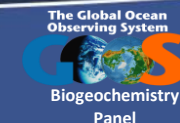# *A communication and coordination service for marine biogeochemistry*

Kim Currie (co-Chair, NIWA, New Zealand), **Véronique Garçon** (co-Chair, LEGOS, France)
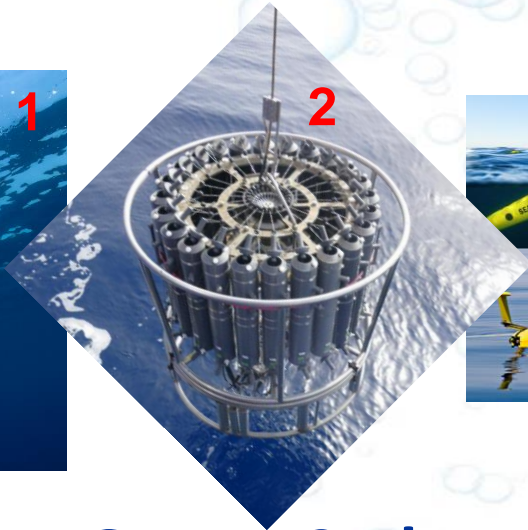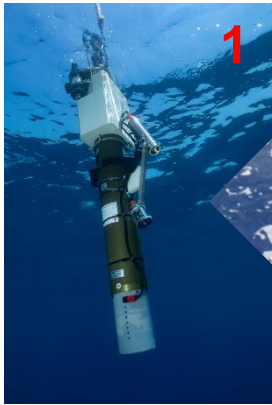
Maciej Telszewski (Director, IO PAN, Poland), **Artur Palacz** (Officer, IO PAN, Poland)

