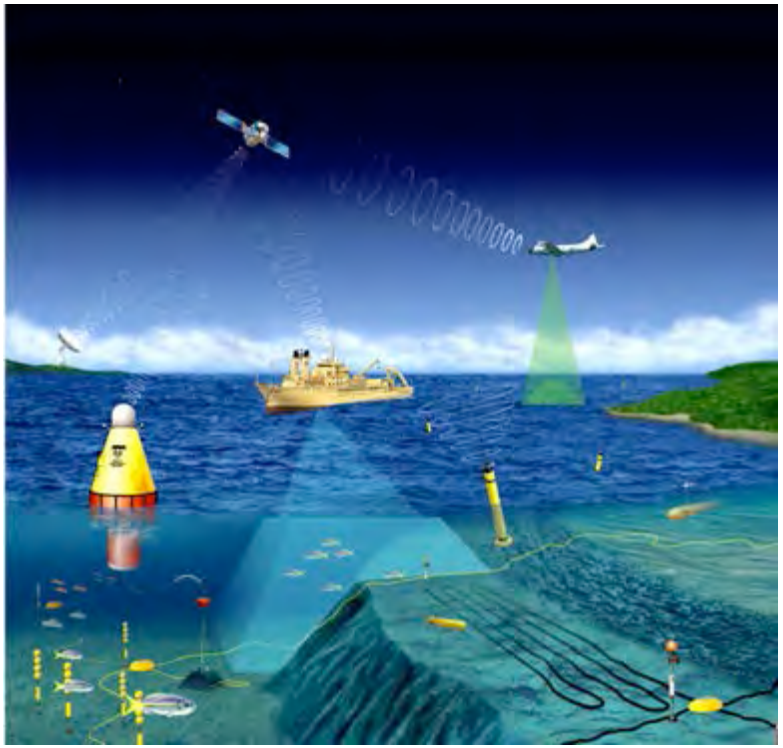
AtlantOS

Optimizing and Enhancing the Integrated Atlantic Ocean Observing System

Sabrina Speich *on behalf of* **Martin Visbeck (PI)**
IPSL Paris & LPO Brest GEOMAR

”Measuring what we must manage”



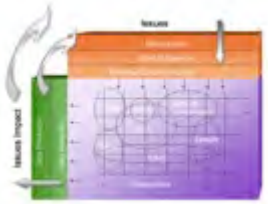
Jacqueline McGlade
former Director
European Environment Agency

