



International SeaFloor Campaign Mapping Opportunities

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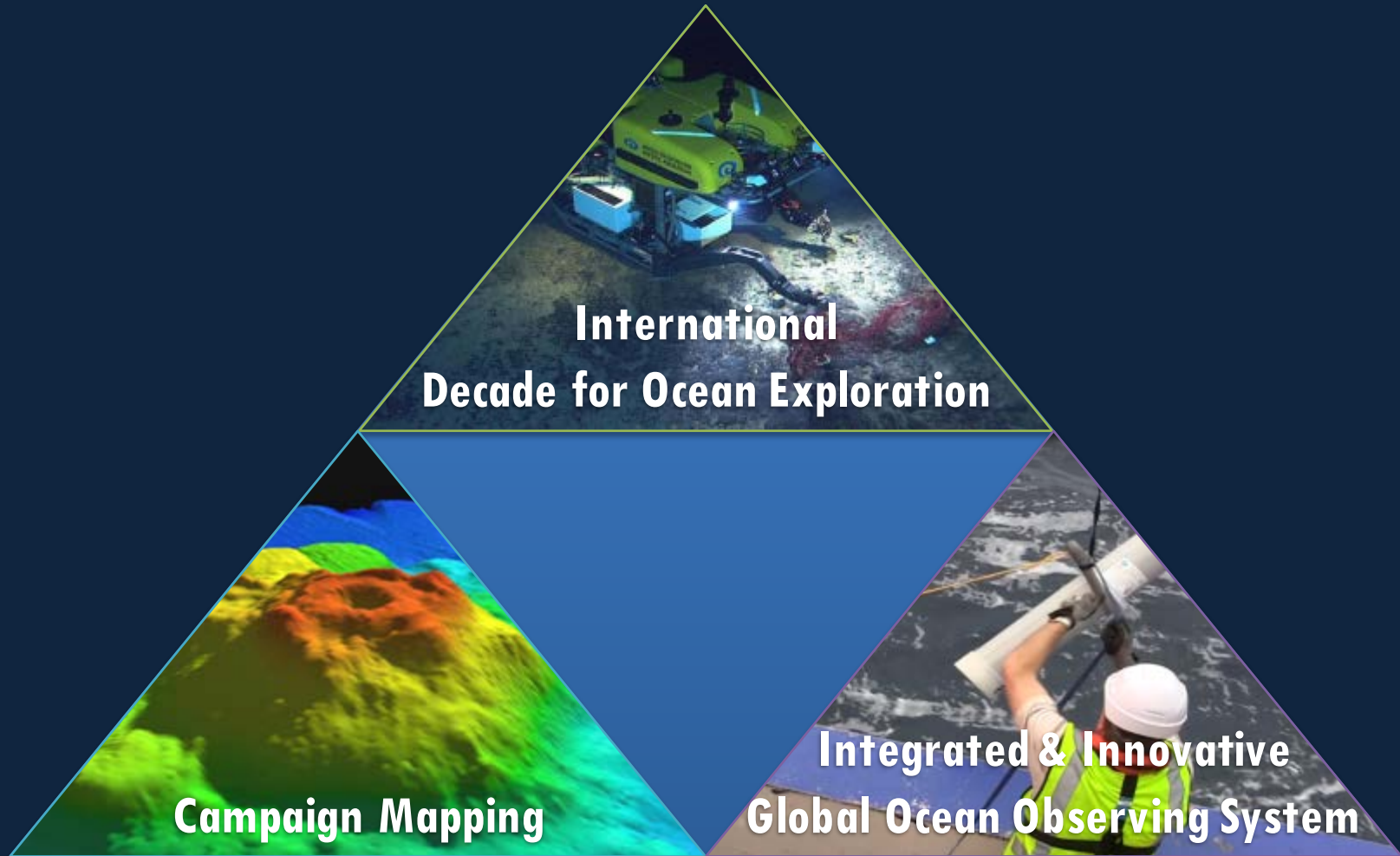
NOAA Assistant Administrator

Oceanic & Atmospheric Research

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Intergovernmental Oceanographic Commission's Integrated Research Opportunities in Next Decade



Through IOC: UNESCO lead on oceans

The Intergovernmental Oceanographic Commission of UNESCO founded in 1960 with the active participation of the USA, has today the mission to:

