Thermae Palace (Oostende, Belgium, 12-13 October 2010)

Real-time, Long-term Integrated Observations of European Seas for Monitoring and Research

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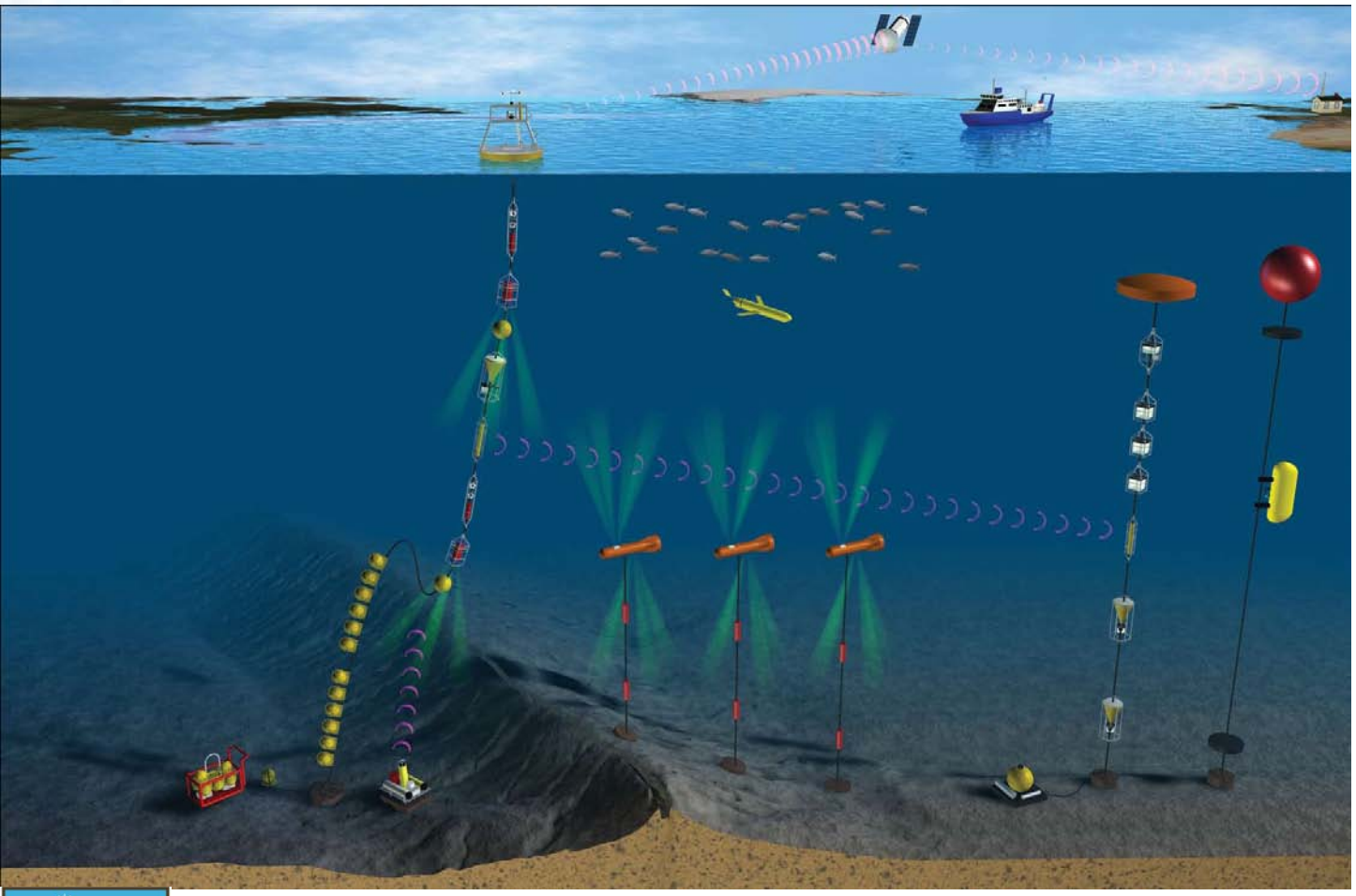
How can we understand the ocean?



- Remote sensing
- Research cruises
- Ships of opportunity
- Lagrangian observatories (such as Argo)
- Eulerian observatories (such as EMSO and EuroSITES)
- gliders and new technology

EuroSITES

Marine Observatories

Marine observatories are strategic in situ observing capacities which provide long-term time-series data.

