

DATA FLOW AND INFORMATION PRODUCTS

1. CURRENT DATA AVAILABILITY AND ACCESS
2. MARIE DREVILLON
3. YOU - DISCUSSION

NEVILLE SMITH

Contributions from: Sylvie Pouliquen, Kevin O'Brien, Cyndie Chandler, Emma Heslop, Mathieu Belbeoch (JCOMMOPS), Atlantos WP7, this workshop, ...

Introduction

TERMS OF REFERENCE

6. Evaluate requirements for delivery of data, and derived products and information

8. ... delivery of information/services of societal importance and relevance.

Background:

- Primer for discussion; eclectic, not comprehensive; not expert
- Starting from assumption that the current systems do not constitute a major risk to TAOS and its stakeholders

Outcome?

- Advise whether a dedicated effort is needed as part of this Review, or simply identify any issues and bring them to the attention of others.

Background

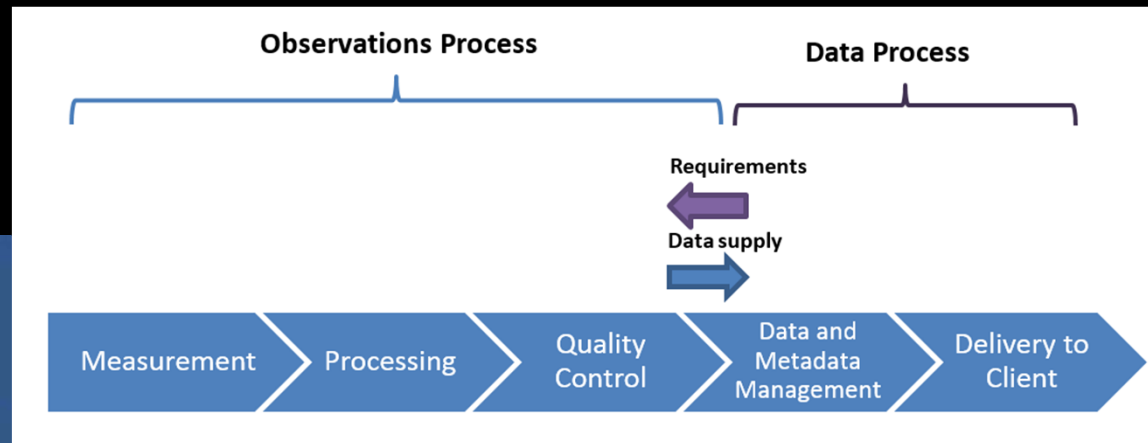
- Data systems have matured
- TAO/TRITON-PIRATA pioneering role in open data exchange, real-time provision of subsurface data, and innovation in the assembly and serving of data and gridded data sets.
- Argo similarly has introduced a major change in the way we routinely manage observations, particularly around QC: now defining the leading edge.
 - C.F Steve Jayne “battle with DM/QC”
- Access to satellite data also mature
- Marie will discuss products

Improved R/T (Jim C TPOS)

- Tropical mooring profiles are received in fragments over GTS
 - difficult to QC profile fragments within a QC data cut; profile shape test not possible
- Tropical mooring profiles received within 24 hour period are pooled
 - averaged within profile levels to form complete profile for assimilation
 - incomplete/gappy profiles often rejected by profile selection criteria
 - gap between vertical levels too large; gap between vertical temperatures too large; top level profile too deep
- **Need for Improved Real-Time Communication of TAO/TRITON Data? Solved by T-Flex?**

