



Fugro's presence in the Region and Approach in Supporting Seabed 2030

3-4 Feb 2021

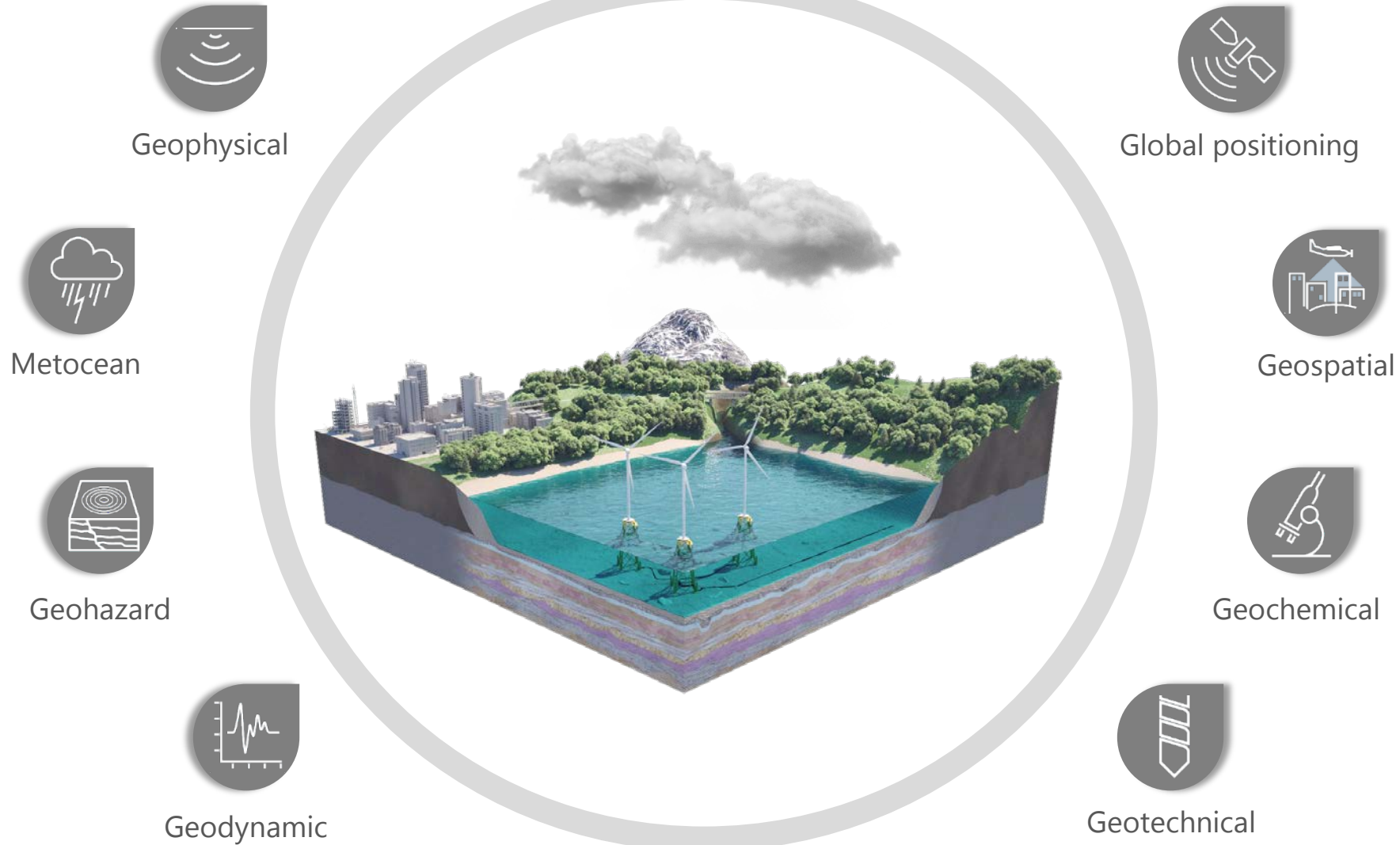
