

“IOs #2: The Roles of Implementing Organizations in IODP – Continuing Cross-Platform Integration in a Multi-Platform Scientific Ocean Drilling Program”

British Geological Survey, Edinburgh, Scotland

Convenor: James A. Austin, Jr., Interim Director, IODP (UTIG)

Premise: The primary objective of the Integrated Ocean Drilling Program (IODP) is to deliver the science summarized in IODP’s Initial Science Plan in a cost-efficient, seamless fashion, using multiple drilling capabilities. IODP will provide two primary drilling and sampling capabilities, the riser-equipped *Chikyu* and a non-riser capability (in two phases), which for Phase 1 (FY04 and FY05) will be the *JOIDES Resolution*. In addition, mission-specific (MSP) drilling and sampling will be supplied on an as-needed basis for shallow water and Arctic drilling that cannot be effectively done through the use of the riser-capable or non-riser vessel, as science prioritization by the international community dictates. A FY04 Program Plan for IODP has now been submitted by the interim planning office, in concert with the Chair of SPC and the IOs, and approved by the Lead Agencies. Non-riser operations for science prioritized by the SAS will begin in ~June 2004 in the northeast Pacific, while MSP operations will likely begin in ~August 2004 with a multi-icebreaker expedition to the Lomonosov Ridge in the high Arctic. *Chikyu* continues to be outfitted, in expectation that sea trials will begin sometime in FY05.

Goals of this meeting: The immediate and continuing challenge will be to integrate the operations and output of these various drilling assets efficiently, for the ultimate benefit of the international science community. This meeting, the second of what will probably become a regular series, once again assembles representatives from designated Implementing Organizations (IO’s), along with selected representatives from IODP Management International, Inc. (IMI, the Central Management Organization of IODP), SAS and the Lead Agencies, to continue to discuss cross-platform integration, in an informal atmosphere. On Day 1, we will first hear reports from IMI and SAS, then proceed on to Action Items identified at the first meeting (Bozeman, MT, August 2003). On Day 2, we will address mutually agreed upon items of importance. This meeting will augment lines of communication among the IOs forged in Bozeman, acquaint IO representatives with new personnel recently hired and now either in place or soon to be in place at IMI, and continue to pursue those issues that have to be resolved by IMI and SAS, with MEXT/NSF, over the next 1-2 years, in order to realize the primary objective stated in the premise above.

Agenda

Day 1: February 27

8:00-8:30 – light refreshments

8:30-8:40 – *Austin (UTIG): meeting introduction*

(Note: a powerpoint projector will be used for all presentations at this meeting, and the convenor will request a copy of all .ppt presentations as a record of the meeting.)

- logistics: Dan Evans, BGS/ESO.
- CMO tasks and responsibilities: the role of CMO in cross-platform integration.
- review and approval of the meeting agenda.

8:40-9:10 – *Talwani (President, IMI): “IODP Structure and Functioning: The Role of IMI”*

- Manik Talwani, Rice University, has been functioning officially as IMI President since January 1.
- Talwani will introduce himself and his new IMI colleagues, Dr. Hans-Christian Larsen, Danish Lithosphere Center (IMI Vice President, Science Deliverables), and Dr. Tom Janecek, University of Florida (IMI Vice President, Science Operations). Larsen and Janecek will begin to serve officially on April 1.
- Talwani will summarize recent activities in support of the CMO – e.g, hiring of personnel, set-up of office space in the U.S. and Japan, submission of the IMI proposal to NSF, and future interactions (e.g., OPCOM as an IMI committee, a subject to which we will return during Day 2).

9:10-9:30 - *Coffin (Chair, SPC): “SAS Progress on Program- and Long-Range Planning”*

- Mike Coffin will brief the IOs on ongoing SAS activities since the last meeting of SPC (Sapporo, September 2003) and SPPOC (San Francisco, December 2003).
- This report will not summarize those meetings (motions and consensus items to be taken as read by all participants), but focus instead on how SAS views continuing interactions with IMI and the IOs, in light of recent pertinent actions (e.g., OPCOM as an IMI committee, accelerated program planning in FY04, near-term designation by SPC of Complex Drilling Programs, or CDPs).
- We may return to a one or more of these items during Day 2.

9:30-10:40 – *Kawamura (CDEX): report from the IO group charged with Action Item #1 from Bozeman - “Develop a program-wide HSE (Health, Safety and Environment) policy which emphasizes a high standard, but also maintains flexibility in response to site-specific demands, and match that policy with a HS and Training framework for technical personnel across platforms.”*

- other members of this group include Skinner (ESO) and Baldauf (JOI Alliance).
- for each of these Action Items, first we will hear a progress report from the responsible group, then open the floor for discussion (inc. a report from CDEX concerning “Protection of deep sea biodiversity”)

- Note(!): all of these groups should emphasize CROSS-PLATFORM integration.

