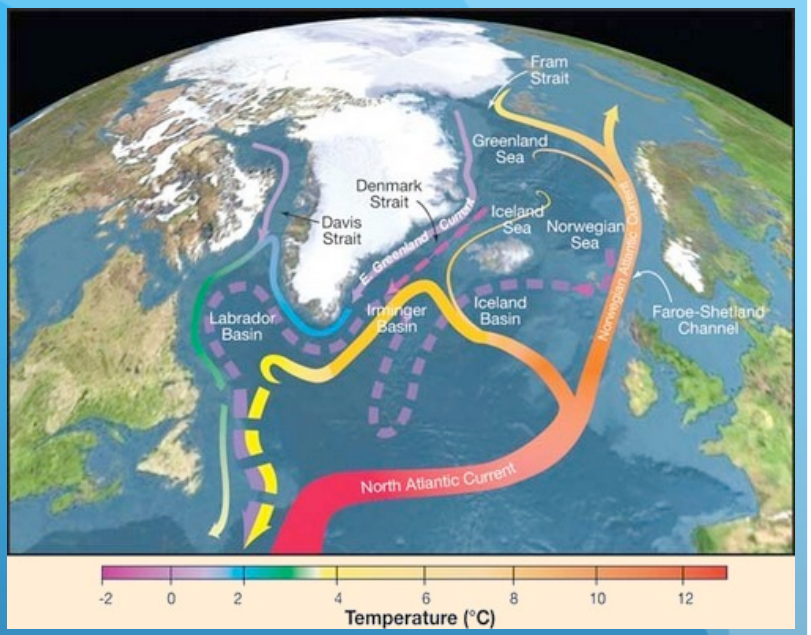
Best Practice in Atlantic Ocean research: how to make cooperation work at different levels