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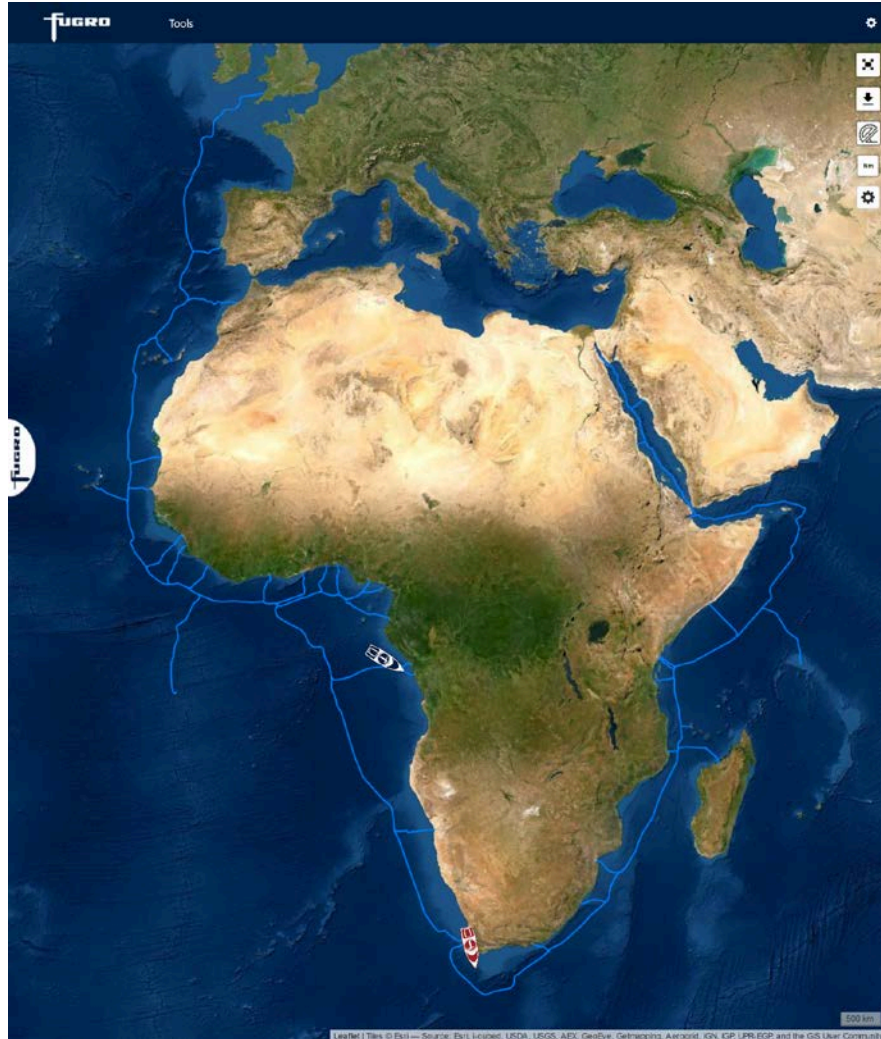