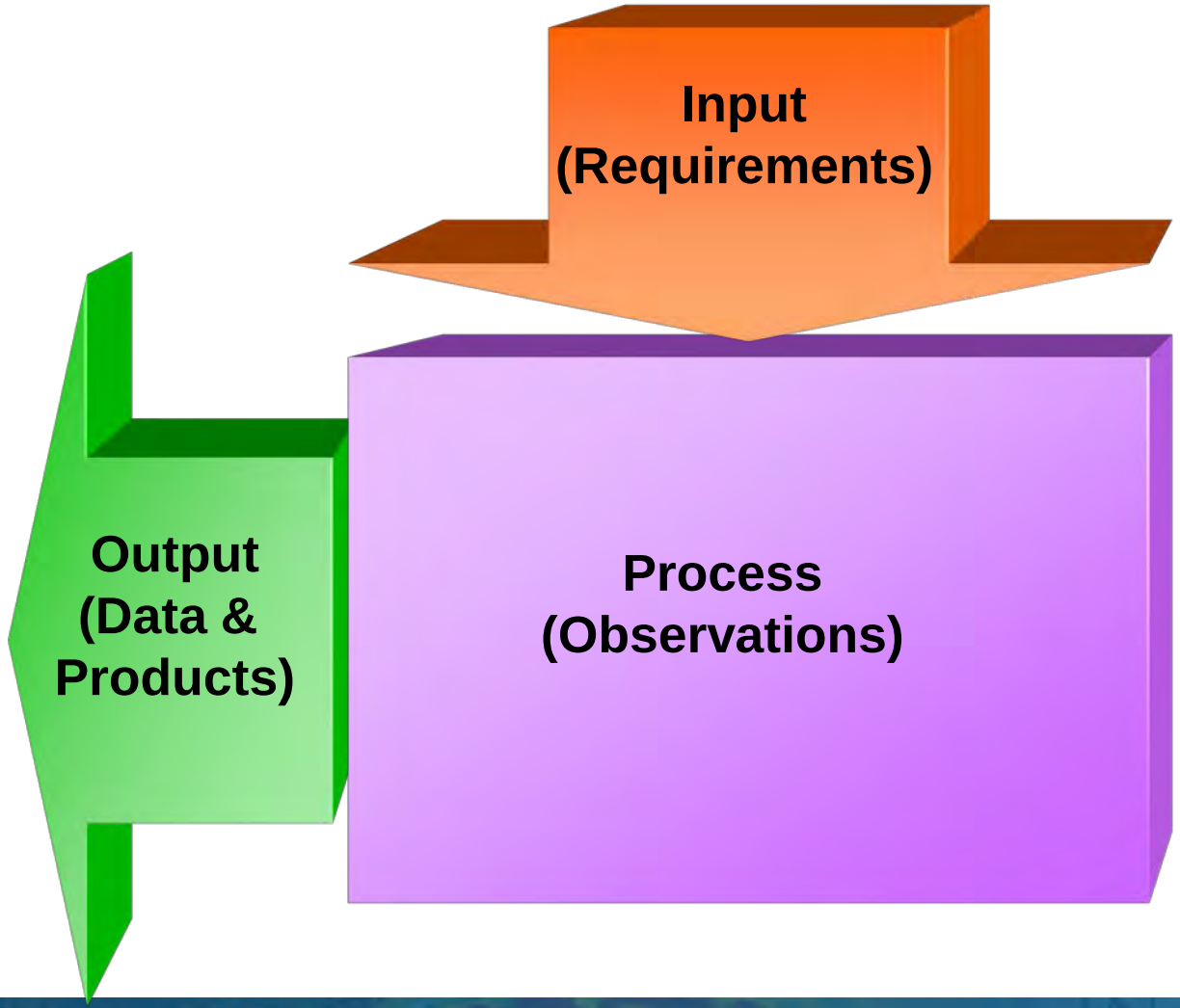
Future of Sustained Observations

- OceanObs'09 identified tremendous opportunities, significant challenges
- Called for **a framework for planning and moving forward with an enhanced global sustained ocean observing system over the next decade**, integrating new physical, biogeochemical, biological observations while sustaining present observations