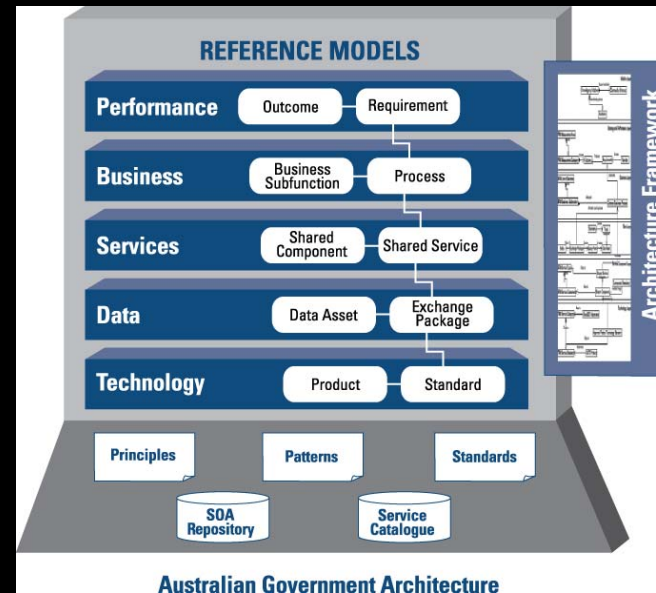
The GOOS Framework

- The review will be guided by the framework for ocean observing ...
 - Where is data management in the FOO process?
 - Essential data management elements
- Separation of concerns
 - Clarity in terms of implementation
 - encourages an integrated approach to information systems: JCOMM OCG active in this space



Greater attention to the architecture of process

- Guides and promotes effective implementation
- (GOOS) enterprise architecture approach would allow better articulation of the dependencies and risks