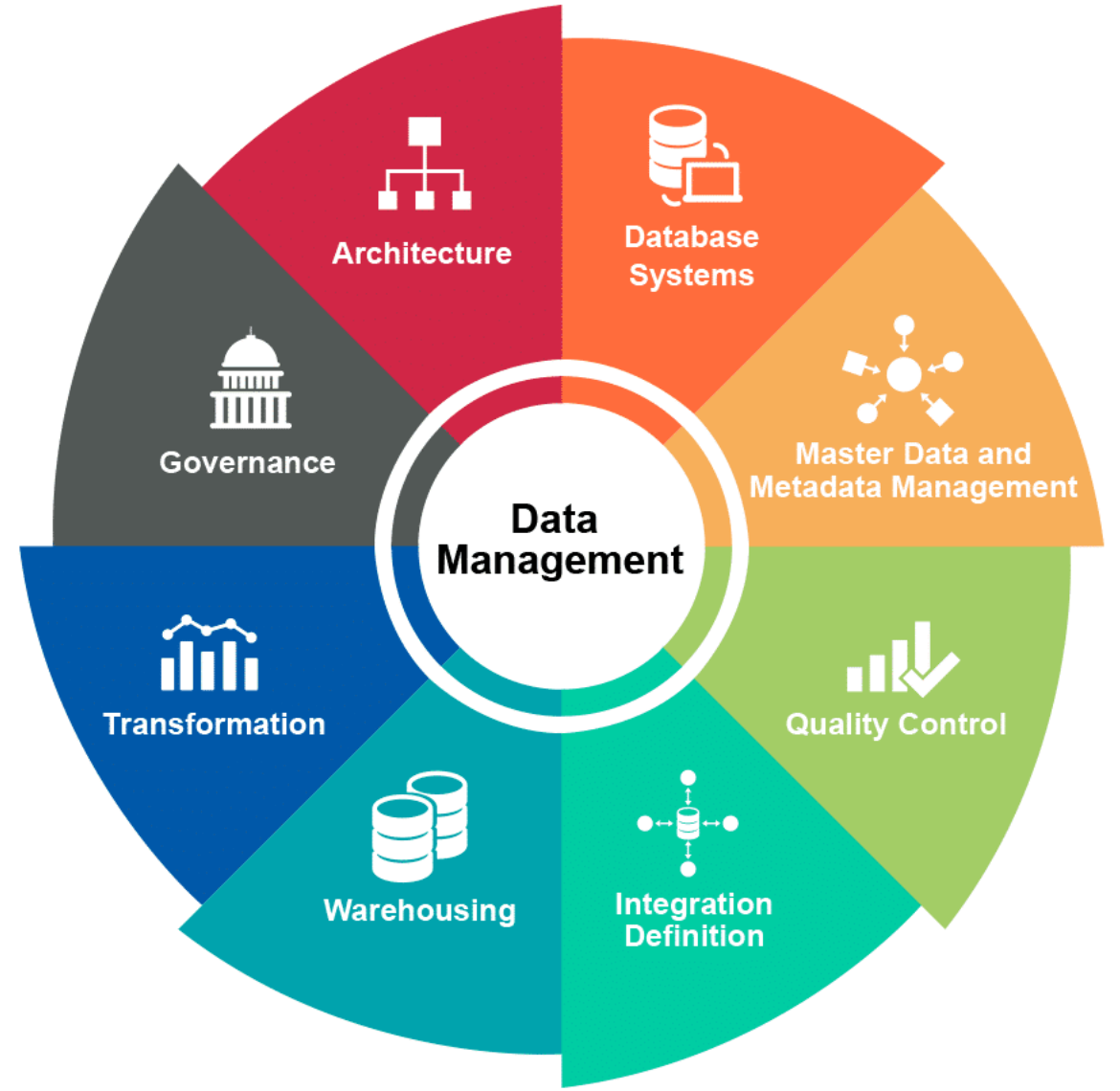# Interior Ocean Carbon Observations

Surface Ocean Carbon Observations

Data Management

Architecture

Database Systems

Master Data and Metadata Management

Quality Control

Integration Definition

Warehousing

Transformation

Governance
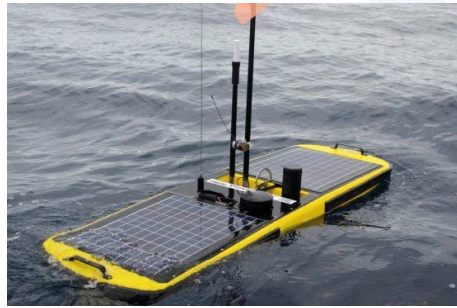
Operationalizing the value chain of Surface Ocean Carbon Observations

- Much of the network is supported by short term research funding rather than longer term operational funding (similar to Met obs.), which is rather counterproductive at the time of the climate emergency when we are asked to deliver ocean carbon uptake in near-real time for a wide variety of purposes.

- We are in the process of describing a fully operational Ocean Carbon Observing System Strategy capable of operationally delivering ocean carbon flux information.

- Current efforts are focused on:
  - Agreement on the objectives, goals and structure of the System and development of the Strategy elements (Nov 2021 – Nov 2022, mostly online)
  - Organizing a technical workshop focused on the technical, financial and organizational solutions for the Strategy allowing for sustainable ocean carbon flux monitoring required to deliver an annual traceable, robust estimate of ocean carbon uptake (Q4 2022)
  - Continue liaison with stakeholders: via COP (26, 27), UNFCCC SBSTA, UN Oceans Conference, GCOS, national and regional funding mechanisms

