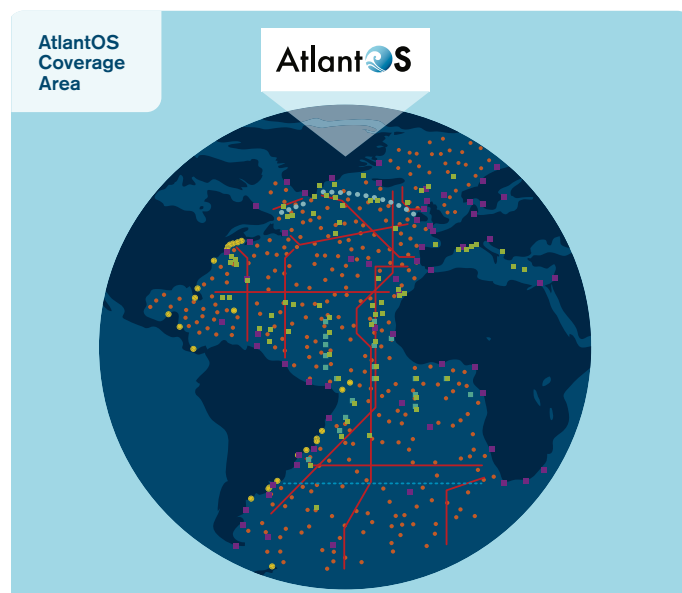


- By responding to user needs,
- By saving time, money, and energy by working together,
- By coordinating the implementation of observing systems and the collection of ocean data in the Atlantic Ocean, and
- By supporting multidisciplinary diversity in all forms and transnational partnerships.

In building AtlantOS, it is important that we define and follow clear and transparent principles. The implementation of the AtlantOS vision will lead to a sustainable comprehensive observing system in the Atlantic basin from which societies, governments, and industries around the Atlantic will benefit. It defines the principles of the system, how partners could contribute, and presents the benefits that will be derived from an effective ocean observing system. The vision is an implementation that points to the operational challenges and approaches and offers guidance on real actions for the ocean observing system and the roles of different partners.



AtlantOS Coverage Area: The Atlantic Ocean, depicting the focus area of ocean observing for AtlantOS. Dots and lines conceptually indicate current ocean observing activities by major networks, such as Argo, GO-SHIP, PIRATA, OSNAP and MBON (Credit: AtlantOS).

Monitoring the Atlantic Ocean, an international and innovative effort

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The ocean plays a major role in the global climate system. Through its continuous exchange of energy and fresh water with the atmosphere, it is the primary regulator of global climate. To cope with the impacts of global change on the ocean, observations are required, not only to better quantify the change, understand and predict the role of the oceans and seas in climate, but also to help decision-makers acting wisely to mitigate and to adapt to climate change.

The Atlantic Ocean covers approximately 20 percent of the Earth's surface. To monitor changes in this interconnected ocean with Arctic, Southern Pacific and Indian oceans, an Atlantic Observing System has been established, based on in-situ and satellite observations, from coastal domains impacted by human activities, to high latitude areas or to the deepest parts of the oceans. Among the components of this observation system are the Argo floats, autonomous in-situ observing platforms, providing accurate data on physical and biogeochemical parameters in real time and from the sea surface

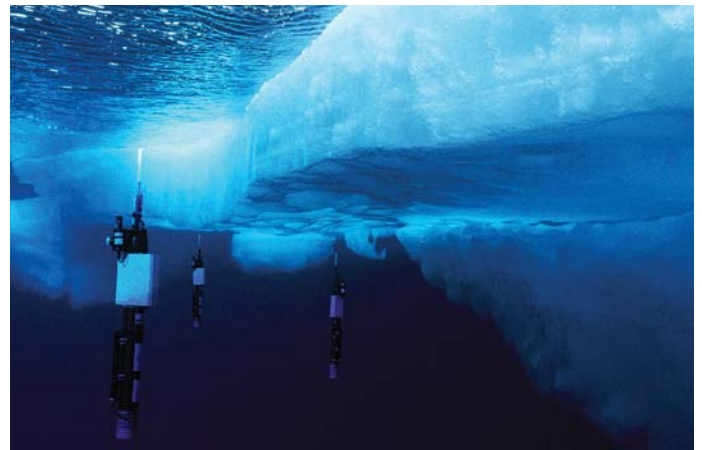
Argo

Argo is one of the most important components of the in-situ ocean observing system, complementing ship measurements in many regions. Euro-Argo ERIC, the European component of Argo, provides in-situ ocean observations to various user's communities interested in the ocean state and evolution. This European Research Infrastructure aims at maintaining one fourth of the international Argo network and developing its extensions to high latitudes, abyssal ocean and biogeochemistry, hence contributing to fill identified gaps in the Atlantic Ocean Observing System.

down to approximately 2000m depth (see box). In this international observation network, Europe plays an important role through the Euro-Argo ERIC,