Overturning in the Subpolar North Atlantic Program (OSNAP) www.o-snap.org

A US-led program with UK, Canada France, Germany, and Netherlands

Presented by: Johannes Karstensen, GEOMAR, Kiel, Germany

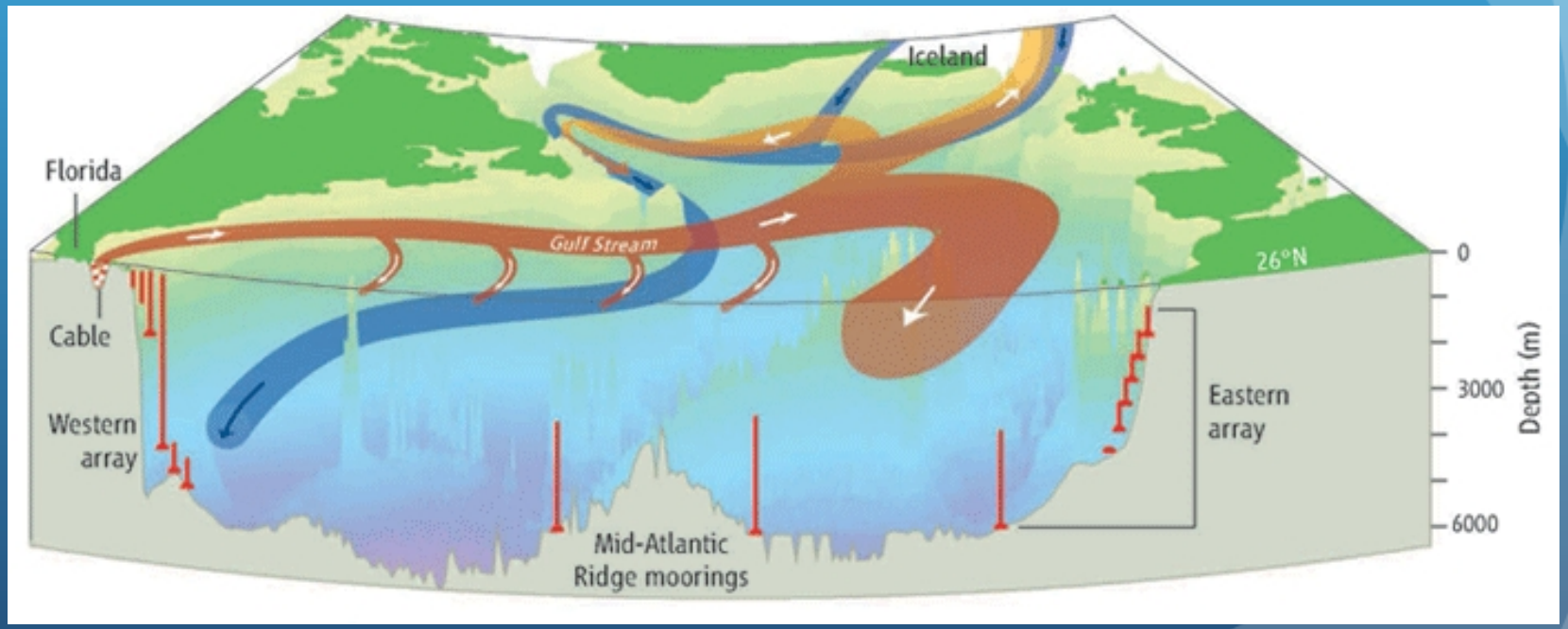
OSNAP objective



- Science program
- Meridional transport of heat, freshwater and properties has a local, regional & global impact on climate
- Most of our knowledge on meridional transport is derived from model simulations – with own imperfections (discretisation, resolution, forcing,…)
- Observing meridional transport is important – but challenging and requires systems to operate on Atlantic basin scale
- **Collaborative effort of partners across the Atlantic is required!**

Success story: RAPID 26°N array

- The RAPID array is a UK/ U.S. funded research initiative to observe the meridional transport in the subtropical Atlantic at 26°N – it is operational since March 2004



OSNAP short history

- Fall 2007: Publication of US AMOC Implementation Strategy. Objective 1: The design and implementation of an AMOC monitoring system
- Fall 2009: U.S. Working Group convened at Woods Hole, US
- Spring 2010: NSF-sponsored **international workshop** at Duke University for the design of a subpolar North Atlantic AMOC observing system
- Summers of 2011/2012: Proposals to national funding agencies (UK, U.S.)
- Spring/Summer/Fall of 2013: UK/U.S. Funding secured for OSNAP
- Summer 2014: Installation of array (6 cruises; UK, US, Can, DE)

OSNAP Program Governance

- Science project !
  Bottom up approach -> Individual PI & individual grants
- Steering committee:
  Members (7) from all participating countries;
  Coordinate and monitor activities in the participating countries (outreach, meetings, media);
  Oversight of OSNAP data management and sharing; interface with the International Project Oversight committee
- International Project Oversight committee:
  Expert scientists (6) (non OSNAP) – to review & provide guidance

OSNAP Program Communication

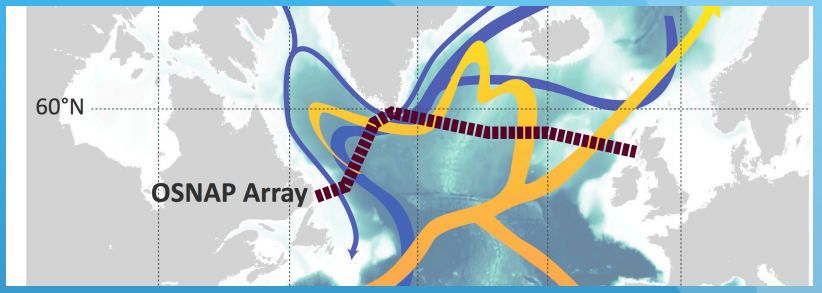
- Science:
  International science conferences & dedicated meetings (including joint meetings with RAPID, NACLIM, …)
  - E.g. coordination of ship time & resources through teleconferences & side events (e.g. Ocean Science Meeting Feb 2014)
- Steering committee:
  Teleconference every 3 month & “ad-hoc meetings” for urgent matters
- Oversight committee:
  In liaison with dedicated OSNAP meetings
- Other communication tools:
  - Twitter (@osnap_updates)
  - facebook page
  - Youtube channel
  - Blogs (e.g. reports from cruises, cool findings)

Communication: OSNAP & North Atlantic Virtual Institute (NAVIS)