1. Fugro and Regional Presence

We are the world's leading Geo-data specialist



• Vessel currently in engaged in project in the Region



- Fugro presence in the Region with hydrographically capable Vessel is strong (from shallow (including small boats) to deep ocean capability, including Geotech – gravity coring, CPT);
- **5 Vessel:**
 - 2 Vessels engaged in the 2Africa subsea cable survey route. 2Africa project is seen as an important pillar supporting tremendous internet expansion as part of Africa’s growing digital economy (<https://engineering.fb.com/2020/05/13/connectivity/2africa/>);
 - 3 Vessels currently working in Angola in different configuration:
 - Geophysics
 - 2D seismic
 - Geotech

Fugro Helmert - Hydrographic state of the art



- Equipped with a medium (EM710MK2) to shallow water multibeam echosounder (EM2040 dual)
- Innomar Medium SBP
- Oceanographic winch for geophysical operations down to ~ 1000m
- Geotech capability
- Endurance ~ 30 days
- Survey crew up to 11 PAX + ROC support with speed data transfer

Vessel has a successful track record of operations working for large scale hydrographic survey programs (i.e. IHO Order 1a Shallow water survey – Red Sea > 100,000 sq.km).

Fugro has built for GCS a sister vessel including hydrographic survey launches which continue to operate in the Red Sea.



The Nippon Foundation-GEBCO Seabed 2030 Project

100% of the ocean floor mapped by 2030

[Download GEBCO's global grid](#)

[Contribute data](#)

2. What is Fugro doing to support Seabed 2030?

What is Fugro doing to support Seabed 2030?