- Promote cooperation and coordinate ocean science research, the development of ocean services, and capacity-building
- Improving management, sustainable development, protection of marine environment, and decision-making processes for its 148 Member States
- IOC is the UN focal point for Ocean Sciences and Ocean Services and is the Implementing Secretariat for UN-OCEANS

International Decade of Ocean Exploration

Integrated global research agenda linking science, management and services to understand the ocean impact on human and planetary welfare and advance recently adopted sustainable development goals

Campaign mapping and ocean observations are essential components as a foundation to characterize the environment and physical state and processes of the ocean

IOC Programs that Rely on US Capabilities and Expertise

Global tsunami warning system

Global Ocean Observing System and data/info exchange

Research on climate change impacts on the oceans, including
OA and impacts on marine ecosystems

Ocean and marine biodiversity data and info exchange

Building better partners through capacity building

Benefits of US Participation in IOC

Leverage intl. scientific expertise, observing platforms/networks and funding

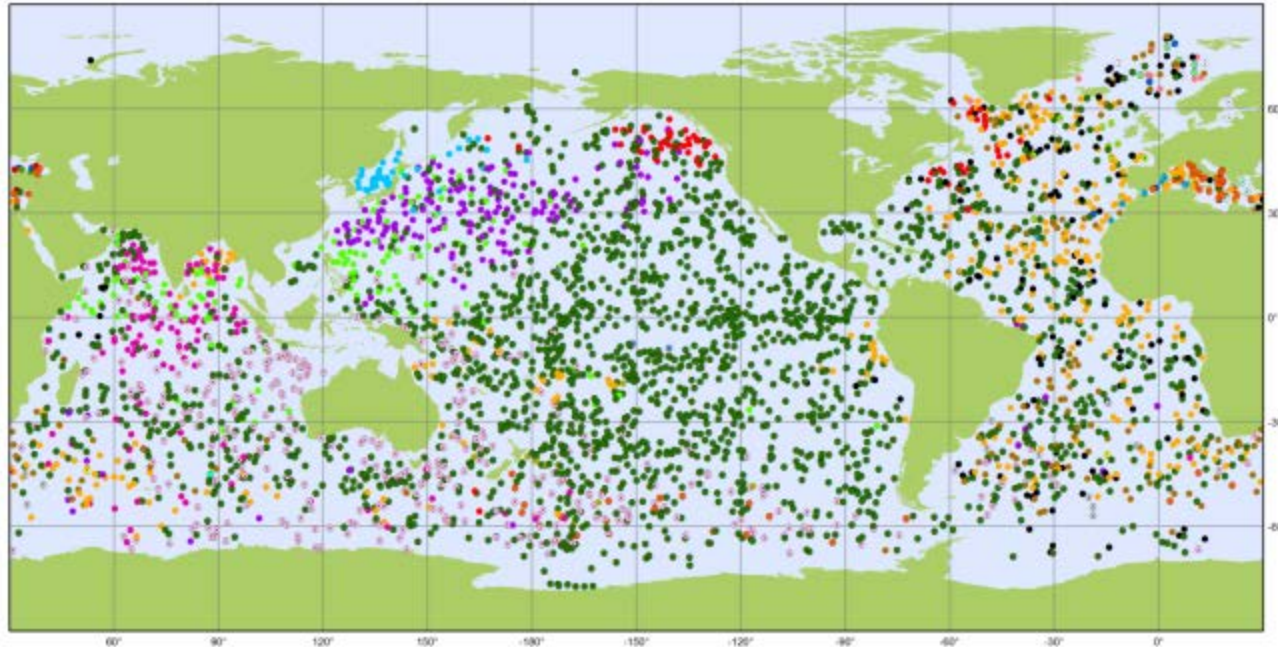
Develop intl consensus on US approaches to intl. scientific protocols and management

Promote timely, free and unrestricted global access to relevant data to preserve life, protect environment, forecast weather & monitor climate

Build intergov. Consensus for funding and implementation of valuable ocean obs products/services

Prevent duplication of scientific and obs programs

The Force-Multiplier Effect



Argo

National contributions - 3785 Operational Floats

July 2016

Latest location of operational floats (data distributed within the last 30 days)