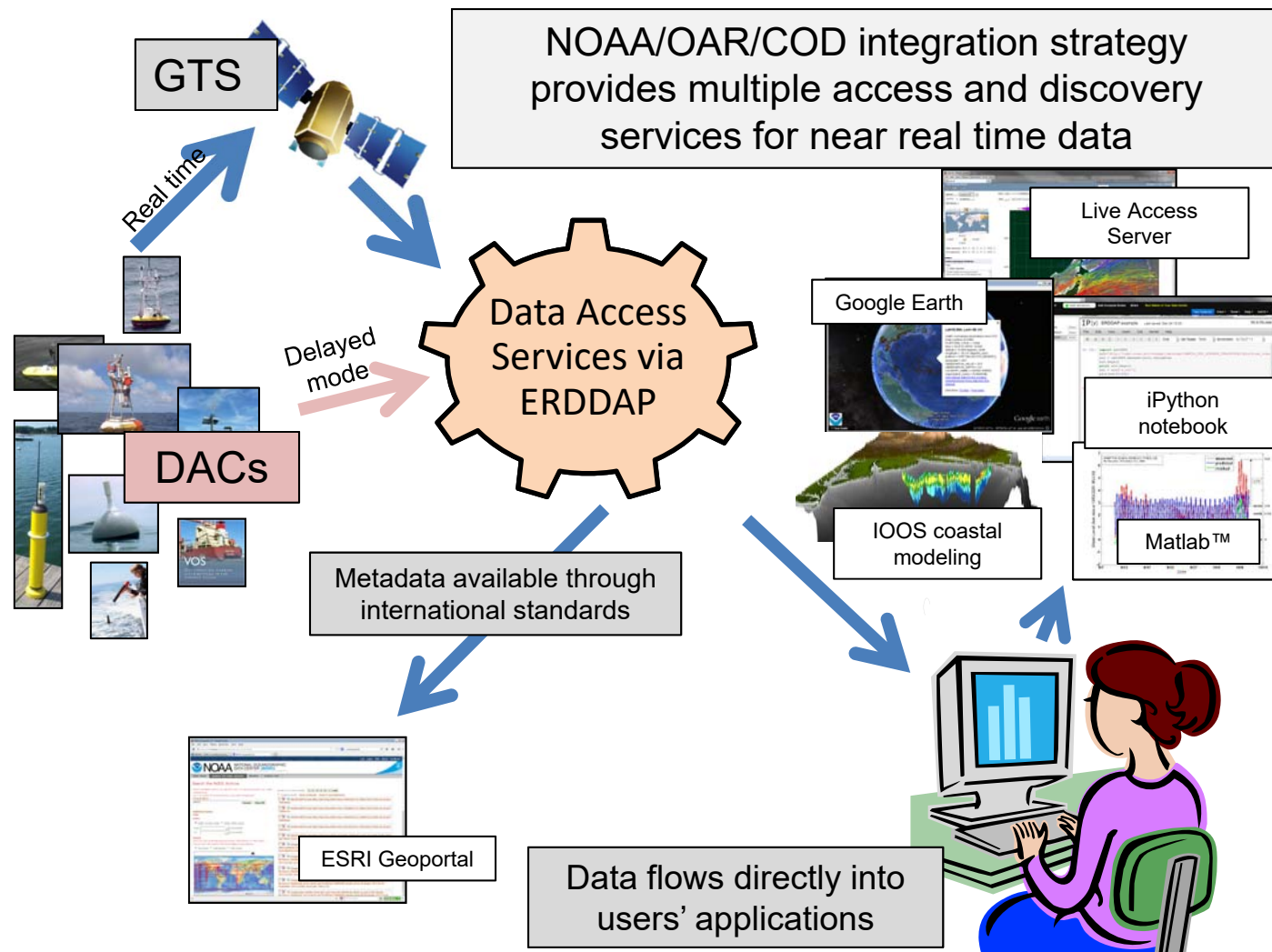


Observing system information systems and services

- Renewed drive toward integration and a culture of information systems and **services**
 - serving both the players internal to TAOS but also external users (e.g., Jörn's presentation)
 - Seeking greater integration across the observing system as a whole
 - IT solutions every time new technology is introduced – can this be reduced/avoided?

