John A. Orcutt
Deputy Director, SIO

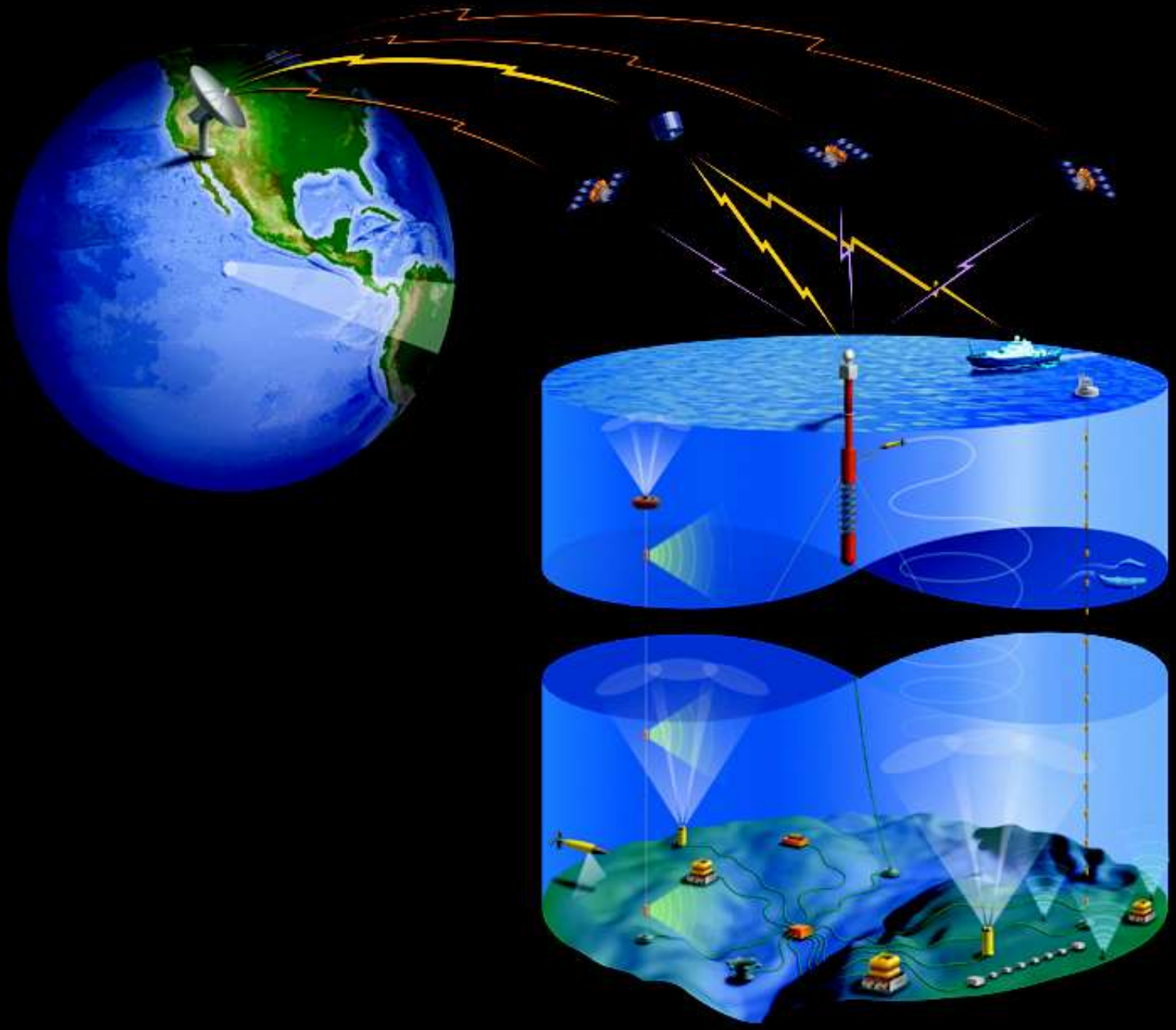
Ocean Observations Initiative

NSF MREFC

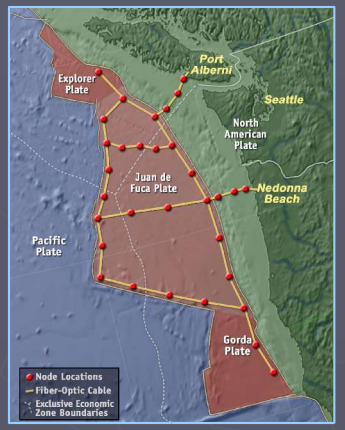
Chair, NSF/CORE DEOS Comm.

