

Atlantic Programs and Plans:
AtlantOS
ATLAS
Blueprint

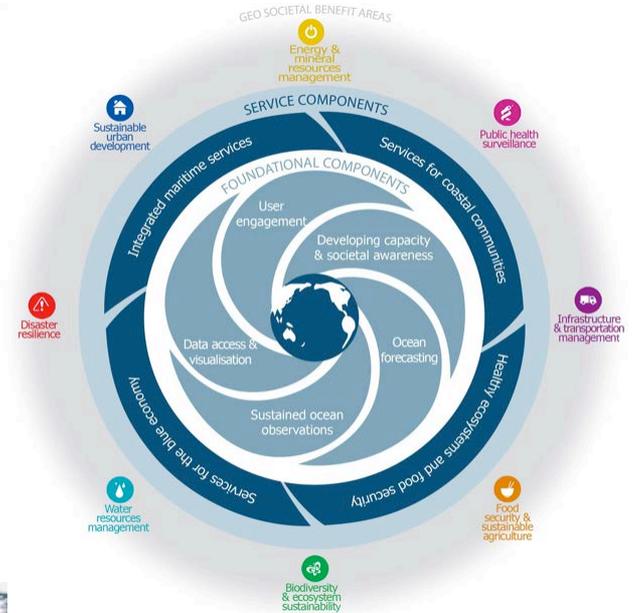
Molly Baringer
NOAA/AOML

Atlantic Ocean Reserach

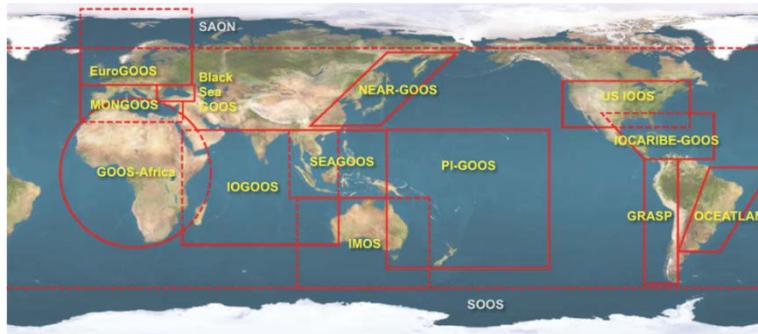
Atlantic Ocean Research Alliance



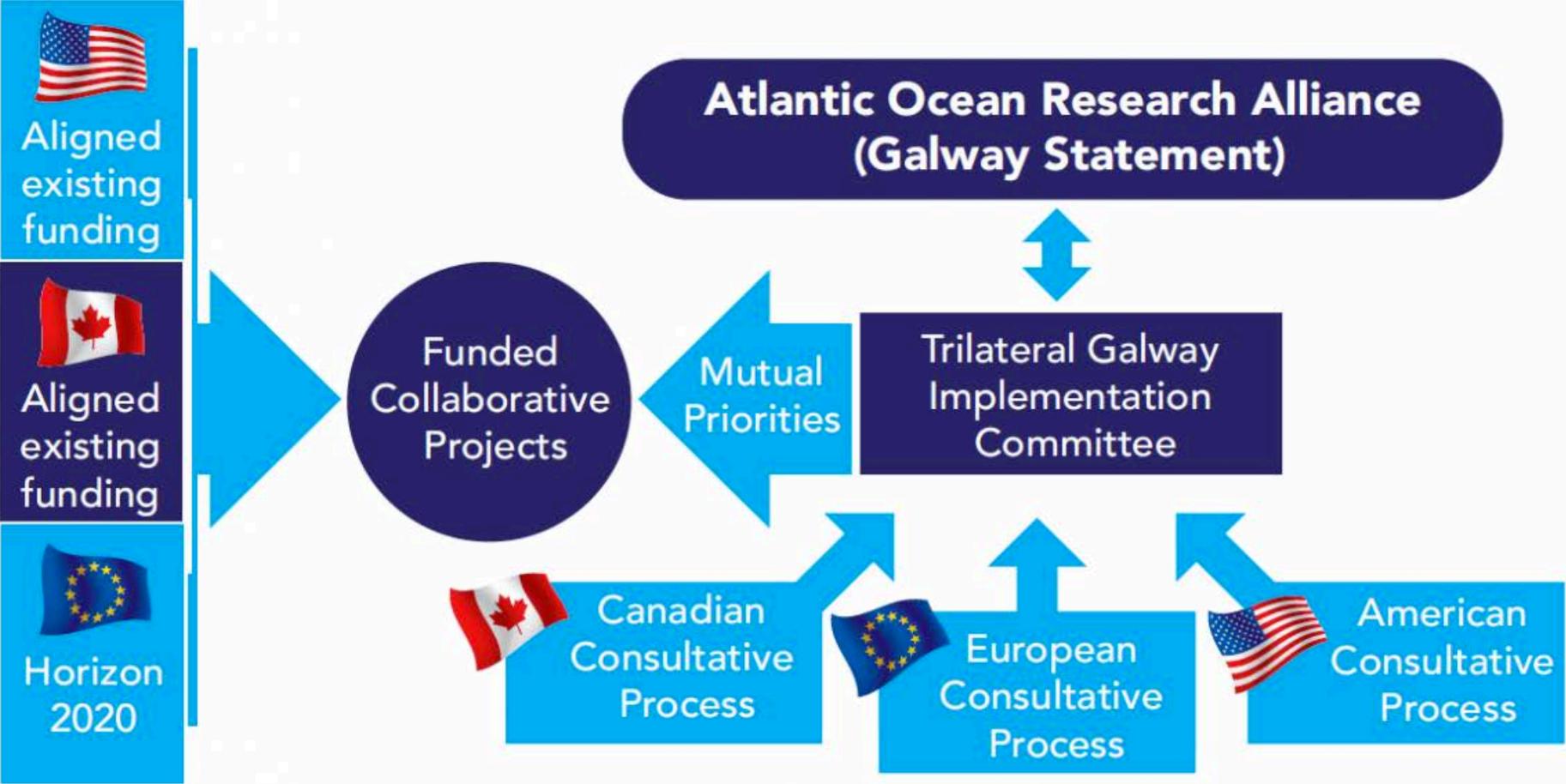
G7 Science



South Atlantic Ocean Cooperation



Atlantic Ocean Research Alliance (AORA)



AORA Priority Areas

- Atlantic Seabed Mapping and Characterization
- Aquaculture
- Ocean Literacy and Outreach
- Ocean Health and Stressors
- Ocean Observation and Prediction

South Atlantic Ocean Cooperation



This cooperation is intended to increase our joint knowledge of the Atlantic Ocean and its dynamic systems, conducting joint research efforts and reciprocal access to infrastructures

European Union collaboration with Brazil, South Africa, Europe and other countries to be invited (Argentina, Uruguay, Namibia, Angola, Cape Verde, among others).



#AtlantOS

AtlantOS

**An Optimized Integrated
Atlantic Ocean Observing
System to enhance the
societal, scientific and
economic benefit**

Anja Reitz

Martin Visbeck

Johannes Karstensen

(GEOMAR Helmholtz Centre for Ocean
Research Kiel, Germany) and the
AtlantOS consortium

*Please See Anja's Poster
and*

www.atlantOS-h2020.eu/

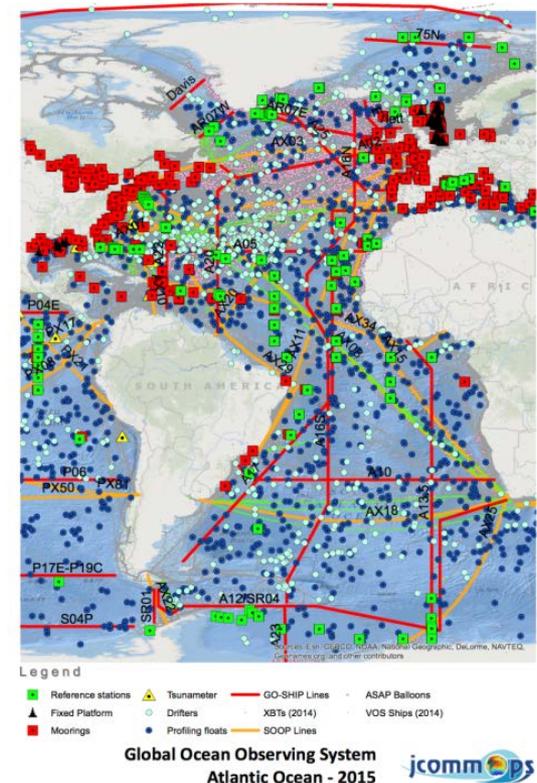


The Project

Horizon 2020 call BG-8-2014: *Developing in-situ Atlantic Ocean Observations for a better management and sustainable exploitation of the maritime resources.*

Budget: 21 Mio. Euros in 4 years
Coordinator: GEOMAR; Partner: 62

AtlantOS is a research and innovation project that proposes the integration of ocean observing activities **across all disciplines** for the Atlantic, considering European as well as non-European partners.