In-Transit Bathymetry Contributions



Technology Development & Innovation



Contribution of Client-Owned Bathymetry

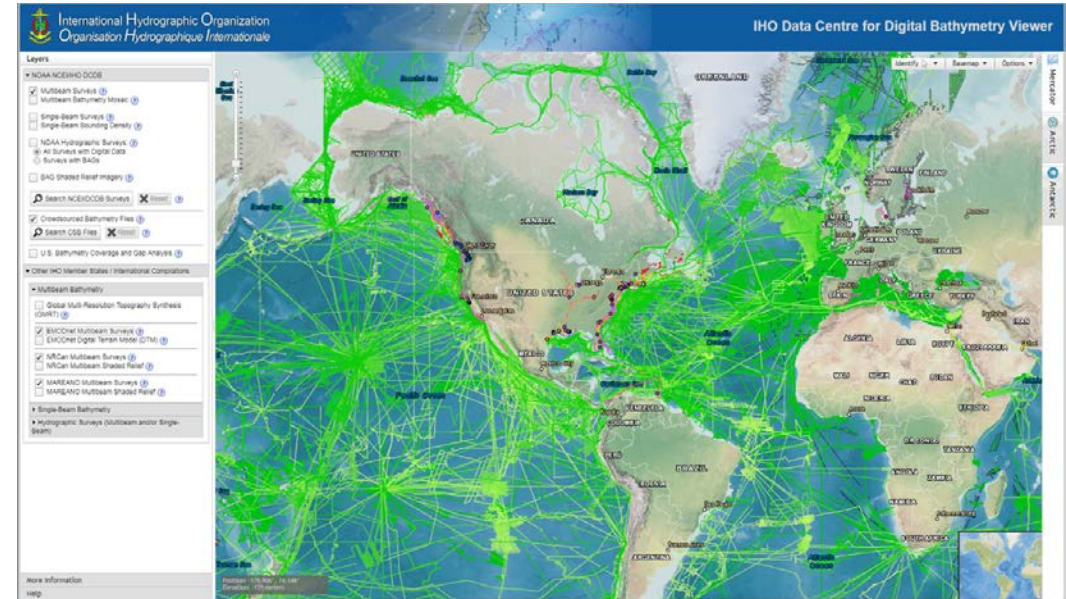


Spreading the Word

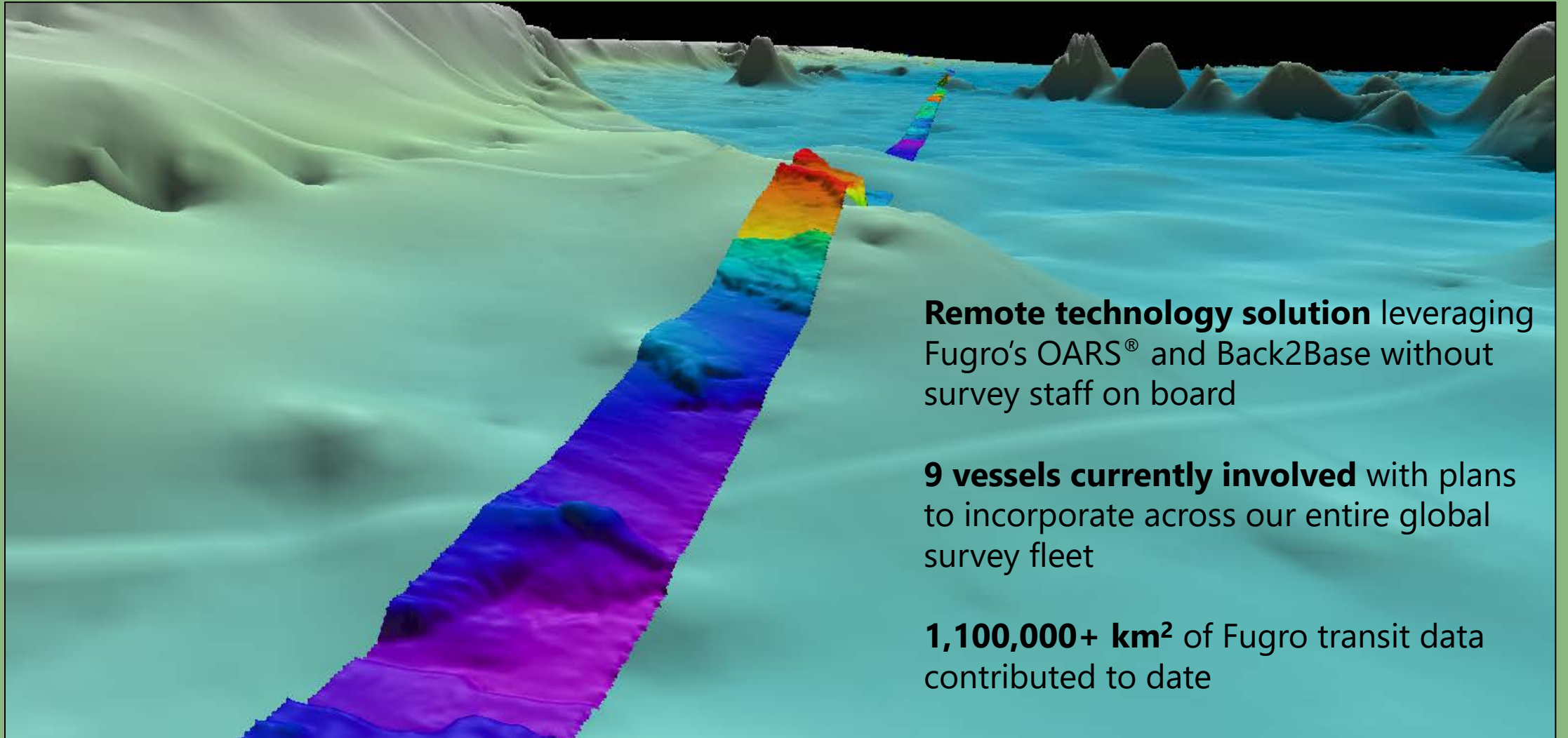


Fugro's in-transit bathymetry program

Fugro made a commitment to collect and contribute bathymetric data acquired during the transits of our survey vessels to Seabed 2030 as part of our corporate sustainability program.