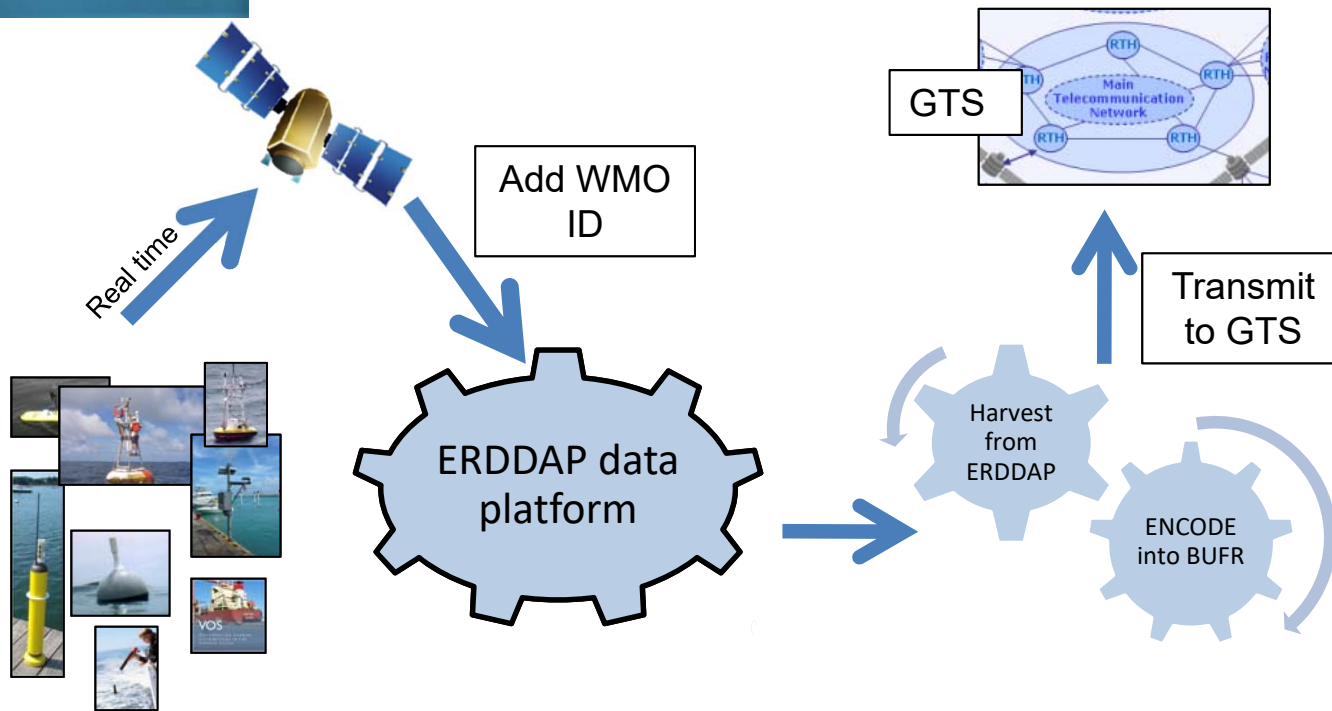
Example 1: NOAA ERDDAP, OpenGTS

- Courtesy of Kevin O'Brien (PMEL)





JCOMM Open Access GTS Pilot Project Sending data to the GTS



Example 2: Atlantos WP7

- Courtesy of Sylvie Pouliquen

AtlantOS WP7 “Data flow and data integration”

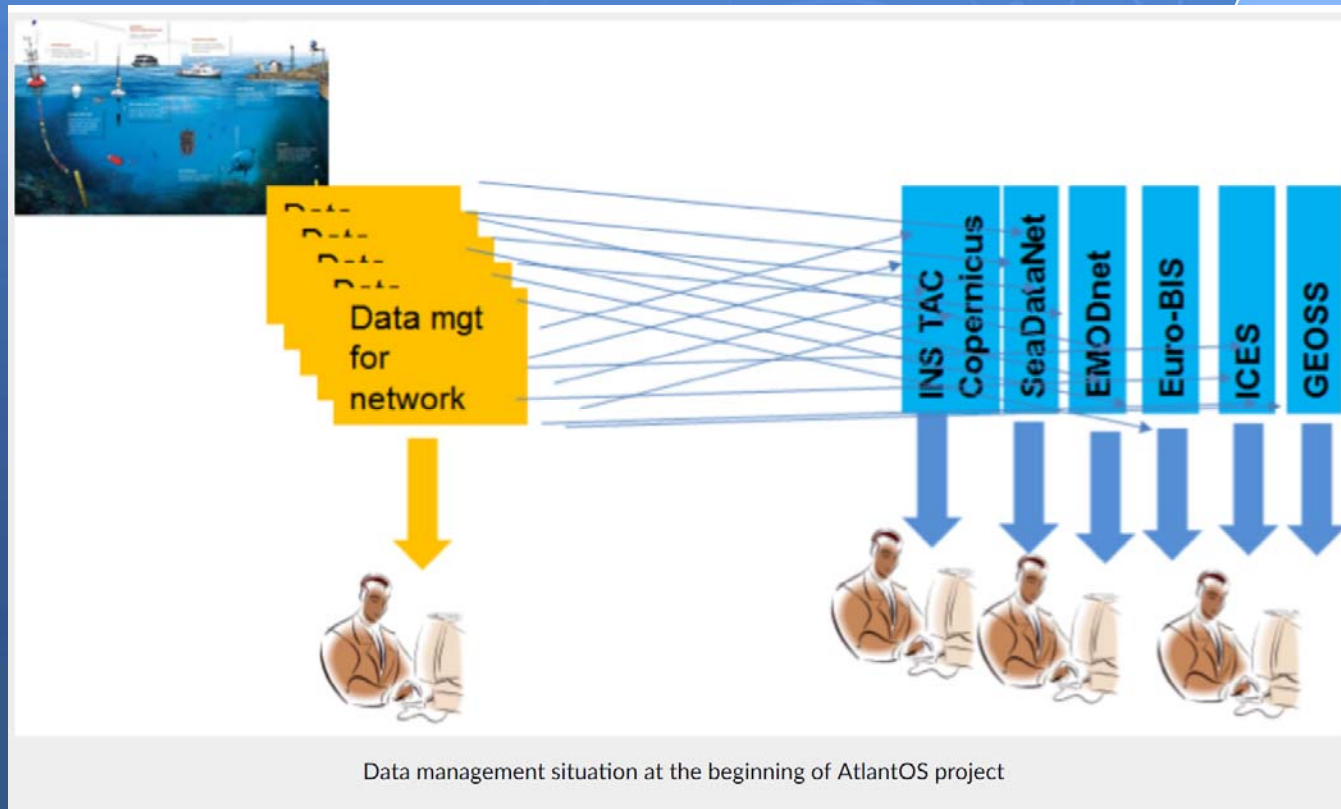
- working with data networks and data integrators in Europe to improve harmonization of Atlantic Ocean data
- Improved interoperability: The FAIR principles ... the ability of a system or a product to work with other systems or products without special effort on the part of the user.