DEOS

Dynamics of Earth and Ocean Systems

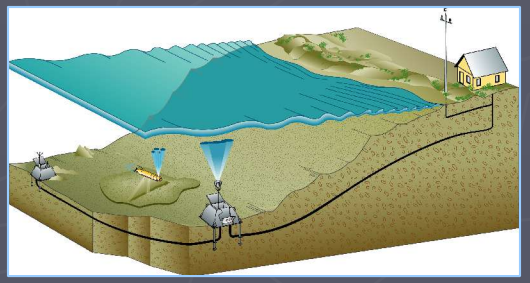


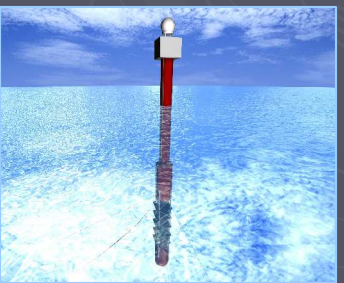
What Will Ocean Observatories Look Like?



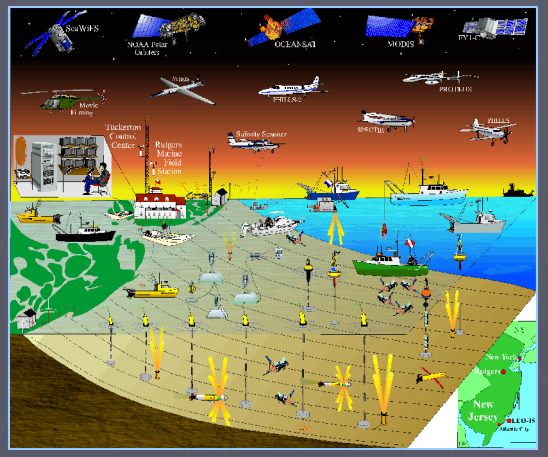
Three Components

- Regional Scale
  - Fiber optic cabled
  - Substantial seafloor power/bandwidth
- Coastal Observatories
  - Fiber optic and mooring
  - Significant bandwidth/power
- Global Network - Moorings
  - Long time series
  - High bandwidth telemetry/seafloor power





Coastal Observatories



Provide critical measurements

to observe episodic events and

secular change

Improve the accuracy of regional coastal models and forecasts

Assess the impact of anthropogenic inputs and geological/geophysical hazards in coastal environments