Framework for Ocean Observing

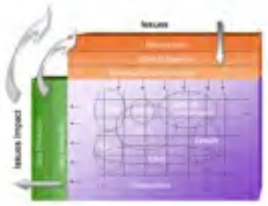
A simple system

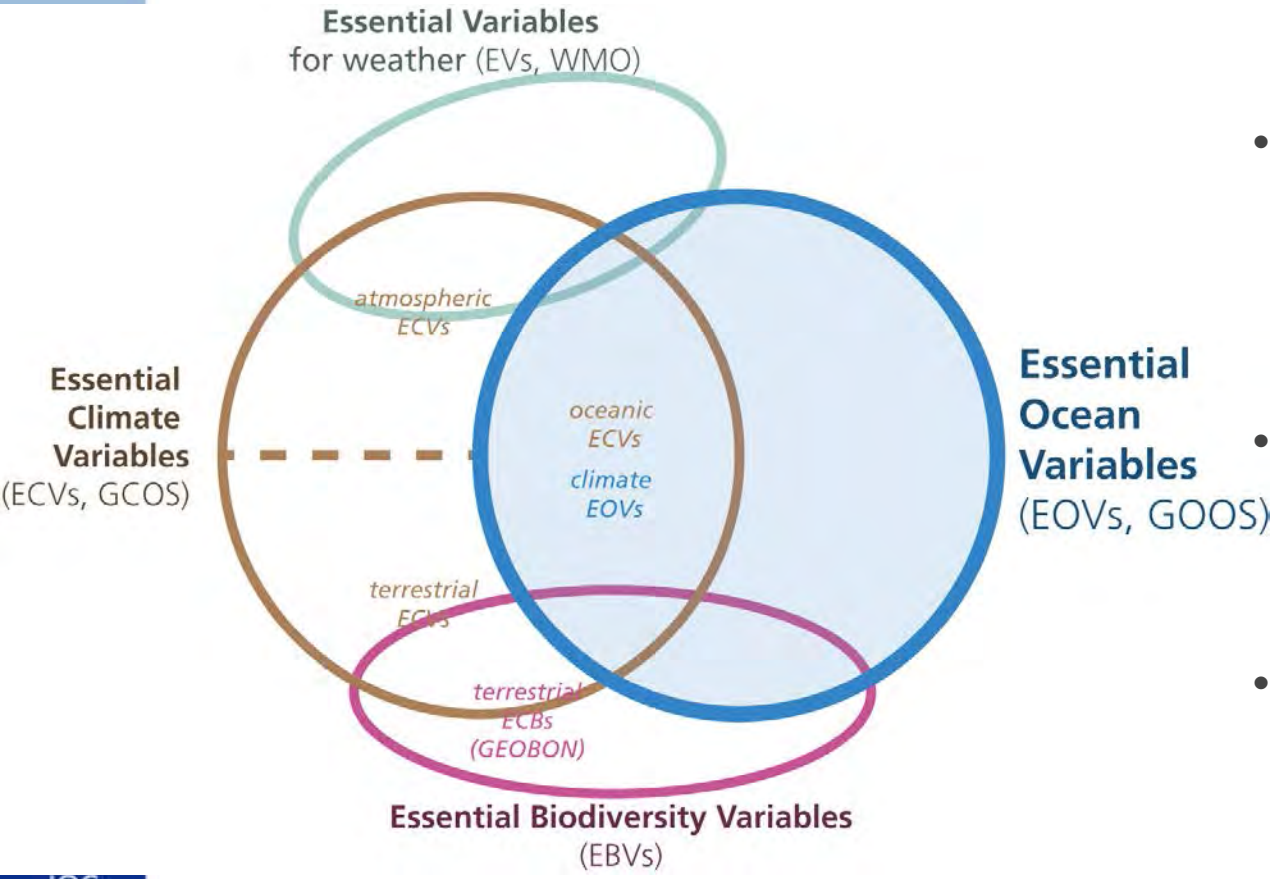




Driven by requirements, negotiated with feasibility

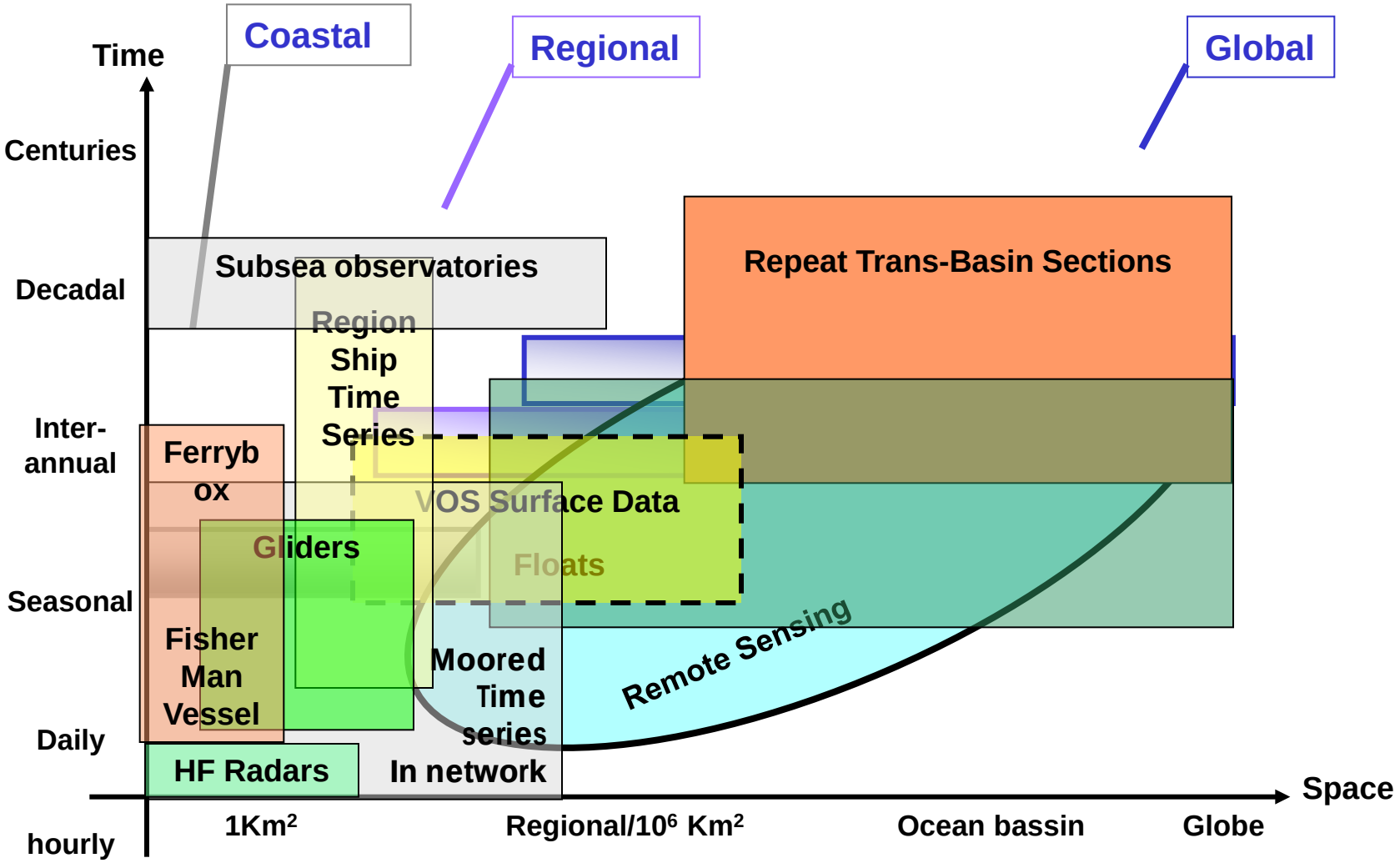
Essential Ocean Variables



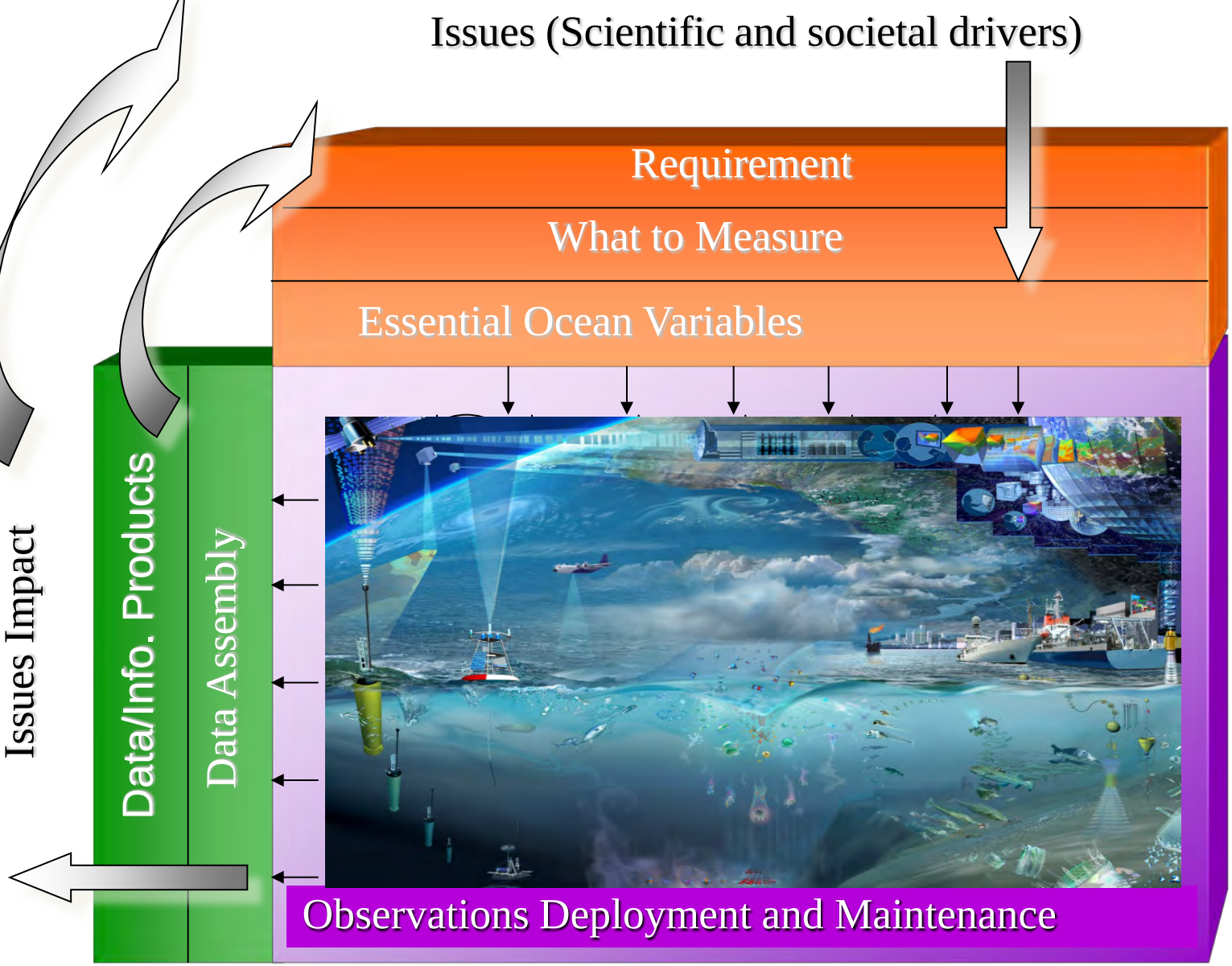


- **We cannot measure everything, nor do we need to**
- basis for including new elements of the system, for expressing requirements at a high level
- Driven by requirements, negotiated with feasibility
- Allows for innovation in the observing system over time