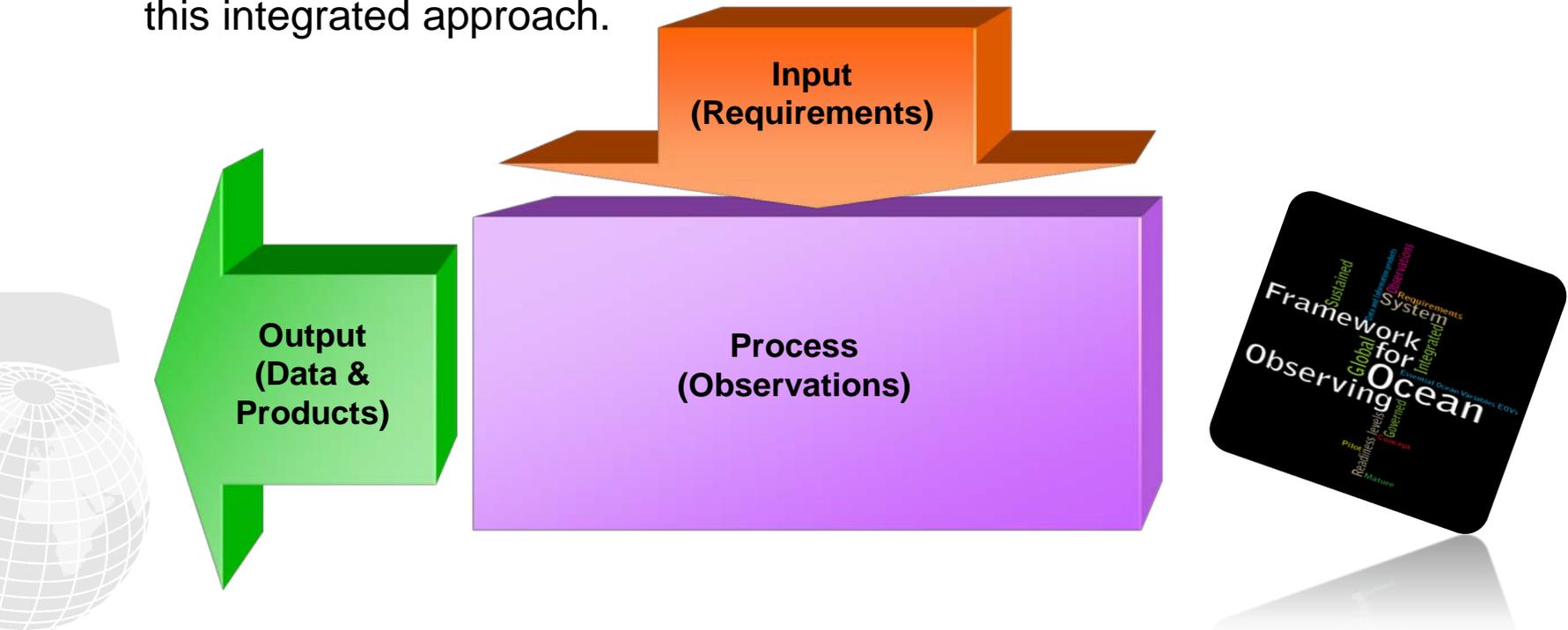


AtlantOS members (white)
and 62 H2020 consortium
partners (black)

The Project

The **vision of AtlantOS** initiative is to improve and innovate Atlantic observing by using the **Framework of Ocean Observing** to obtain an international, more sustainable, more efficient, more integrated, and fit-for-purpose system.

Hence, the AtlantOS initiative will have a long-lasting and sustainable contribution to the societal, economic and scientific benefit arising from this integrated approach.



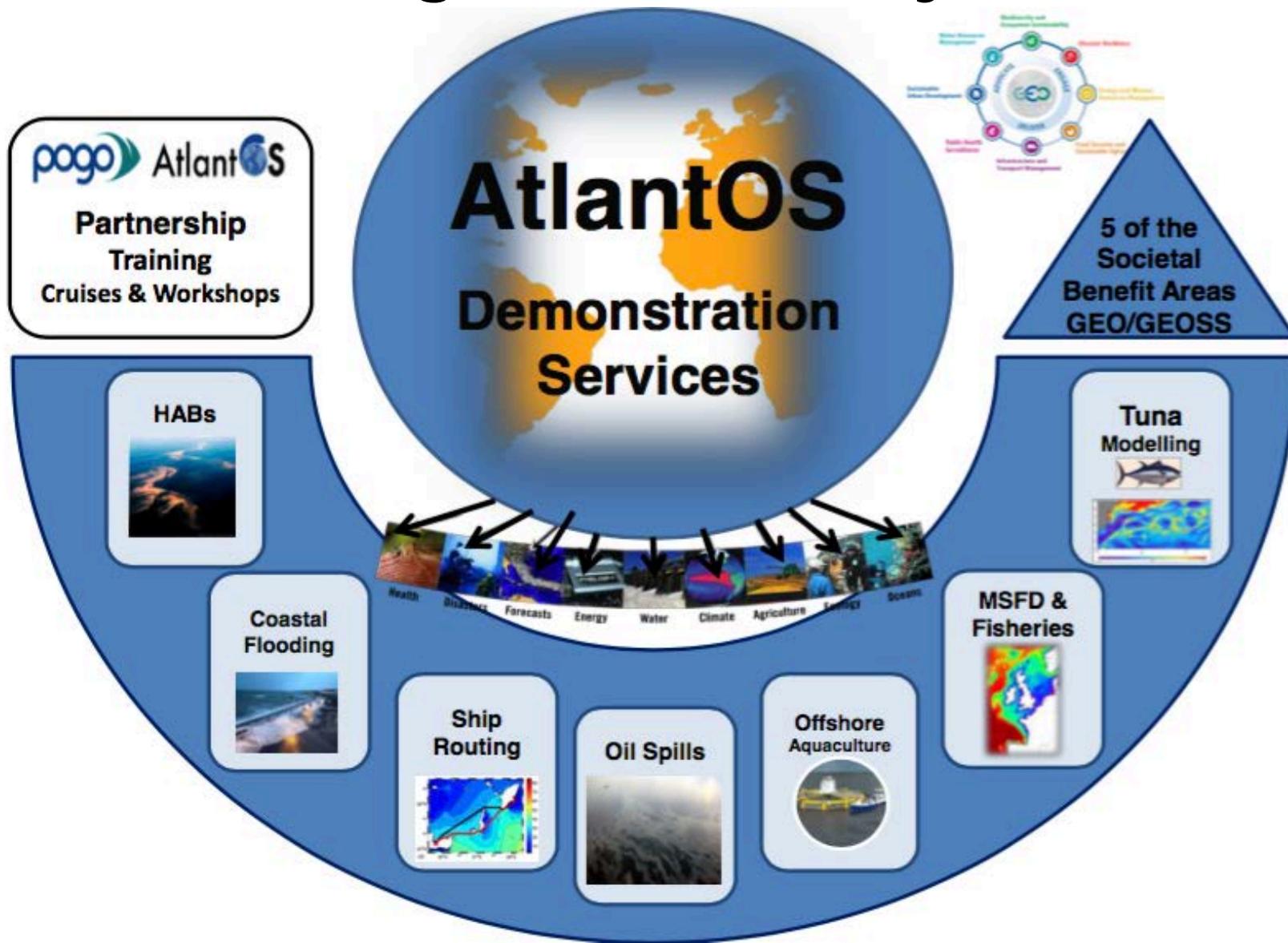
Highest level objectives for all WPs

To carry out the research and innovation needed to deliver the framework and tools for a fit-for-purpose, efficient, integrated and sustainable Integrated Atlantic Ocean Observing System – leaving a legacy for GEO/GEOSS and GOOS

- Achieve a significant change in planning, observations, data systems, and leave a legacy for the countries around the basin
- Steering a voluntary collaboration of investment two orders of magnitude greater than that in the project itself

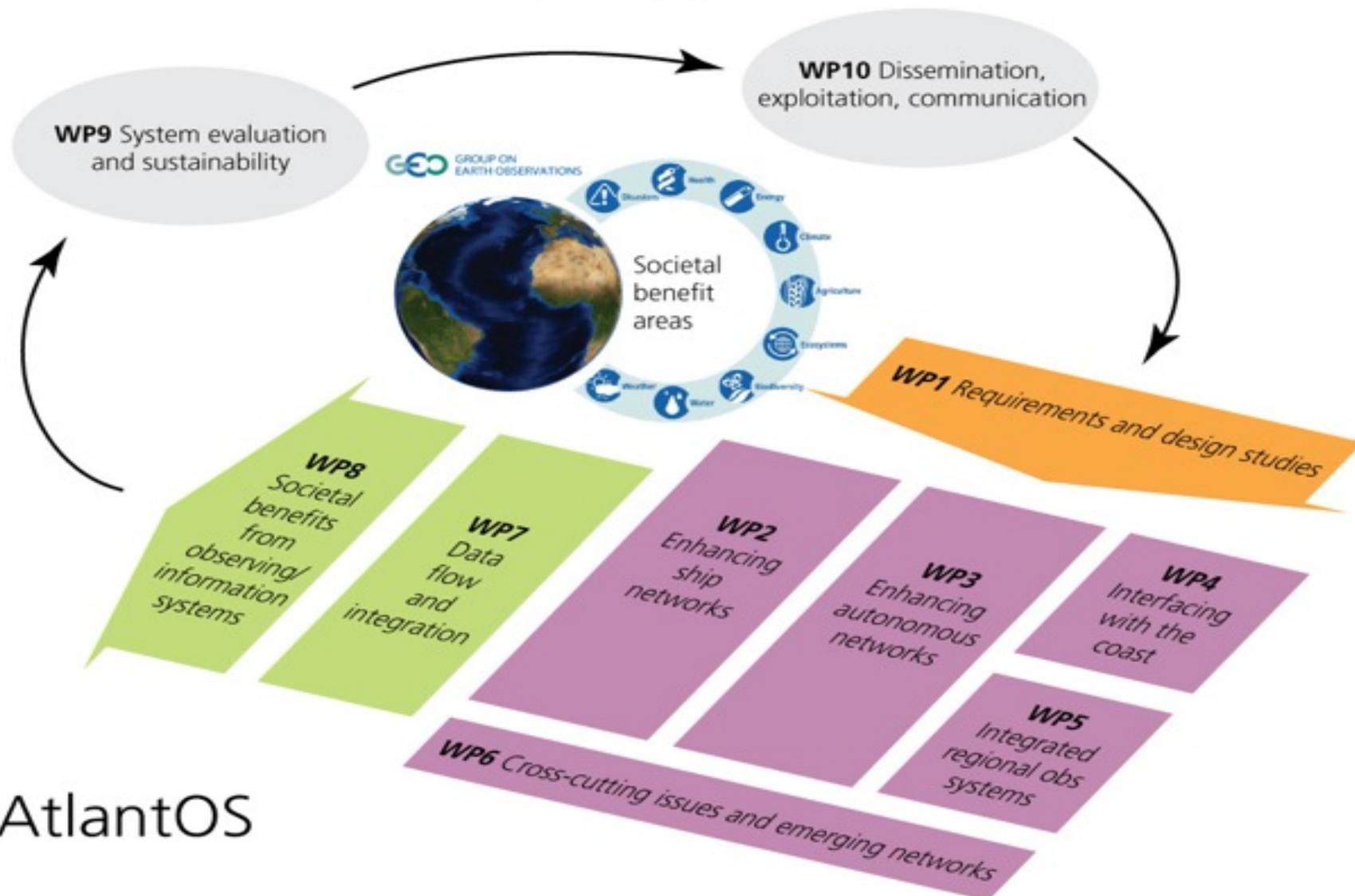


Societal benefits from observing/information systems



Project Structure

WP11 Management



AtlantOS

13 EU countries (DE, UK, IE, DK, FR, PL, NO, ES, PT, NL, BE, IT, HR) participating in AtlantOS and 5 (CA, US, BR, SA, FO) non-EU countries