• ARGENTINA (2)	• CHINA (138)	• GERMANY (142)	• JAPAN (171)	• NETHERLANDS (12)	• SPAIN (8)
• AUSTRALIA (377)	• ECUADOR (2)	• GREECE (6)	• KENYA (1)	• NEW ZEALAND (10)	• TURKEY (3)
• BRAZIL (10)	• EUROPE (7)	• INDIA (128)	• KOREA, REPUBLIC OF (40)	• NORWAY (11)	• UK (137)
• BULGARIA (2)	• FINLAND (8)	• IRELAND (10)	• MAURITIUS (2)	• POLAND (5)	• USA (2088)
• CANADA (74)	• FRANCE (327)	• ITALY (85)	• MEXICO (2)	• SOUTH AFRICA (1)	



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US Ocean Observation G7 Objectives

Advance Ocean Obs outcomes for S&T Ministers (core elements of UK workshop);

Encourage recommitment of G7 to sustain and expand global ocean observing system;

Leverage US and partner investments in ocean observing platforms, networks, funding, & expertise,

Further innovation and integration, building capacity, improving data infrastructure for delivery of knowledge and data to address societal benefits to ensure it is fit for purpose

G7 Science Minister Communique

Support the development of an initiative for enhanced global sea and ocean observation required to monitor inter alia climate change and marine biodiversity, e.g. through the Global Argo Network and other observation platforms, while fully sustaining and coordinating with ongoing observation;

ii. Support an enhanced system of ocean assessment through the UN Regular Process to develop a consensus view on the state of the oceans, working to a regular timescale which would enable sustainable management strategies to be developed and implemented across the G7 group and beyond;

G7 Science Minister Communique+

Promote open science and the improvement of the global data sharing infrastructure to ensure the discoverability, accessibility, and interoperability of a wide range of ocean and marine data;

iv. Strengthen collaborative approaches to encourage the development of regional observing capabilities and knowledge networks in a coordinated and coherent way, including supporting the capacity building of developing countries; and

v. Promote increased G7 political-cooperation by identifying additional actions needed to enhance future routine ocean observations.

The logo for the Atlantic Ocean Research Alliance (AORA) features the letters 'A', 'O', 'R', and 'A' in a bold, dark blue font. The letter 'O' is replaced by a stylized globe showing the Atlantic Ocean basin, with sunbeams radiating from the top center of the globe.

AORA

ATLANTIC OCEAN RESEARCH ALLIANCE

THE ATLANTIC: **OUR SHARED RESOURCE**

MAKING THE VISION REALITY



Priority Areas of Cooperation – “The What”

Ocean research and observation efforts subsequently defined under statements of purpose in which we have agreed to work together in the following priority areas of cooperation:

- Atlantic Seabed Mapping and Characterization
- Aquaculture
- Ocean Literacy, including Information Management and Dissemination
- Ocean Health and Stressors
- Ocean Observation and Prediction

Priority Areas of Cooperation – “The How”

In working together to advance results in the identified areas of research cooperation, we will seek to improve efficiencies and effectiveness by:

Organizing, aligning and leveraging research activities in a way that takes advantage of opportunities for synergies in work already underway and the use of infrastructure or installations

Better coordination of data sharing, interoperability and coordination of observing infrastructure

Promoting researcher mobility

Coordinating the planning and programming for better alignment of relevant activities and resources

Coordination of Programs and Resources

EU: Horizon 2020 - the European Union Framework Programme for Research and Innovation

Specific calls were earmarked for the implementation of the Galway Statement on Atlantic Ocean Cooperation in the 2014-2015 Work Programme – total investment of about 70 M €

USA-EU: A Collaborative International Research Programme on the Coupled North Atlantic-Arctic System

USA: NSF and NASA Dear Colleague Letters

Canada: Alignment of research in Galway Statement priority areas by Canadian ocean science and technology community being realized through existing mechanisms and programs

Atlantic Seabed Mapping Working Group

Accomplishments

Draft Terms of Reference developed for review

White Papers developed:

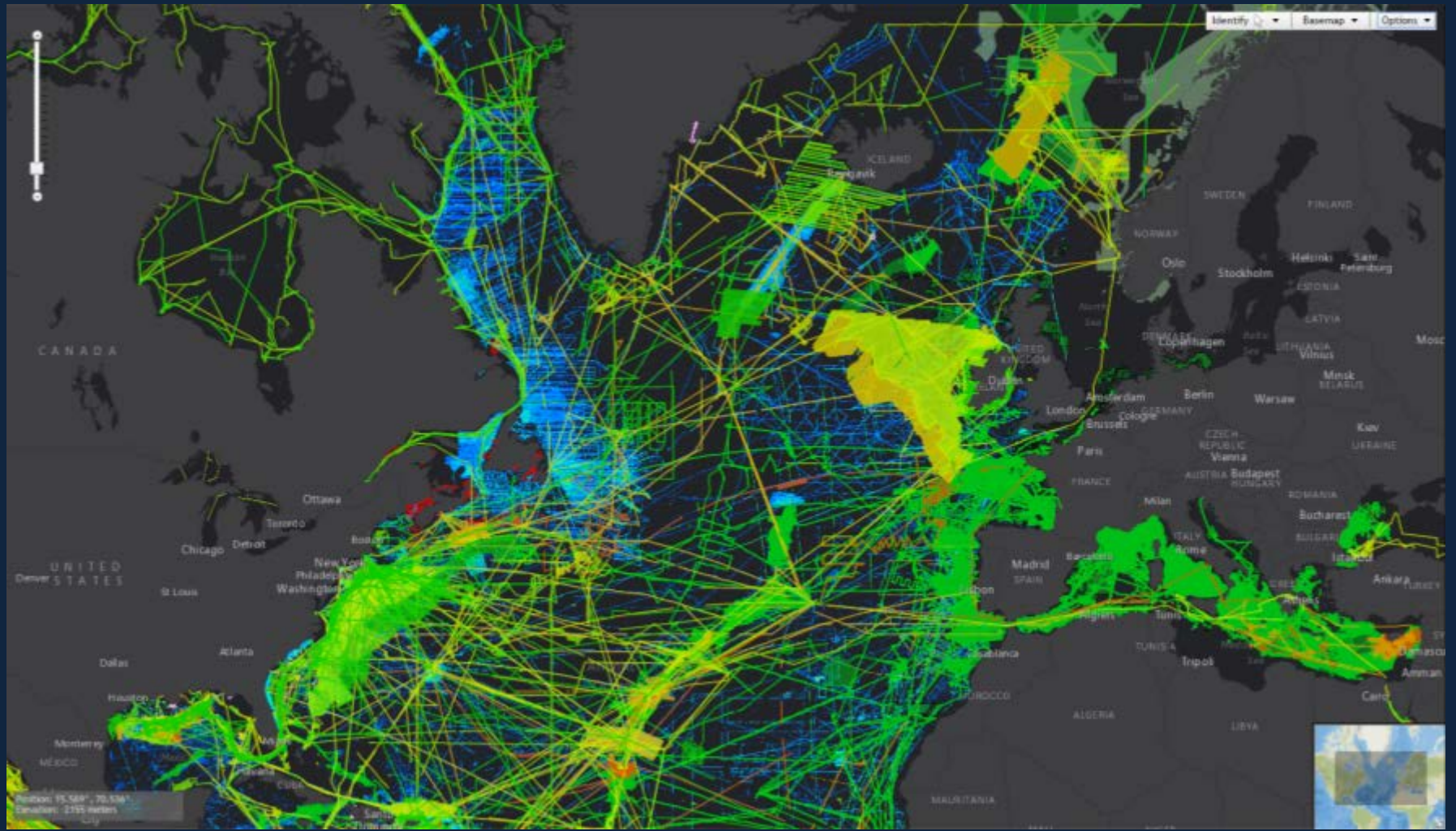
- Improving, Sharing, Discovery & Access of Seafloor Data in the North Atlantic
- Technology: Methods for Collecting Data

Five opportunistic trilateral surveys completed:

- Celtic Explorer Transect from St. John's Newfoundland to Galway, Ireland
- CCG Louis St. Laurent Transect from Halifax, Nova Scotia to Tromso, Norway
- L'Atalante Transect from Guadeloupe to the Azores
Initial planning for a joint mapping campaign

