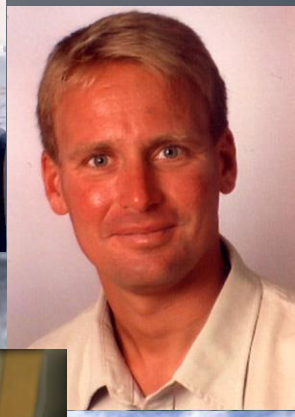
Connecting the World with Ocean Observations: Interoperability and Governance

- **Chair:**
  - **Katy Hill,** Ocean Observations (GCOS/GOOS) at WMO
- **Panelists**
  - **Toste Tanhua**: Co-Chair of the GOOS SC; GEOMAR, Germany.
  - **Patricia Miloslavich**: Project Officer, GOOS Biology and Ecosystems Panel, University of Tasmania senior professor, Simon Bolivar University in Venezuela.
  - **Dick Schaap,** Managing Director, MARIS company, the Netherlands, and Technical Coordinator SeaDataNet.
  - **Caine Taiapa**, General Manager at Manaaki Te Awanui Charitable Trust in New Zealand.

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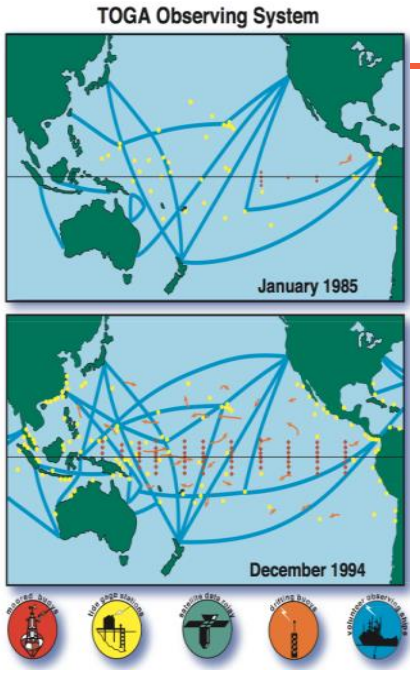
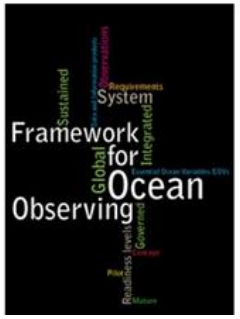
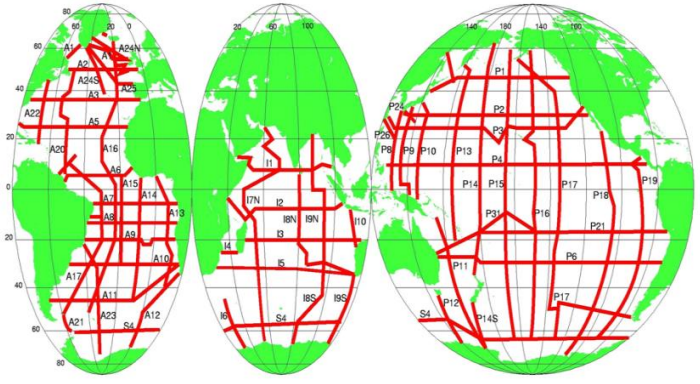
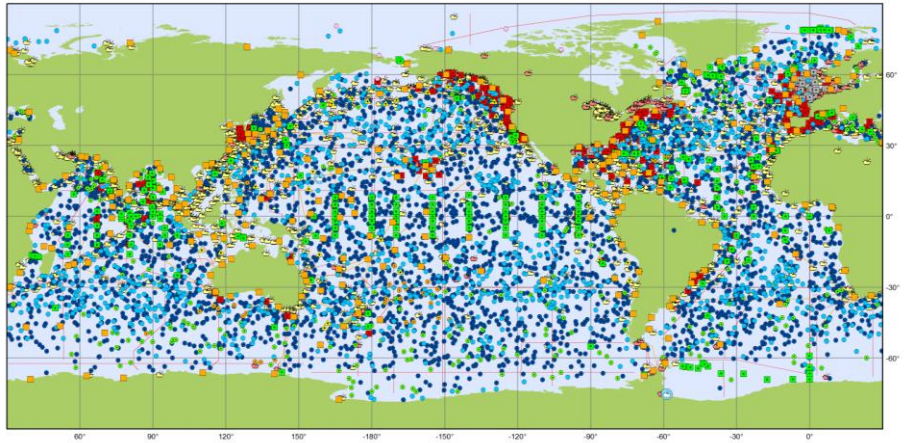
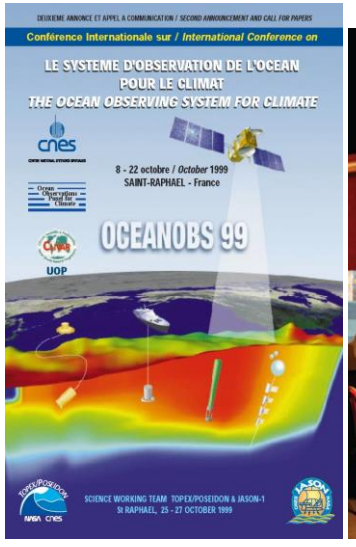
- How we got here.
  - –WOCE, TOGA, JGOFs, set foundations, community collaboration
  - – OceanObs'99, Sustained Observing System for Climate.
  - –OceanObs09: opened doors to broader uses. FOO.
- OceanObs19?
- Goal: An integrated multiplatform, multidisciplinary, multi-scale, multi use (and user driven), observing system (interoperable!).
  - –Governance to enable the funding, development, implementation, use and evaluation.











