

Together We Can Create a Safe and Liveable World

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In recent years, the Atlantic Ocean Research Alliance (AORA) Atlantic Seabed Mapping International Working Group (ASMIWG) and The Nippon Foundation-GEBCO Seabed 2030 Project have been working together toward a complementary goal of creating a wholly mapped Atlantic Ocean basin, with all bathymetry data publicly available via GEBCO. Now AtlantOS is embarking on a goal to create an All-Atlantic Ocean Observing System, where all underlying data are shared freely without restrictions.

A comprehensive digital atlas of the ocean and a comprehensive ocean observing system for all major basins are recognized key research and development priority areas of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030).

For these programs, cross-sectoral, interdisciplinary collaboration and partnerships are paramount to success. Fugro, as a member of the private sector, has demonstrated how technical expertise and resources can be applied to help achieve these goals.

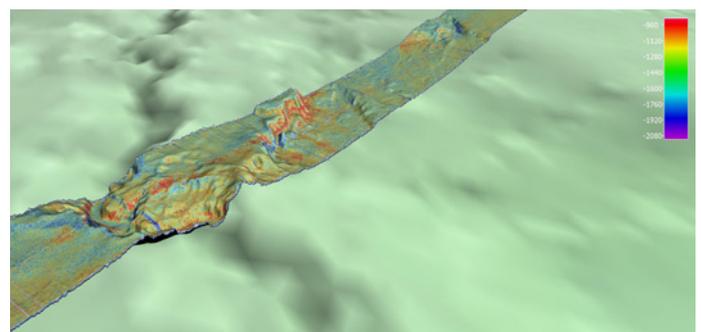
Fugro has been supporting Seabed 2030 since 2016, when the company initiated a crowdsourced bathymetry program from its survey vessel fleet. The program began with one vessel in the Americas region, collecting multibeam data during transits and developing the systems and processes needed to support remote command and control of multibeam data acquisition, as well as remote data upload and transfer. Fugro ultimately plans to extend the capability across its global survey fleet and today contributes data from seven multibeam-equipped vessels. Total contributions to Seabed 2030 currently stand at approximately 450,000 km² of multibeam data, with about 278,000 km² of that data also benefiting AORA ASMIWG.

In many cases, the contributed multibeam data included backscatter and water column data along with the bathymetry. Modern multibeam sensors can acquire all three data types simultaneously. Together, they provide significant information for characterizing the seafloor and water column, all of which is relevant to key priority areas of the UN Ocean Decade and to ocean science. In this way, Fugro's collection and contribution of multibeam sonar data from survey vessel transits has provided

invaluable information that supports the bathymetry interests of AORA ASMIWG and Seabed 2030, as well as the ocean observation interests of AtlantOS.

This high-tech crowd sourced approach pioneered by Fugro can also be applied to the collection and contribution of other ocean observation data. Examples include temperature, salinity, currents, marine mammal, and bird observations. In the United States, NOAA has implemented a Voluntary Observing Ship (VOS) program for contributing weather information at a volunteer's location, as a contribution to the Global Ocean Observing System (GOOS). One can imagine that this approach could be expanded and/or adapted to include other oceanographic data as well. Through such an approach, crowdsourced ocean observation could be born. The same principles currently utilized by Fugro to remotely command and control these instruments could also be used here to help coordinate a global effort of seafloor mapping and ocean observations.

Whether it is bathymetry data under AORA ASMIWG and Seabed 2030, or broader ocean observation data under AtlantOS, there is a unique opportunity for the private sector to contribute existing data, acquire and share crowdsourced data, and become a collaborative partner in coordinated campaigns to fill data gaps in the Atlantic Ocean basin and around the world. Fugro sees its support of these programs and ultimately the United Nations Decade as an important part of the company's vision to help create a safe and liveable world. The company encourages other private sector firms working in maritime industries to likewise get involved so that together we can fulfil the Decade's vision and obtain "The Science We Need for the Ocean We Want".



Multibeam data acquisition for seabed mapping (Credit: David Millar).