Provide real-time, open data to, scientists, users and decision-makers on shore

Tectonic plate scale

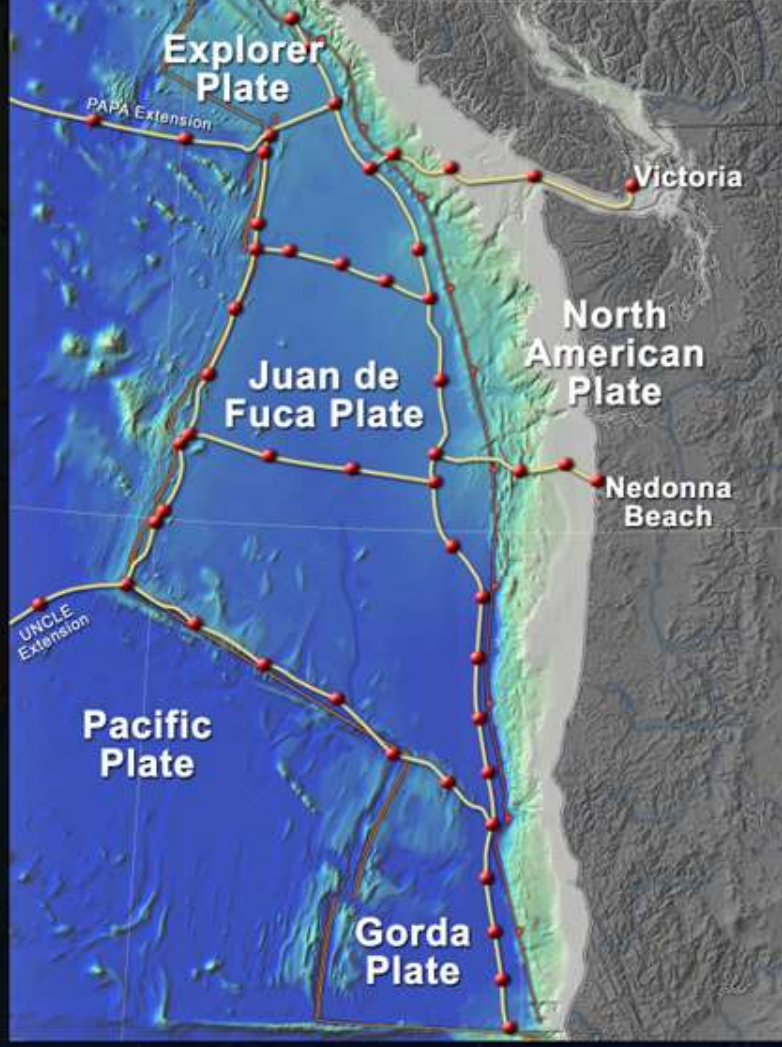
2000 miles of Fiber Optic Cable

Network of submarine laboratories

The Internet on the seafloor, 100kw of power and high bandwidth

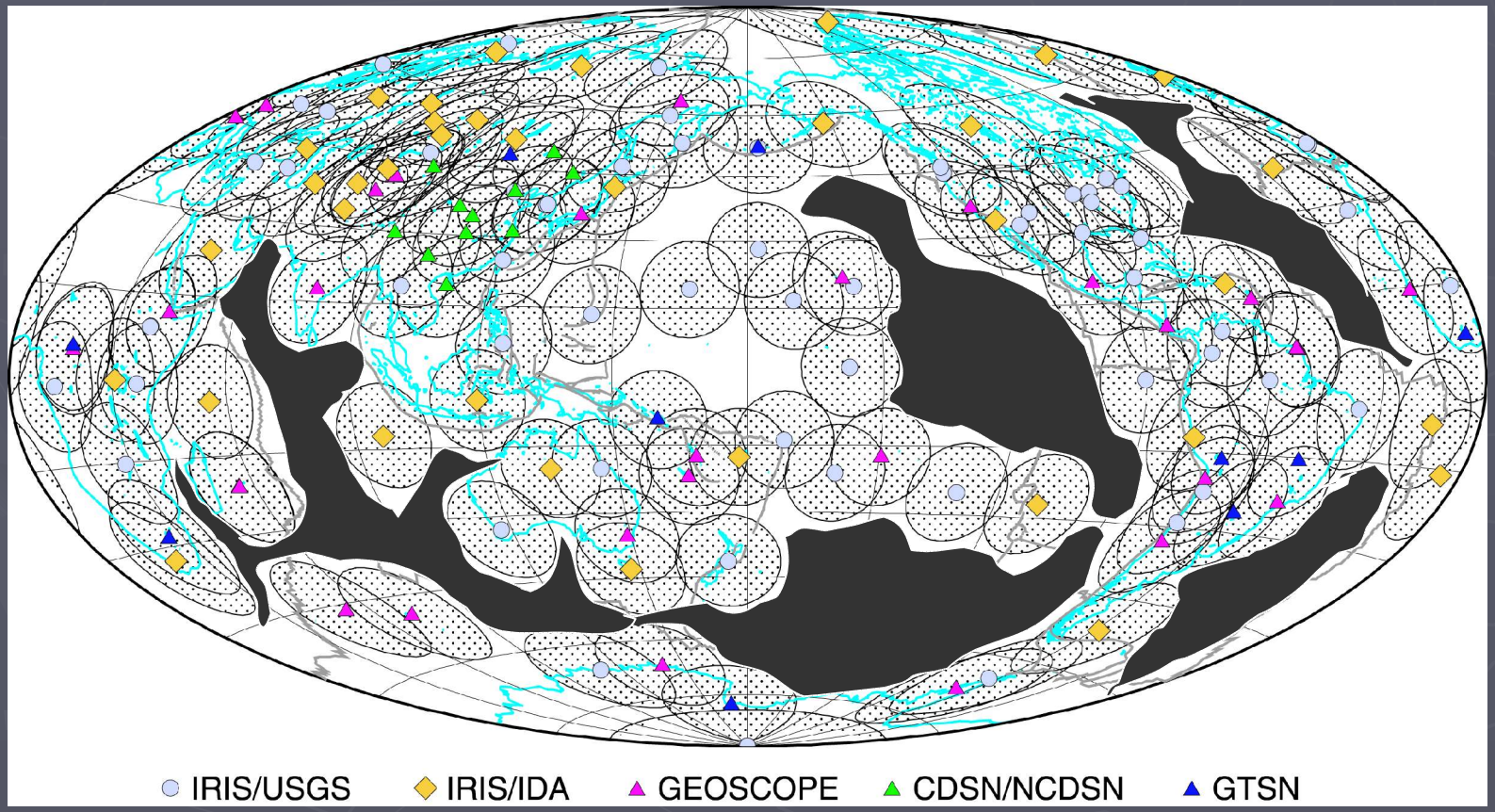
Real-time data return and control, fleets of ROVs and AUVs

