

Framework for Ocean Observing

Dave Checkley

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On behalf of The Task Team on an
Integrated Framework
for Sustained Ocean Observing

Sponsorship

- IOC Intergovernmental Oceanographic Commission of UNESCO
- GEO Group on Earth Observations
- CEOS Committee on Earth Observation Satellites
- POGO Partnership for Observation of the Global Oceans
- SCOR Scientific Committee on Oceanic Research
- SCAR Scientific Committee on Antarctic Research
- GCOS Global Climate Observing System
- GOOS Global Ocean Observing System
- JCOMM Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology
- PICES North Pacific Marine Science Organization
- ICES International Council for the Exploration of the Sea
- CoML Census of Marine Life
- IGBP International Geosphere-Biosphere Programme
- WCRP World Climate Research Programme

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Task Team on an Integrated Framework for Sustained Ocean Observing

Recommend a framework for moving global sustained ocean observations forward in the next decade; integrating feasible new biogeochemical, ecosystem, and physical observations while sustaining present observations; considering how best to take advantage of existing structures

Task Team Membership

Name	Expertise	Country	Primary sponsor	Other sponsor Links
Keith Alverson	Paleoclimate/physical/observing systems	Int	IOC	GOOS
Bee Berx	Fisheries	UK	ICES	
Peter Burkill	Biology/plankton	UK	SCOR	
Francisco Chavez	Biogeochemistry/ecosystems	USA	IGBP	
Dave Checkley	Fisheries	USA	PICES	
Candyce Clark	observing systems	USA	JCOMM	
Vicki Fabry	acidification/plankton/biogeochemistry	USA	POGO	
Albert Fischer	secretariat	Int	IOC	GOOS, JCOMM, WCRP
John Gunn*	Biology	Australia	CoML	POGO, SCOR, GOOS
Julie Hall	Biology	New Zealand	IGBP	
Eric Lindstrom*	Satellites	USA	GCOS	GOOS
Yukio Masumoto	Physical oceanography	Japan	POGO	
David Meldrum	Meteorology/Physical/observing systems	UK	JCOMM	
Mike Meredith	Polar regions	UK	SCAR	
Pedro Monteiro	Carbon fluxes	South Africa	GOOS	
José Mulbert	Biology/coastal	Brazil	GEO	GOOS
Sylvie Pouliquen	Real-time data systems	France	JCOMM	GOOS
Carolin Richter	Climate observations	Int	GCOS	
Sun Song	Marine ecosystems	China	POGO	
Rob Koopman	Climate / GEOSS	Int	GEO	
Martin Visbeck	Physical oceanography/climate research	Germany	WCRP	CLIVAR
Stan Wilson	Satellites	USA	CEOS	
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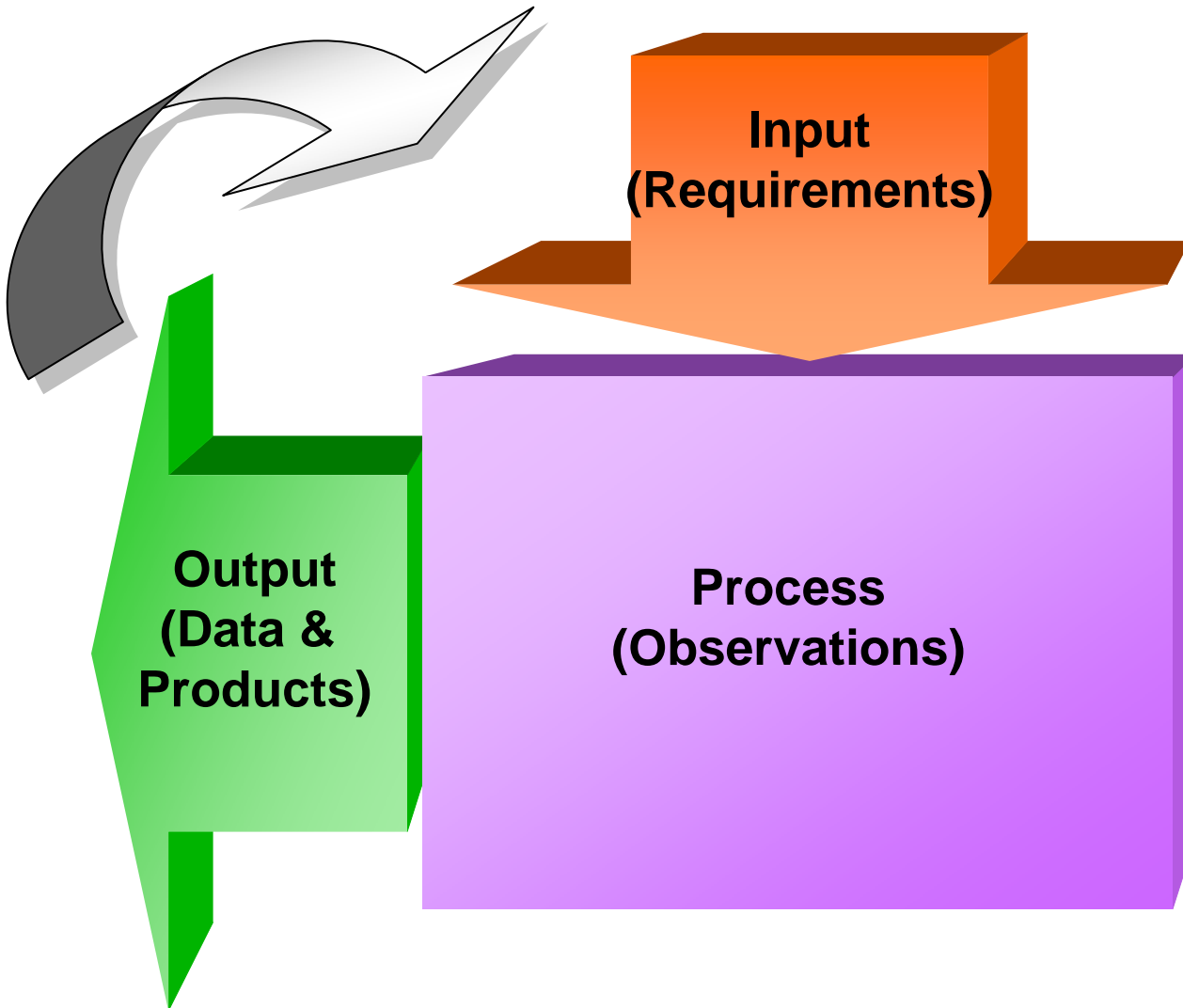
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A Framework for Ocean Observing