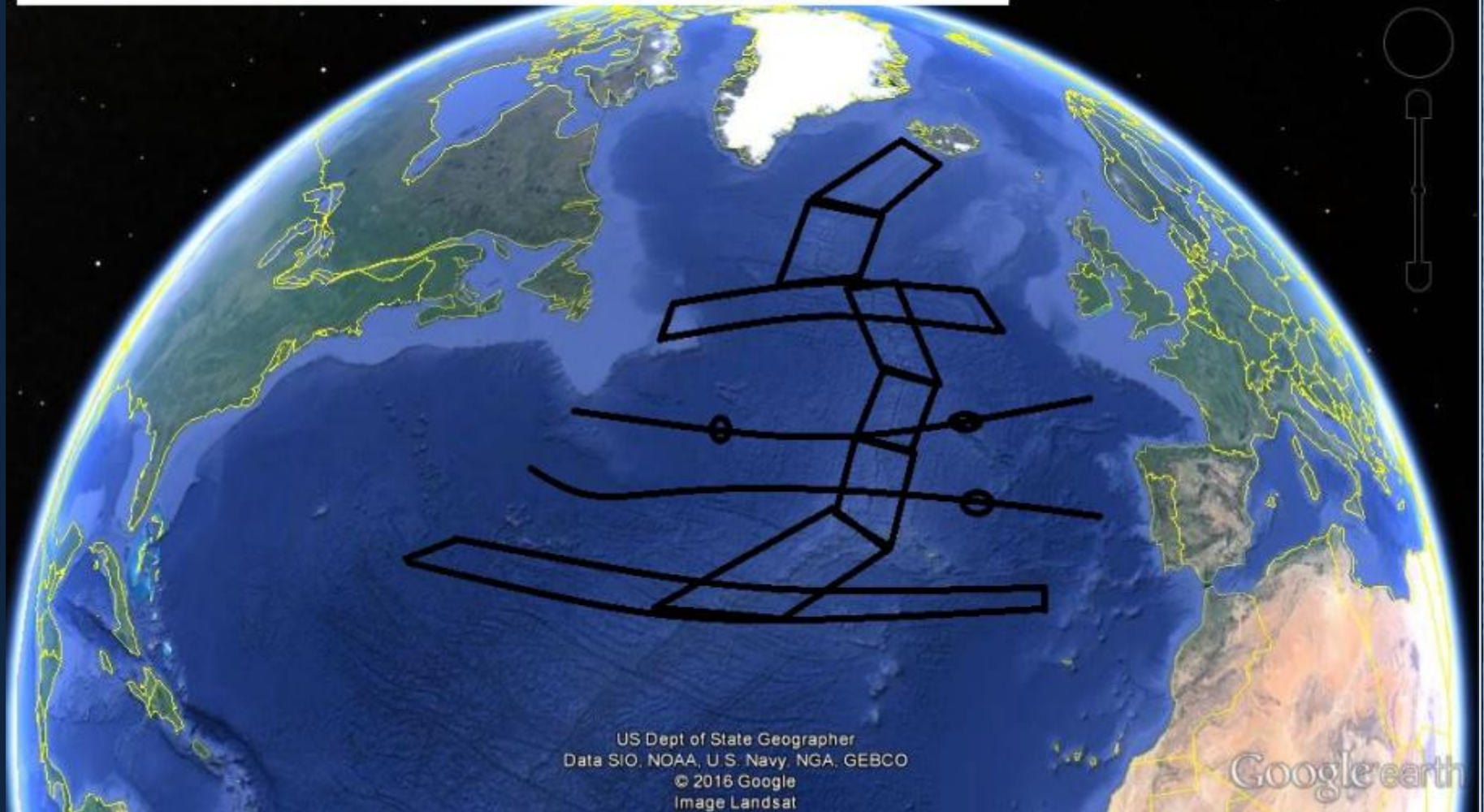






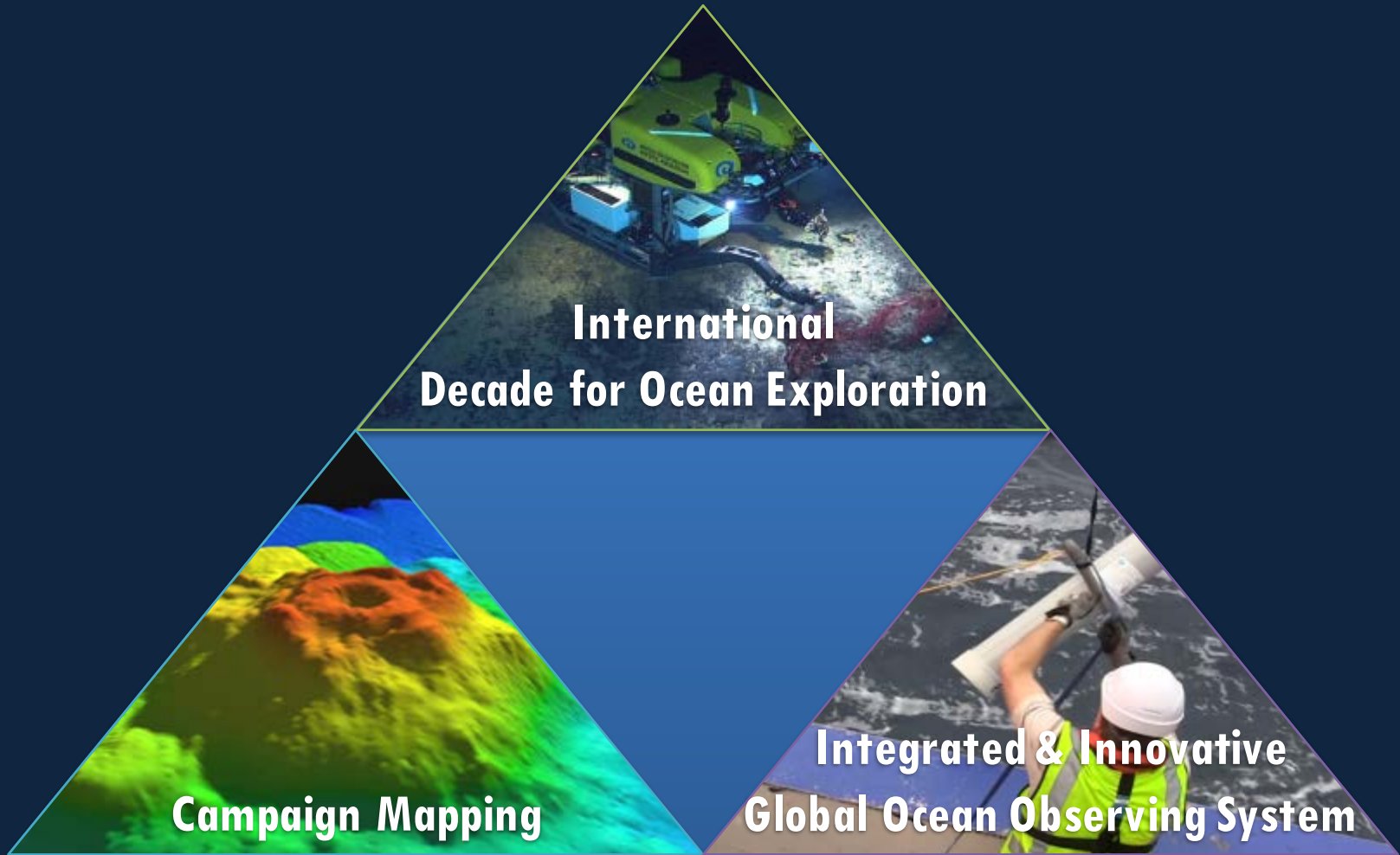
Conceptual Graphic (polygons / lines arbitrary at this point)

- Mid Atlantic Ridge target zones prioritised (e.g. MPAs first)
- Transects with structures features / VMEs mapped (underpinning groundtruthing)
- Northern & southern and mid Atlantic corridors connecting E-W existing mapping



US Dept of State Geographer
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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Image Landsat

Campaign for Ocean Mapping is Key to Integrated Research Opportunities in Next Decade



The image shows a vast expanse of deep blue water with gentle, rhythmic ripples across its surface. The lighting is even, highlighting the texture of the water. In the lower right quadrant, the word "BACKGROUND" is written in a bold, white, sans-serif font.

BACKGROUND

G7: UK Workshop Outcomes

Supporting and **accelerating the development and implementation of ecosystem/biodiversity Essential Ocean Variables (EOVs)** for routine implementation;

Improving sea-level observing networks and infrastructure to improve provision of global and regional sea-level information, especially in areas where sea-level changes are an increasing threat;

Continuing **critical regional observing in the tropics** and **maintaining and enhancing our observing capacity in the marine cryosphere (Arctic and Antarctic)**;

Enhancing the **effective use and international coordination of research ships and satellites** to leverage their unique capabilities in the ocean observing strategy;

Fostering **increased collaboration with the shipping industry** on ocean observations to explore increasing use of commercial fleets for observing of the ocean and seas.