The Value Chain of Surface Ocean fCO_2 Measurements
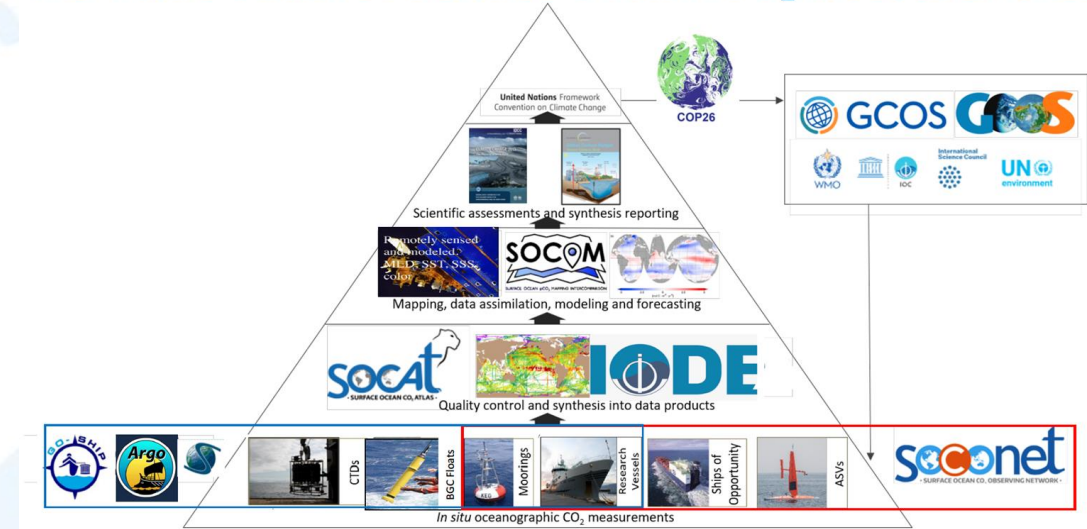
Carbon (and wider BGC) Data Management needs an overhaul
We need a GOOS-wide strategy on carbon and biogeochemistry data management (obs. networks, OCG, ODIS, IODE, WIGOS, WIS)

The infrastructure supporting the management of carbon and biogeochemistry data is **extremely vulnerable**:

- **Reliance on 1-2 key groups** to develop software and provide hardware infrastructure
- Data from various platforms have different, often non-crossing pathways
- Most of the infrastructure is **research-funded** or in best case, **short term funded**

Volunteer basis (!!!) for Quality Control (e.g. SOCAT)