- Continuous observations to capture episodic events
- Observation and capacity building
- Coastal laboratories
- Marine biosphere reserves
- Argo floats
- Ferrybox
- Gliders
- Seafloor based systems, ...

Marine observatories provide the backbone of the ocean observation system and the EMODNET

The setting

We need more marine research infrastructure to observe and understand impact of human activities and climate change on the marine environment.

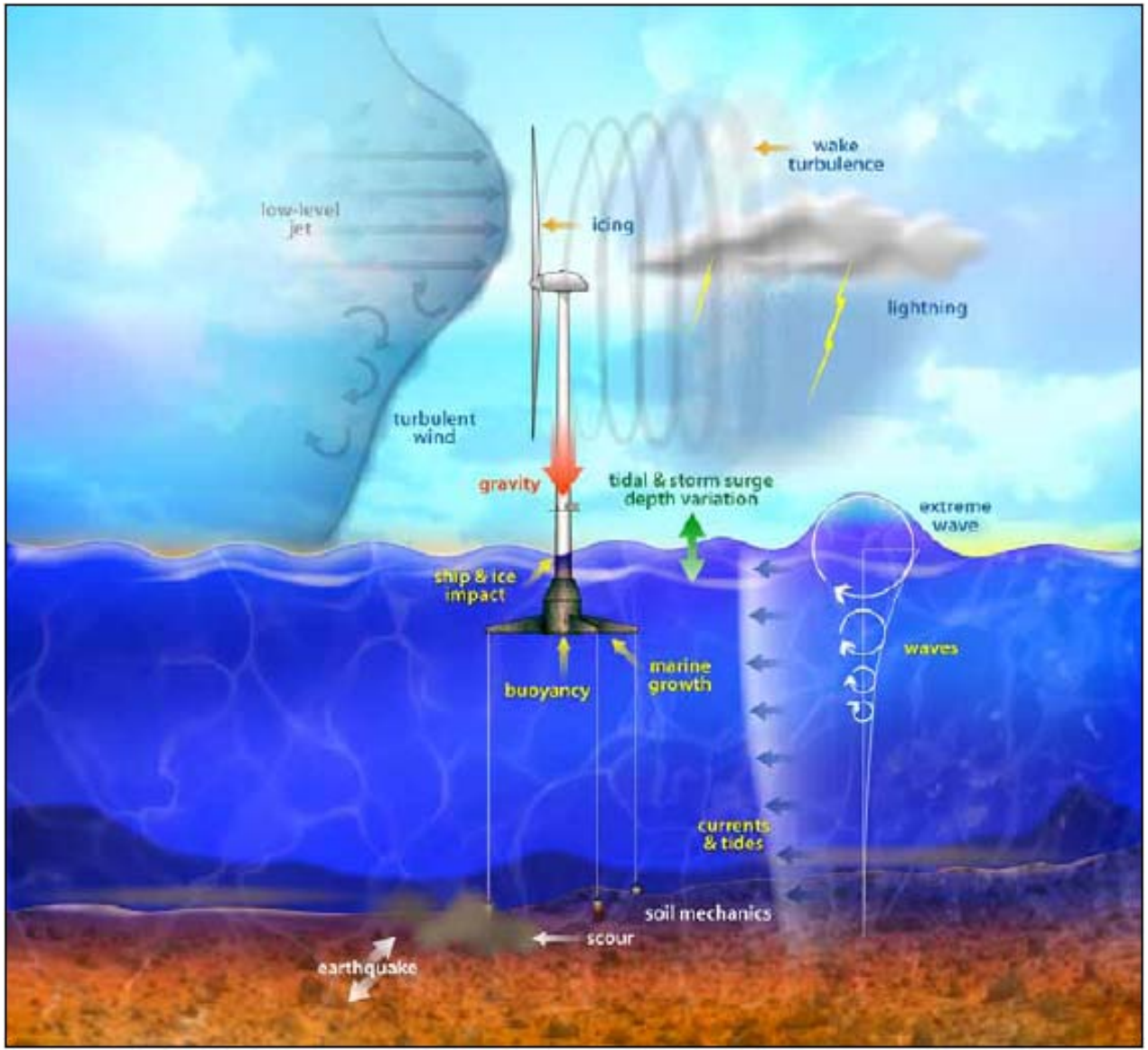
DG MARE September 2010: “Marine Knowledge 2020 – Marine data and observation for smart and sustainable growth”, actions 2011-2013:

- reduce operational costs and delays for users
- increase competition and innovation
- reduce uncertainty in knowledge

Principle of full and open exchange of data:

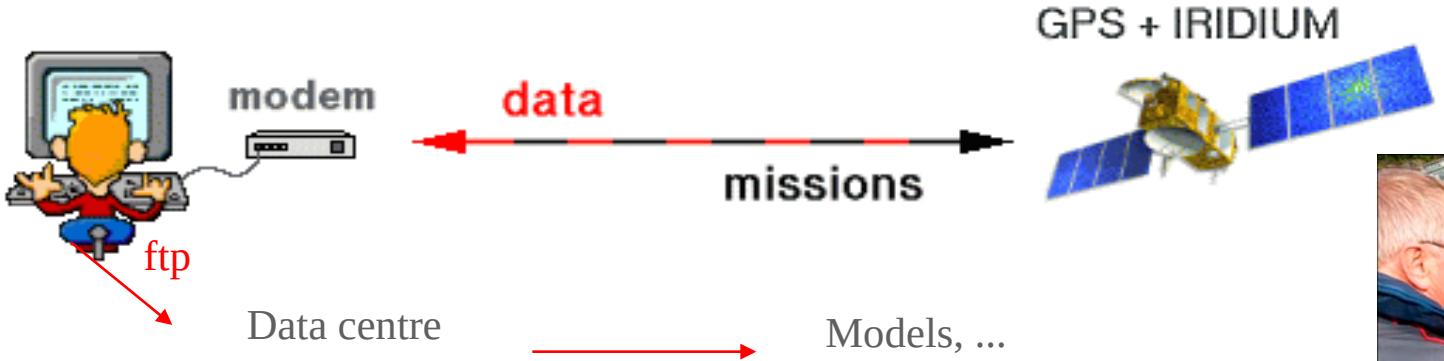
- EMODNET
- GMES Sentinels, Data and Information Policy
- GEOSS Data Sharing Policy
- GEO Ministerial Summit

New requirements:
E.g. met-ocean impact on offshore wind installations
Environmental impact of new activities

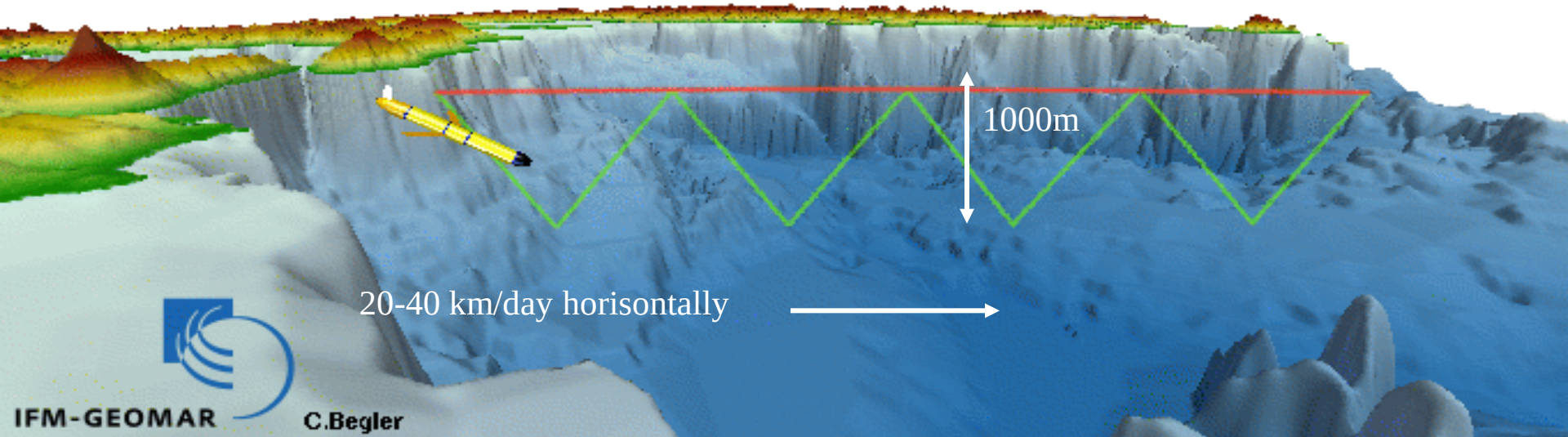


New technology: Norwegian Atlantic Current Observatory (NACO)
Glider observatory off the mid-Norwegian shelf from 2011