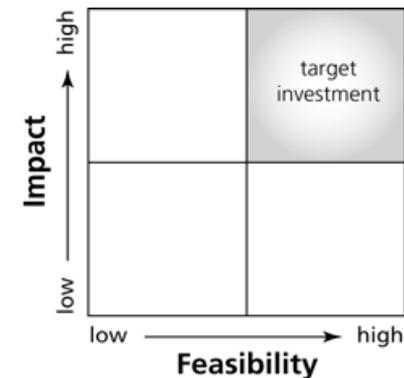
WP1 Observing System requirements and design studies

Objectives:

- Iteratively apply the systems design processes of the *FOO* to provide a refined design for an Integrated Atlantic Ocean Observing System meeting societal objectives

Achievements:

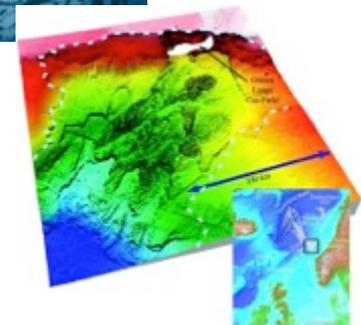
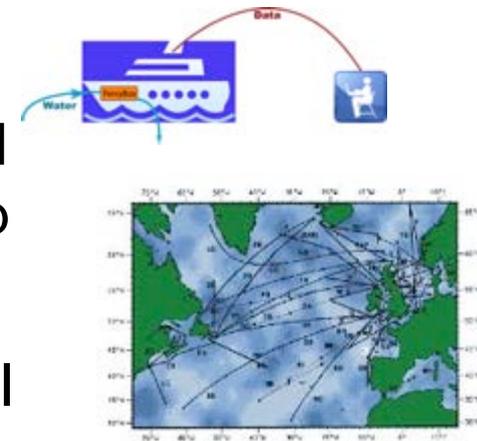
- Initial Integrated Atlantic Ocean Observing System Requirements Report
- OSSE experiments Report
- BioGeoChemical workshop
- Capacities and Gaps Analysis



WP2 Enhancement of ship-based observing networks

Objectives:

- Enhance, coordinate and support vessel-based observations – including programs like Go-Ship and others
- Enhance delivery of biochemical and ecological variables using new technology
- Improve the fish survey data availability
- Integrate the national European deep seafloor mapping results and enhance the accessibility of sea floor data



WP3 Autonomous observing networks

Autonomous observing network enhancements:

1. Argo (ERIC Euro-Argo)
2. OceanSites
 - Network of fixed point biogeochemical observatories
 - Pirata mooring Array
 - Transport Mooring Array (O2)
3. Glider network
4. Surface Drifters
5. European Animal Telemetry Network



WP4 Interfaces with costal ocean observing systems

Objectives:

- Conduct gap analysis for the connection between costal and deep ocean networks
- Optimize shelf sampling over seasonal timescales
- Strengthen access to sea level data networks
- Share best practice

Achievements:

- Data processing of pre-existing glider data
- Cross-shelf exchange and complementary of coastal and open ocean observing networks in the Bay of Biscay



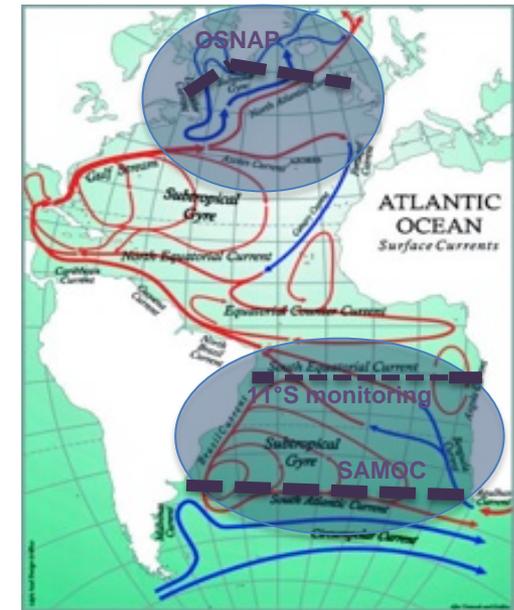
WP5 Integrated regional observing systems

Objectives:

- Optimize the regional observing systems
- Application of regional ocean observing: climate and ecosystem
- Regional Observing system simulation experiments and process modelling

Achievements:

- Assessment, networking and integration for product generation
- Capacity building on ocean observing and science networking (e.g. MyScience & GO-SHIP MSM60-SAMBA/SAMOC trans"south"Atlantic cruises)
- Development of a new ensemble-based probability score for observation system intercomparison (North Atlantic)
- Application and optimization of an ecosystem module of several functional groups representing the intermediate levels of the oceanic food web (zooplankton and micronekton)



WP6 Cross cutting issues and emerging networks

Objectives:

- Coordinating testing, deployment, maintenance and operation of the Integr. Atlantic Ocean Observing System
- Maximizing international collaboration and dissemination of observing system best practices
- Development of new and emerging observational activities

Achievements:

- Sensors and instrumentation roadmap online
- Biogeochemical sensors for microbial sample and preservation have been designed. Bench-top system to be used on cruise June 2017
- Over 550 samples collected using trace metal clean conditions.
- Roadmap for emerging networks created

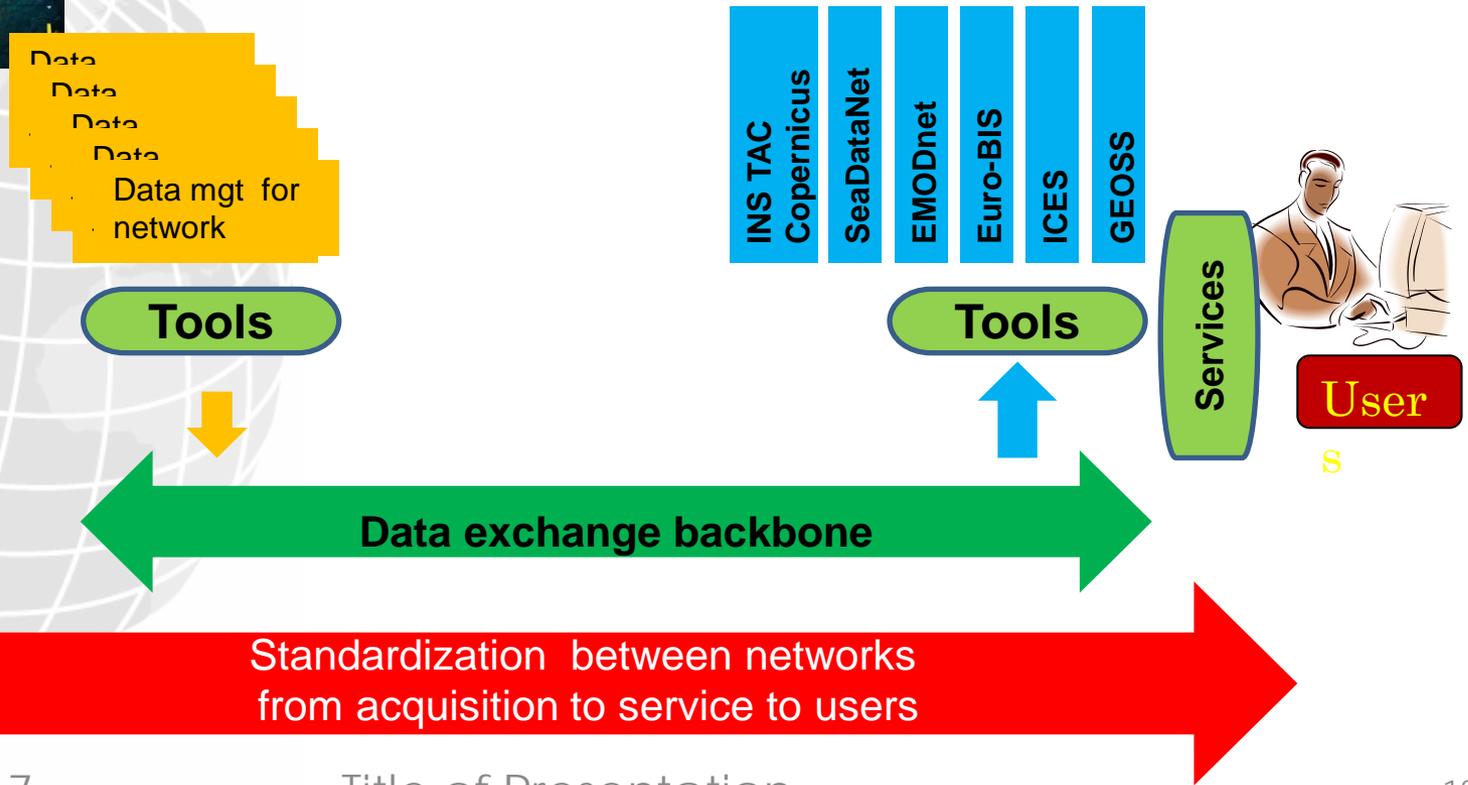
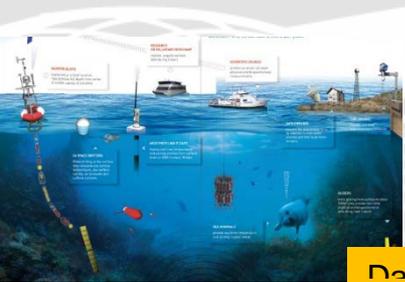
Impacts:

- Lab-on-chip molecular analytics can now be evaluated with real world eDNA target organisms. Reagent preservation has been extended

WP7 Data flow and data integration

Objectives:

- Data harmonization with data providers
- Integration and dissemination with users



WP8 Societal benefits from observing/information systems

Objectives:

- Demonstrate the value and societal benefit of the existing observing system in the Atlantic through pilot actions. Develop a suite of end-user focused products that are targeted at issues of societal concern such as climate, disasters, ecosystems, health and water.