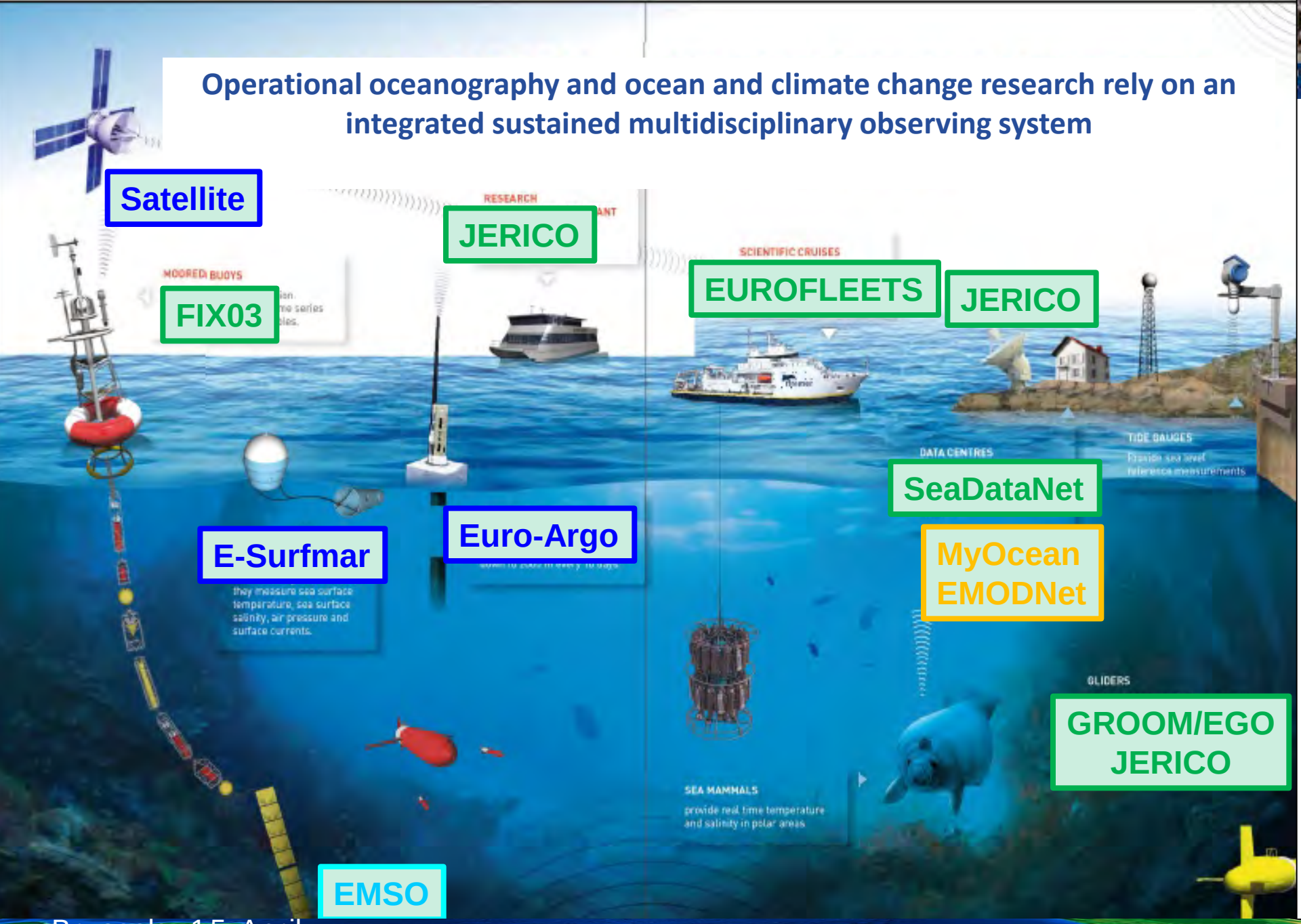
From Global to regional to coastal



Structure of the Framework



Operational oceanography and ocean and climate change research rely on an integrated sustained multidisciplinary observing system



The Initial Global Ocean Observing System

Integrated system designed to meet many requirements:

- Climate
- Weather prediction
- Global and coastal ocean prediction
- Marine hazards warning
- Transportation
- Marine environment and ecosystem monitoring
- Naval applications
- 8 of 9 Societal Benefits

- Tide gauge stations
- Drifting Buoys
- Tropical Moored Buoys
- Profiling Floats
- Ships of Opportunity
- Ocean Reference Stations
- Ocean Carbon Networks
- Dedicated Ship Support
- Data & Assimilation Subsystems
- Management and Product Delivery
- Satellites -- SST, Surface Topography,

Galway Statement on Atlantic Ocean Cooperation

HORIZON 2020

THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

The European Union, the United States and Canada agreed to join forces on Atlantic Ocean research. The agreement focuses on aligning the ocean observation efforts of the three partners.

The goals are to better understand the Atlantic Ocean and to promote the sustainable management of its resources. The work will also study the interplay of the Atlantic Ocean with the Arctic Ocean, particularly with regards to climate change.