>30 year lifetime, adapable and expandable



NEPTUNE

Global Seismic Station Coverage

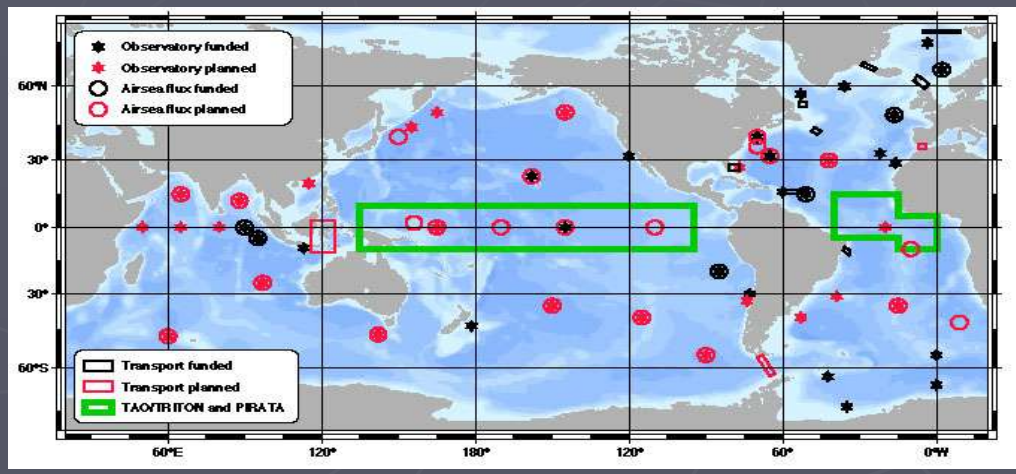


Global Network - Moorings

Will collect long term, multi-disciplinary observations in remote areas

Will include water column sensors for physical, biological and chemical studies.

Will enhance understanding of oceans and underlying planet by increas-ing suite of observations from sea surface to ocean floor



FY04 President's Budget

NSF Funding for MREFC Projects, FY 2002 through FY 2008[1]
(Dollars in Millions)

	FY 2002[2] Actual	FY 2003 Request	FY 2004 Request	FY 2005 Request	FY 2006 Request	FY 2007 Request	FY 2008 Request
ONGOING PROJECTS							
ALMA Construction	12.50	30.00	50.84	49.67	48.84	47.89	46.49
EarthScope: USArray, SAFOD, PBO		35.00	45.00	54.26	40.00	23.00	
High-performance Instrumented Airborne Platform for Environmental Research	35.00		25.53				
IceCube Neutrino Observatory	10.12		60.00	33.40	34.30	35.30	36.30
Polar Aircraft Upgrades	0.89						
Large Hadron Collider	16.90	9.72					
Network for Earthquake Engineering Simulation	24.40	13.56	8.00				
National Ecological Observatories Network[3]		12.00	12.00	16.00	20.00	20.00	20.00
South Pole Station	15.55	6.00	0.96				
Terascale Computing Systems		20.00					
NEW STARTS							
Scientific Ocean Drilling				76.85	23.00		
Rare Symmetry Violating Processes					30.00	42.66	44.00
Ocean Observatories					24.76	40.33	72.46
Totals	$115.35	$126.28	$202.33	$230.18	$220.90	$209.18	$219.25

OOI Project Description

Ocean Observatories Initiative (OOI)

Project Description: This project will construct an integrated observatory network that will provide the oceanographic research and education communities with continuous access to the ocean. The OOI will have three elements: 1) a regional cabled network consisting of interconnected sites on the seafloor spanning several geological and oceanographic features and processes, 2) several relocatable deep-sea buoys, and 3) an expanded network of coastal observatories, developed through new construction or enhancements to existing facilities. The primary infrastructure for all components of the OOI consists of an array of seafloor junction boxes connected to cables running along the seafloor to individual instruments or instrument clusters. Depending upon proximity to the coast and other engineering requirements, the junction box is either terminated by a long dedicated fiber-optic cable to shore, or by a shorter cable to a surface buoy that is capable of two-way communications with a shore station. The observatory infrastructure of the OOI will be operated as a shared-use facility with open community access to data.

