by a dynamic team of approximately 45 people including international leading scientists, engineers, technicians, data experts and students. In the last 5 years, SOCIB team has published more than 75 papers in peer-reviewed international journals in areas such as: beach & nearshore studies; meso and submesoscale ocean variability; ocean forecasting; new observing systems, tools for decision support & data management. SOCIB team is strongly involved in international marine and coastal research programmes, including open data initiatives, for example participating in EU initiatives and projects such as in recent years CMEMS, EMODnet MedSea-Checkpoint, PERSEUS, JERICO-NEXT or ODIP2, among others.

SOCIB Significant Infrastructures and/or major items of technical equipment:

SOCIB Marine Research Infrastructure is included in the Spanish Large Scale Infrastructures Network since 2010. Major components include:

- **Observing Marine Infrastructure;** a multi-platform integrated system for monitoring physical and biogeochemical data, from the coast to the open ocean in the Western Mediterranean including: surface drifters, vertical profilers, coastal and deep sea moorings, coastal stations, satellites, research vessel, HF radar, gliders, sea-turtles, etc.
- **Ocean Forecasting Infrastructure:** (a) high resolution numerical ocean forecasting models for currents from the coastal to open ocean, (b) high resolution wave forecasting in the coastal ocean and (c) coupled atmosphere-ocean meteo-tsunami forecasting system.
- **Data Centre/Cyber-infrastructure:** opendata the core of SOCIB that guarantees -real time or quasi real time and delayed mode- data archiving, processing, quality control, visualization and download from all platforms. All data are available for scientists and society.

SOCIB New Technologies, Ocean Observatories and Grand Challenges:

New monitoring technologies are key components of recent observing systems being progressively implemented in many coastal areas of the world oceans. As a result, at SOCIB we believe we have new capabilities to characterise the ocean state and its variability at small scales exists today in many cases in quasi-real time. The real challenge for the next decade is therefore the integration of theses technologies and multi-platform observing and forecasting systems to (a) monitor the variability at small scales (e.g. mesoscale/weeks) in order (b) to resolve the sub-basin/seasonal and inter-

annual variability and by this (c) establish the decadal variability, understand the associated biases and correct them. In other words, the challenge is to advance from small to large scales since the new observing and forecasting systems now allow this major change in our focus of ocean observation.

SOCIB focus in the Mediterranean Sea; an ideal ocean laboratory to develop planet ocean observing and forecasting activities, emphasizing islands sustainability:

The Mediterranean Sea is a well-known reduced scale ocean, an ideal natural laboratory to study global ocean processes, in particular those associated with meso and submesoscale variability, interactions with mean flows and associated ecosystem response. SOCIB, the Balearic Islands Coastal Ocean Observing and Forecasting System, is one of such new ocean observatories, a multi-platform distributed and integrated system, a facility of facilities that extends from the nearshore to the open sea. SOCIB takes profit of the strategic position of the Balearic Islands at the Atlantic/Mediterranean transition area, one of the 'hot spots' of biodiversity in the world's oceans and also, of the real science based sustainability needs in islands where preservation of the environment is essential to assure, both residents welfare and the competitiveness of the tourist sector. SOCIB is unique in that, from peer-reviewed excellence, its mission and objectives are science, technology and society driven.

SOCIB Innovation and products:

The know-how, data, tools for decision support and products developed until now are a clear performance indicator of SOCIB achievements and innovations in a new era of ocean observation. SOCIB recently undertook a products review and from this developed a sector-focused Products & Services Strategy that enabled to identify 10 key user sectors, groups of users with common data interests and needs, that are important to the region (economically/societal benefit) and for which SOCIB can provide data of value (e.g. value to decision making), both observed variables and derived/value added variables (e.g. predicted wave height, divergence/convergence zones, spawning habitat mapping of top predator fish species). The implementation of this strategy is now underway and by end 2017 the SOCIB website will include a new searchable product catalogue, with detailed information on the existing and developing products, and new sector focused product and information zones. Regional ocean observatories have a key role to play in delivering societal benefits from ocean data and research, and the SOCIB efforts are aligned with the aims of JERICO-NEXT in supporting the coastal component of a future European Ocean Observing System (E00S).

Concluding remarks.

SOCIB and new marine infrastructures, because of their critical mass, multidisciplinary, integrated and targeted approach, and sustained funding, are establishing new research ecosystems that facilitate integrated and oriented scientific excellence, while at the same time, enhancing technology development, responding to society needs and challenges, innovations and new products, and through all this and with science-society engagement, contributing to bridge the science-policy gap. In other words, we are establishing new ways of international partnership that are leading to major science breakthroughs, innovations in ocean observation and new ways of more efficient and science based coastal and ocean management to guarantee healthy oceans in a sustainable planet for future generations.