Achievements:

- 1st technical workshop report (MS 1.0)
- Product Specification and engagement strategy
- PSDs: Product Specification Document
- Product development complete for some tasks
- Engaged with WP1 (EOVs & biogeochemical targets workshop) WP7 (integration of data into) and WP10 for external users survey/communication.

WP9 System evaluation and sustainability

Objectives:

- Provide quantitative and near real time information of the state of the in-situ Atlantic Observing System
- Analyze and properly document for each EOVS the adequacy of the current observing and information system
- Develop a long-term sustainability plan for Integrated Atlantic Ocean Observing Systems

Achievements:

- Initial web based monitoring systems developed by JCOMMOPS and ETT
- Performance indicators defined in each network
- JCOMMOPS growing involvement in WP7

WP10 Engagement, Communication and Dissemination

Main Objectives:

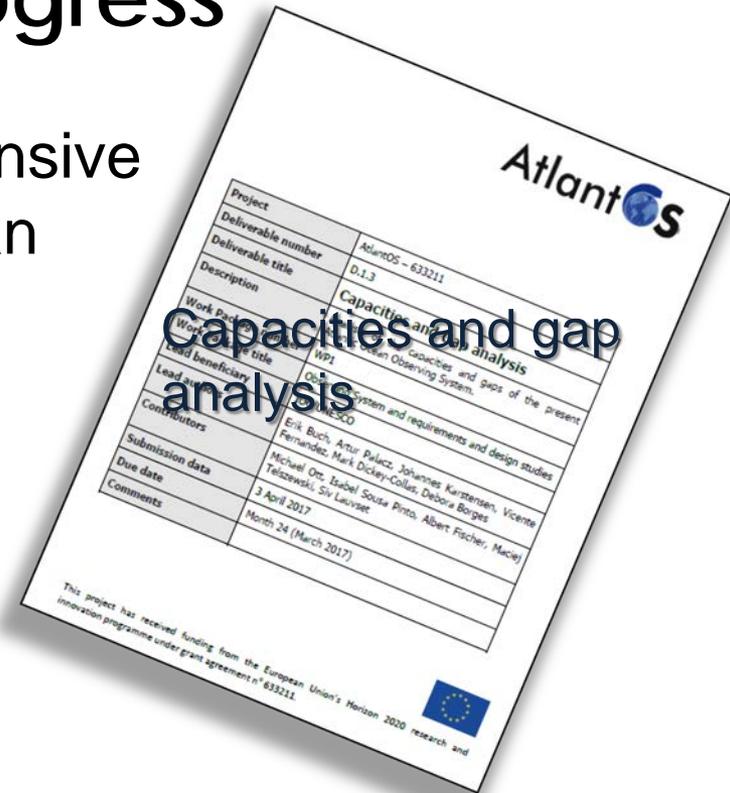
- Develop a results-oriented dialogue with key stakeholders communities to enable a meaningful exchange between the products and services that Integrated Atlantic Ocean Observation Systems can deliver and the demands and needs of the stakeholder communities

Services:

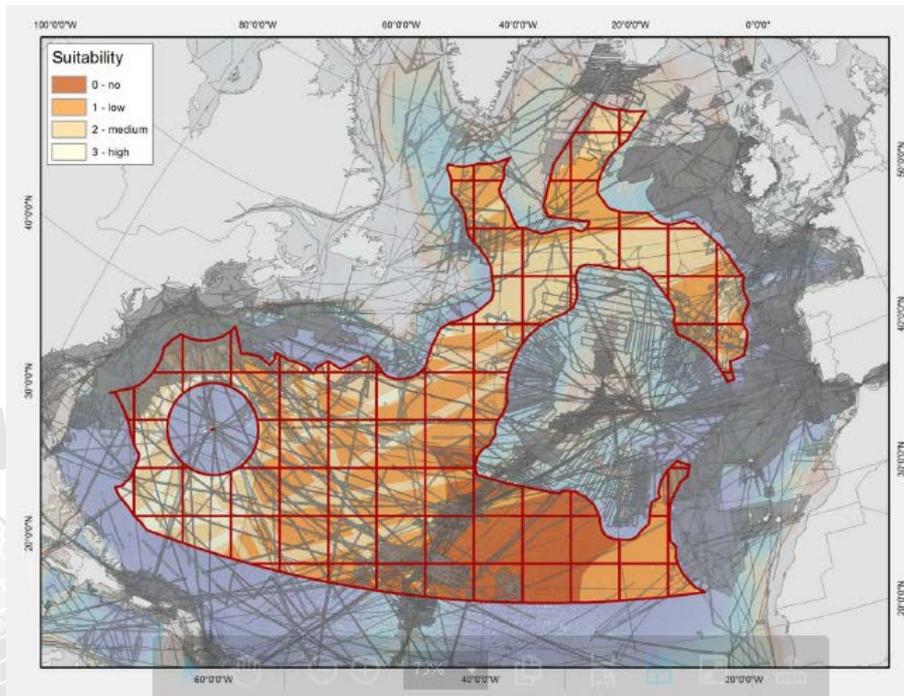
- AtlantOS Engagement and Communication Strategy
- Data dissemination and exploitation
- Science – Policy engagement
- Communicating project results

Achievements/Progress

A strategy for performing a comprehensive capacity and gap analysis of the ocean observing value chain.



Capacities and gap analysis



Atlantic Seabed Mapping:
Identification of pilot areas
in the North Atlantic.

Poster: EGU2017-15869 (Mo 17:30-19:00)
Hall X3

Achievements

> ICES data portal

Acoustic trawl surveys

Print it | Send to | f | t | in | Share it

THEMATIC

- > All data
- > Acoustic trawl surveys
- > Biodiversity
- > DATRAS
- > DOME (Marine Environment)
- > Eggs and larvae
- > Fish stomach
- > Historical plankton
- > Oceanography
- > Underwater Noise
- > Vulnerable Marine Ecosystems

LOGIN REQUIRED

- > InterCatch
- > Regional DataBase
- FishFrame

Processed Acoustic and Biotic collected on acoustic trawl surveys in the Northeast Atlantic and Baltic seas

The database hosts information on fisheries observations collected from various pelagic surveys coordinated by ICES and falls into two categories: acoustic data, derived from readings taken on vessels, and those obtained through trawls in the open ocean – pelagic – zone. Combined, this provides key biological data on fish stocks such as herring, mackerel and blue whiting as well as krill and other prey species.

This project has received funding from the European Commission - Horizon 2020 research and innovation programme under grant agreement no 633211.




Anders Thorsen, IMR

SUBMIT DATA

BROWSE SUBMISSIONS

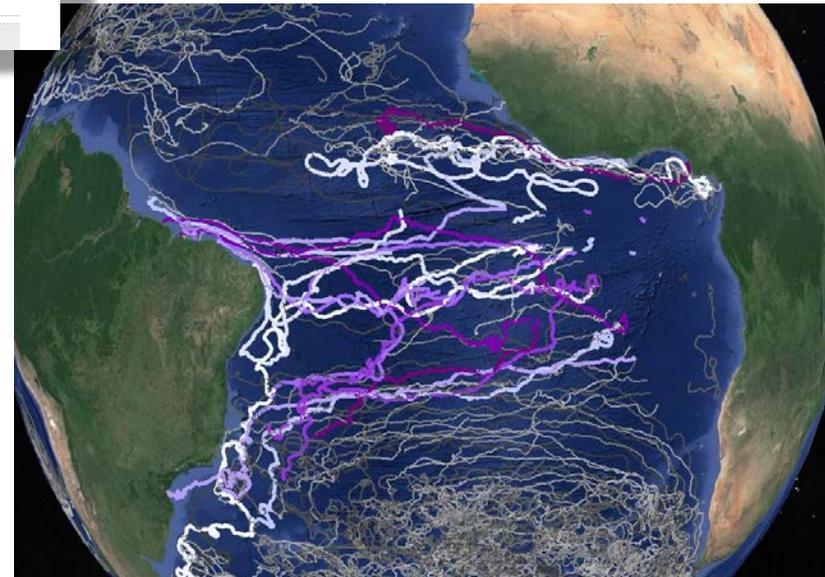
LINKS

- > Acoustic code lookup (Vocabulary)

The Acoustic Trawl Survey Data Portal is operational at <http://acoustic.ices.dk>

Extending the surface drifter fleet in the tropical Atlantic:
Grey thin lines: trajectories of all drifters with barometers (last 2 years).
Pink & purple thick lines: New AtlantOS deployments.