Budget Project Description

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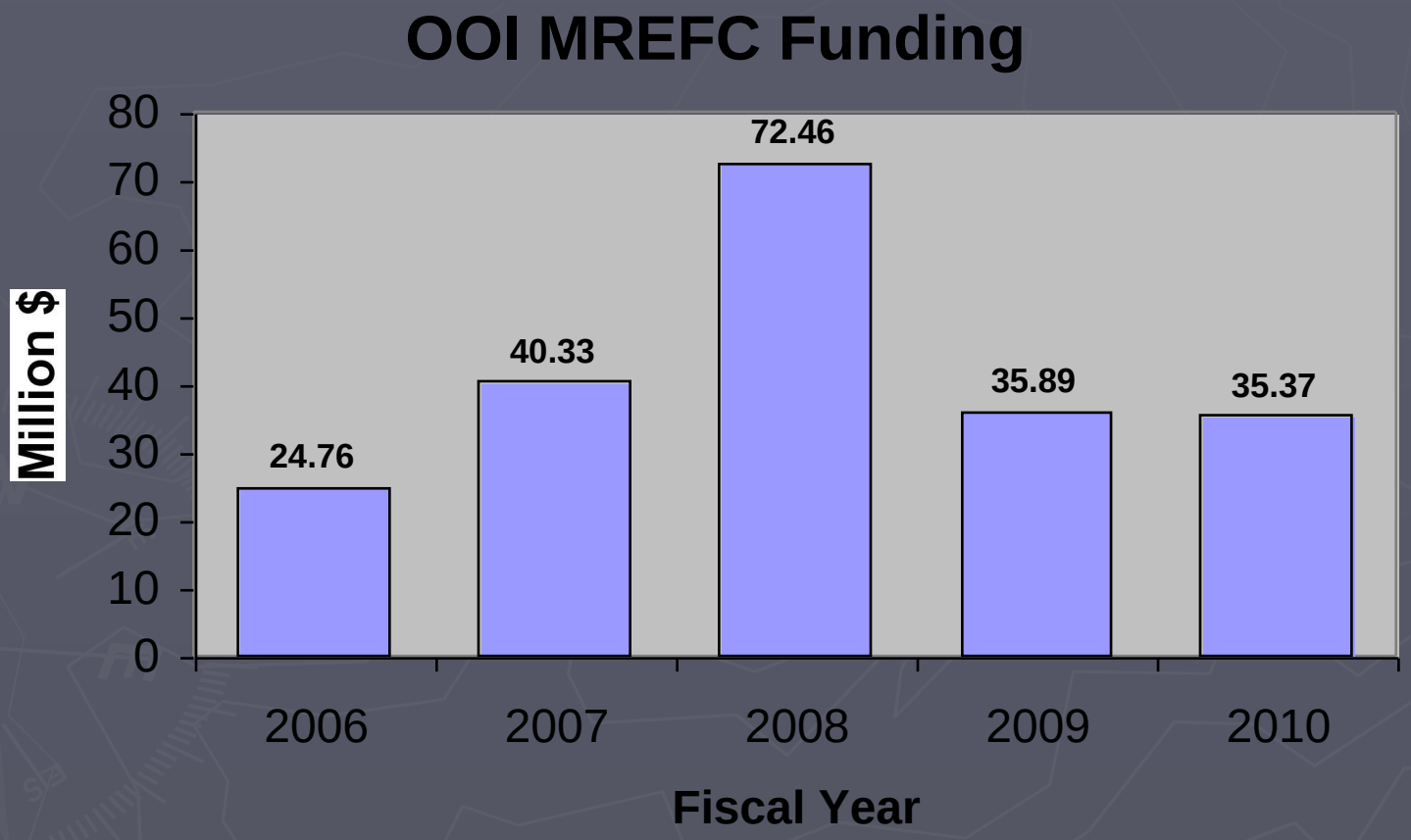
MRE Funding