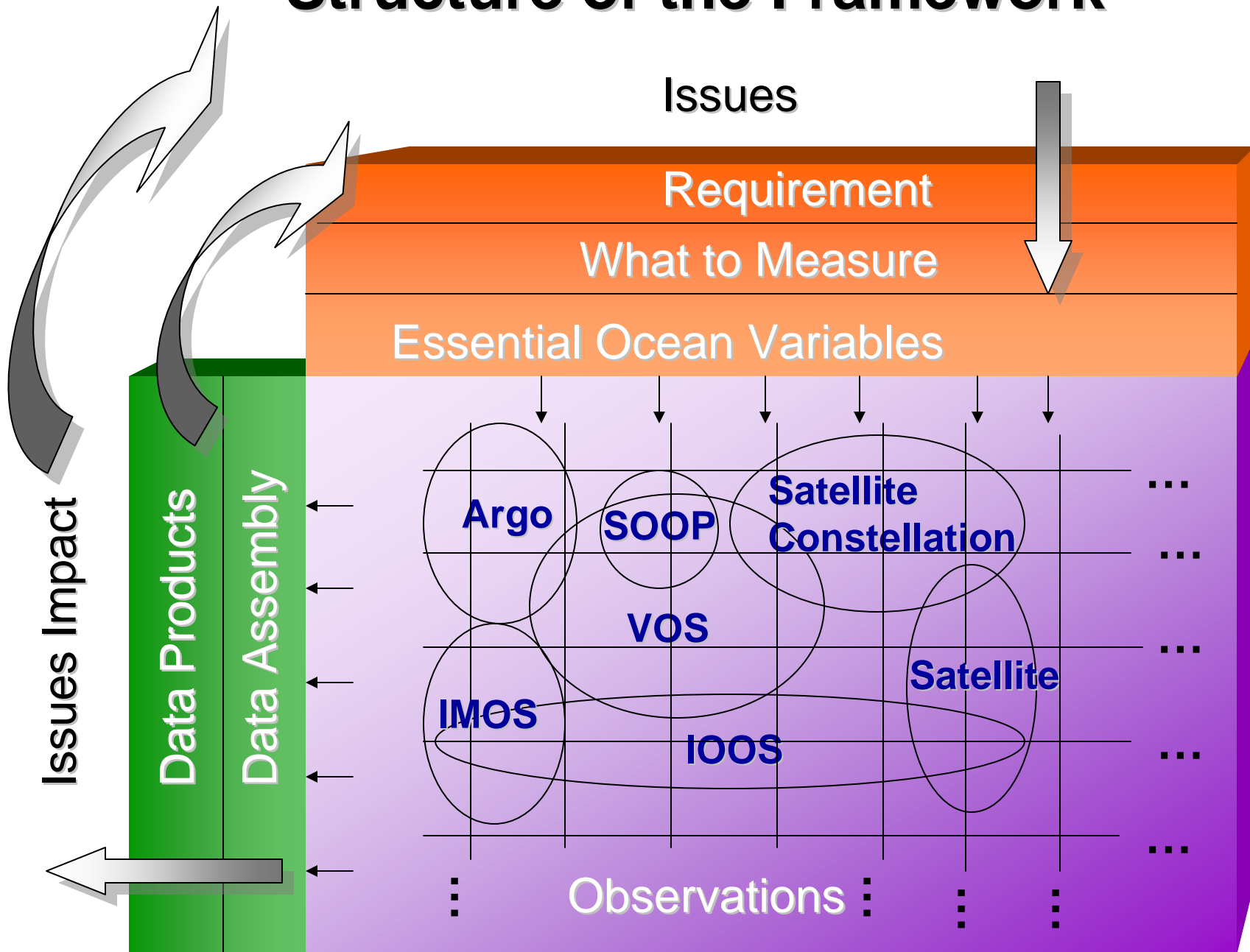
Consultative Draft v. 7

15 May 2011

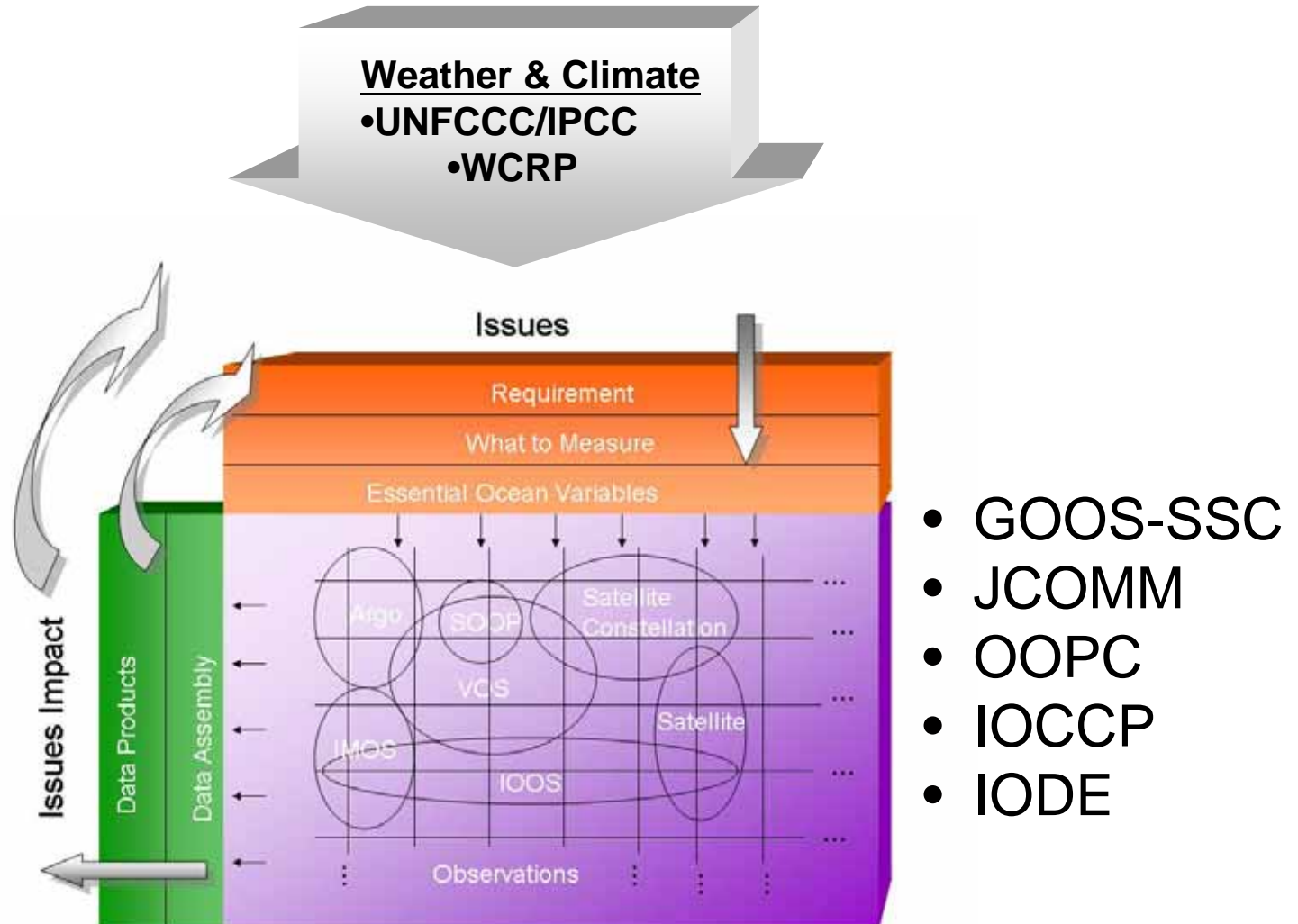
A Simple System