- NAVIS is a hub for **the exchange of knowledge** of science teams across international boundaries, disciplines, methodologies
- Goal:
  - to foster interaction and collaboration amongst international scientific groups focusing on the North Atlantic (circulation, biogeochemistry)
- Portal for the dissemination of science to the broader community interested and potentially affected by the North Atlantic and its variability
- NAVIS is NSF funded (Science Across Virtual Institutes SAVI)
  - as such US students/postdocs are funded
  - "EU matching call" (North Atlantic observing) does not exits

OSNAP – part of the "Atlantic Ocean transport observing system"

- OSNAP:
  A transoceanic line in the subpolar North Atlantic that can capture the net transport of overflow & Labrador Sea waters



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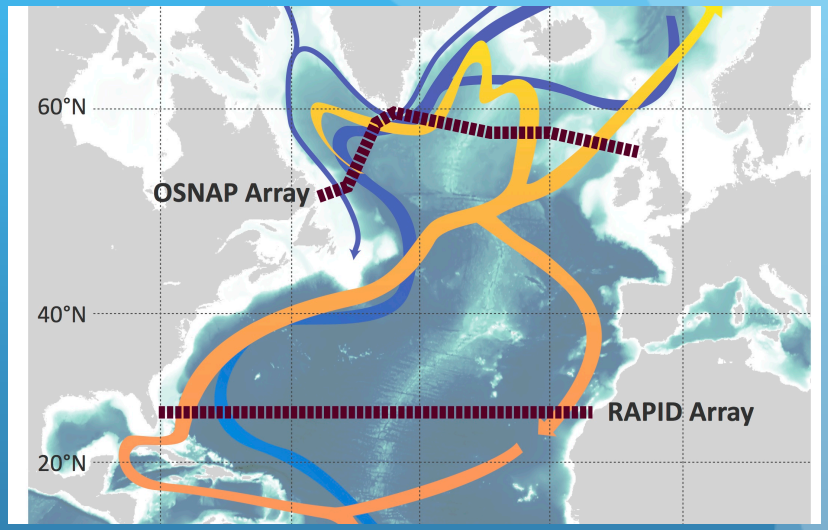

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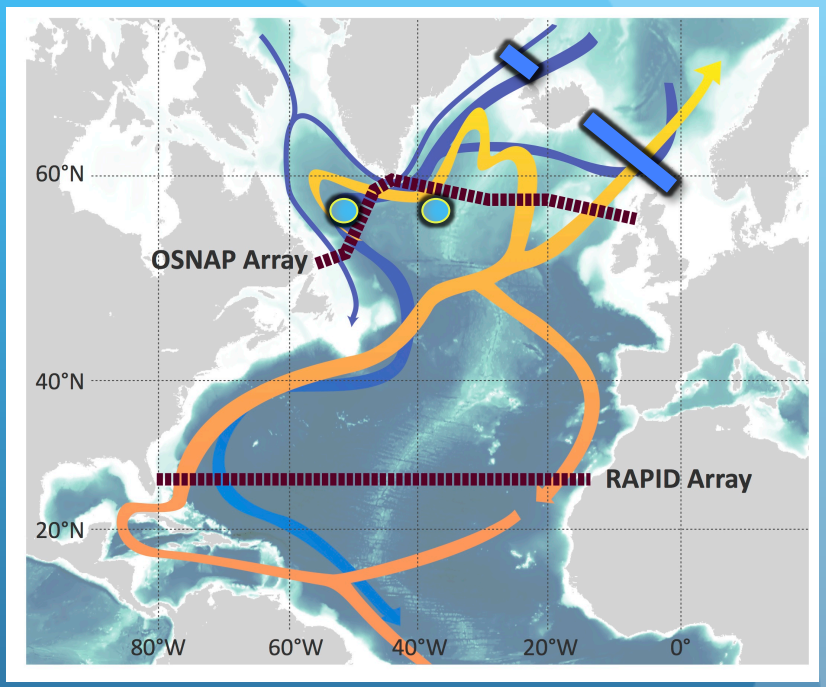