poster: EGU2017-13914, Wed. 17:30-19:00, Hall X4



Achievements

Showcase the power of integrated trans-Atlantic in the subpolar North Atlantic and the subtropical South Atlantic Ocean

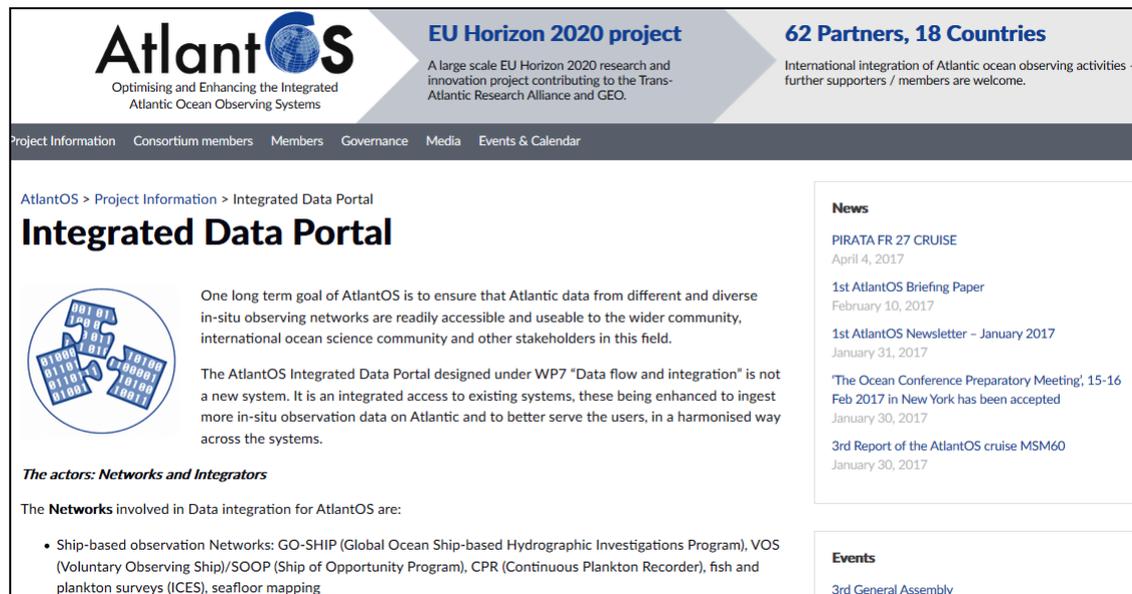
Assessment and Coordination of Regional Observing networking and capacity building



Company /Institute	Sensor or Instrument name	Application/target /technology	TRL1	TRL2	TRL3	TRL4	TRL5	TRL6	TRL7	TRL8	TRL9	Operational demo	Commercial release
Common Sense Project	Cefas Noise Sensor (pre production prototype)*	hydrophone	met	met	met	met	met	met	met	Jul-16		Jul-16	
Common Sense Project	SSU (Smart Sensor Unit)*	multiple parameters	met	met	met	met	met	met					
Common Sense Project	MK2 pCO2 Analyser (water)*	partial pressure CO2	met	met	met	met	met	met	met				
Common Sense Project	MK3 pCO2 Analyser (air)*	partial pressure CO2	met	met	met	met	met	met	met				
Common Sense Project	OceanPack AUMS*	autonomous underway measuring system	met	met	met	met	met	met	met				
Common Sense Project	OceanPack Subsea*	partial pressure CO2	met	met	met	met	met	met	met				
Common Sense Project	Microplastic sensor*	microplastics	met	met	met	met	Sep-16	Feb-17					

Sensor roadmap: horizon-scanning tool using standardized 'readiness level' descriptors, focused on EOVs

Achievements



AtlantOS
Optimising and Enhancing the Integrated Atlantic Ocean Observing Systems

EU Horizon 2020 project
A large scale EU Horizon 2020 research and innovation project contributing to the Trans-Atlantic Research Alliance and GEO.

62 Partners, 18 Countries
International integration of Atlantic ocean observing activities – further supporters / members are welcome.

Project Information Consortium members Members Governance Media Events & Calendar

AtlantOS > Project Information > Integrated Data Portal

Integrated Data Portal

One long term goal of AtlantOS is to ensure that Atlantic data from different and diverse in-situ observing networks are readily accessible and useable to the wider community, international ocean science community and other stakeholders in this field.

The AtlantOS Integrated Data Portal designed under WP7 "Data flow and integration" is not a new system. It is an integrated access to existing systems, these being enhanced to ingest more in-situ observation data on Atlantic and to better serve the users, in a harmonised way across the systems.

The actors: Networks and Integrators

The **Networks** involved in Data integration for AtlantOS are:

- Ship-based observation Networks: GO-SHIP (Global Ocean Ship-based Hydrographic Investigations Program), VOS (Voluntary Observing Ship)/SOOP (Ship of Opportunity Program), CPR (Continuous Plankton Recorder), fish and plankton surveys (ICES), seafloor mapping

News

PIRATA FR 27 CRUISE
April 4, 2017

1st AtlantOS Briefing Paper
February 10, 2017

1st AtlantOS Newsletter – January 2017
January 31, 2017

'The Ocean Conference Preparatory Meeting', 15-16 Feb 2017 in New York has been accepted
January 30, 2017

3rd Report of the AtlantOS cruise MSM60
January 30, 2017

Events

3rd General Assembly

To provide access to existing systems, incorporating more in-situ observation data on the Atlantic Ocean in a harmonized way across the systems.

Oral: EGU2017-2266 (Mo 09:00-09:15) room 0.96

AtlantOS Transatlantic Ocean Data Harmonization Workshop - Brussels on the 7-8th June 2017.

The AtlantOS-project invites you to participate in a strategic workshop on Transatlantic Ocean Data Harmonization in Brussels on the **7-8th June 2017**.

Location: Clora Avenue des Arts 8, 1210 Brussels (close to MADOU subway stop)

Price: The workshop is available free of charge. The participants are responsible for their own travel and accommodation expenses.

Registration: Please register ASAP. Deadline: May 10th 2017. **The Number of seats are limited.**

Link: <https://www.eventbrite.com/e/atlantos-transatlantic-ocean-data-harmonization-workshop-tickets-33426862646>

Upcoming Meetings

Meeting	Location	Time
3 rd Blue Planet Symposium	Maryland	31 May – 2 June 2017
AtlantOS Data Harmonization Workshop	Brussels	7 – 8 June 2017
The Ocean Conference (UN SDG 14)	New York	5 – 9 June 2017
11 th GEO European Project workshop	Helsinki	19 – 21 June 2017
AtlantOS 3 rd annual General Assembly	Gran Canarias	21 – 23 Nov 2017

AtlantOS Plan for Broader

Engagement: Led by WP5, WP8 and WP1

Objective: Transition from a loosely-coordinated and fragmented set of existing activities, into a system that is sustained and sustainable, efficient, and fit-for-purpose

Meeting	Location	Time
IAPSO	Cape Town, SA	Sept 2017
AtlantOS 3 rd annual GA meeting	Gran Canarias	21 – 23 Nov 2017
Ocean Science	Portland, Ore	11 – 16 Feb 2018
4 th ICES/PICES/IOC Symposium on Climate and Impacts	Washington, DC	Apr 30 – 4 May 2018



#AtlantOS

AtlantOS

Outcome of AtlantOS and related initiatives: **Blueprint for OceanObs19**



An international, multi-disciplinary and multi-sectoral team is currently established

Blueprint for an integrated
Atlantic Ocean Observing System

1. Vision for the Atlantic Ocean Observing System
2. Model based analysis and predictive capability
3. Information products and creating user advocates
4. New Technologies
5. International and Private Sector Partnership
6. User Communities and Capacity Building
7. Sustainability of systems and institutions



A Trans-Atlantic assessment and deep-water ecosystem-based spatial management plan for Europe

Call: EU Horizon 2020: BG-2015-2
(Unlocking the potential of seas and oceans)

Duration: May 2016 – April 2020
(48m)

Consortium: 24 partners +1 linked
3rd party, from 12 countries

Budget: €9.3M

Coordinator: The University of
Edinburgh, Scotland (UK)

Murray Roberts
Katherine Simpson
Univ Edinburgh

Focus: Providing essential new knowledge of North Atlantic ecosystems through data gathering and synthesis

Impact: Discoveries and outputs will inform and facilitate stakeholder agreement on marine policy and regulation and spur Blue Growth

Core activities: 25+ research cruises investigating 12 case studies across the Atlantic