10:40-11:00 – Coffee Break

11:00-12:10 – *Davies (JOI Alliance, presented by Rack/Baldauf): report from the IO group charged with Action Item #2 from Bozeman – “Implement sharing and exchange of technical staff among platforms, tied to annual program planning.”*
- other members of this group include Kuroki (CDEX) and Evans (ESO).

12:10-1:10 – Lunch

1:10-2:20 – *Firth (JOI Alliance, presented by Rack/Baldauf): report from the IO group charged with Action Item #3 from Bozeman - “Agree upon, then implement, a program-wide sample curation and management policy, in two phases: a) for IODP cores to be collected beginning in FY’04, and b) for older (DSDP, ODP) cores, should the decision be made to move them. Before implementation, SAS should be consulted for advice and input about both phases.”*
- other members of this group include Kuramoto (CDEX) and Roehl (ESO).

2:20-3:30 – *Evans (ESO): report from the IO group charged with Action Item #4 from Bozeman - “Develop a ‘minimum acceptable’ set of ‘IODP’ data to be derived from all platforms (in consultation with the SAS), so as to distinguish it from proponent-driven data production, analysis and interpretation (some of which may be derived directly from ‘IODP’ data).”*
- other members of this group include Kuramoto (CDEX) and Rack (JOI Alliance).

3:30-3:50 – Coffee Break

3:50-5:00 – *Suzuki (CDEX, presented by Kawamura-san): report from the IO group charged with Action Item #5 from Bozeman - "Collectively, educate our 'customer base', the international scientific community submitting proposals to IODP, about the need to commit to long-range (multi-year) expedition planning. Reemphasize (to SAS, the Lead Agencies,...) that a successful IODP will require such a commitment, constrained by annual (budget-based) program planning."*
- other members of this group include Kingdon (ESO), Baldauf (JOI Alliance), and the CMO.

5:00-6:15 – reception hosted by BGS.

Agenda

Day 2: February 28

8:00-8:30 – light refreshments.

8:30-9:00 – *Summary by the convenor of Day 1 discussions.*

(Note: Lead Agency representatives will be asked at this time for their input.)

9:00-9:30 – *Evans (ESO): items from the “IOs only” meeting held on February 26.*

9:30-10:15 – *Continued group discussion of Action Items, Day 1, in light of IOs meeting.*

10:15-10:30 - Coffee Break

10:30-12:00 - *Austin et al.: the evolving role of OPCOM in IODP.*

- “**SPPOC Consensus 03-12-02**: The SPPOC transfers the OPCOM responsibilities from the SAS to the IMI, with the IMI vice president for science operations serving as the chair of the OPCOM.”
- How will OPCOM function in this new mode?
- How will the new relationship of OPCOM to the rest of IODP affect: operational planning, the relationships between the CMO and the IOs, the relationships between the CMO and the SAS?
- Will this new OPCOM help the IO’s interact with the CMO to assure that program-wide engineering development is carried out properly (e.g., regularly scheduled, platform-specific engineering tests, external oversight, other?)

12:00-1:00 – Lunch

1:00-3:00 – *Other items brought forward by meeting participants:*

- expedition numbering in IODP (Murray, Chair SciMP; Graham, ESO; Rack, JOI Alliance).
- prospectus preparation in IODP (Evans, ESO).
- CDEX proposal for make-up of the Science Party (science & research structure) for long-duration expeditions (e.g., *Chikyu* riser drilling)

3:00-3:15 – Coffee break

3:15-4:45 – *Continued discussion (convenor). How would the participants like to carry forward action items from this meeting, as the interim planning office gives way to IMI?*

4:45-5:00 – *IOs meeting #3 – where and when?*

- Suggested (by the convenor) venue: Japan, CDEX to host.
- late summer 2004?

5:00 (approx.) – Adjourn.

Participants

From CDEX (Center for Deep Earth Exploration) - Operator, *Chikyu*:

Asahiko Taira
Yoshi Kawamura
Shinichi Kuramoto

From the SIC (“Systems Integration Contractor”) - Operator, Non-riser capability (*JOIDES Resolution*):

“JOI Alliance”:

- a. TAMU (Texas A&M University)
Jeff Fox
Jack Baldauf
- b. Lamont-Doherty Earth Observatory
Dave Goldberg
- c. JOI, Inc. (Joint Oceanographic Institutions, Inc.)
Frank Rack

From ESO (European Science Operator) – Operator, MSP (“mission-specific platforms”) program, ’04 and (likely) beyond:

- a. BGS (British Geological Survey):
Alister Skinner
Dan Evans
Andy Kingdon
- b. EMA (European Management Agency):
Catherine Mevel
- c. Others (various institutions): Tim Brewer, Colin Graham, Brice Rea, Ursula Roehl, Hans-Joachim Wallrabe-Adams

From Science Advisory Structure (SAS):

SPC:

Mike Coffin, Chair
Jamie Austin

SciMP:

Rick Murray, Co-Chair

From IODP Management International, Inc. (IMI):

Manik Talwani
Hans-Christian Larsen
Tom Janecek

From the Lead Agencies:

NSF:

Jamie Allan

**IO's Meeting #2: The Roles of
Implementing Organizations in
IODP – Continuing Cross-Platform
Integration in a Multi-Platform
Scientific Ocean Drilling Program**

**British Geological Survey (ESO)
Edinburgh, Scotland
February 27-28, 2004**

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- Day 1: hear reports from IODP-MI and SAS, then proceed to Action Items identified in Bozeman (IOs Meeting #1, August 2003).
- Day 2: address mutually agreed upon items of importance (e.g., OPCOM functioning).