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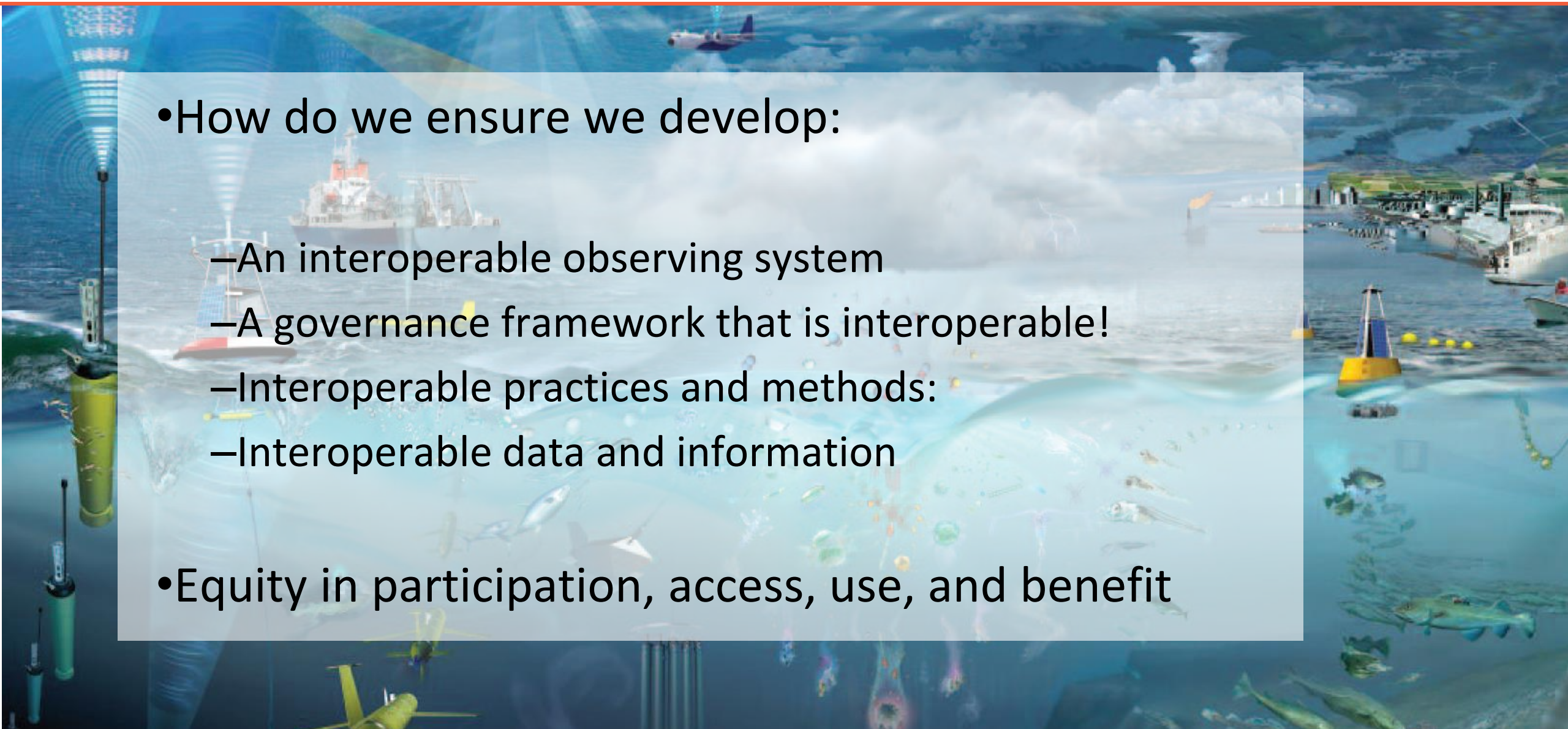

- How do we ensure we develop:
  - An interoperable observing system
  - A governance framework that is interoperable!
  - Interoperable practices and methods:
  - Interoperable data and information
- Equity in participation, access, use, and benefit