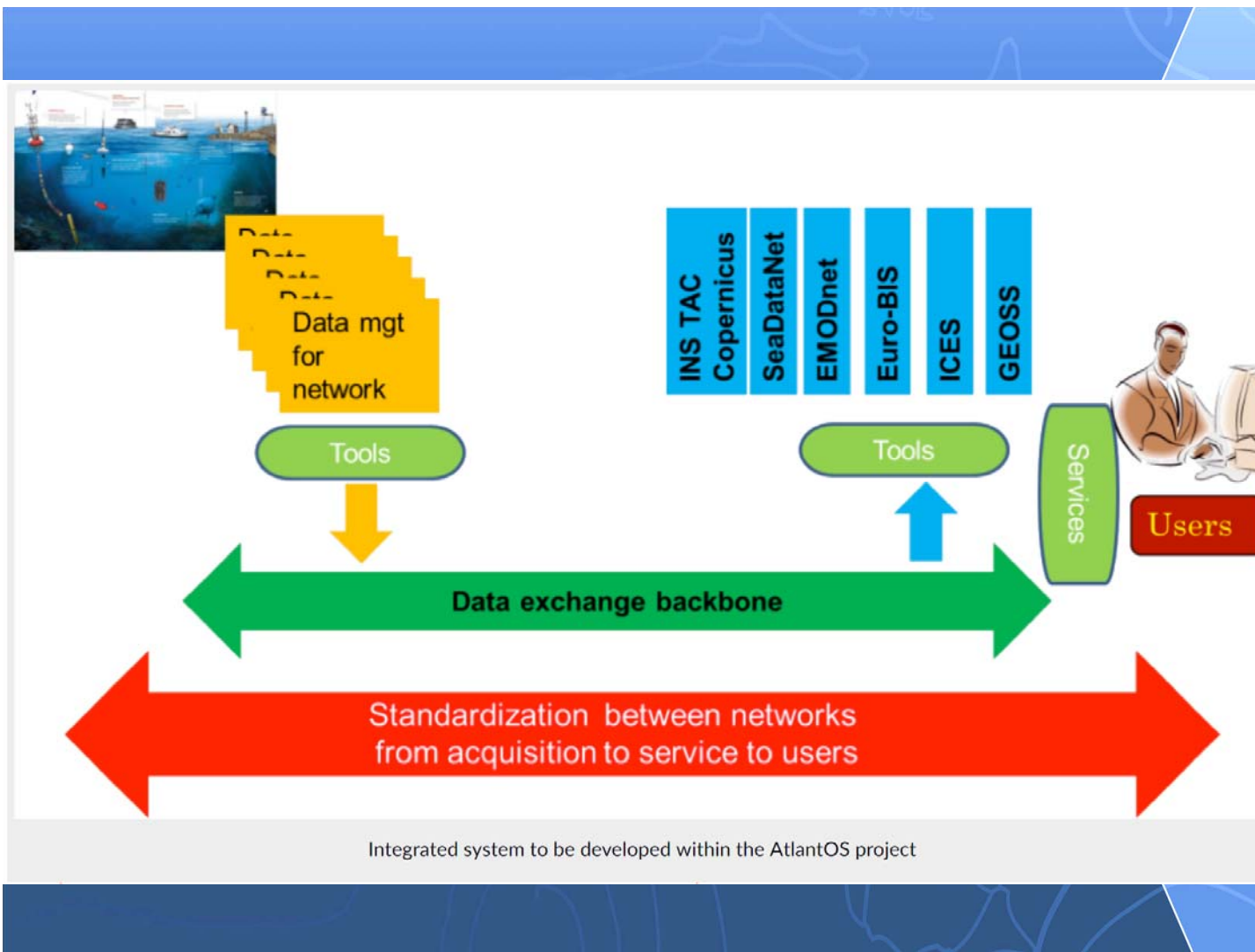
Agreement and implementation of key-metadata standards