AtlantOS H2020 Project

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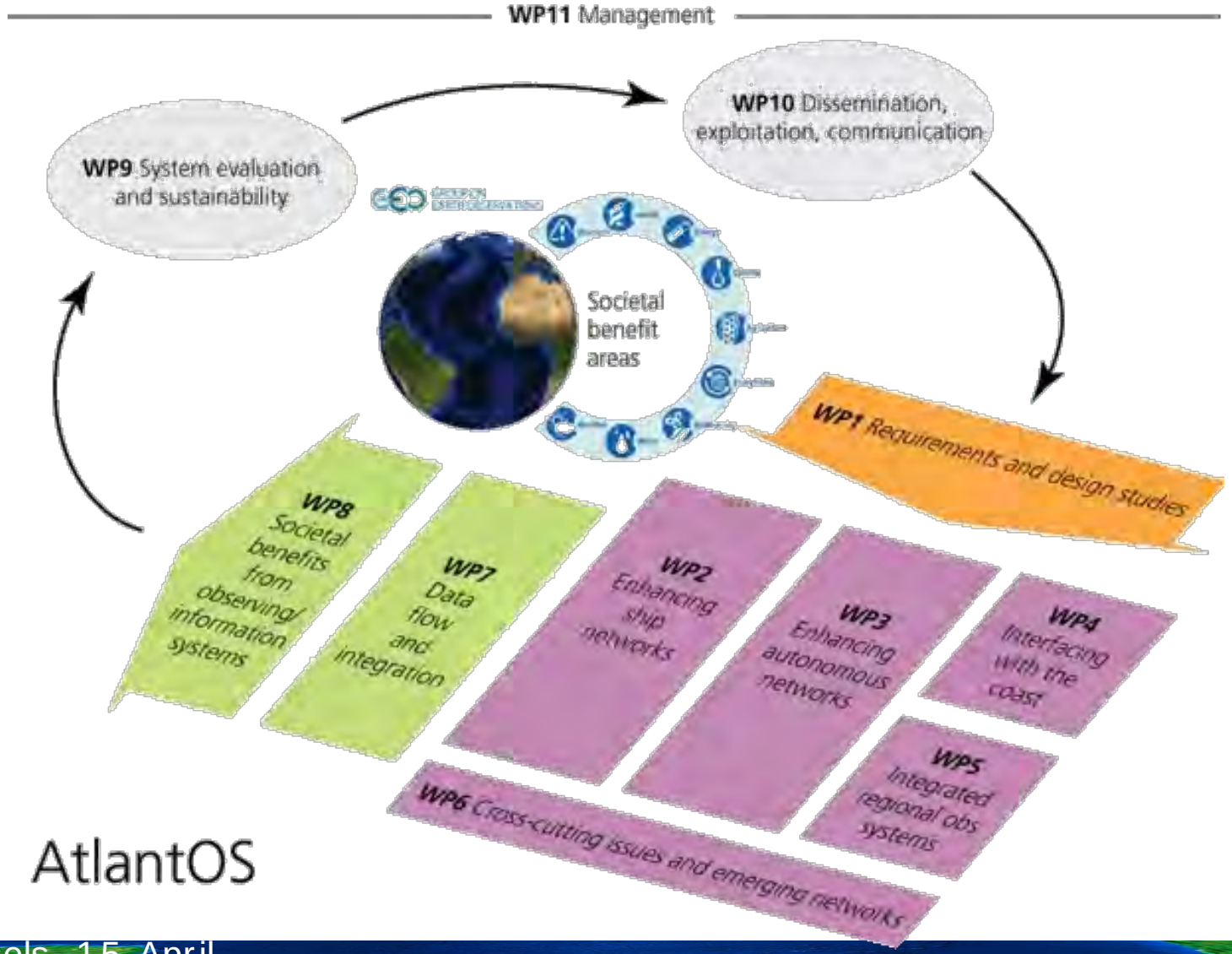