Structure of the Framework



Framework: Societal Driver 2010



Framework: Societal Drivers Next Decade

Regional

- Regional Seas
- CCAMLR

Fisheries

- FAO
- RFMOs

Ecosystem services/ Biology

- CBD
- CSD
- WSSD

Assessments

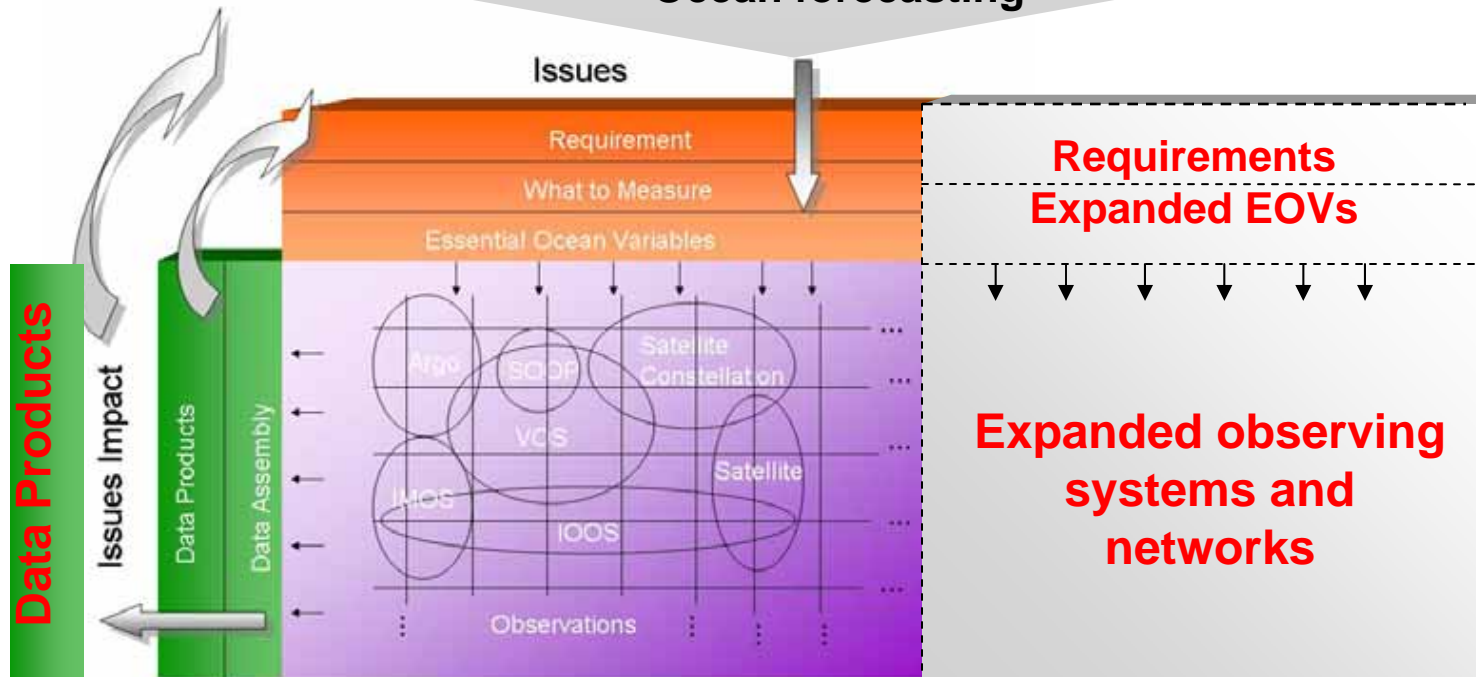
- Global Marine (UN)
- TWAP (GEF)
- Regional