- use of identifiers for platforms and institutions
- common vocabularies
- quality control standards for data shared in near real time

Towards an integrated EU data system

V. Harscoat /Ifremer, S. Pouliquen /Ifremer, AtlantOSWP7 partners





Community best practice

(Courtesy Emma Heslop, Cyndy Chandler)



Evolving and Sustaining Ocean Best Practices Workshop

Intergovernmental Oceanographic Commission
Paris, France, 15-17 Nov 2017

Ocean BP Definition

A community best practice is a methodology that has repeatedly produced superior results relative to other methodologies with the same objective.

To be fully elevated to a best practice, a promising method will have been adopted and employed by multiple organizations.

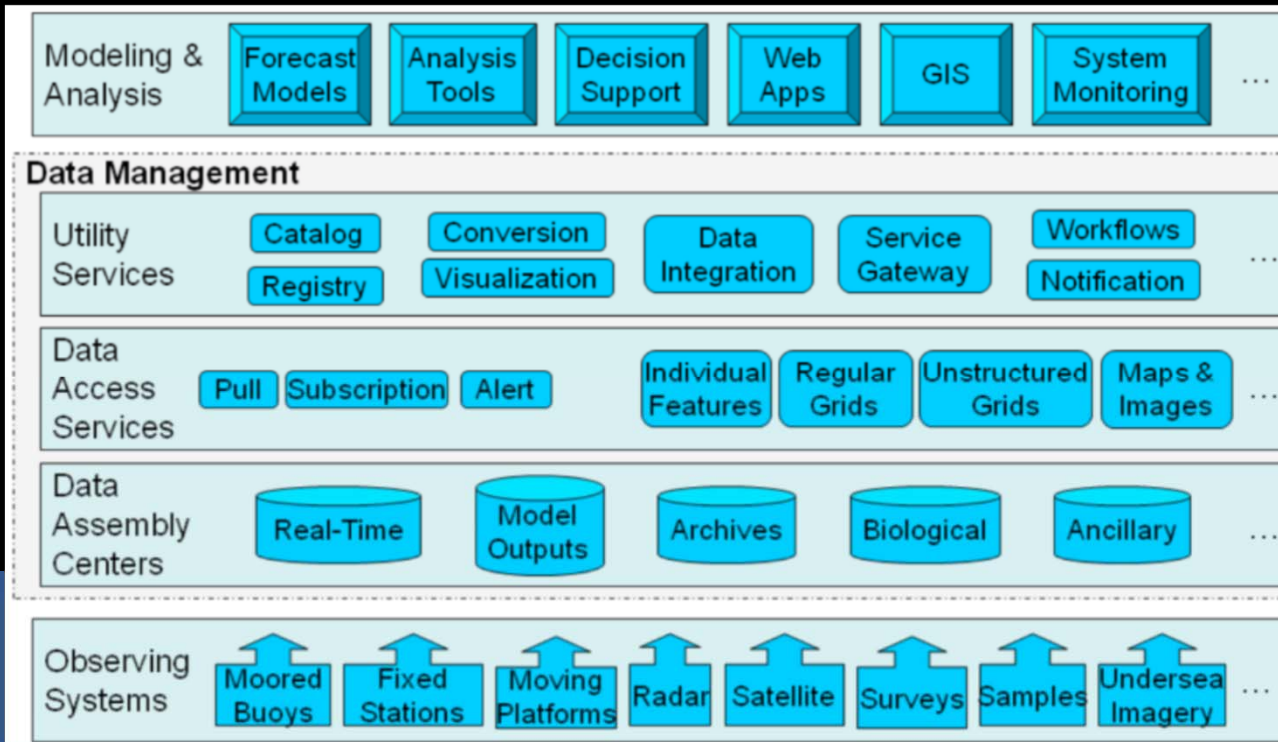


An Ocean Best Practice System

Centered on 4 key components:

1. UNESCO/IOC IODE best practice repository providing a sustained, open access, and internationally recognized repository