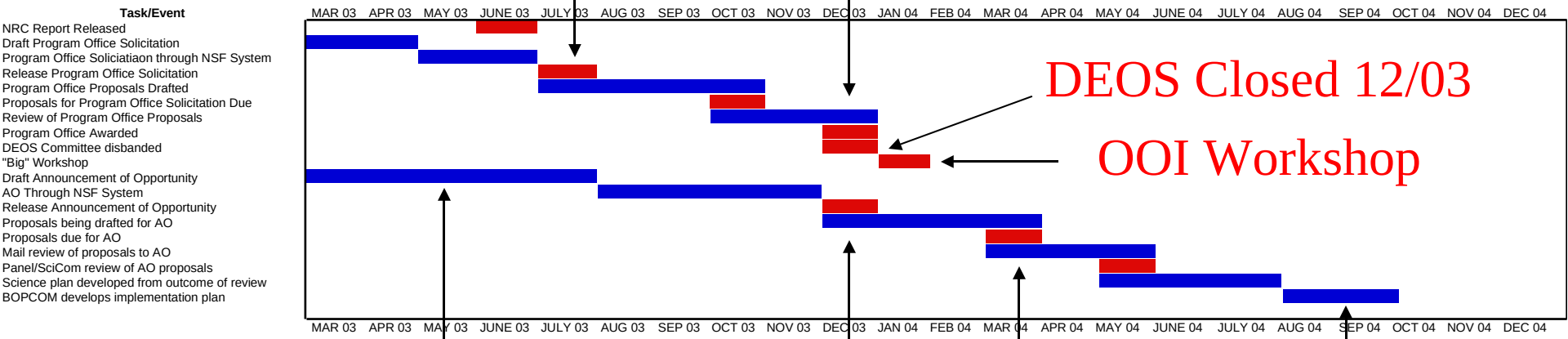


$208.8M

Current Timeline (2/7/03)