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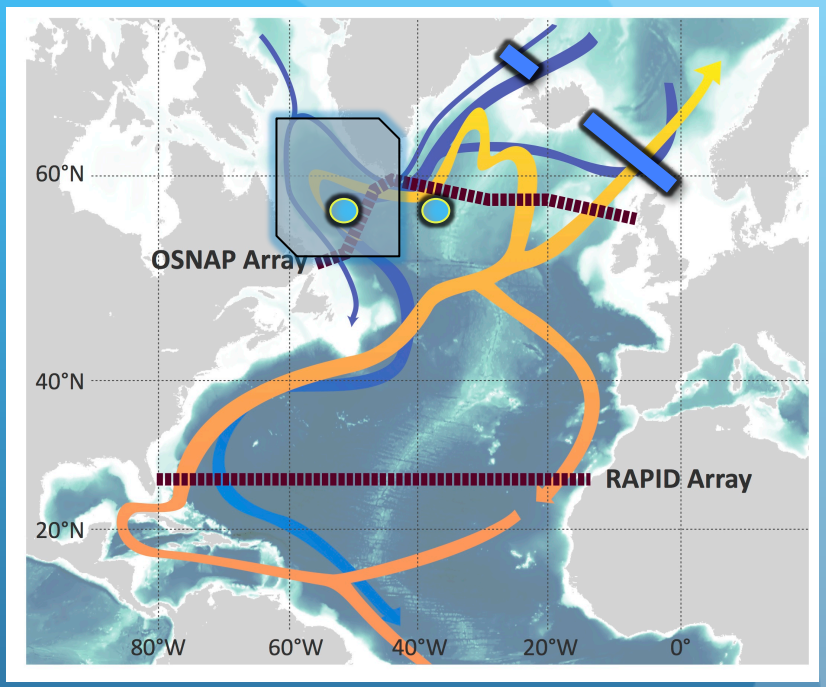

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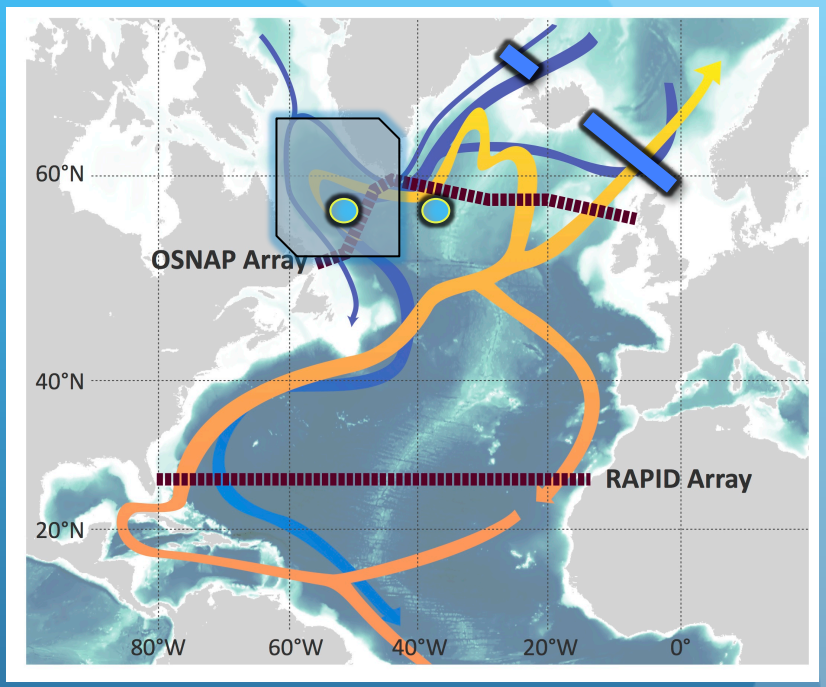

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  - South Atlantic: SAMOC

OSNAP Outlook

- While OSNAP is a project (4 years) – the “North Atlantic Ocean transport observing network” is an opportunistic network of arrays and shall have a future perspective
- Per-se OSNAP is not designed to be a sustainable effort – but it serves as a pilot array that may demonstrate the benefit of such a system within the context of Atlantic Ocean Observing
- In order to argue for sustained funding for components of the “North Atlantic Ocean transport observing network” an optimization (technology, minimize redundancy) along societal needs is required

Outlook:
AtlantOS (proposal H2020)

https://www.atlantos-h2020.eu;
email: atlantos@geomar.de

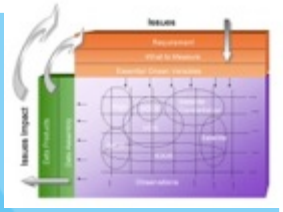
AtlantOS conduct research and innovation by exercising the Framework of Ocean Observing, which calls for a