Fugro's in-transit bathymetry program



Remote technology solution leveraging Fugro's OARS[®] and Back2Base without survey staff on board

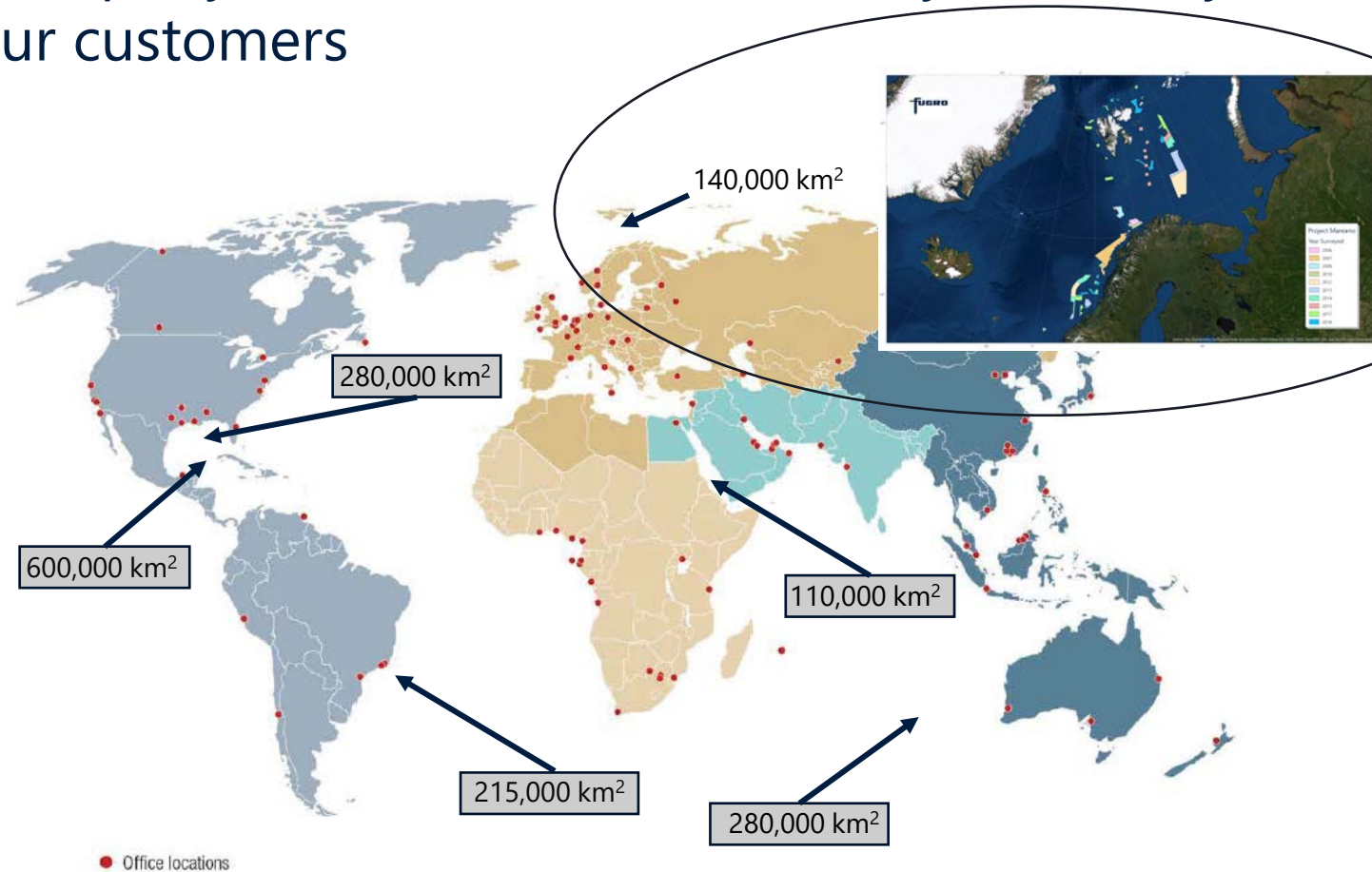
9 vessels currently involved with plans to incorporate across our entire global survey fleet

1,100,000+ km² of Fugro transit data contributed to date

Seabed 2030

Data gaps will be filled by **the release of existing data**, crowdsourced bathymetry contributions and ocean basin mapping campaigns

Fugro acquires ~1,000,000km² of bathymetry data per year ... but these are usually owned by our customers



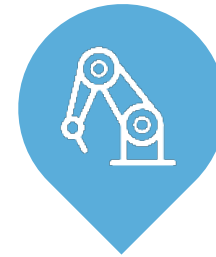
Seabed 2030

The use of existing and **emerging technologies** will play a central role in the Seabed 2030 project.