<http://www.eu-atlas.org/>



atlas

ATLAS Objectives with multidisciplinary approach

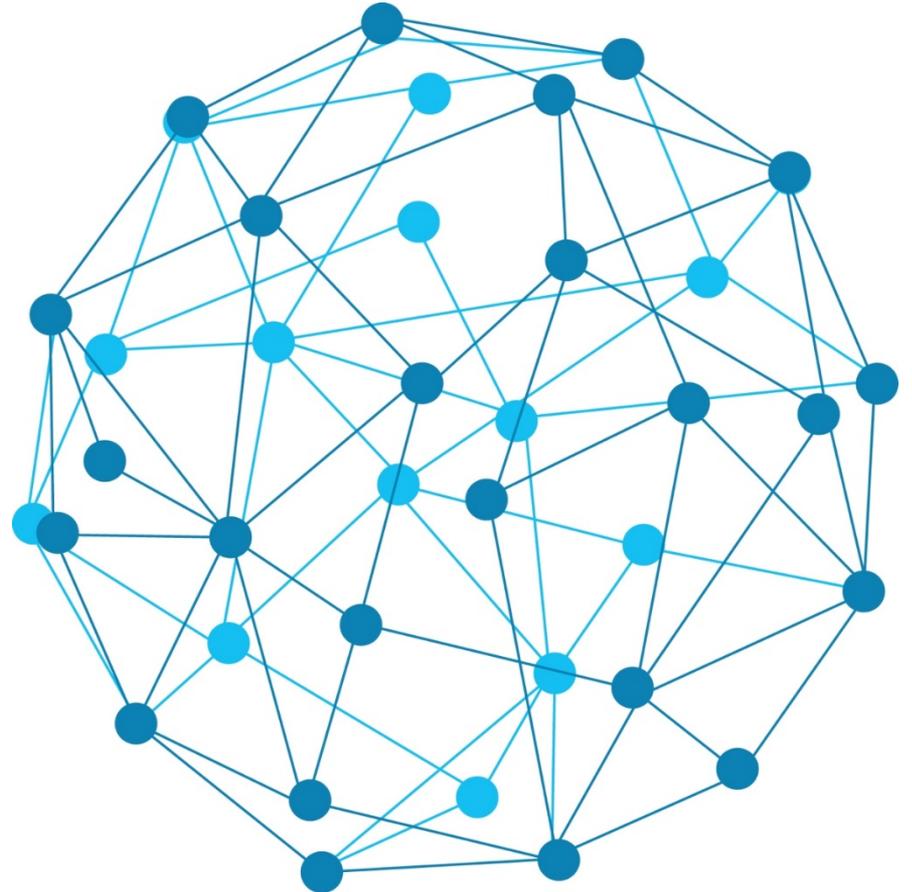


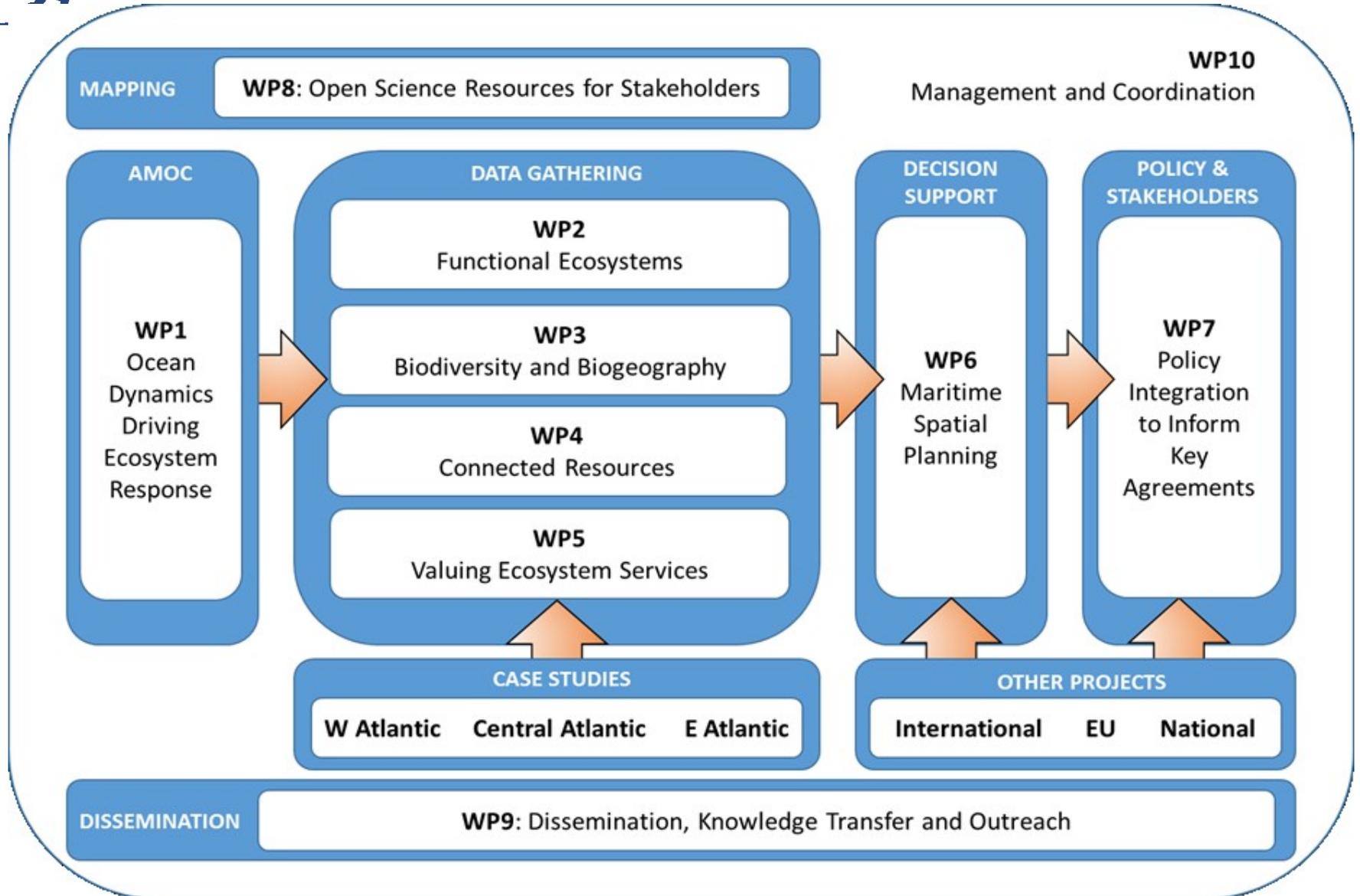
- **Advance** our understanding of deep Atlantic marine ecosystems and populations
- **Improve** our capacity to monitor, model and predict shifts in deep-water ecosystems and populations
- **Transform** new data, tools and understanding into effective ocean governance
- **Scenario-test** and develop science-led, cost-effective adaptive management strategies that stimulate Blue Growth



Investigating Interconnections Between:

- **Ocean circulation**
- **Surface production**
- **Ecosystem functioning**
- **Biological richness**
- **Socio-economic importance**





Steering Committee



Stuart Cunningham
WP1, SAMS



Dick van Oevelen
WP2, NIOZ



Telmo Morato
WP3, IMAR-UAz



Sophie Arnaud-Haond
WP4, Ifremer



Claire Armstrong
WP5, UiT



Anthony Grehan
WP6, NUIG



David Johnson
WP7, SC



Stéphane Pesant
WP8, UniHB



David Murphy
WP9, AquaTT



J Murray Roberts
WP10, UEDIN



Ambitions

Innovation beyond the state-of-the-art in modelling, predicting, monitoring and policy implementation

New basin models



Better predictions



Cost-effective robust monitoring



Stronger policy implementation

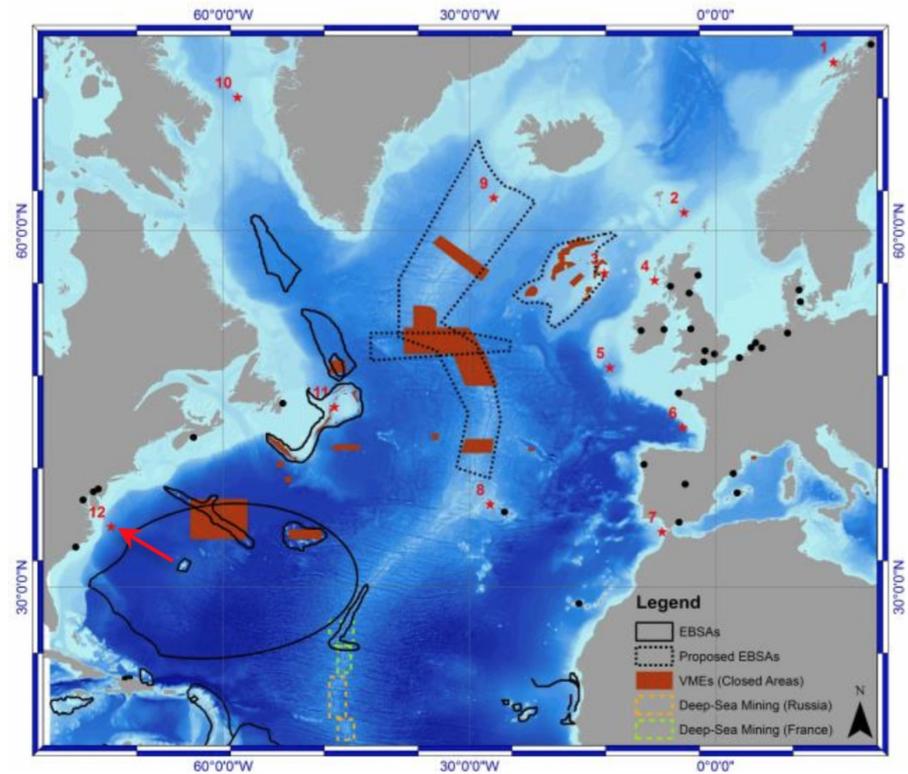
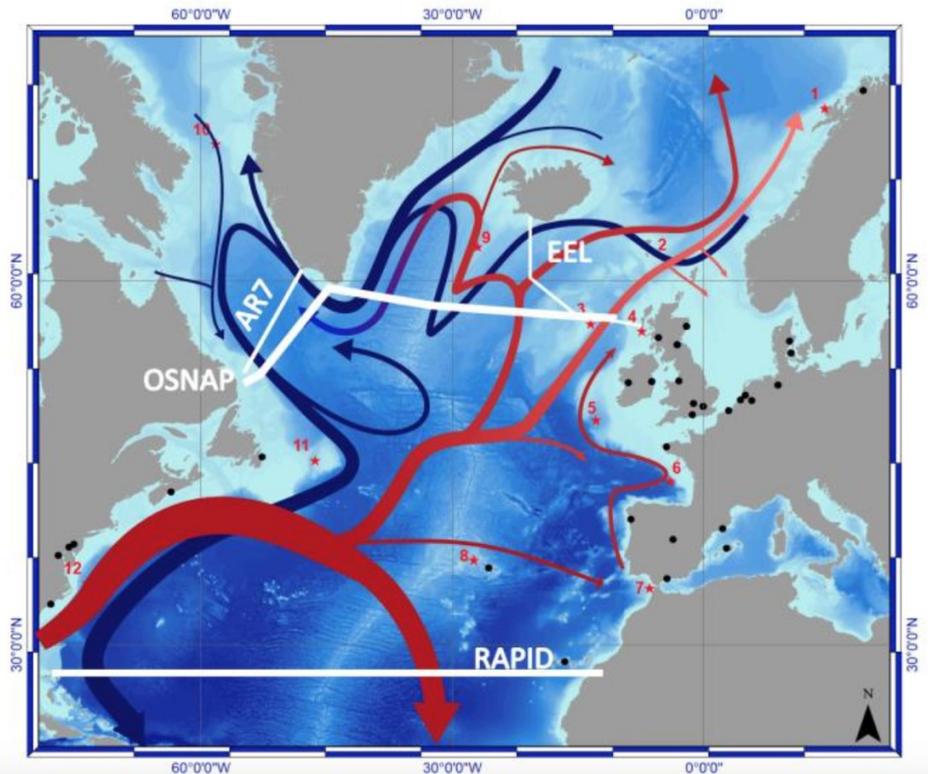