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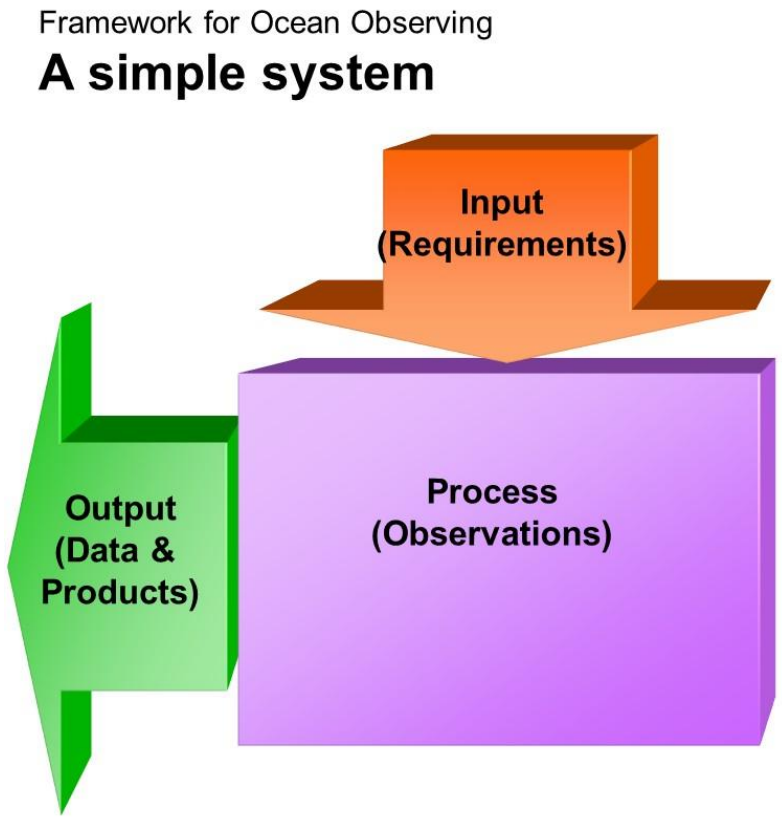
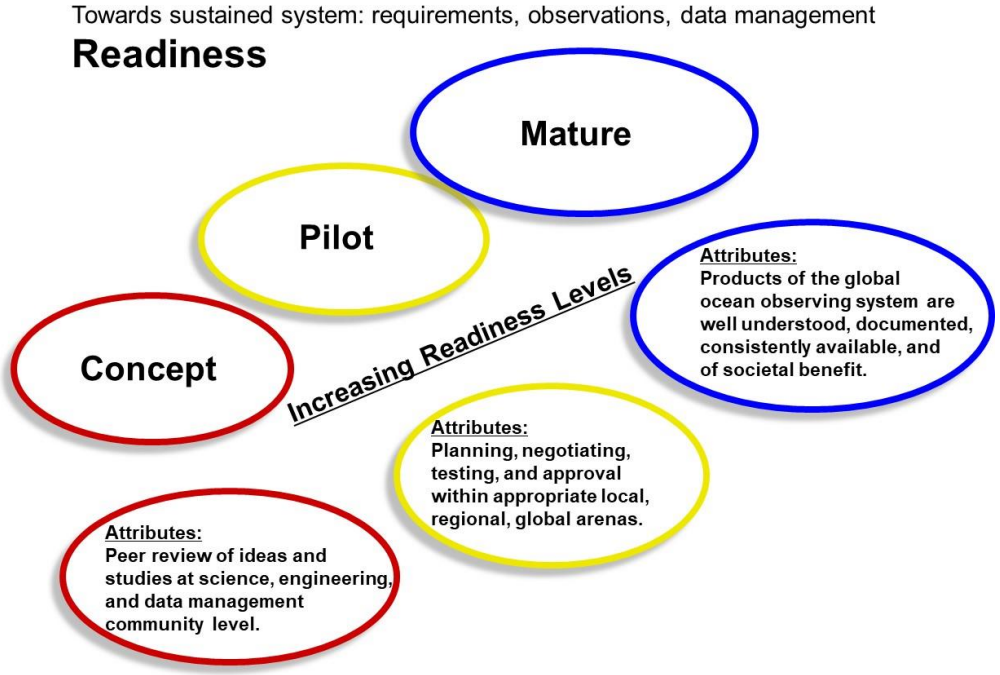
Connecting the World with Ocean Observations:
Interoperability and Governance

TOSTE TANHUA – GOOS Co-Chair and GEOMAR.

Connecting the World with Ocean Observations: Interoperability and Governance

The Framework for Ocean Observing has transformed ocean observing the last decade





Connecting the World with Ocean Observations: Interoperability and Governance

Vision
A truly global ocean observing system that delivers
the essential information needed for our sustainable development, safety, wellbeing and prosperity

Mission
To lead the ocean observing community and create the partnerships to grow an integrated, responsive and sustained observing system

Connecting the World with Ocean Observations: Interoperability and Governance

A fully-integrated ocean observing system will deliver ocean information across three key application areas:

- **Operational Services**
- **Climate**
- **Ocean health.**

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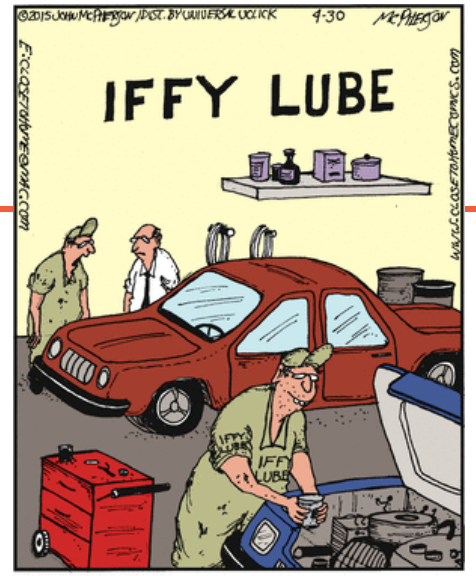