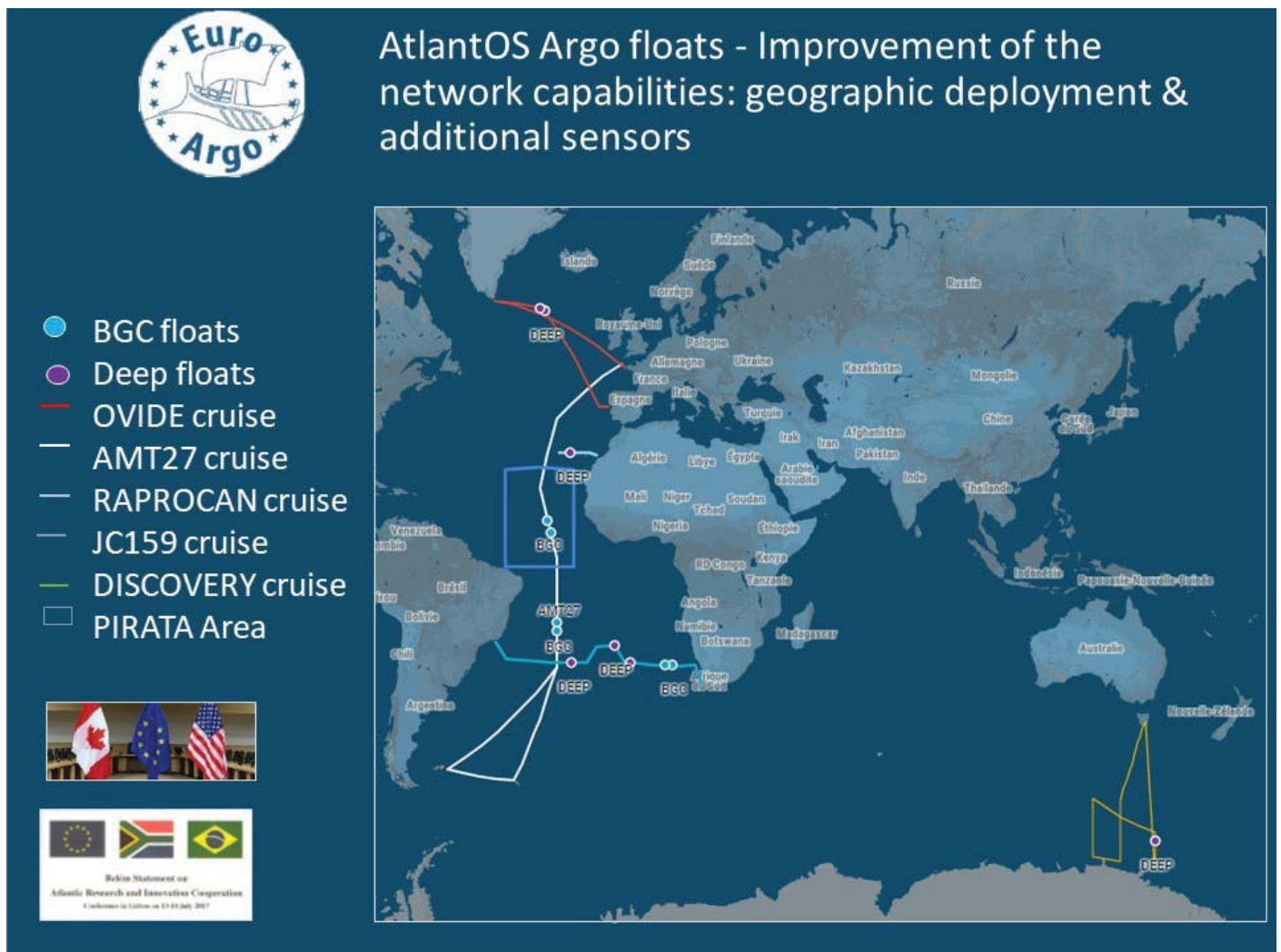
a structure that coordinates a network of research infrastructures, supported by the Member States and the European Commission. Europe provides not only the technology to access the deepest part of our oceans (up to 4000m deep), the least explored region (such as the Arctic and Antarctic) but also the very precise biogeochemical states of our oceans.

The European H2020 AtlantOS project has contributed significantly to the development of these tasks by supporting the Biogeochemistry-Argo (Figure 1) and Deep-Argo networks in particular in the South Atlantic that was less covered by Argo (Figure 2). The sustainability and extension of the Euro-Argo mission is important. In particular, the extension to new generations of cost-effective sensors and floats and the engagement with new end-users to meet societal needs are critical aspects of this sustainability. The Integrated Global Ocean Observing System (GOOS), comprising multiple observation networks like Argo, multiplies opportunities for deployment, for trans-Atlantic cooperation to fill gaps in ocean observations.



Biogeochemistry-Argos in high latitudes (Credit: Michèle Barbier).

By fostering a coherent, interdisciplinary and interoperable set of marine initiatives across Europe and beyond, new and innovative solutions can emerge to meet the challenges of observation and data management. The Atlantic Ocean Observing System (AtlantOS) is part of this global effort and Argo and Euro-Argo ERIC are major components of this system.



Deep-Argo float networks in the South Atlantic Ocean (Credit: Michèle Barbier).