Real-time services

- Emergency support
- Ocean forecasting

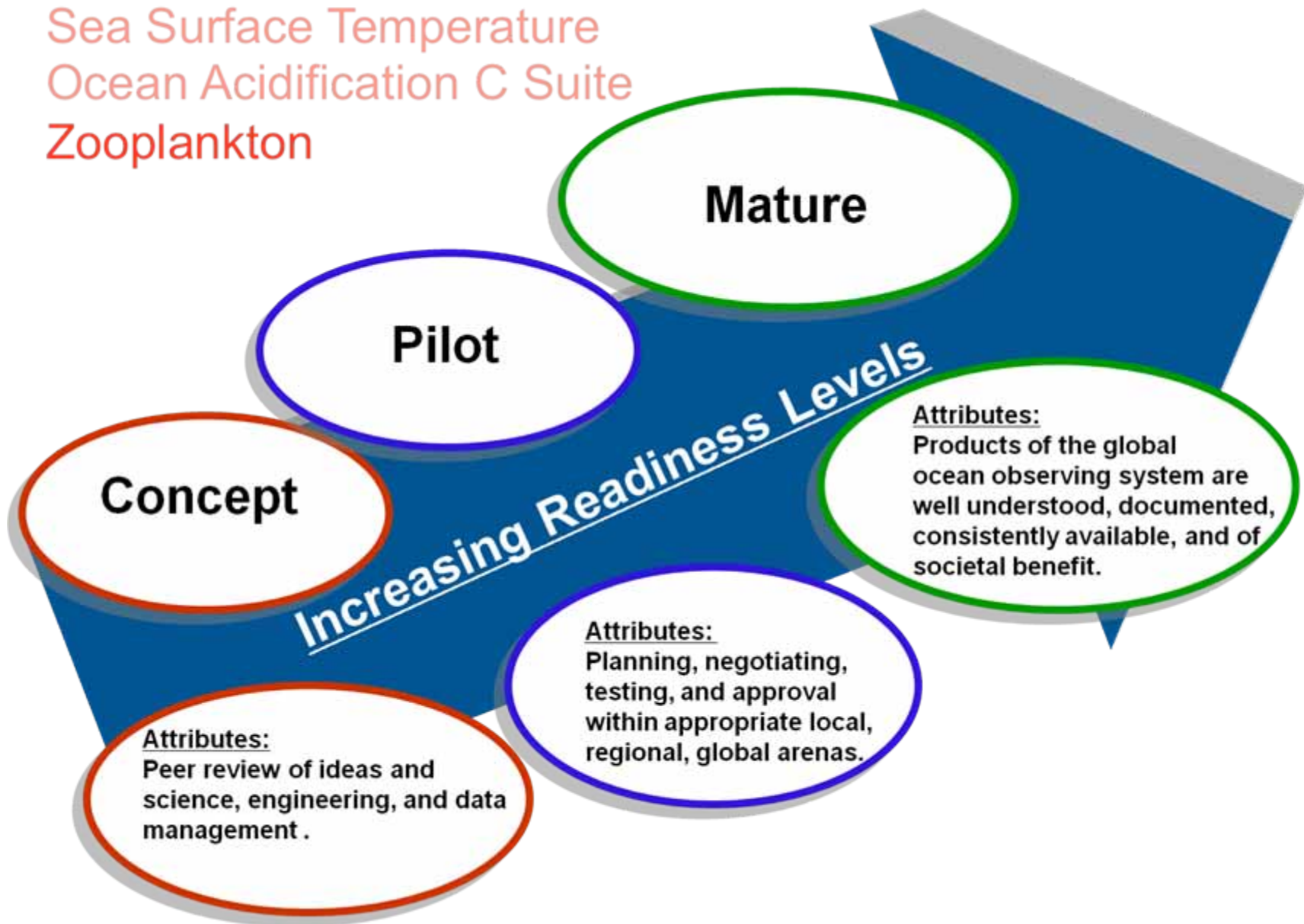
Weather & Climate

- UNFCCC/IPCC
- WCRP
- Climate services



Readiness Levels

Sea Surface Temperature
Ocean Acidification C Suite
Zooplankton



Key Concepts of the Framework

- ❑ Articulates ‘**best practices of a systems approach**’ for building an enlarged and interoperable system
- ❑ Establishes “**Essential Ocean Variables (EOVs)**” as basis for building new elements of the system.
- ❑ Argues that an “**Integrated Observing System**” will be a derivative of an EOV-based approach driven by requirements.
- ❑ Proposes an approach to introducing new components of the system through a number of “**Readiness Levels**”

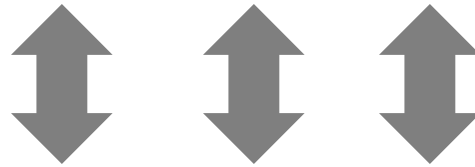
Implementing the Framework: Aligning Organizations

- The team considered several approaches for **governing** the Framework
 - **Characterized by Simplicity**
 - **Based on Functional Needs**
 - **Bring Stakeholders Together**
 - **Nominal Operating Costs**
- Requires ongoing engagement of international sponsors and other bodies