AtlantOS project

63 Partners, XX Countries, 20M€

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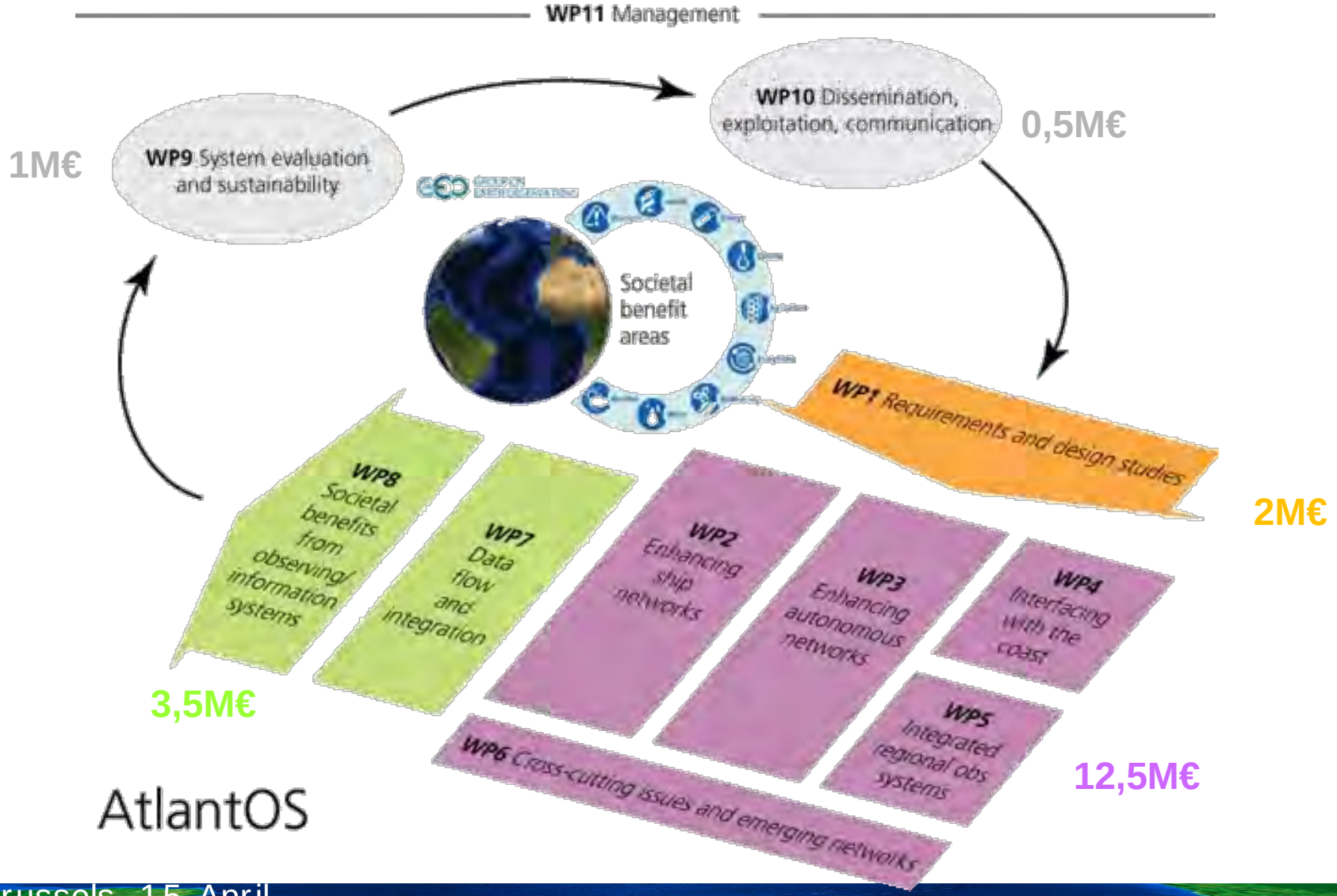
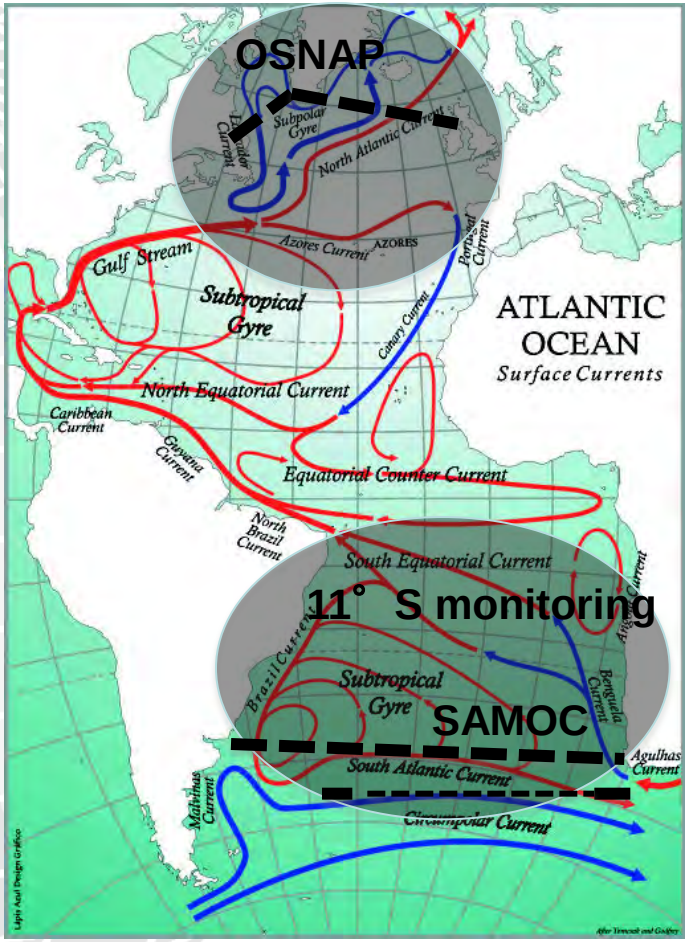