Solicit Office 6/03

Program Office 12/03



DEOS Closed 12/03

OOI Workshop

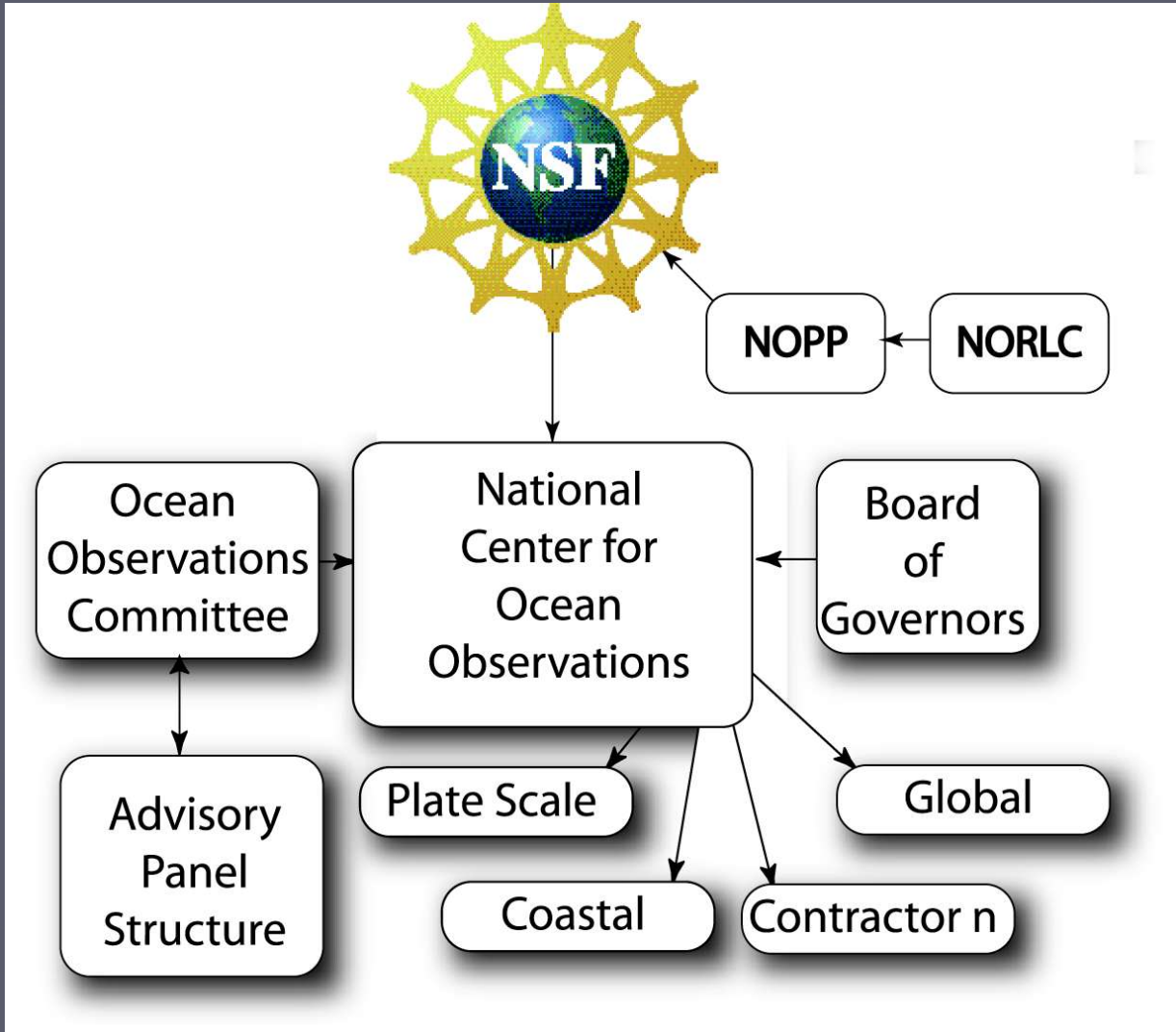
Draft Announcement Of Opportunity

AO 12/03

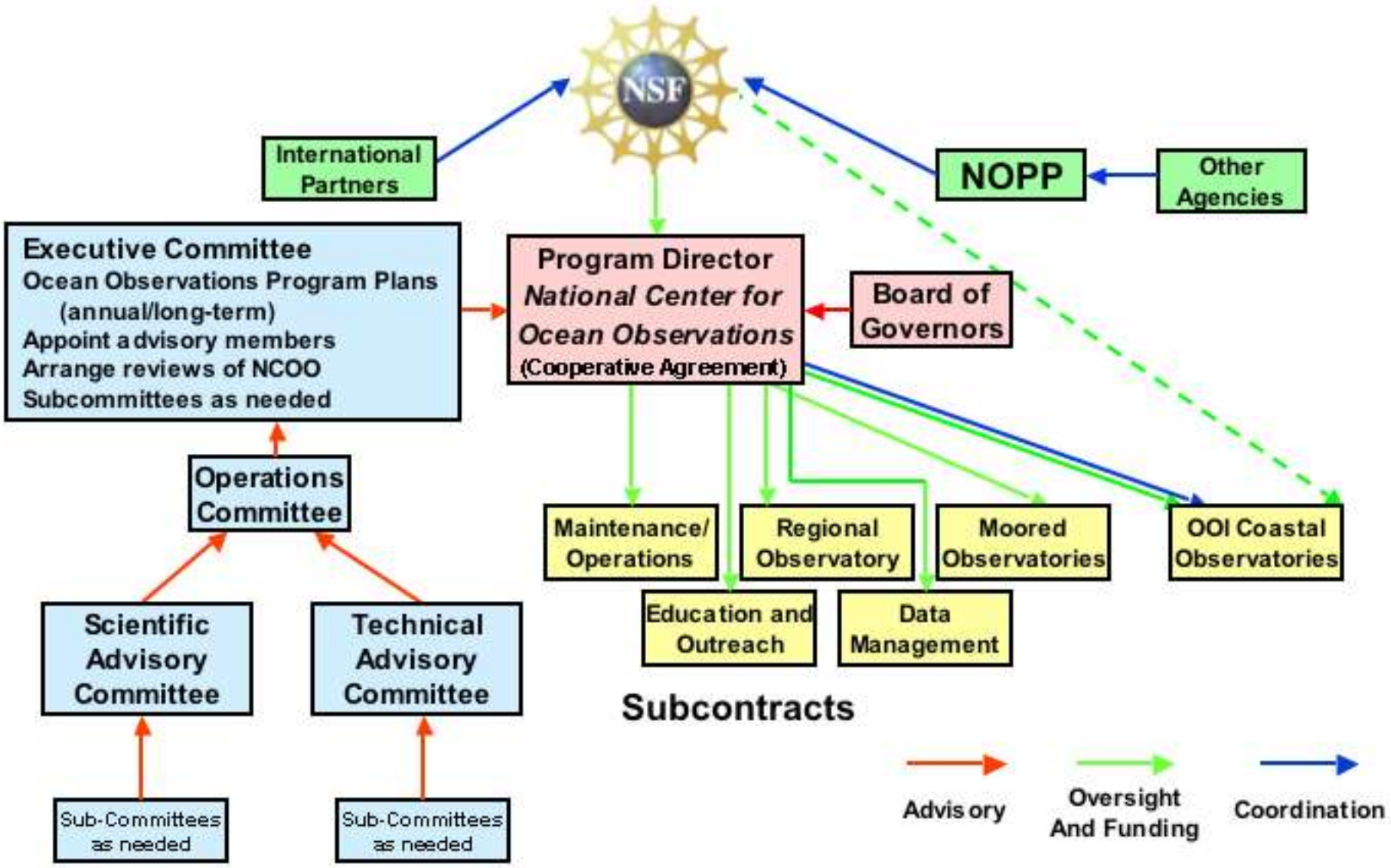
AO Proposals 2/04

1st Yr Implementation Plan 9/04