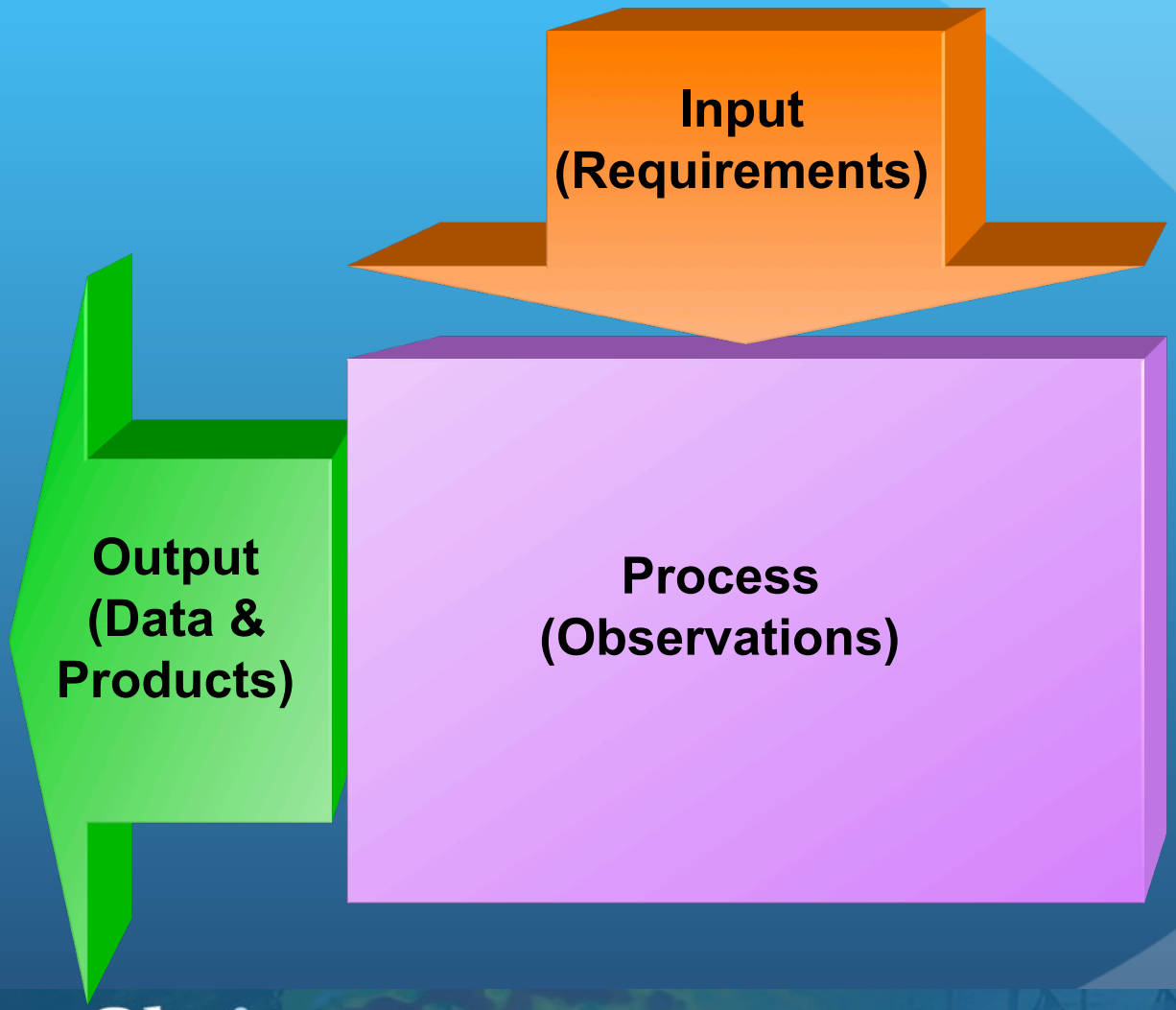
- more systematic
- more innovative
- more cost effective
- user driven

international integrated Atlantic Ocean Observing System building on existing elements of the Global Ocean Observing System