Dynamic communication



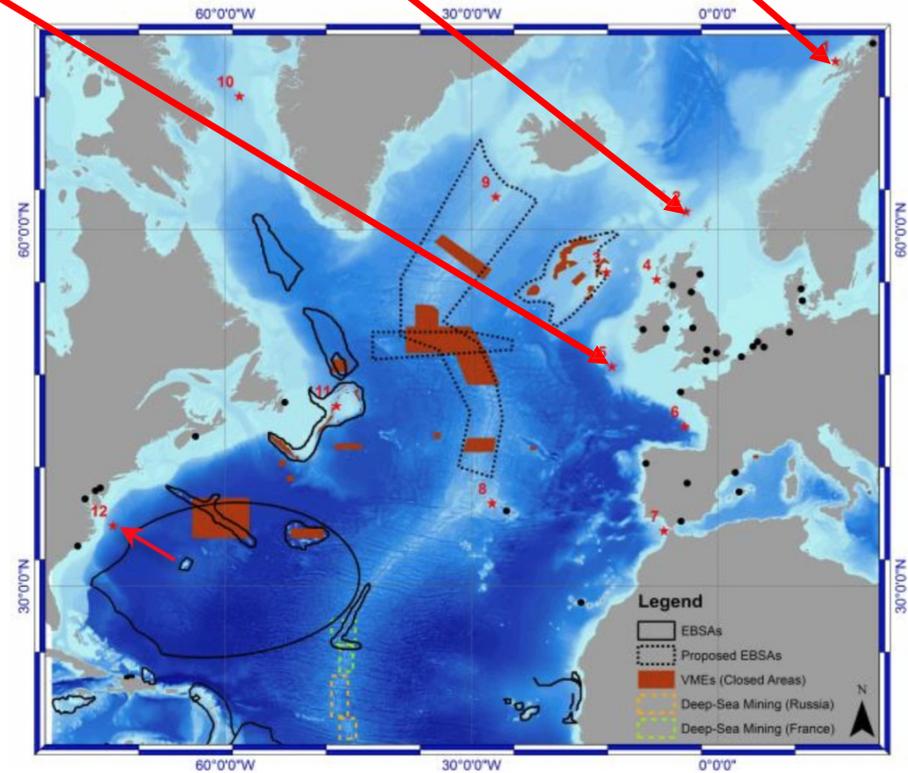
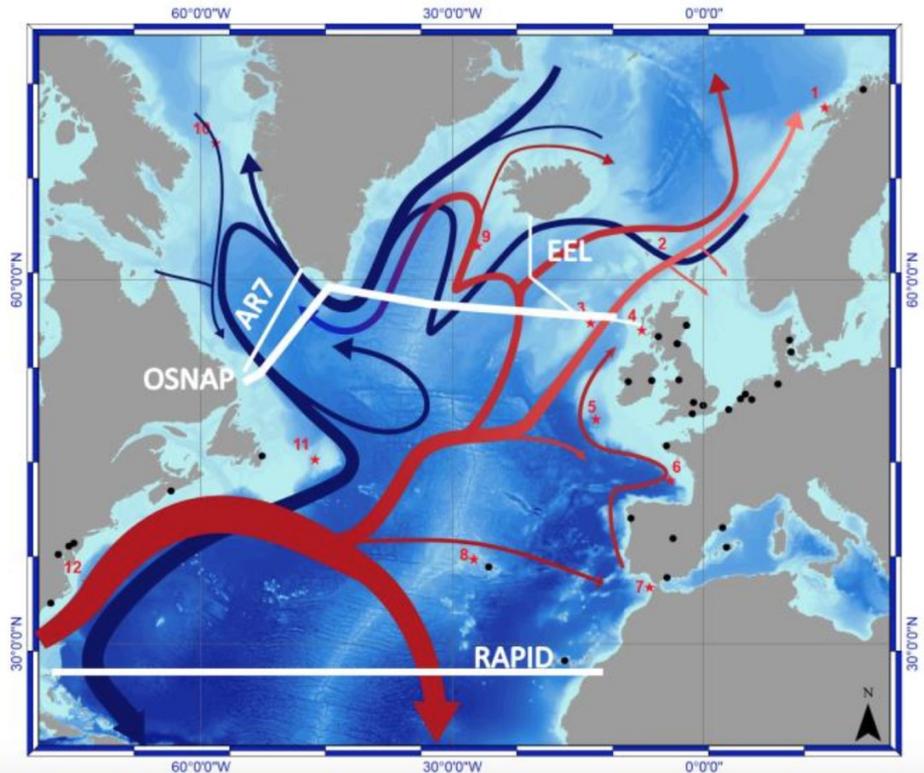


Lea-Anne Henry
Case Study co-ordinator
Chancellor's Fellow, University of Edinburgh



Case Study	Focus Ecosystems (CWC, cold-water coral)	Current and BG Sectors*	Lead & collaborators
1. LoVe Observatory (Norway)	CWC reefs, sponges	F, OG, T	<u>Statoil</u> , NIOZ, UEDIN
2. West of Shetland and W Scotland slope (UK)	Sponge grounds	B, F, OG	<u>UEDIN</u> , BP, OGUK, MSS
3. Rockall Bank (UK & Ireland)**	CWC reefs, coral gardens, carbonate mounds, sponge grounds, cold seeps	B, F, OG	<u>MSS</u> , IEO, OXU
4. Mingulay Reef Complex (UK)	CWC reefs	F, T	<u>UEDIN</u> , MSS
5. Porcupine Seabight (Ireland)	CWC reefs, coral gardens, carbonate mounds, sponge grounds	B, F, OG	<u>NUIG</u> , Woodside
6. Bay of Biscay (France)	CWC on slope and in canyon settings	B, F	<u>IFREMER</u>
7. Gulf of Cádiz/Strait of Gibraltar/Alborán Sea (Spain & Portugal)	CWC reefs, coral gardens, sponge grounds	B, F, OG	<u>IEO</u> , IFREMER, IMAR-UAz
8. Azores (Portugal)**	Hydrothermal vents, seamounts, coral gardens, sponge grounds	B, F, M	<u>IMAR-UAz</u> , IEO
9. Reykjanes Ridge (Iceland)**	Hydrothermal vents, CWC reefs, coral gardens, sponge grounds	B, F, M	<u>UCD</u>
10. S Davis Strait/Western Greenland/Labrador Sea (Canada)	CWC reefs, coral gardens, sponge grounds	B, F	<u>DFO</u>
11. Flemish Cap (Canada)**	Coral gardens, sponge grounds	B, F, OG	<u>IEO</u> , DFO, OXU, NAFO
12. SE USA (Bermuda transect)**	CWC reefs on slope and in canyon settings	B, F, M, OG	<u>UNCW</u> , AP-TU, NOAA

* Blue Growth sectors: **Biotechnology**; **Fisheries**; **Mining**; **Oil & Gas**; **Tourism**; ** indicates data include ABNJ





Expected Impacts

Blue Growth: Opportunities for marine and maritime sustainable growth

- Improve **resource management** (ecosystem approach) and governance
- Improve **cooperation** within EU and trans-Atlantic
- Contribute to the **EU Integrated Maritime Policy**
 - The Marine Strategy Framework Directive (MSFD),
 - The Common Fisheries Policy (CFP),
 - The EU ‘Maritime Strategy for the Atlantic Ocean Area’
 - The Galway Statement on Atlantic Cooperation
- Strengthen international **agreements to conserve** vulnerable marine ecosystems (VMEs) and ecologically significant marine areas
- Engage with UN process developing an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction

Developing a **Blueprint** for an Atlantic Ocean Observing System

- Integrative
- Inclusive
- Multi-national
- Multi-sectoral
- Multi-disciplinary
- Sustainable
- Purposeful but not prescriptive