This meeting will augment lines of communication among the IOs, acquaint the IOs with new personnel recently hired at IODP-MI, and continue to pursue those issues that have to be resolved by IODP-MI, working with the IOs, SAS and MEXT/NSF over the next 1-2 years, in order to realize the primary objective stated in the premise.

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SAS Progress on Program and Long- Range Planning

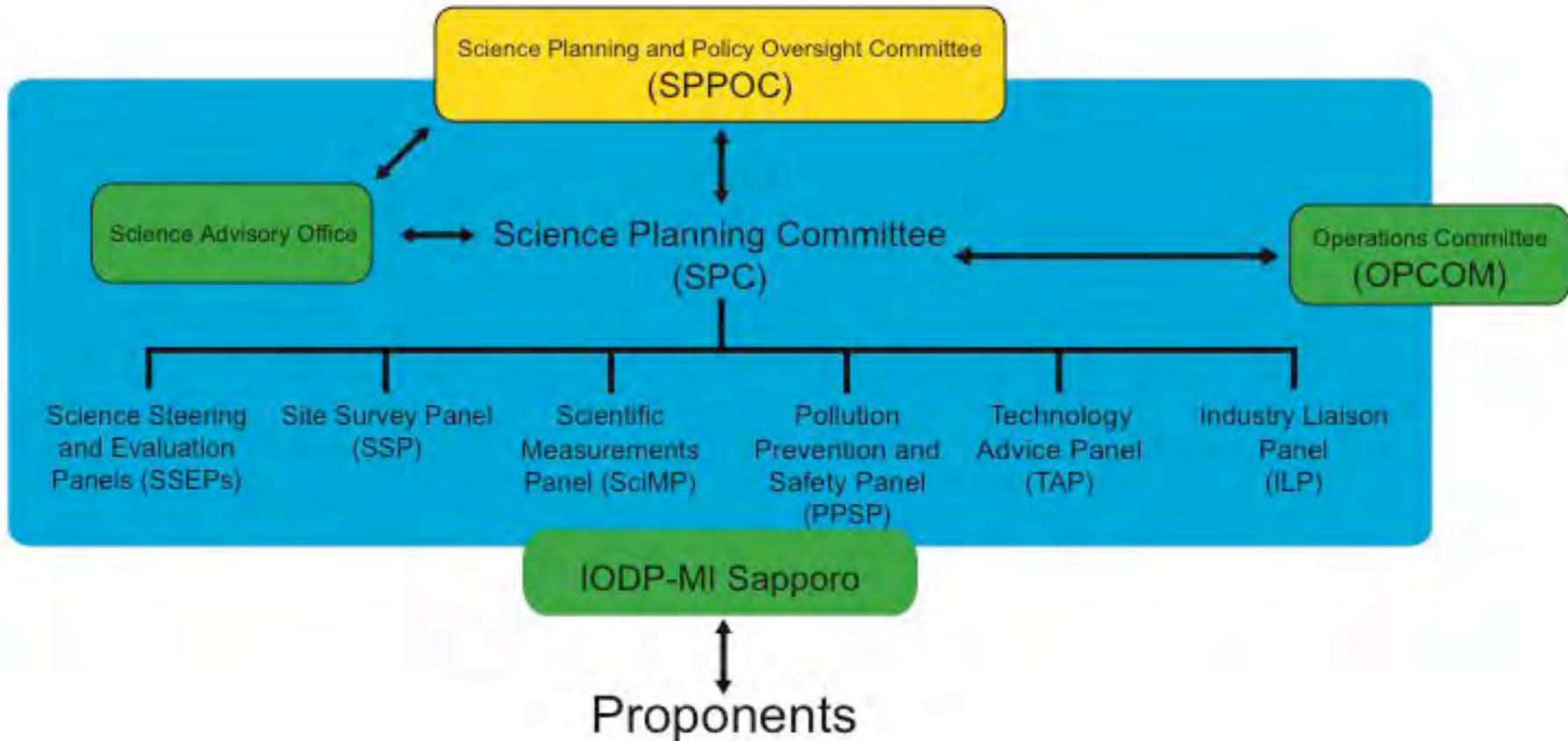
Mike Coffin

IODP Science Advisory Office

Ocean Research Institute

University of Tokyo

IODP Science Advisory Structure (SAS)