4/20/2016, 9:17 am

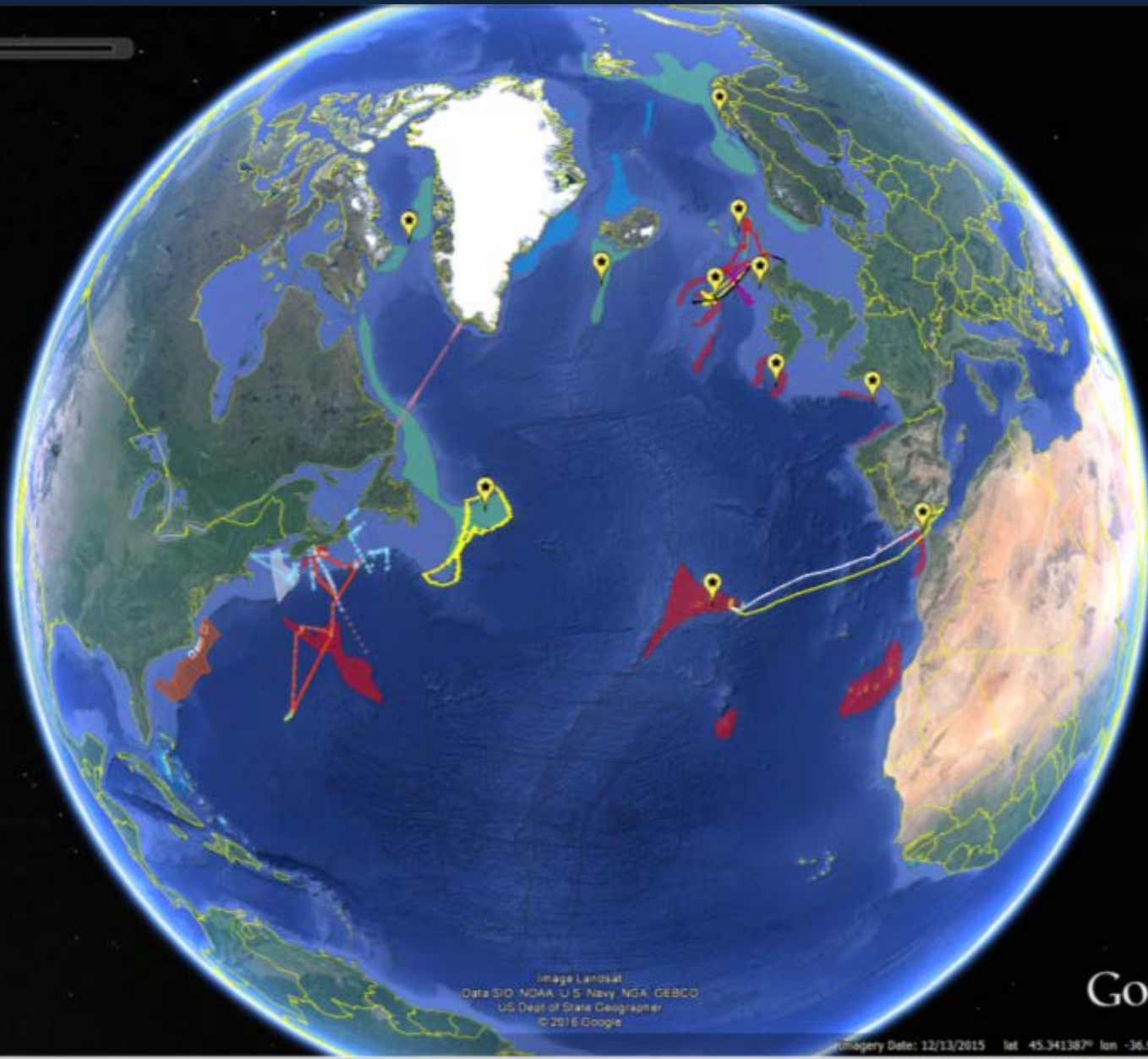


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