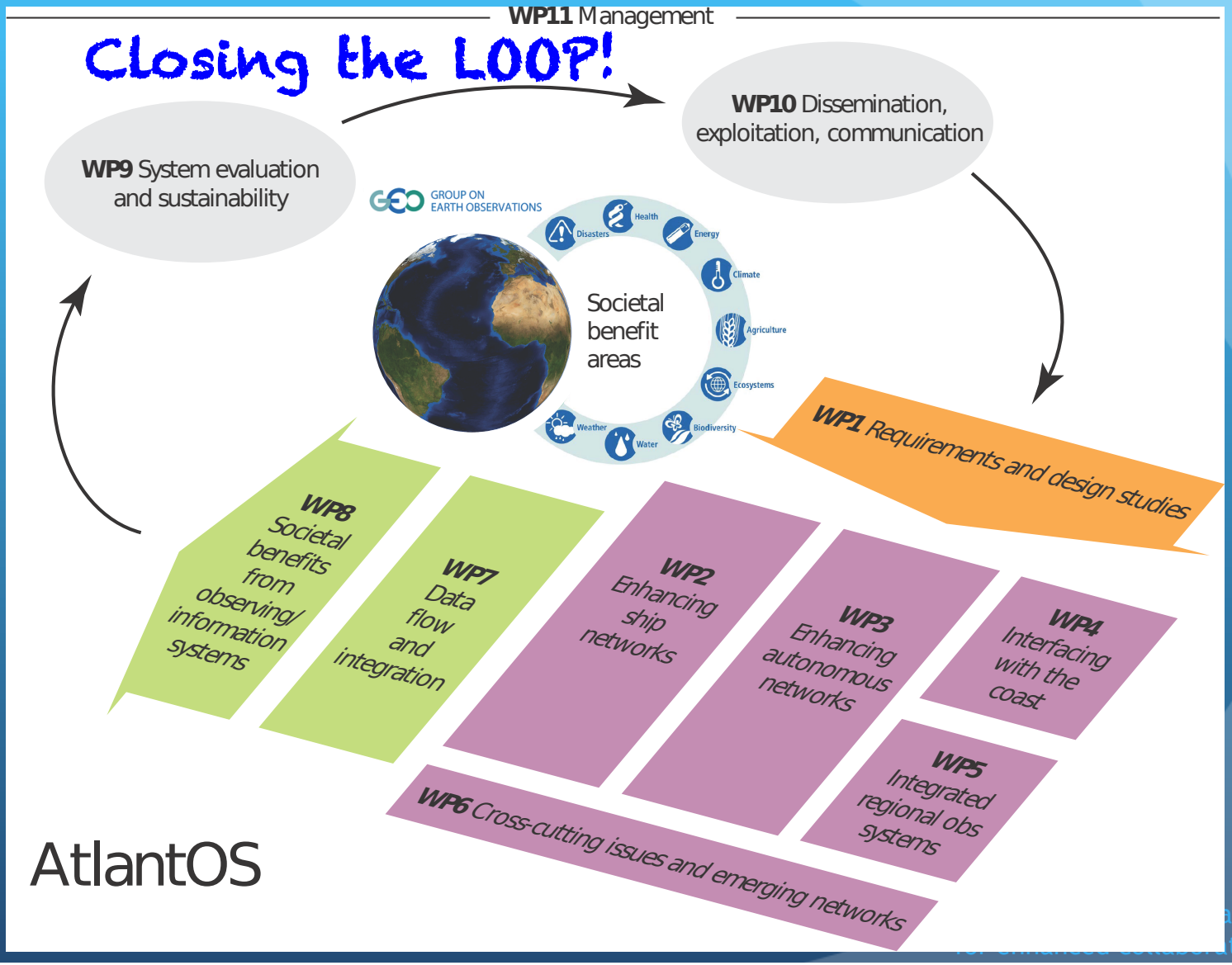
- Regional focus areas (WP5)
  (including Overturning & Climate, Fisheries, Productivity):
  - Subpolar North Atlantic (OSNAP & NACLIM + others region)
  - Subtropical South Atlantic (SAMOC + others region)

AtlantOS approach:
The Framework for Ocean Observing





AtlantOS Structure



Thank you!