**All SAS committees and panels: 7 Japanese + 7 American + 4 ECORD (3 voting, 1 non-voting)
>150 Scientists**

SAS-IMI-IO Interactions

- IODP-MI Operations Committee (OPCOM)
- Phase I Annual Program Plan Development
- Complex Drilling Projects (CDPs)
- Project Management
- Expedition/Site Naming
- Publications

SAS-IMI-IO Interactions

- IODP-MI Operations Committee (OPCOM)
 - Draft presented by IODP-MI
- 'independent' SAS Operations Committee (OPCOM)
 - iPC WG - Keir Becker, Secretary
 - Terms of Reference approved by iPC - Hajimu Kinoshita & Ted Moore, Co-Chairs
 - Terms of Reference approved by IWG (12 Aug 2003) - Leinen and Yoshida, Co-Chairs

iPC OPCOM WG

- Keir Becker, University of Miami, USA
- Hisao Ito, Geological Survey of Japan
- Philippe Pezard, Université Montpellier II, France
- Nick Piasias, Oregon State University, USA
- Alister Skinner, British Geological Survey, UK
- Asahiko Taira, Japan Marine Science and Technology Center, Japan

interim Planning Committee (iPC)

- Jamie Austin, University of Texas at Austin, USA
- Andrew Fisher, University of California, Santa Cruz, USA
- Kathryn Gillis, University of Victoria, Canada
- Peter Herzig, Technische Universität Bergakademie, Freiberg, Germany
- Benoît Ildefonse, Université Montpellier II, France
- Hisao Ito, Geological Survey of Japan
- Kenji Kato, Shizuoka University, Japan
- Jeroen Kenter, Vrije Universiteit, The Netherlands
- *Hajimu Kinoshita, Japan Marine Science and Technology Center, Japan
- Chris MacLeod, Cardiff University, United Kingdom
- Larry Mayer, University of New Hampshire, USA
- *Ted Moore, University of Michigan, USA
- Delia Oppo, Woods Hole Oceanographic Institution, USA
- Kiyoshi Suyehiro, Japan Marine Science and Technology Center, Japan
- Yoshiyuki Tatsumi, Japan Marine Science and Technology Center, Japan
- Zuyi Zhou, Tongji University, China

Terms of Reference

- General Purpose and Mandate: to recommend the most logistically and fiscally effective means to achieve IODP scientific objectives
- Consensus and Quorum: reach all decisions by consensus; quorum shall be required consisting of 2/3 of the scientific participants and 2/3 of the management representatives

Terms of Reference

- Membership: Chair, SPC Chair, SAS representatives (3), IO representatives (3), IODP-MI (1); ≤ 3 -year terms
- Liaisons, Observers, and Guests:
Liaisons - lead agencies (2); chair of SSEPs, SciMP, PPSP, SSP, ILP, and TAP (7)
- Meetings: twice per year; drilling schedules must be approved by the SPC and SPPOC

Phase I Annual Program Plan Development

- FY04 - Done (kudos to Jamie Austin, John Farrell, I SAS Office, et al.)
- FY05 - March (SPC ranking) - July (SPPOC Annual Program Plan consideration)
- FY06 - June (SPC ranking) - December (SPPOC Annual Program Plan consideration)
- Unknown: non-riser operations post-April 2005 (March 2004 notification?)

news feature

Digging in

A new ship and a wave of funding will let scientists drill where they have never been able to drill before, from near the North Pole to the rocks lying beneath Earth's crust. Rex Dalton and David Cyranoski report.

Nature, 4 December 2003

NEWS OF THE WEEK

OCEAN DRILLING

Arctic Is First Call for New Global Program

Science, 12 December 2003

Expeditions to Drill Pacific, Arctic, and Atlantic Sites

Eos, 13 January 2004

2004-2005 IODP Expedition Schedule

Expedition	Port (Origin)	Dates	Platform
Juan de Fuca Ridge Flank Hydrogeology	Astoria	21 June - 29 August 2004	JOIDES <i>Resolution</i>
Central Arctic Paleoceanography	Stavanger	1 August - 15 September 2004	Drilling Platform + <i>Oden</i> + Icebreaker
North Atlantic Neogene-Quaternary Climate (Part I)	Bermuda	13 September - 30 October 2004	JOIDES <i>Resolution</i>
Atlantis Oceanic Core Complex (Part I)	Ponta Delgada	30 October - 18 December 2004	JOIDES <i>Resolution</i>
Atlantis Oceanic Core Complex (Part II)	Ponta Delgada	18 December 2004 - 10 February 2005	JOIDES <i>Resolution</i>
North Atlantic Neogene-Quaternary Climate (Part II) + Norwegian Margin Bottom Water	Ponta Delgada	10 February - 5 April 2005	JOIDES <i>Resolution</i>