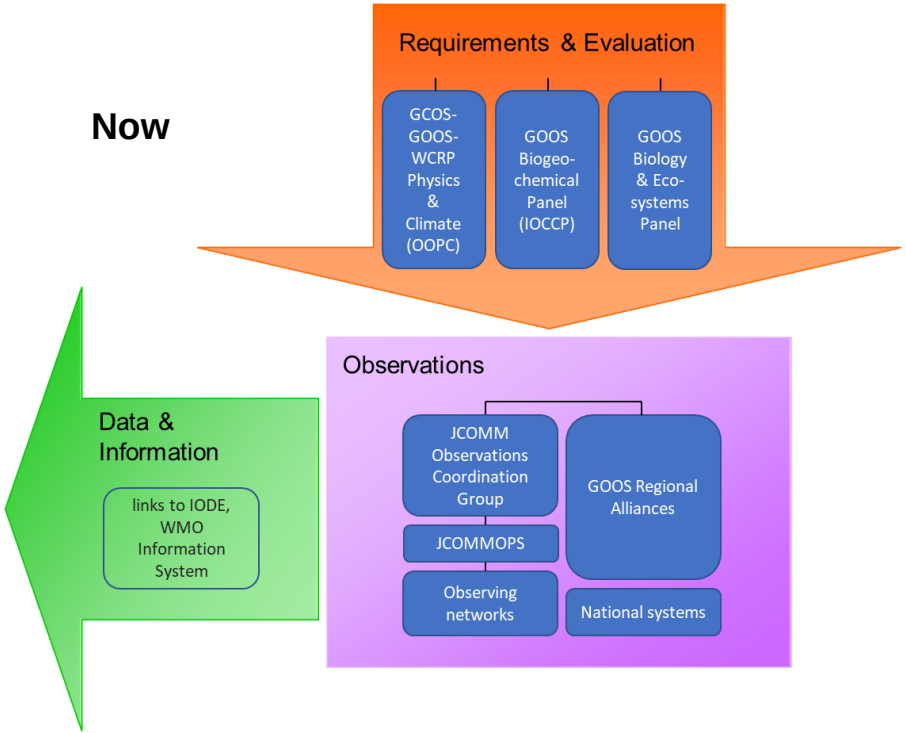
"We sort of think we changed your oil, but we're not sure."

What is the governance structure needed to ensure interoperability of the observing system?
How to:

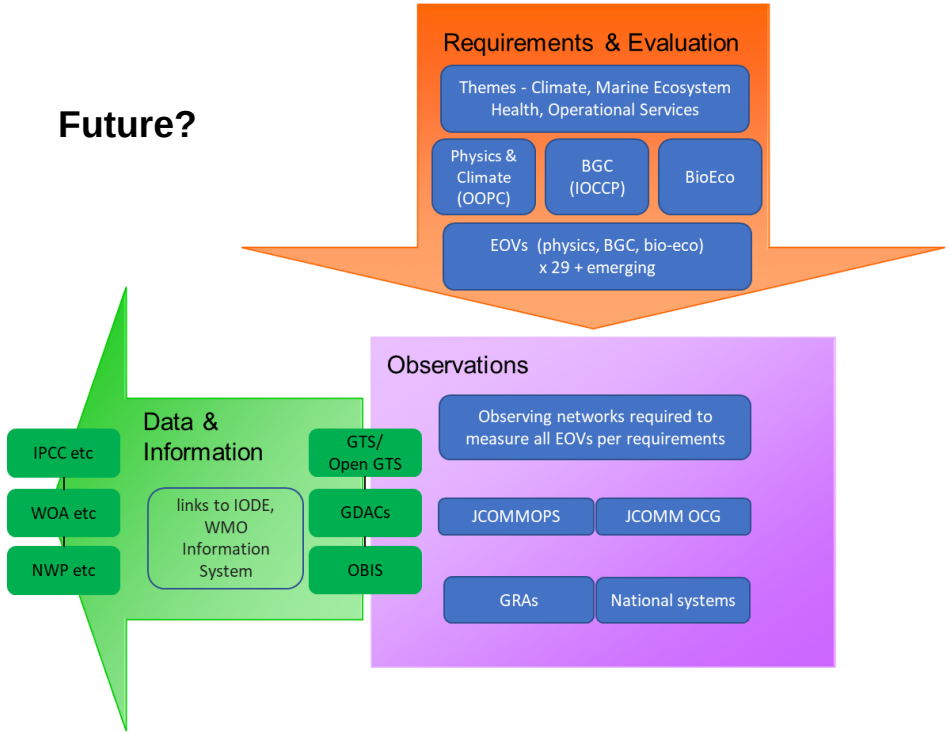
- Ensure that the observing networks are interoperable?
- Ensure that the data delivery system are interoperable?
- Better deliver on GOOS themes / service areas?