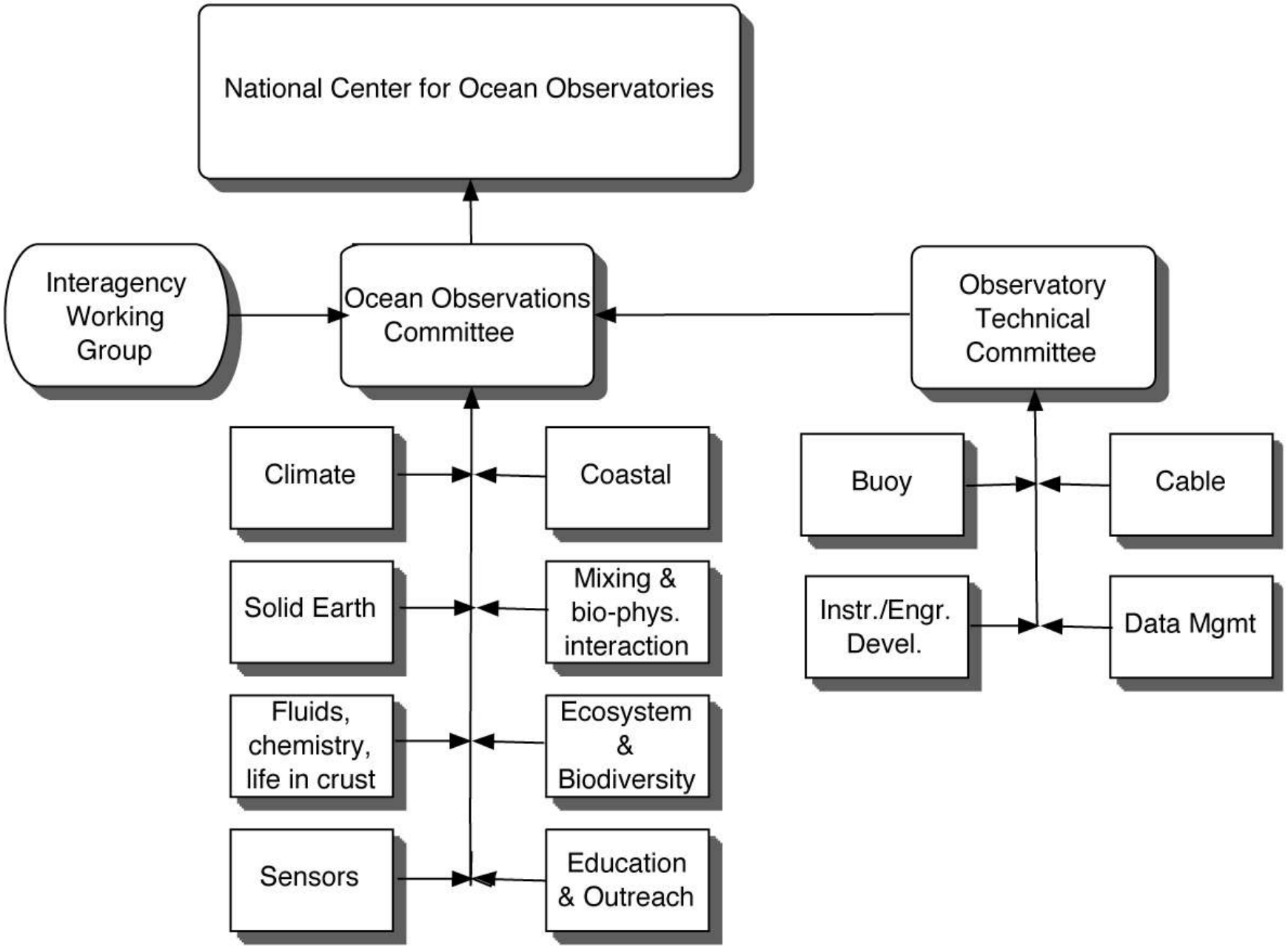
National Organization



Management during both the construction and operational phases: Proposed Structure



OOI Advisory Structure Model



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