FY04

FY05

Prospective FY05 Expeditions (with OPCOM)

- 519 - South Pacific Sea Level (Tahiti and Great Barrier Reef), Camoin et al.
- 564 - New Jersey Sea Level, Miller et al.
- 589 - Gulf of Mexico Overpressure, Flemings et al.
- *[545 - Juan de Fuca Ridge Flank Hydrogeology (Part II), Fisher et al.]*

March 2004 SPC Ranking

- Deep Biosphere and Subseafloor Ocean
 - 547-Full4 Oceanic Subsurface Biosphere
 - 553-Full2 Cascadia Margin Hydrates
 - 555-Full3 Cretan Margin
 - 557-Full2 Storegga Slide Gas Hydrates
 - 573-Full2 Porcupine Basin Carbonate Mounds
 - 584-Full2 TAG II Hydrothermal
- 9.2. Environmental Change, Processes, and Effects
 - 482-Full3 Wilkes Land Margin
 - 548-Full2 Chicxulub K-T Impact Crater
 - 581-Full2 Late Pleistocene Coralgall Banks
 - 595-Full3 Indus Fan and Murray Ridge
- 9.3. Solid Earth Cycles and Geodynamics
 - 522-Full3 Superfast Spreading Crust

Ongoing External Reviews (FY06?)

477-Full4	Okhotsk/Bering Plio-Pleistocene
505-Full5	Mariana Convergent Margin
537-CDP3	Costa Rica Seismogenesis Project
537A-Full3	Costa Rica Seismogenesis Project Stage 1
552-Add	Bengal Fan
600-Full	Canterbury Basin
603-CDP3	NanTroSEIZE Overview
603A-Full2 (*)	NanTroSEIZE Reference Sites
603B-Full2	NanTroSEIZE Mega-Splay Faults
621-Full	Monterey Bay Observatory

SAS FY07 - +0.25 Years

2006	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SPPOC							FY07 Plan					
SPC	FY07 Rank			FY07 Sched								
SSEPs					Meet						Meet	
Proposals				Due						Due		

SAS FY07 - +1.25 Years

2005	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SPPOC							FY07 Plan					
SPC	FY07 Rank			FY07 Sched								
SSEPs					Meet						Meet	
Proposals				Due						Due		

Annual Program Plan Timing (0.25 vs. 1.25 years)

- IO Issues, e.g.,
 - Co-chief selection
 - Prospectus
 - Scientific staffing
 - Technical staffing
 - Clearances
 - Logistics, including purchase of long lead-time items

Complex Drilling Projects (CDPs)

- Multi-platform and / or multi-part expeditions that require a long-term commitment from the IODP
- Consist of overview proposal and one or more component proposals

Complex Drilling Projects (CDPs)

- 537-CDP3: Costa Rica Seismogenesis Project
 - 537A-Full3: Costa Rica Seismogenesis Project Stage 1
- 603-CDP3: NanTroSEIZE Overview
 - 603A-Full2: NanTroSEIZE Reference Sites
 - 603B-Full2: NanTroSEIZE Mega-Splay Faults

Project Management

- iSAS Project Management WG Report
- SPC Consideration of WG Report (March 2004)
- SPC Consideration of New Scoping Groups (March 2004)

iSAS Project Management WG

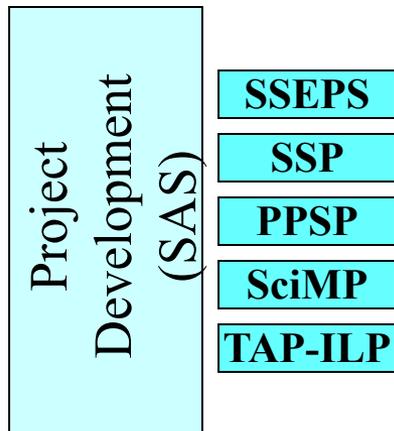
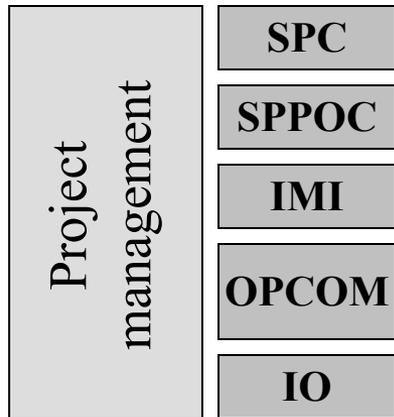
- Jamie Austin, University of Texas, USA
- Keir Becker, University of Miami, USA
- Tim Byrne, University of Connecticut, USA
- Harry Doust, Vrije Universiteit, The Netherlands
- Hisao Ito, Geological Survey of Japan
- Barry Katz, ChevronTexaco, USA
- Yoshihisa Kawamura, Japan Marine Science and Technology Center, Japan
- Kate Moran, University of Rhode Island, USA
- John Thoroughgood, British (Beyond?) Petroleum, USA