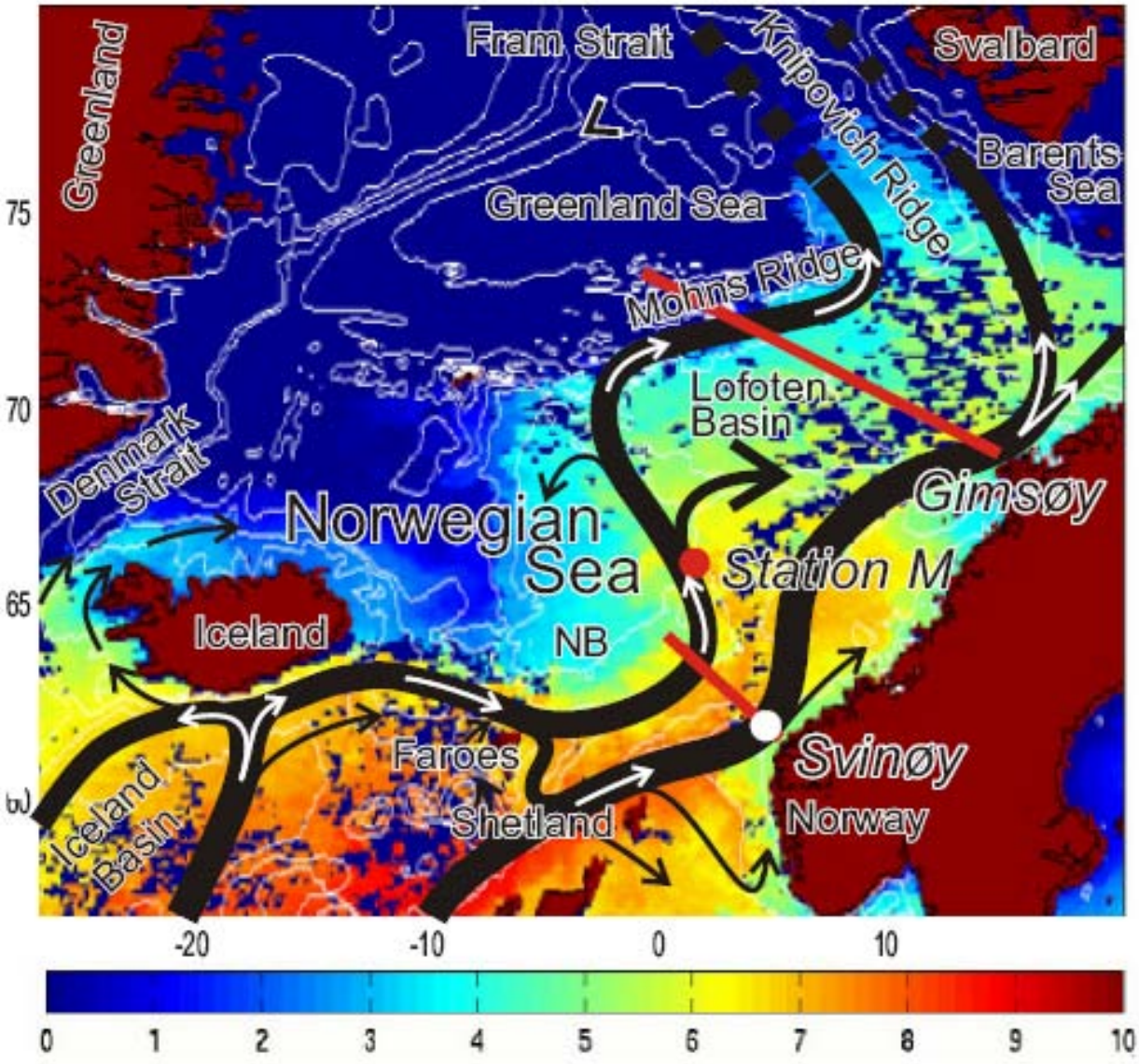
Operation central



NACO launch, minister Tora Aasland



www.rundecentre.no

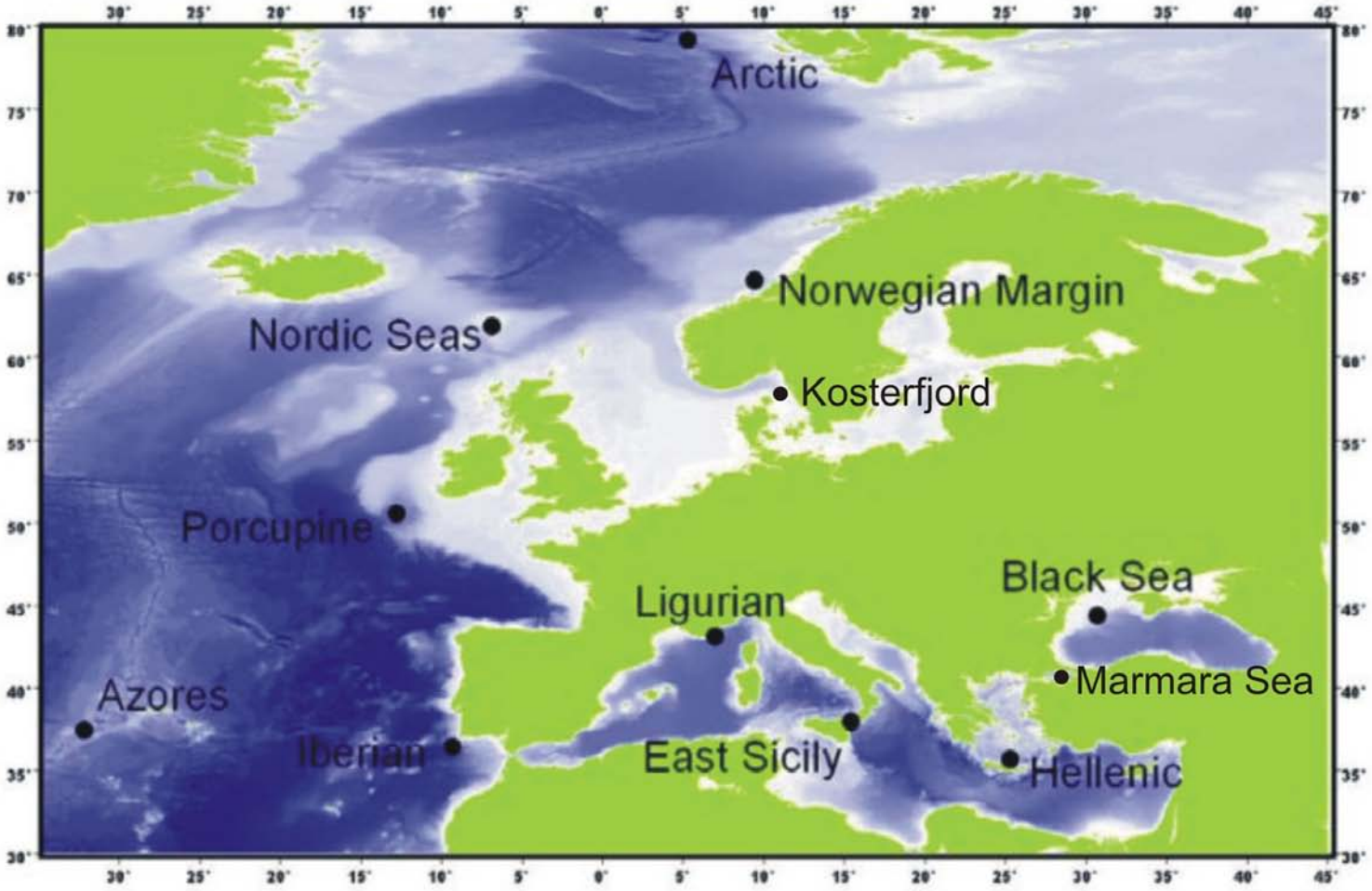


Focus area for NACO, national base funding for 6 gliders and support, available for international research projects contributing to running costs. Other similar in other areas.