There is a need for an overall coordination and steering body to make sure the parts of the mashinery works.
Some parts of the GOOS mashinery need **refurbishing** and some more „**grease and tuning**" is needed
►► Time for **service and update** of GOOS!

Now



Future?



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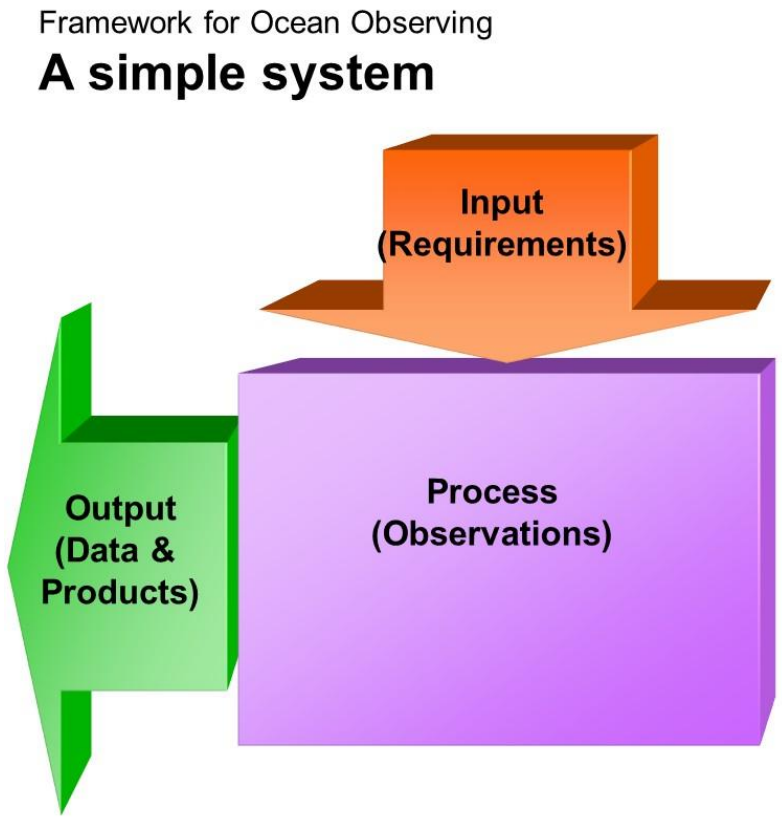
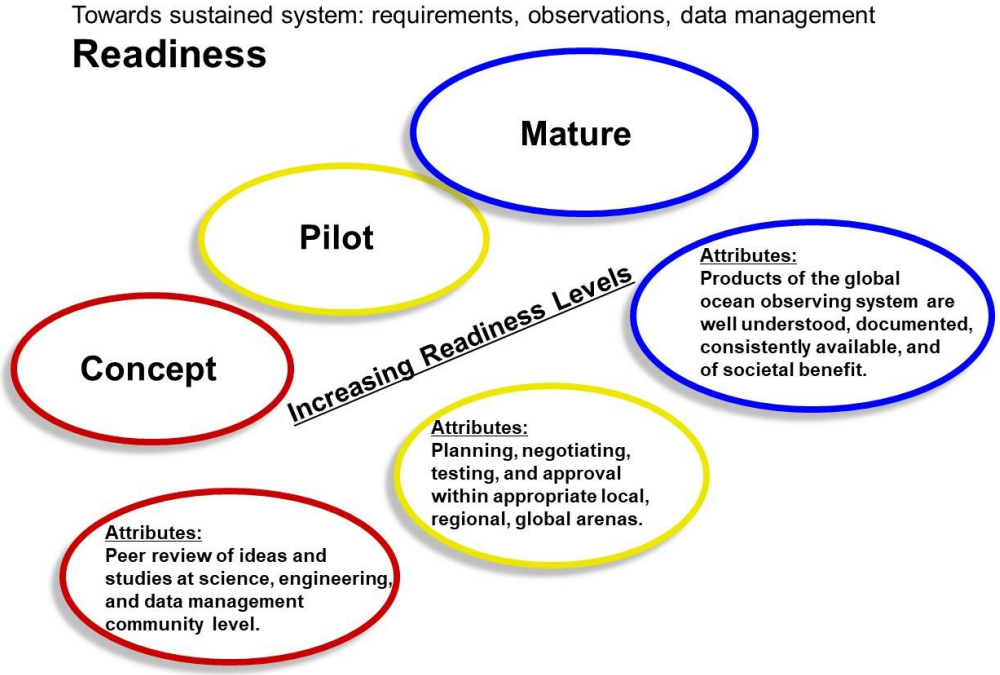
The Framework for Ocean Observing has transformed ocean observing the last decade





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Connecting the World with Ocean Observations: Interoperability and Governance

Three main themes (might be more)

- **Operational Services**
- **Climate**
- **Ocean health.**

Status compared to OO‘09:

- A much broader community
- More pull from stakeholders
- A much more complex system
- …

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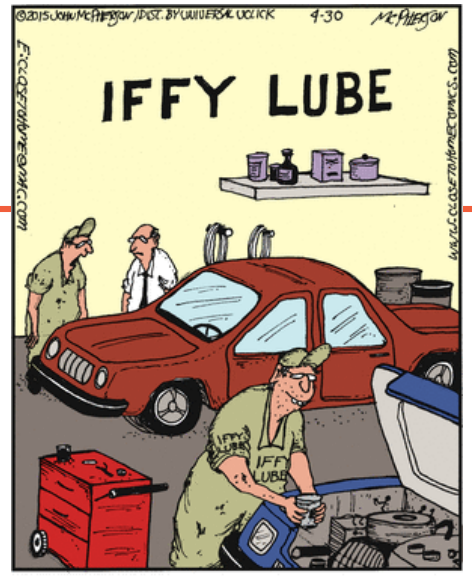


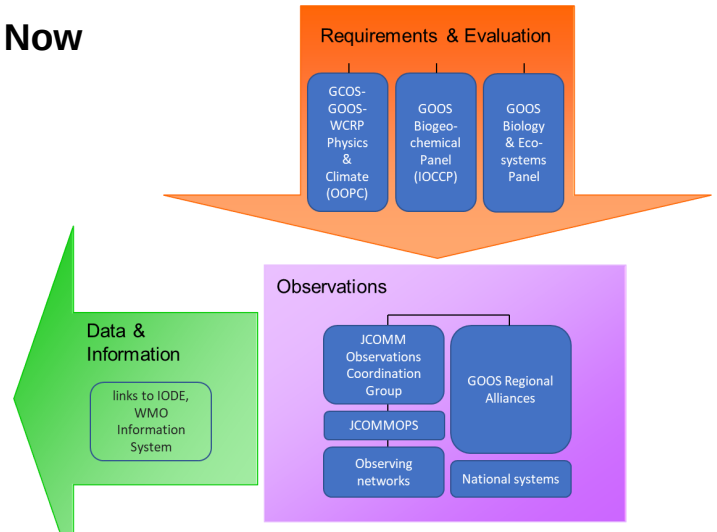
"We sort of think we changed your oil, but we're not sure."

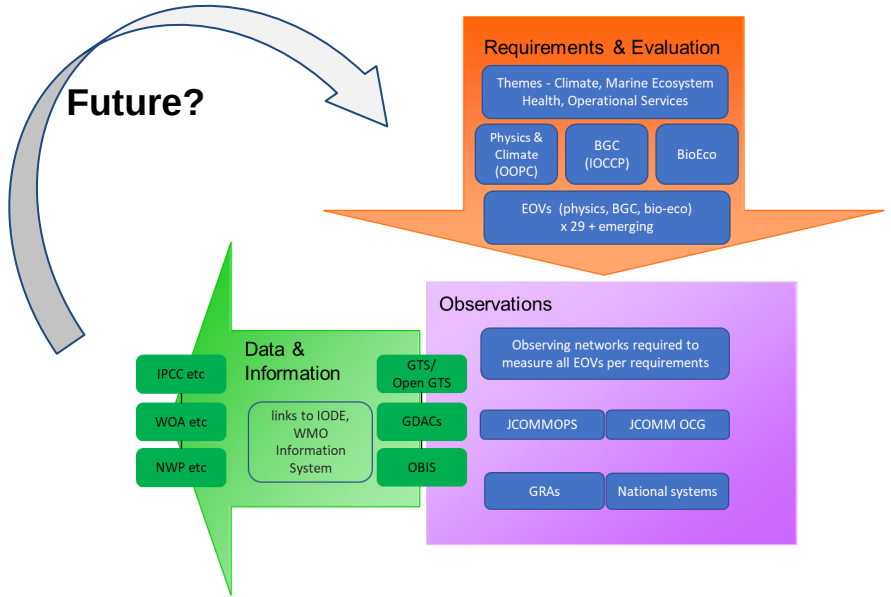
What is the governance structure needed to ensure interoperability of the observing system?

How to:

- **Ensure that the observing networks are interoperable?**
- **Ensure that the data delivery system are interoperable?**
- **Ensure sustained deliver on societal relevant areas?**
- **How do we create efficient cooperation between partners?**

There is a need for an overall coordination and steering body to make sure the parts of the mashinery works. Some parts of the OO mashinery need **refurbishing** and some more „**grease and tuning**" is needed ►► Time for **service and update** of the Global Ocean Observing System!





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PATRICIA MILOSLAVICH – GOOS BioEco Coordinator, UTAS, USB.

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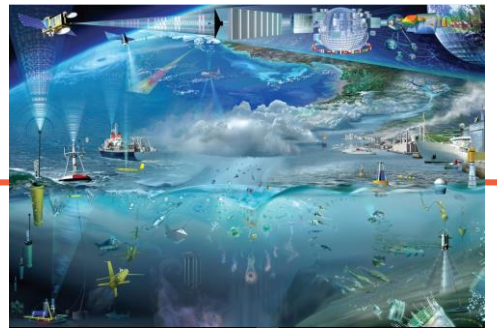
DICK SCHAAP - Managing Director, MARIS company, the Netherlands, and Technical Coordinator SeaDataNet.