Project Management WG: Recommendations

- Recognizes 8 distinct phases, separated and by clear milestone decision points:
 1. Initiation - science proposal received and nurtured
 - Review to establish maturity of project (SAS/SSEPs)
 2. Appraisal and evaluation - proposals accepted and key documents prepared
 - Review to rank and prioritise proposals (SAS/SPC)
 3. Selection – Proposal becomes a project, operational planning commences, DPG formed to manage all further activities, co-chief scientist(s) nominated
 - Project & well concept peer review (OPCOM)
 4. Extra survey definition – contingent on need to acquire more site specific data
 - Survey, well plan and science integration review (OPCOM/CMO/IO)
 5. Survey execution and incorporation – follow up to phase 4
 - Final pre-operational review (OPCOM/CMO/IO))
 6. Operations – drilling activities carried out (IO)
 7. Post-operation – review of operation, budgetary efficiency and scientific achievements (SAS, CMO, IO)
 8. Scientific Performance Review - evaluation of CDP (CD-PEC)
- **Note that phases 4, 5 and possibly 8 are contingent – they will normally be needed only for complex, riser-type projects**

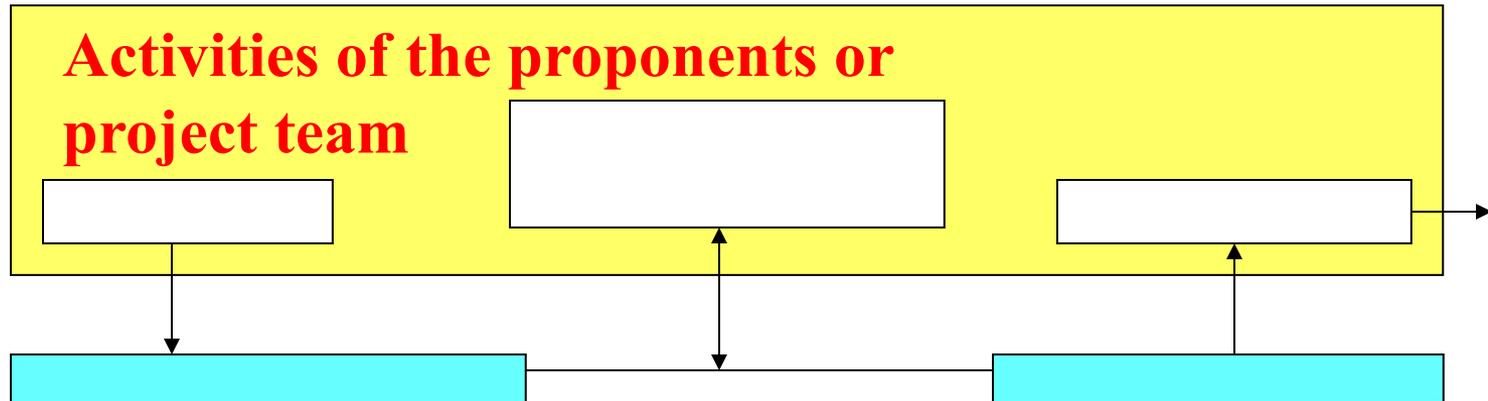
Key to slide

Phase (I – VIII)



Activities of the decision-making bodies: highest authorities at the top

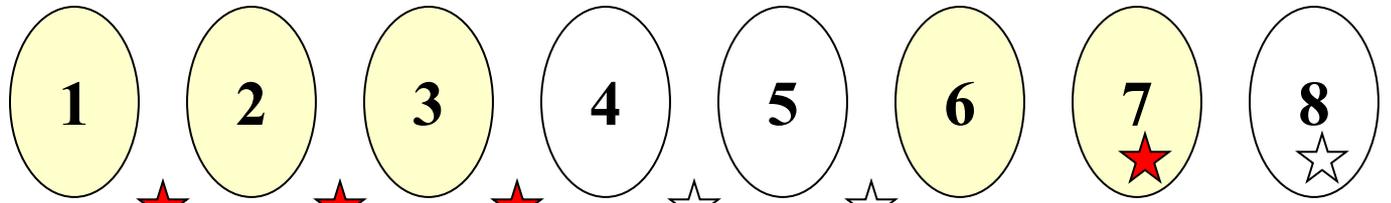
Note: activities in lined boxes show where input is required. Unlined boxes show discretionary advice/activities