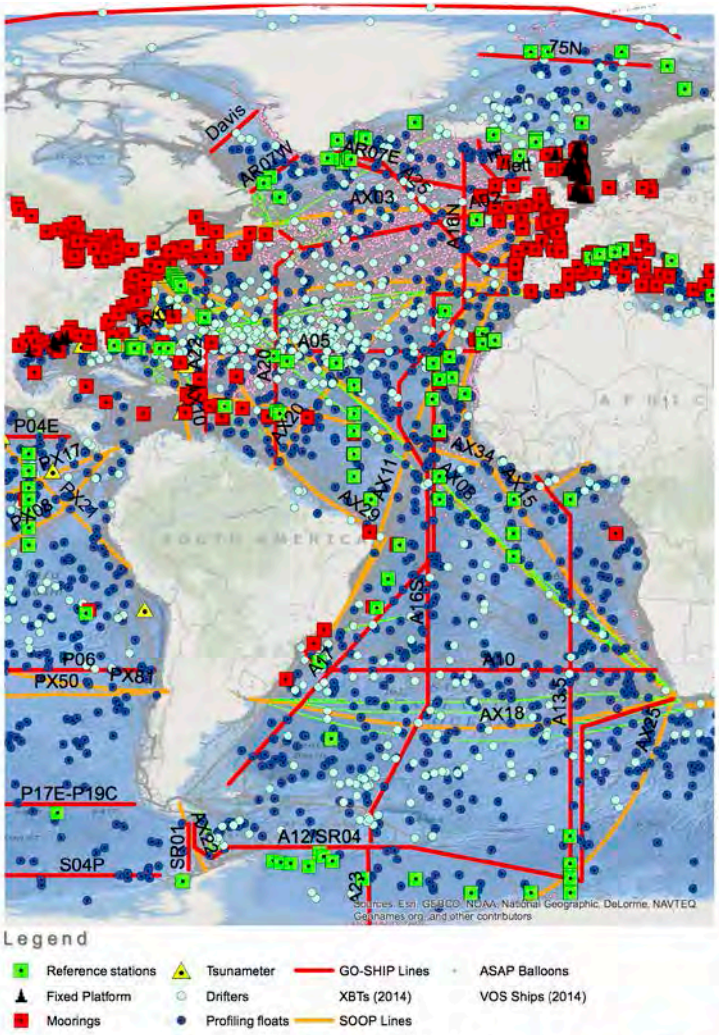
AtlantOS proposal

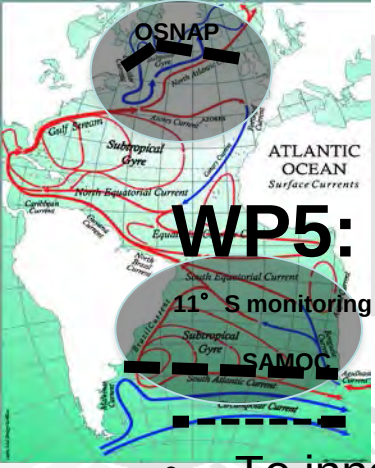
Optimizing and Enhancing the Integrated Atlantic Ocean Observing System

WP5: Integrated regional observing systems

Coordinated by S. Speich (IPSL & LPO) & J. Karstensensen (GEOMAR)

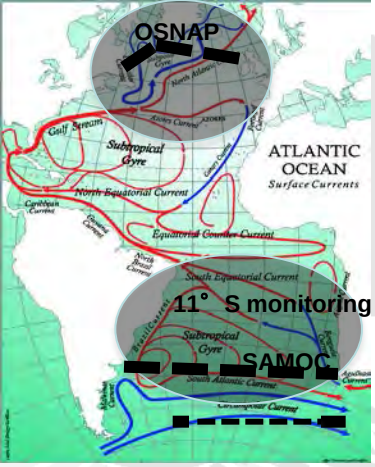






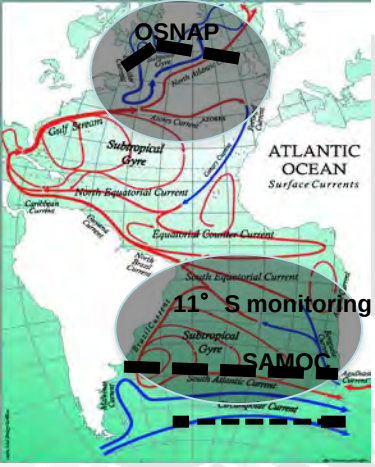
WP5: Integrated regional observing systems

- To innovatively optimize the regional observing systems & link with WP2, WP3, WP6
- To integrate, the fragmented observations & build international partnership (NH & SH) towards a basin-scale consolidation
- To identify key ocean observations addressing regional societal needs and determine their optimal observation
- To integrate observational data for exploratory product generation
- To narrow existing *in situ* observing system gaps and provide a more efficient observing strategy based on the specific characteristics of the regional ocean dynamics and ecosystem
- To use the regional systems as a “showcase” for implementing a pioneering framework of ocean observation, more cost effective and user driven in order to prepare for basin-scale and later global scale assessments



WP5: Work organization

- Task 5.0: Work Package Coordination
- Task 5.1: Assessment and Coordination of Regional Observing
- Task 5.2: Application of regional ocean observing: climate and ecosystem
- Task 5.3: Regional Observing system simulation experiments and process modelling



WP5: Partners

- CNRS (WP lead; task 5.0; task 5.1, task 5.2; task 5.3)
- GEOMAR (WP co-lead; task 5.0; task 5.1)
- NERC (task 5.2)
- DMI (task 5.2)
- UPMC (task 5.2)
- CLS (task 5.3)

International Partners

- MEOPAR (Canada) (task 5.1)
- MCTI (BRA) (task 5.1)
- WHOI (USA) (task 5.1)
- CSIR (RZA) (task 5.1)

AtlantOS

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