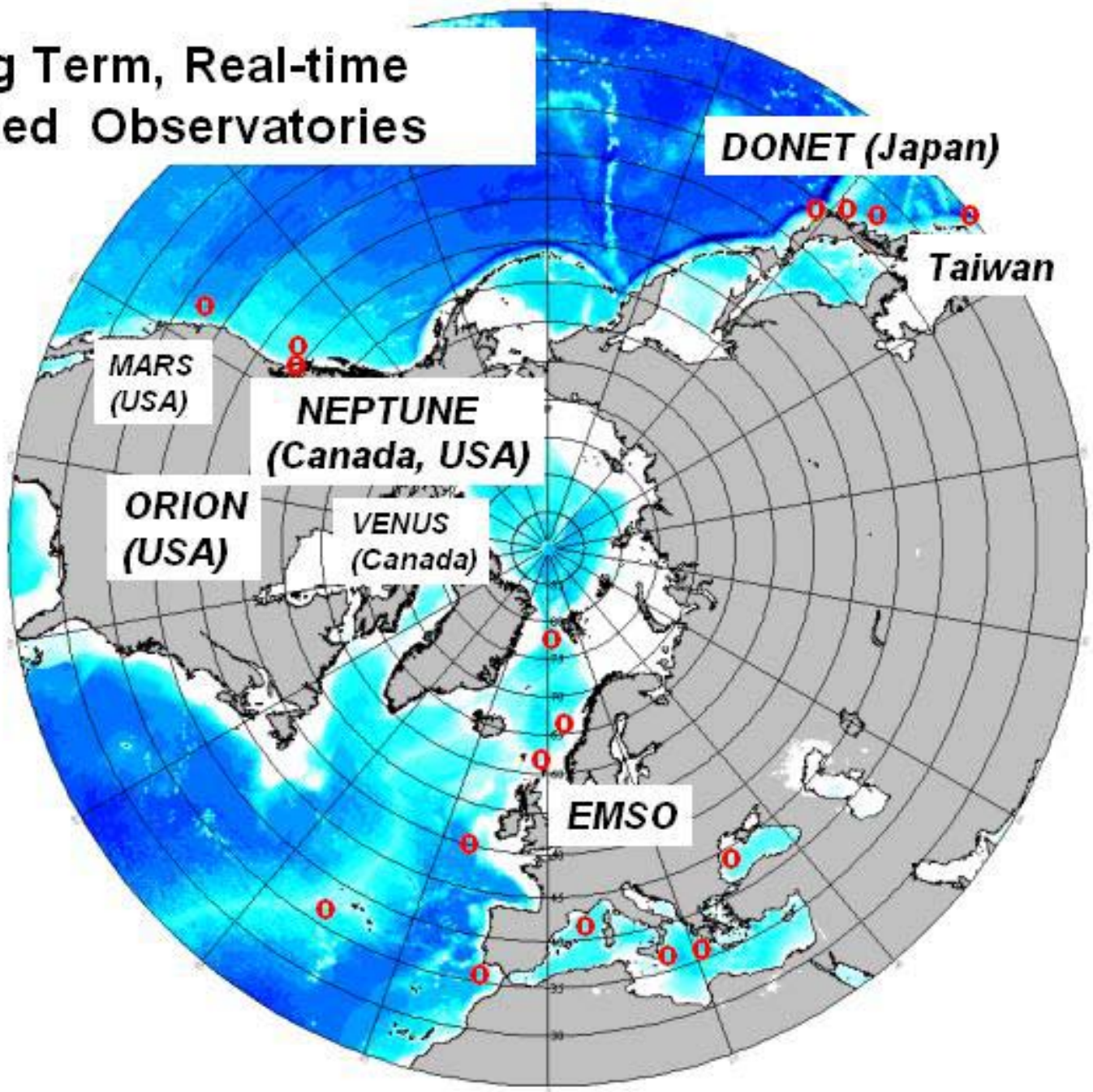
High bandwidth real time observations from the deep sea:

ESONET NoE (European Sea Observatory Network)