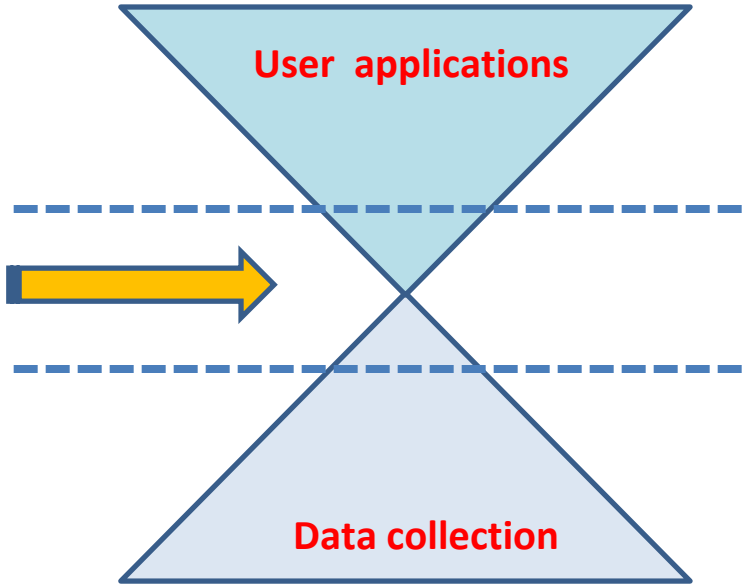


Importance of ocean and marine data management

- Data are collected by governments, research institutes, and private industry (in Europe already more than 1.000 organisations)
- Data for physics, geophysics, meteorology, chemistry, biology, geology, bathymetry
- Acquisition of oceanographic and marine data is expensive; **annual** costs in Europe estimated at **1.4 Billion Euro** (1.0 = in-situ; 0.4 = satellites)

Professional data management is required with agreements on standardisation, quality control protocols, long term archiving, catalogues, and access

'Measure once, use multiple times'



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Overarching European infrastructures for marine data and data products

- **Pan-European infrastructure for marine data management, run by NODcs:** Network of data centres interacting directly with data collectors, providing standards, validation services and long term stewardship.Providing data discovery and access services to users for multiple marine disciplines. Bottom-up approach, co-funded by EU RTD since end 90's
- **European Marine Observation and Data Network,** funded by EU DG MARE since 2008. Focus on developing and providing generic data products for European marine waters. Top-down approach, funded by EU DG MARE since 2008
- **Copernicus Marine Environmental Monitoring Service**, funded by EU DG GROW. Focus on developing and providing marine environmental forecast products; includes INSTAC service for operational oceanography data exchange
- **EuroGOOS, European component of GOOS.** Network of oceanographic observing systems in European waters. Focus on providing access to operational observations