2. New peer-reviewed BP journal Topic in Frontiers in Marine Science
Advanced indexing which will be integrated into a system that provides ...
3. increased discoverability and access to BP documents through simple interfaces, metrics and advanced ocean knowledge based semantic indexing and search.
4. The community of ocean best practice developers and users, key components of which are OCG Networks, GRAs, and GOOS panels
 - a) being a source for community peer reviewed data management and QC related best practice,
 - b) supporting harmonisation of measurements leading to greater interoperability of downstream data,
 - c) with critical mass, providing an ability to scan across best practices by say variable, platform and (if relevant) region to indicate gaps and potential collaborations that could form to develop needed ocean best practices.

Bringing data together – acting as one



Multiple purposes

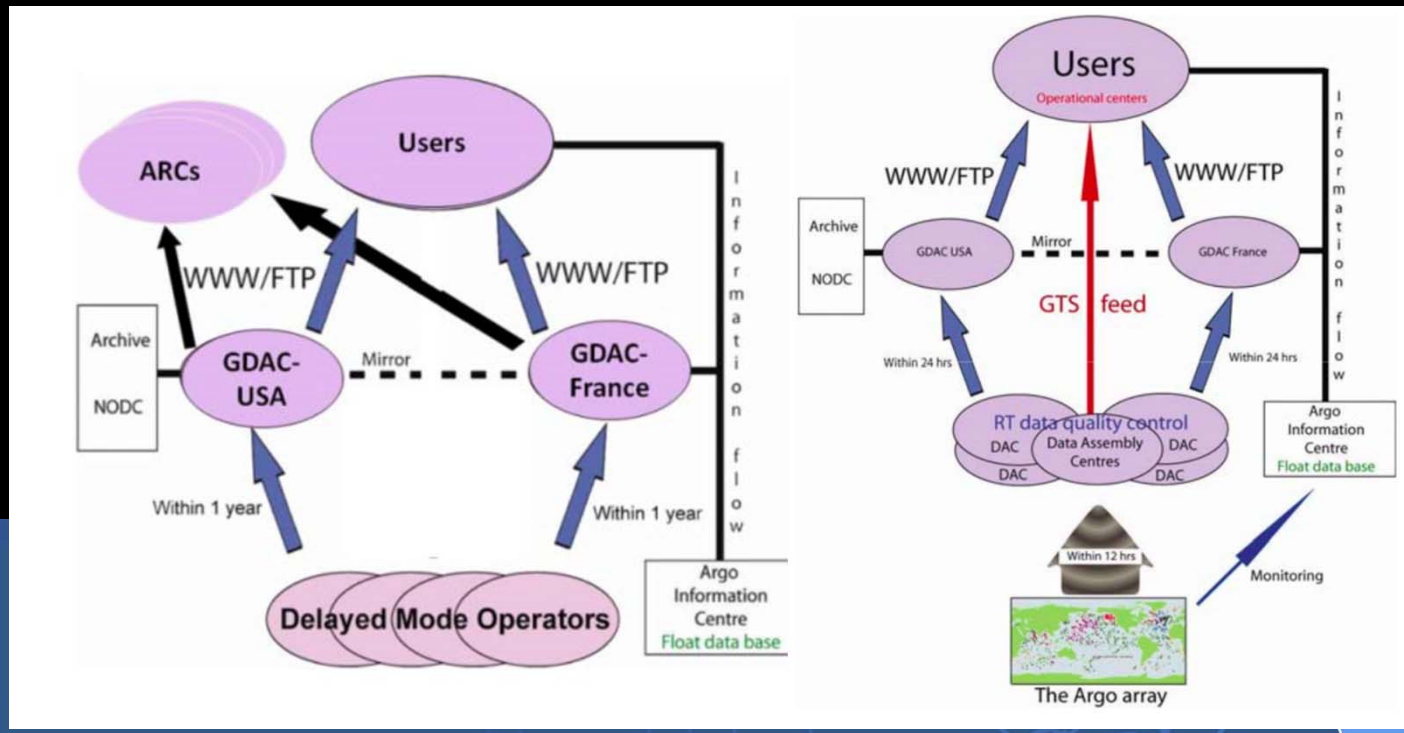
- The many lives of ocean data – Magdalena TPOS!