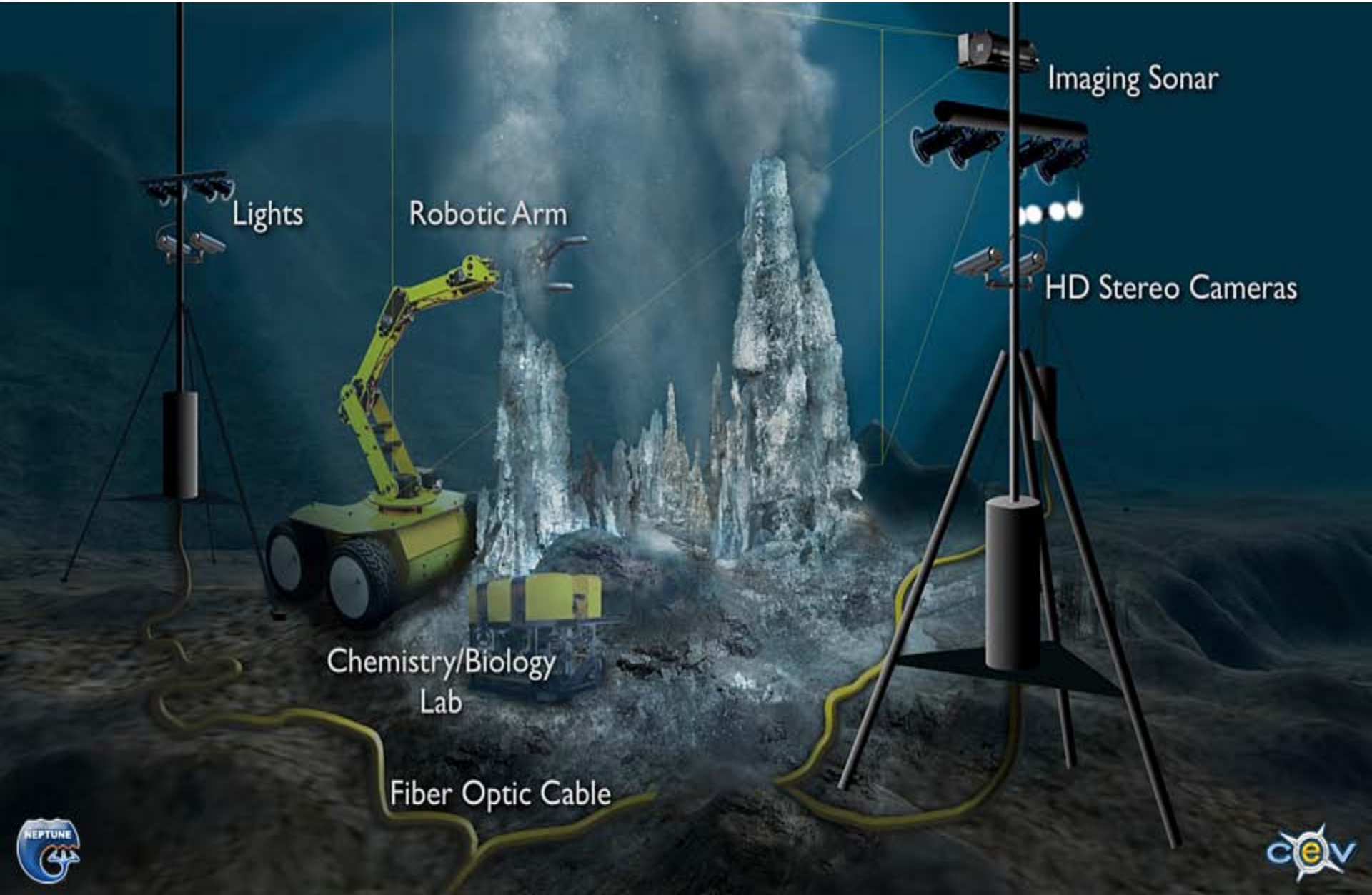
EMSO Preparatory Phase for ESFRI (European infrastructure)



Long Term, Real-time Cabled Observatories



Few limits to cable observatory options – Choose and design !



Establishment of cable-based ocean observatories in Norway:

"The gateway to the far north"

Operation:

Hardanger Fjord

Implementation:

Vesterålen Margin

Svalbard Margin

Ocean Ridge Demo Mission

Planning:

Svalbard Ocean Ridge

Snøhvit

Main surface currents

National implementation examples but key issue/message: Efforts on a European level would be cost-effective and stimulate development

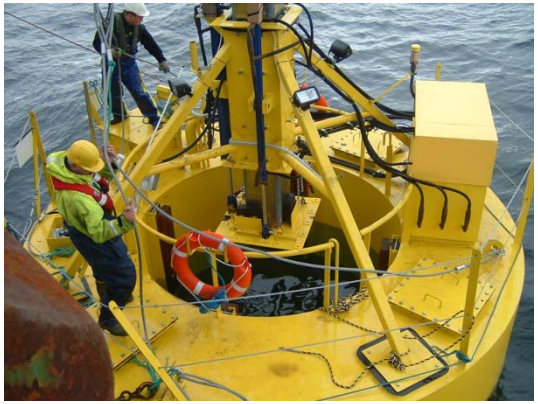
- Given the cost of acquiring data, it is crucial to maximise synergies at EU level - EMODNET and the principle of "producing data once and using it as many times as possible”
- Utilize European mechanisms:
  - EU FP projects like EuroSites
  - COST such as Everyones Glider Observatory (EGO)
  - ESFRI such as EMSO and SIOS
- Process initiated by the Marine Board ESF ->

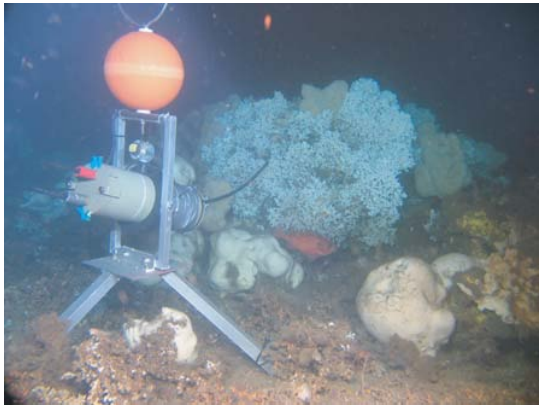
Marine Board-ESF

2nd Marine Board Forum

"Towards a European Network of Marine Observatories for monitoring and research"

Brussels, 16 September 2010





The vision: The 2nd Marine Board Forum, held in Brussels on 16 September 2010, culminated in a unanimous call from its participants for the prioritization at national and EU level of actions to deliver:

"A long-term, stable and integrated network of strategic marine observatories, installed and operated through multi-national cooperation and support, providing consistent in situ data from the seas and oceans in support of the EU Integrated Maritime Policy and as a driver for smart, sustainable and inclusive growth in Europe (Europe 2020).