Technology development and innovation will accelerate and reduce the cost of ocean mapping



REMOTE OPERATIONS



ROBOTICS



AUTONOMOUS



ADVANCED ANALYTICS



CONNECTED DATA



CLIENT INTERFACES

Technology development and innovation



Uncrewed Surface Vehicles



Unmanned Aerial Vehicles



Remote Command and Control



Autonomous Underwater Vehicles



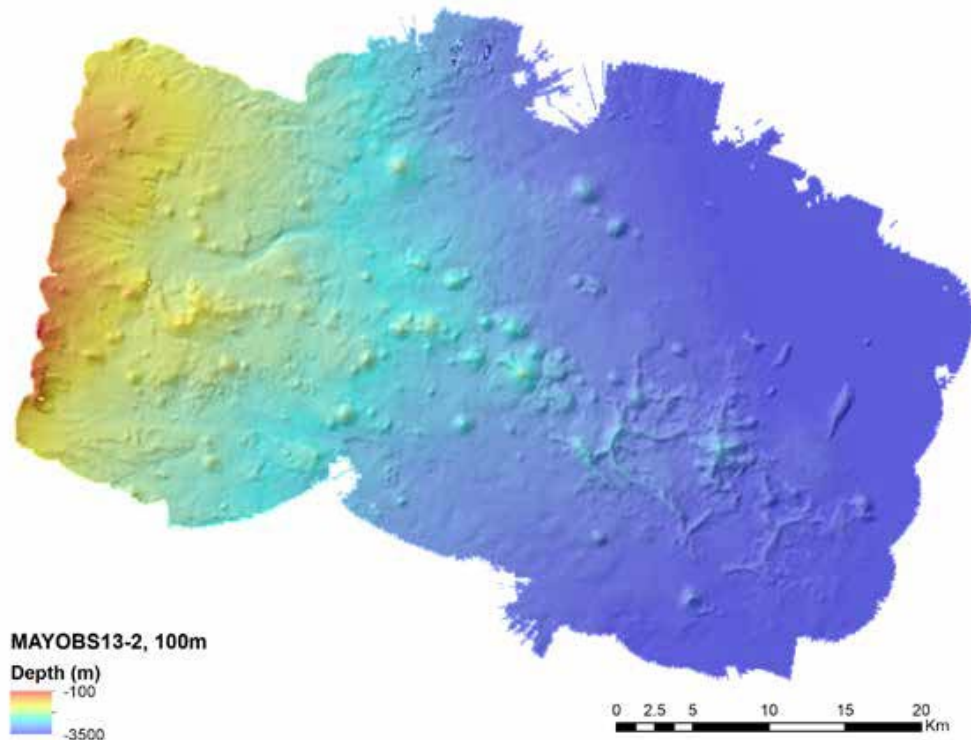
“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

(United Nations)

3. Regional recent success stories

Ocean mapping: where there's a will, there's a way

from SB2030 in-depth Issue July 2020



MAYOBS13-2, 100m

Depth (m)
-100
-3500

0 2.5 5 10 15 20 Km



Describing the survey, Dr Carla Scalabrin, Ifremer Head of Mayotte Project Hydroacoustic Team, stated:

"It was our first experience of remote working and we never met our Fugro colleagues in person, as the project was planned by email and videoconferencing. Despite these challenges, we quickly established a climate of trust and the data transfer was extremely powerful. This successful survey is the result of a positive and respectful collaboration between the Ifremer and Fugro teams."



Thank you



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 fugro.com