Issue impacts SOCAT, GLODAP, GO2DAT, SDG 14.3, GOA-ON

Community asked to deliver information on an operational basis but not provided with dedicated resources for development, integration and delivery of products
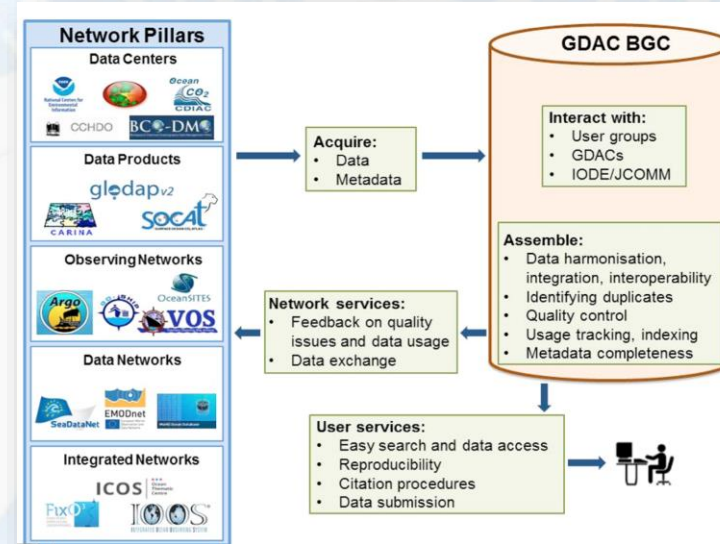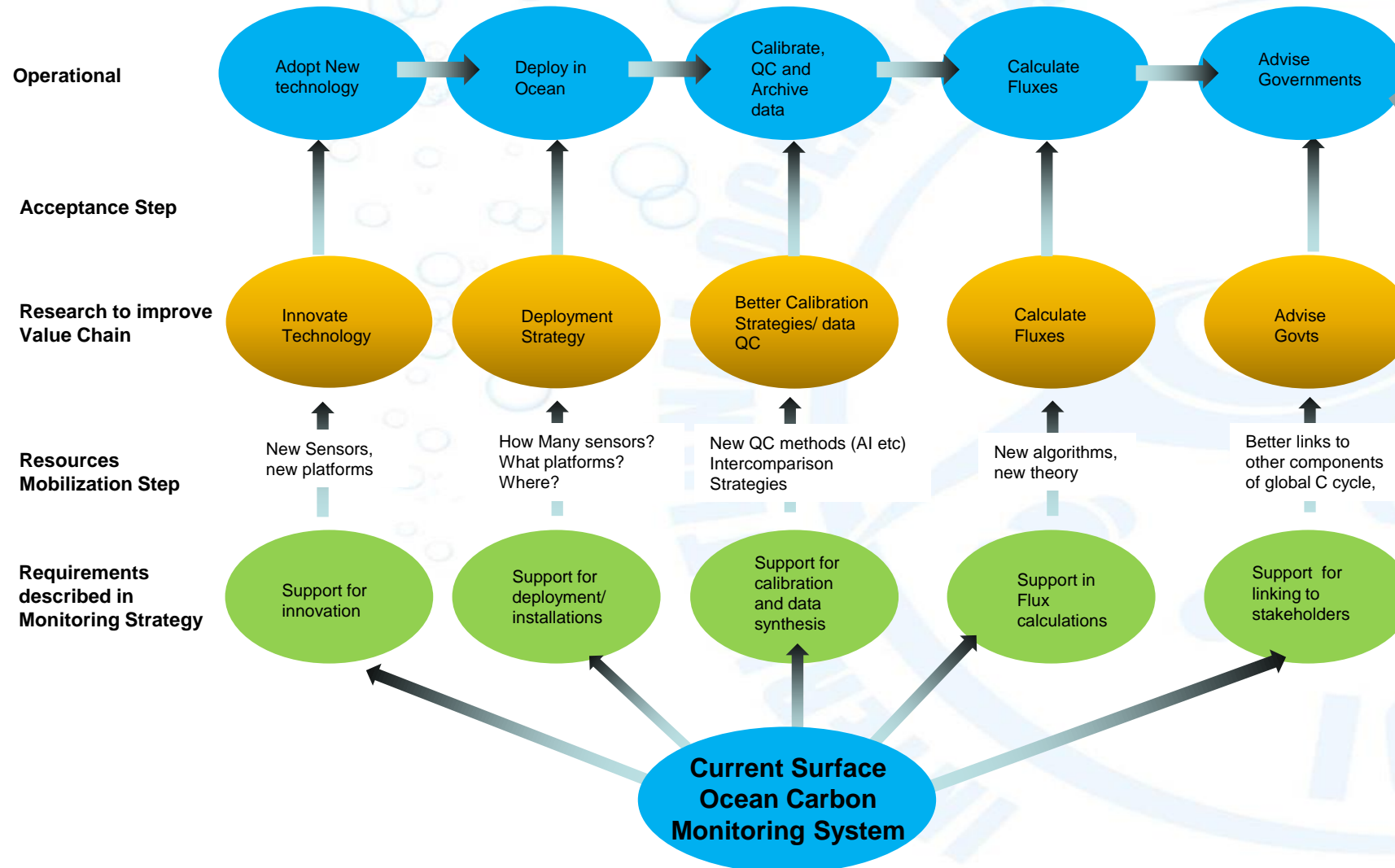

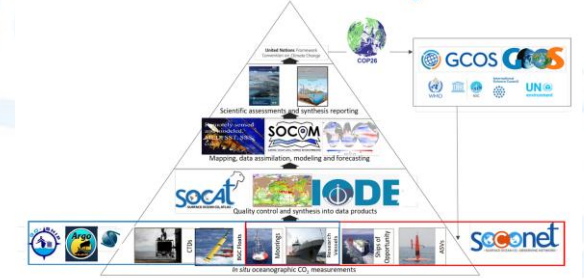We are currently working with several partners to:

- Move away from community-based volunteer QC efforts run purely on voluntary basis;
- Develop dedicated resources to produce data synthesis products (e.g. SOCAT, GLODAP, GO2DAT) in an automated, operational manner which would increase the TRL of the whole operation;
- Make sure that services and applications depending on data synth. products clearly acknowledge that dependence;
- Initiate national efforts to operationalize funding for global oceanographic data management across disciplines
- Implement recommendations of the IOCCP Position Paper: Global Data Assembly center for BGC -> easy access, fit for purpose (e.g. uncertainties) and user friendly...
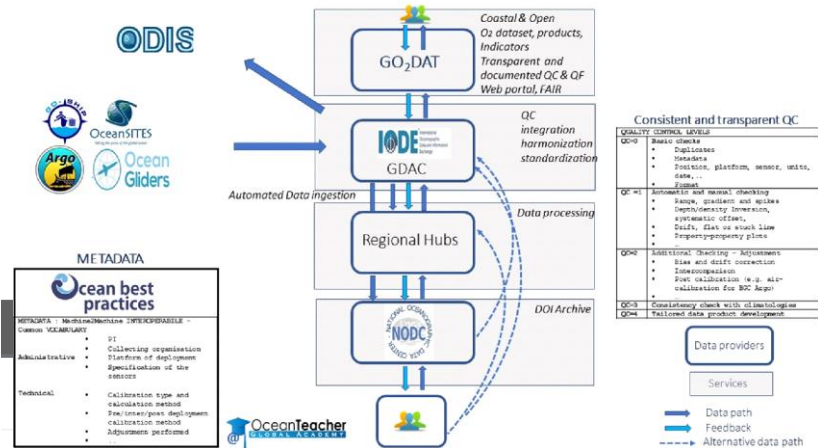
Operationalizing the value chain of Surface Ocean Carbon Observations

Oxygen Data Portal / Synthesis Product

Wildlife Energy Pollution

Ocean scientists call for global tracking of oxygen loss that causes dead zones

Scientists from six continents say a monitoring system could help protect coral reefs and fisheries around the world

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A fish kill on the Louisiana coast in 2010 believed to be due to the Gulf of Mexico oxygen-depleted dead zones. Photograph: Patrick Semansky/AP
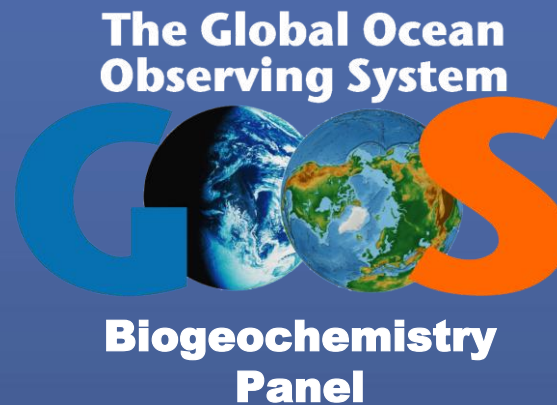
REVIEW article

A global ocean oxygen database and atlas for assessing and predicting deoxygenation and ocean health in the open and coastal ocean.

Provisionally accepted
The final, formatted version of the article will be published soon

🔔 Notify me

Marilaure Gregoire[1*], Veronique C. GARCON[2*], Hernan Garcia[3], Denise Breitburg[4], Kirsten Isensee[5], Andreas Oschlies[6], Maciej Telszewski[7], Alexander Barth[1], Henry C. Bittig[8], Jacob Carstensen[9], Thierry Carval[10], Fei Chai[11], Francisco Chavez[12], Daniel J. Conley[13*], Laurent Coppola[14], Sean Crowe[15], Kim Currie[16], Minhan Dai[17], Bruno Deflandre[18], Boris Dewitte[2], Robert Diaz[19], Emilio Garcia-Robledo[20], Denis Gilbert[21], Alessandra Giorgetti[22], Ronnie N. Glud[23], Dimitri GUTIERREZ[24], Shigeki Hosoda[25], Masao Ishii[26], Gil Jacinto[27], Chris Langdon[28], Siv K. Lauvset[29], Lisa A. Levin[30], Karin E. Limburg[31], Hela Mehrtens[6], Ivonne Montes[32], Syed Wajih A. Naqvi[33], Aurélien PAULMIER[2], Benjamin G. Pfeil[34], Grant C. Pitcher[35], Sylvie Pouliquen[10], Nancy N. Rabalais[36], Christophe RABOUILLE[37], Virginie Racapé[10], Michael Roman[38], Kenneth A. Rose[38], Daniel L. Rudnick[30], Jodie Rummer[39], Catherine M. Schmechtig[14], Sunke Schmidtko[6], Brad Seibel[40], Caroline Slomp[41], Rashid Sumaila[42], Toste Tanhua[6], Virginie Thierry[43], Hiroshi Uchida[25], Rik Wanninkhof[44] and Moriaki Yasuhara[45]

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

GOOD Global Ocean Oxygen Decade

A communication and coordination service for marine biogeochemistry

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Thank You!