Actions

1. A Europe-wide mapping exercise and gap analysis on long-term marine data provision

2. A European strategy on the development of an integrated network of marine observatories.

The rationale

Long time series facilitate

1. **Effective policy making and sustainable management of the seas and oceans**
2. **Monitoring of the rate and scale of environmental change, including climate change and biodiversity loss**
3. **Detection of hazards and events**
4. **Understanding ocean, earth and climate system processes**

A network of marine observatories should integrate observations for research and observations for management purposes.

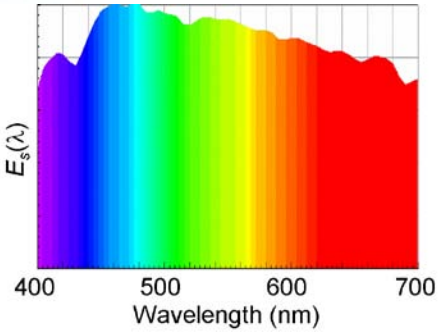
Actions

1.A Europe-wide mapping exercise and gap analysis on long-term marine data provision

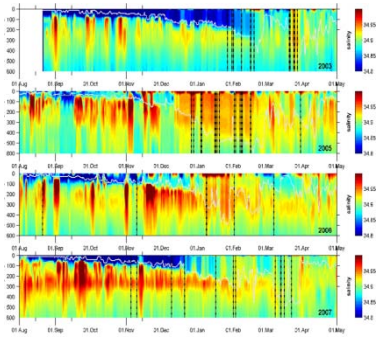
1. Identify the needs
2. Examine what is already in place
3. Identify the gaps in coverage

2. A European strategy on development of an integrated network of marine observatories.

1. Strategic location
2. Coordination of existing and new
3. Consistency
4. Research priorities
5. Long-term funding mechanisms
6. Legal frameworks
7. International integration
8. Use of advanced e-infrastructure



Marine Board Fora series:



- **1st Marine Board forum** on "*Marine Data Challenges: From Observation to Information*" (2008)
  - contributed to development of the European Marine Observation & Data Network (EMODNET) initiative launched by European Commission

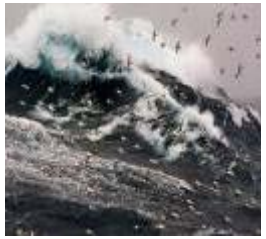
- **2nd Marine Board forum** on ***"Towards a European Network Marine Observatories for monitoring and research" (2010)***
  - Provide long-term time-series data sets to support science, industry and policy making.
  - Maintain momentum of marine and maritime RTD efforts in this field and enhance their interactions
  - Secure long-term political support (from Member States, EC etc.)

  The 2nd Forum addressed and discussed **at both managerial and strategic levels and on a multiscale approach,** issues for the **implementation, operation and maintenance of a European network of marine observatories**

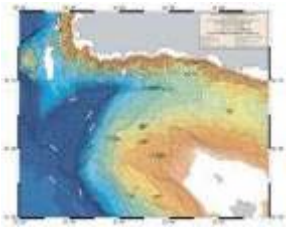
  -> http://www.esf.org/research-areas/marine-sciences/marine-board-forum/2nd-marine-board-forum-september-2010.html

Marine Board-ESF

The Marine Board provides a pan-European platform for its member organisations to develop common priorities, to advance marine research, and to bridge the gap between science and policy in order to meet future marine science challenges and opportunities.



- Established in 1995; by Member Organisations in consultation with the European Commission
- 30 Member Organisations (Research Funding and Performing Organisations) from 19 countries
- Node for:
  - Knowledge exchange between national science organisations
  - Science Forum, with members and other networks (EuroGOOS, EFARO, ICES, ECORD, WaterBorne TP, etc.); MB Biennial Forum
  - Policy Interface: European Commission = Permanent observer



European focal point for marine scienc

Forum ***Strategy***

Voice ***Synergy***