Activities of the SAS evaluation and advice panels

Project Planning Phase

★☆☆ reviews



Operations management

- SPC
- SPPOC
- IMI
- OPCOM
- IO

SAS Function

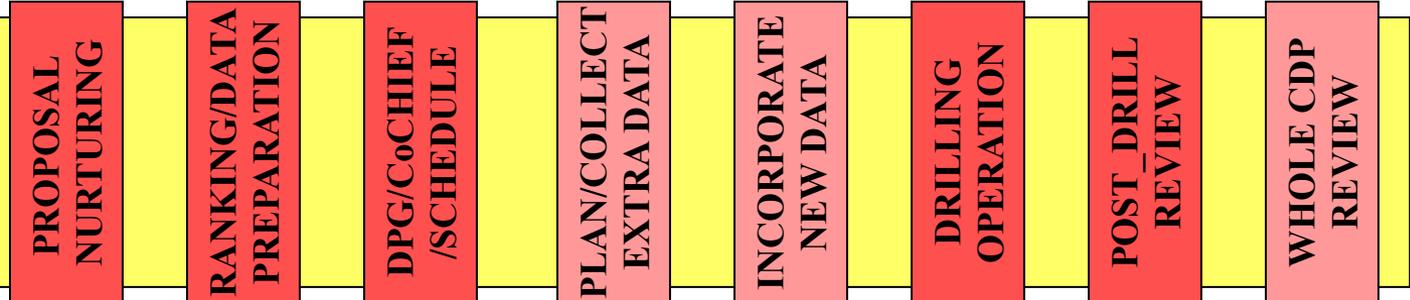
OPCOM
IMI / IO

IO

SPPOC
IO

CD-
PEC

Project activities



Project evaluation

- SAS Off
- SSEPS
- SSP
- PPSP
- SciMP
- TAP-ILP
- external

EVALUATION

RISK ASSESSMENT

Project Management WG: Recommendations

- Adoption in principle of the Project Management system as described, with its phased structure and defined review points, providing assurance that the project(s) is ready to proceed further
- Pilot application to selected early IODP projects, including simple and complex ones (eg NanTroSEIZE)
- Evaluation of its effectiveness, applicability and flexibility after a period of 1 – 1.5 years
- Propose clarifications and modifications as appropriate

PMS must be usable by the IODP community – this proposal provides a framework to identify what will be needed and what will work and what not

SPC Consideration of WG Report

- Doust presentation and WG Report discussion at March 2004 SPC meeting
- SPC (+IMI+IO?) WG to form at March 2004 SPC meeting
- New WG to report at June 2004 SPC meeting
- New WG report to July 2004 SPPOC meeting

Scoping Groups

- Arctic - post-scoping (March 2004 SPC opportunity), now in implementation (iSAS)
- Indus - being formed (September 2003 SPC)
- *South Pacific Sea Level (GBR?) - March 2004 SPC?*
- *New Jersey Sea Level (also ICDP) - March 2004 SPC?*
- *Costa Rica CDP - March 2004 SPC?*
- *Nankai CDP - March 2004 SPC?*

Expedition/Site Naming

- SciMP Expedition/Site Naming WG, Rick Murray, chair
- Input from
 - JDESC
 - USSAC
 - ESO
- Murray to present recommendations at March 2004 SPC meeting
- Recommendations to the SPPOC finalized shortly thereafter

Publications

- SPC Publications WG, Ken Miller and Yoshiyuki Tatsumi, co-chairs
 - JDESC
 - USSAC
 - ESSAC
- SciMP Recommendations, Rick Murray and Eiichi Kikawa, co-chairs
- Miller and Murray to present respective recommendations at March 2004 SPC meeting
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*"When I said I didn't want a bunch of yes-men,
I didn't mean I wanted a bunch of no-men."*

IO meeting Action Item #1

- Develop a program-wide HSE (Health, Safety and Environment) Policy
- IODP Environmental Principles (draft)

(drafted by PPSP 14 Dec. 2003: IO-AI#1-1)

- Recognize environment impact
- IOs & IOs' contractors are responsible
- Protection of marine life and the environment
- Disposal of waste material and restitution
- Storage of potentially harmful substances
- Keep the public informed of our activities



- To ensure the health and safety of all personnel in the areas in which IOs operate and to minimize the impact of their operations on the environment.
- IODP IOs will:
 - Provide HSE leadership
 - Develop specific policies & management practices
 - Ensure the commitment and adherence to HSE
 - Provide HSE induction and training
 - Review and track implementation and performance
 - Develop feedback system to encourage and facilitate employee (adherence to established HSE policy)
 - Performance appraisal for employee & contractor



- ALARP : As Low As Reasonably Practical
- Health Guidelines
- Safety Guidelines
- Training Guidelines
- Guidelines
 - 1.0 Leadership and Commitment
 - 2.0 Planning
 - 3.0 Implementation
 - 4.0 System Evaluation



Future Action

- Complete HSE Policy by the end of Mar 04
 - Wording: simple and clear
 - Merging guidelines - essence to policy
- Each IO develop specific policies & management practices dependent on facilities and projects



Protection of Deep Sea Biodiversity



CDEX



Discussion History

- Coos Bay Statement to the UN (Aug. 29, 2003)
 - “Statement of concern to the United Nations General Assembly regarding the risk to seamounts, cold-water corals and other vulnerable ecosystems of the deep-sea” (submitted in Dec. 03)
- Dr. Kitazato (JAMSTEC) contacted Prof. Thiel (Emer. U. Hamburg), exchanged their opinions on the statement, and discussed future impact on IODP (Dec. 03 to Jan. 04).
- CDEX got the copy of (the Coos Bay) statement from Drs. Kitazato and Yamamoto of JAMSTEC (Nov. 03), and made draft comments.
- Dr. Yamamoto prepared documents to discuss this issue in SPC (June 04).