- Recommends establishment of a **Framework Steering Group**: comprised of representatives of international sponsors of OO'09 and others
 - ephemeral, not permanent
 - allow progress to more permanent governance structure

Governance Structure

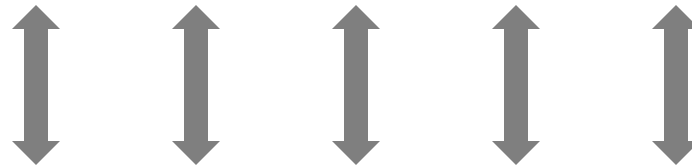
Steering Committee

(Peak Bodies, Sponsors, Observing Panel Chairs,
Observing System leaders)



Observing System Panels

(e.g., Physics, Biology, Biogeochemistry)



Technical Advisory Groups

(e.g., Observing technologies, data, and data products)

Status

Comments received from many sponsors and others

- Generally favorable and supportive
- Biology and biogeochemistry ripe for framework
- Commitment, next steps, cost?
- “Maintain momentum!”

PICES

- MONITOR will consider Wednesday

Next Steps

- Complete review and revision of May 2011 FOO draft
- Publish final framework (IOC)

Ideal (tentative):

- GOOS Board to serve as FOO Steering Group
- Reconstitute GOOS Board

“ ...they are likely to look back at us 50 or 100 years hence and ask ‘what were they thinking, why weren’t they making these measurements, why didn’t they calibrate them?’ “

- Carl Wunsch, OceanObs’09