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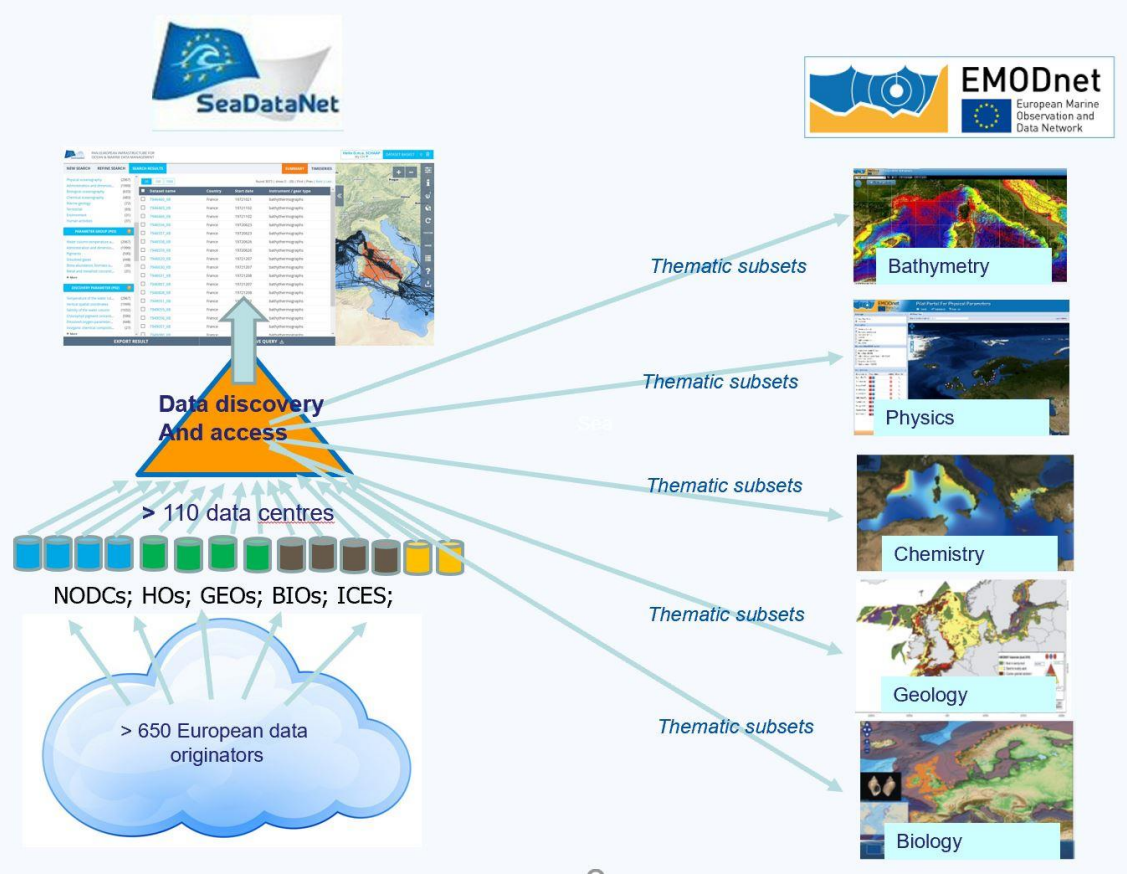
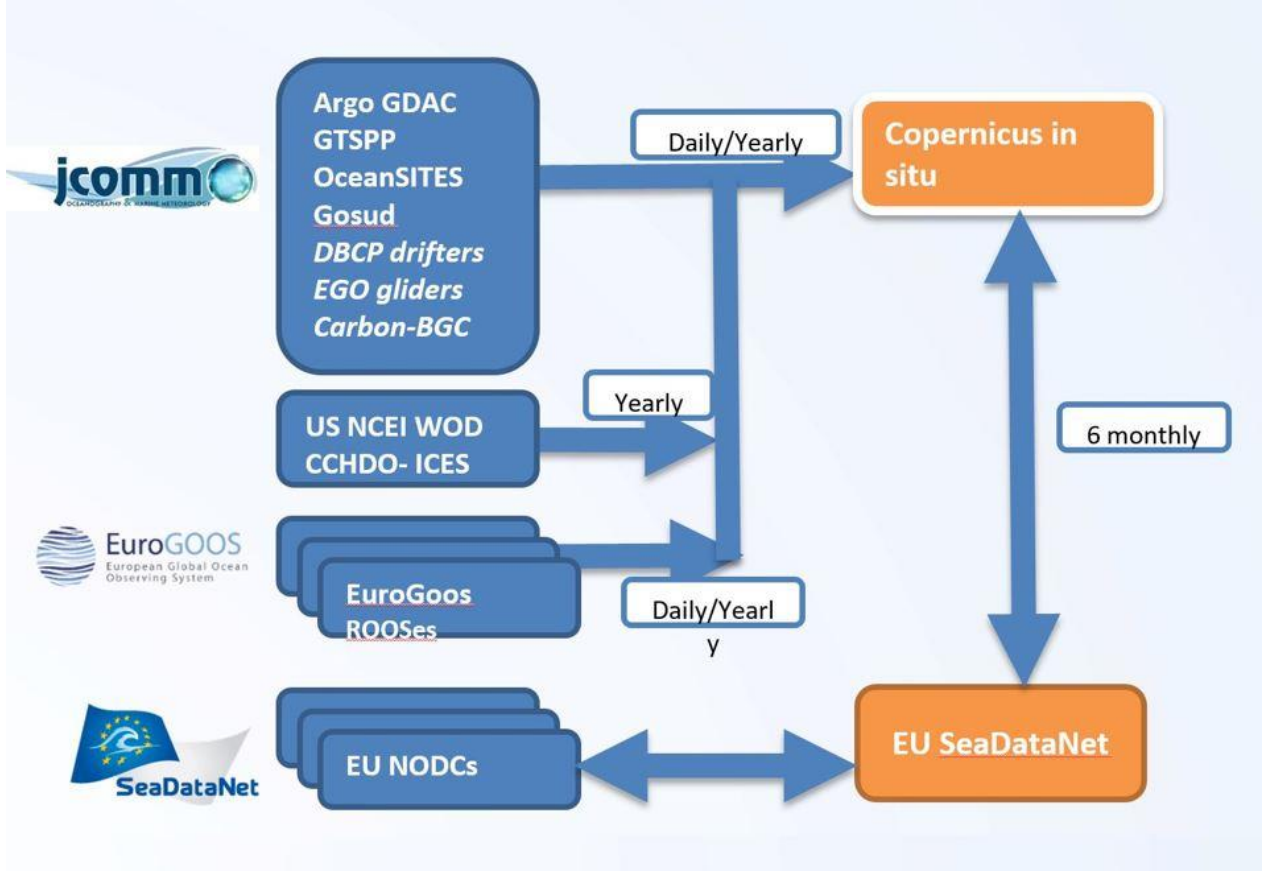
Relations between infrastructures:





Delayed mode data; all marine data themes

Operational oceanography data

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CAINE TAIAPA - General Manager at Manaaki Te Awanui Charitable Trust in New Zealand.

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