Scope for the **Blueprint**

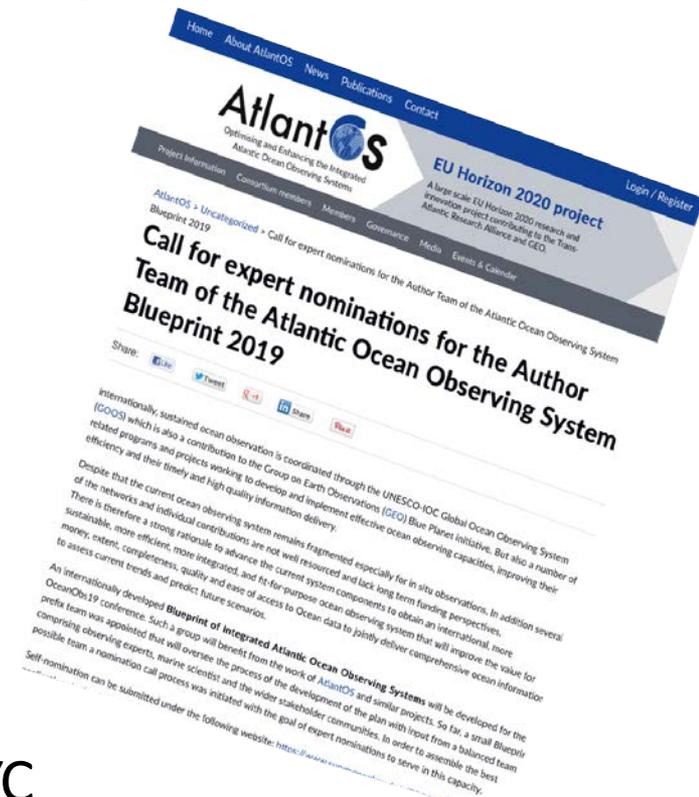
- Atlantic: North and South, open ocean and coastal
- Guided by AtlantOS but open to the wider Atlantic community
- Inclusive and ambitious
- Encourage and enhance Community-based interest and participation
- Encourage defined contributions, but not prescriptively enforcing a precise observing plan plan
- Build on named principles
- Encourage public and private sector contributions
- Include capacity development

Key stakeholder groups

1. **Science community:** science teams, CLIVAR Atlantic, MOCs, Future Earth Oceans activities (IMBER, SOLAS), Future Earth Coasts
2. **Regional OOS/ocean groupings:** EuroGOOS, IOOSS, IOC regions, UNEP regional seas, IOOS, C-IOOS
3. **Users:** service providers, private sector users (shipping, oil/gas, fishing, aquaculture, recreation, ...); assessment users like OSPAR, IPCC special report, SDGs, IPBES, WOA; NGOs
4. **Nations:** funders of observing systems
5. **Observation providers:** in situ and satellite, public and private

First step: Create the Working Group

- Form a small writing team, with a broad perspective and multi-national representation to draft
 - Vision
 - Terms of Reference
 - Qualifications for Working Group
- Call released November 2016 - broad International response
35 applicants
- Committee formed January 2017
- Tele-Meeting held in late February
- Framework Document being put together
- Planned meetings: April – Paris, June – NYC
- More meetings, workshops, consultations 2017
- Draft community communication this spring, summer



Membership

Co-Chairs

- Brad deYoung – Canada
- Martin Visbeck – Germany

- Erik Buch – Denmark
- Moacyr Arajou – Brazil
- Martin Edwards – United Kingdom
- Albert Fischer – France
- Jan-Stefan Fritz – Germany
- Jose Henrique Muelbert – Brazil

**Gaps to be filled –
Modeling, Africa,
Private sector,
Community groups**

- Glenn Nolan – Belgium
- Isabel Sousa Pinto - Portugal
- Eleanor O'Rourke - Ireland
- Sylvie Pouliquen – France
- Janice Trotte Duha – Brazil
- Toste Tanhua – Germany
- *Molly Baringer – United States*

Working Group Strategy

Create and empower a **Team for the Atlantic Observing System blueprint / framework**, drawing from the five groups of stakeholders, to:

- Develop a consultative document that defines purpose and vision together with regional examples to demonstrate capability and potential
- Seek feedback and input to the evolving draft document
- Manage an engagement process with the five stakeholder groups
 - Through direct engagement at annual meetings of these groups
 - Opportunistic roundtable discussion
 - Other
- Manage an open review process

Approach

1. Write an overview of key issues for each of the components
2. Identify challenges and strategies – for consideration, discussion
1. Follow an example based approach to map the issues, and provide focus for partners, users, national funders, international coordinators, data managers

Example based approach

- Storm surge, tsunami warning, hurricanes – coastal issues, direct community interests, links to operational modelling community, new technology, connections to atmospheric modellers
- Ocean health – ocean ecosystem stress, links to climate change, requires multi-disciplinary at all levels, links to fisheries
- Climate – observing connections to global issues, e.g. carbon flux, focus on physics, chemical, and biological measurements, links to climate modelling
- Oil spills, contaminants, search and rescue – support for operational modelling, adaptive sampling and observing systems (e.g. glider deployments).

Document Structure (draft)

1. Vision for Atlantic Observing in 2030
2. Observing Networks
3. Data Flow
4. Model Based Analysis
5. New Technologies
6. Information products
7. International and Private Sector Partners
8. User Communities and Capacity Building
9. Sustainability of systems and institutions
10. Governance Arrangements

Timeline

Fall 2016	Terms of Reference published, open nominations process launched
January 2017	Team named and in place
February 2017	First Full TeleMeeting
April 2017	Develop draft document outlining challenges, approaches
June 2017	Full Meeting linked with UN SDG
November 2017	Draft document for AtlantOS sharing, gather input from WPs
December 2017	Extend community consultation with Full Draft Document
2018	Continue review, consul develop final draft
September 2019	Presentation to OceanObs'19
2019+	Process calling for national commitments to blueprint/framework

Summary

- Expect the next two years to see many meetings, working groups and white papers aimed at generating input to OceanObs 2019 that do not look like the familiar platform-based white papers.
- Get engaged!

Extra Slides



G7 Science Minister call for: Enhanced Global Ocean Observing



G7 Science and Technology Ministers, meeting in 15-17 May 2016 ***The Future of the Seas and Oceans: Toward Science-Based Management, Conservation and Sustainable Use of the Oceans, Seas and Marine Resources***

- i. Support the development of an initiative for enhanced global sea and ocean observation ...
- ii. Support an enhanced system of ocean assessment ...
- iii. Promote open science and the improvement of the global data sharing infrastructure ...
- iv. iv. Strengthen collaborative approaches to encourage the development of regional observing capabilities ...
- v. Promote increased G7 political-cooperation by identifying additional actions needed to enhance future routine ocean observations.

G7

Future of the Seas and Oceans Initiative

AORA-AtlantOS Exchange of Ideas
6 April 2017

Adrian Martin (NOC) – adrian.martin@noc.ac.uk

Background

- October 2015:
 - G7 Science ministers meeting in Berlin
 - Specific statement in communique on **‘Future of the Seas and Oceans – Joint research’**
 - Specifically mentioned litter and deep sea mining but also...
 - “commit to continuing discussions and developing a proposal for how we can most effectively enhance international cooperation amongst the G7 and other interested countries.”

Background

- March 2016:
 - 2 day workshop hosted by NOC in Southampton
 - Brought together experts across G7
 - Recommendations fed into subsequent G7 science ministers meeting...

Background

- May 2016:
 - G7 Science ministers meeting in Tsukuba, Japan
 - 6 priority areas identified including
 - ‘The Future of the Seas and Oceans’

Toward science-based management, conservation and sustainable use of the oceans, seas and marine resources.

 - 5 recommendations...

Tsukuba Recommendations

1. 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 on going observation
2. 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
3. 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
4. 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
5. Promote increased G7 **political-cooperation** by identifying additional actions needed to enhance future routine ocean observations.

Preliminary report

Scientists/specialists across G7 approached for assessment of needs in...

- Observations:

Argo

Technology

Benthic ecology

Gliders

Satellite

Synthesis

Go-Ship

Arctic

Sea-level

Antarctic Vessels

Basin-scale

Tropical

Fixed point

Pelagic ecology

- World Ocean Assessment (UN Regular Process...)
- Data: storage, communication and sharing
- Regional observations and capacity building
- Legal and policy

Workshop at NOC

30 November – 1 December 2016



Workshop at NOC

30 November – 1 December 2016

- Delegates from G7 plus independents (IPCC, IOC, SCOR, WOA, GOOS, POGO, Blue Planet)
- Discussed report and developed priorities for each of the 5 Tsukuba recommendations
- 6 month, 2 year and 5 year plans to be developed for each ahead of...

next G7 Science Ministers Meeting
Italy – September - 2017

Recommendation leads

Action	Co-lead	Active	Informed
1	Italy, UK, US	Canada, EC, France, Germany, Japan	
2	UK, US	Italy, Japan	Canada, EC, France, Germany
3	France, Japan	Canada, EC, Germany, Italy, UK, US	
4	Italy, UK	Germany, Japan, US	Canada, EC, France
5	Italy, US, UK	EC, Germany, Japan	France, Canada

Action 1

Sub-action	Lead country
Sustainable funding	Germany
G7-GOOS liaison	UK
Biogeochemical ARGO	France
Deep ARGO	US
Gliders	UK
Sensors	UK
Augmented observatories	Italy
GLOSS	US
Research vessels	France

Action 2

- Profile: G7 Science Ministers (or Leaders)
- underline the importance of the UN Regular Process
 - commit to raise its profile in G7 countries
 - commit to actively support Regular Process & WOA-II.
- Policy: G7 countries identify their respective UN Regular Process national focal points by 31 May 2017
- Establish a G7 group to coordinate collaborative input to the process
- Funding: G7 should discuss WOA budgetary shortfalls
- Might fund and/or host regional workshops etc

Action 3

- Discuss development of a limited set of common data sharing standards and data integration translators
- Share best practise
- Discuss development of a 'G7 Marine Open Data Accord'

Action 4

- Develop a programme to establish and deploy systems for the synthesis of local in-situ observations and satellite observations to deliver marine environmental analyses that would underpin sustainable development objectives and needs.
- Develop a joint programme to define the implementation of essential building blocks required to develop an integrated coastal observing system.
- Work with the IOC to identify and propose pilot project locations (e.g.through GOOS Regional Alliances) for the incremental implementation of integrated coastal observing systems

Action 5

- Set up a secretariat to consider the policy, funding and regulatory issues.
- Collaborate with the OECD Project on Innovation in the Ocean Economy to assess in detail the economic potential of public investments in ocean observing and data collection.