- Operational requirements are now better known and better characterised.
- Ease of access and use remains a key characteristic
 - Important to have feedback
 - Important to understand different types of use
- High quality for climate change monitoring and detection: climate records

The importance of quality

- Quality assurance and control happens within the observations process (at the point of measurement, in processing and in producing level 2 datasets; see Figure Pouliquen et al 2010) but also within the data process as different data streams are brought to bear.



TPOS?

- Discussed at La Jolla workshop (briefly) but no direct follow-up
- Re-emerged when developing outline of 2nd Report Chapter 7 DM:

- Accessibility
- Usability
- JS: 'better use of existing data'

7.1. Background

- Why is this chapter needed?
 - Improving accessibility
 - Improving consistency
 - ...

7.2. Essential elements and requirements

- Essential ocean data management elements
- The many lives of TPOS data (Balmaseda et al, La Jolla)
- Build on but do not repeat background in La Jolla whitepaper #13
- JCOMM and WIS DM elements

7.3. Quick turn-around data requirements

- Improvements needed in the fast delivery mode
- Data policies – addressing barriers (e.g. EP)
- [OpenGTS/ERDDAP Pilot](#)

7.4. Delayed and re-processed data streams

- Improving accessibility, usability
 - Use WP inventories as example
 - Lowering barrier for modelling, assimilation
- Potential for consolidation, standardisation
- Integrate data from the various platform (ERDDAP)

7.5. Recommendations, actions

7.6. Summary

Issues?

FROM MY INFORMANTS

- TAOS specific? No significant issues
- Good progress on integration
- Data centres, exchange?
 - Mixed DC capabilities in tropical Atlantic
 - Movement towards open data sharing uneven
 - Some cultural issues around access but some progress, e.g. Senegal
- Capacity issues
 - Mixed – need greater involvement from developing currents

THIS WORKSHOP

- Telecommunication/bandwidth fr PIRATA (solved with T-Flex)
- Uncertainty around end-to-end delivery (gaps in figures)
- Clunky data protocols (e.g. Jörn's talk yesterday)
- Survey protocols (also Jörn, but less of a DM issue?)
- ... tbc

Conclusions

- Have identified no major risks for TAOS from the approach to information systems
 - There are areas that need improvement
 - Integrated systems and services - move away from platform specific approaches?
- Multiple channels, different offerings, acquire once and serve in multiple ways.
 - The architecture is probably opaque to most
 - Enabling improvements in quality, most of which are only possible with off-line scientific interventions.
 - Making progress with data exchange
 - Broadening the base of DM support
- Discussion?
 - Weaknesses and gaps?
 - Making better use of the data we have
 - Seamless access and interoperability, for research and routine use

Thank you...

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