Comments

- Could be a big impact on IODP community in near future
- A specific WG should work with SAS (TBD) with scientific sense
- IOs should be concerned with the issue and check procedures prior to spud-in
- SAS (TBD) evaluates the site survey readiness, including environmental issues



Progress on Bozeman Action Items

**IOs Meeting #2
British Geological Survey (ESO)
Edinburgh, Scotland
February 28, 2004**

Action Item #1

“Develop a program-wide HSE (Health, Safety and Environment) policy which emphasizes a high standard, but also maintains flexibility in response to site-specific demands, and match that policy with a HS and Training framework for technical personnel across platforms.”

- the Action Item group (Kawamura, Brett, Baldauf) will develop a set of overarching principles, for transmission first to the VP of Science Operations of IODP-MI, then on to the June meeting of SPC, and ultimately to SPPOC and the IODP Council in July.
- present a modified, amplified presentation on preservation of deep-sea biodiversity to SPC in June (see accompanying .ppt presentation and .pdf file). SPC may then decide on appropriate SAS responses (e.g., involvement of SSP and PPSP in continuing consideration of this issue).

Statement of concern to the United Nations General Assembly regarding the risks to seamounts, cold-water corals and other vulnerable ecosystems of the deep-sea

Deep-sea biologists from around the world met for the 10th Deep-Sea Biology Symposium at the Institute of Marine Biology, University of Oregon, in Coos Bay, 25 - 29 August 2003. We, the undersigned, discussed anthropogenic threats to deep-sea biodiversity and ecosystems in light of the request by the UN General Assembly and the United Nations Informal Consultative Process on Oceans and the Law of the Sea to 'consider urgently' the risks to the biodiversity of seamounts, cold-water corals and other deep-sea ecosystems. We concluded the following:

- **populations of numerous commercially important species of deep-sea fish and precious corals associated with seamounts, ridges, plateaus, continental slopes, coral reefs and sponge fields in the deep-sea have been serially depleted by fishing;**
- **benthic habitats and communities have been severely damaged by fishing activities;**
- **the biological characteristics of most deep-sea species render the deep sea particularly sensitive to anthropogenic disturbance and exploitation;**
- **although knowledge of deep-sea biodiversity is limited, evidence to date suggests that deep water habitats such as coral, seamount, seep and vent ecosystems are likely to harbour distinct assemblages of diverse and highly endemic species.**

The lack of effective international regulations for the conservation of natural systems and the protection of the biodiversity of the deep sea on the High Seas, as well as within areas of national jurisdiction (EEZs), is a cause of great concern. In this regard, consistent with the precautionary approach, we recommend that:

- **the conservation and protection of the biodiversity of the deep sea is the responsibility of all nations, in particular on the global ocean commons – the high seas;**
- **non-commercial research, within ecologically appropriate constraints, should be promoted and freely conducted to better understand species diversity and life history, community structure, trophic organization and ecosystem processes of the deep-sea;**
- **conservation measures should be established at the global, regional and national levels with an emphasis on developing representative networks of marine protected areas (MPAs) as called for by the World Summit on Sustainable Development and endorsed by the UN General Assembly;**
- **areas critical for baseline scientific research and to furthering the understanding of the deep-sea environment should be designated as Science Priority Areas;**
- **the UN General Assembly should adopt a moratorium on deep-sea bottom trawl fishing on the High Seas effective immediately;**
- **all regulations should be in conformity with the 1982 UN Convention on the Law of the Sea and other relevant instruments, including the Convention on Biological Diversity and the 1995 UN Fish Stocks Agreement.**

[The signatories to this statement listed below have signed in their individual capacity. Institutional affiliations are for identification purposes only.]

IODP-MI (also known as IMI)

Proposed Structure and Operations

Integrated Ocean Drilling Program Management International Inc.

IODP Management International, Inc. (IODP-MI) has been selected to be the Central Management Office (CMO) to manage the Integrated Ocean Drilling Program (IODP).

(The terms IODP-MI and CMO will be used interchangeably).

Vision

- To translate the scientific priorities of the Ocean Drilling Community with consultations with the Implementing Organizations (IOs) and the Science Advisory Structure (SAS) into program plans
- To implement these program plans in an efficient and cost-effective manner, and
- To make the integrated results available to the scientific community.

Mission Statement

- The CMO will receive advice and recommendations on scientific priorities and on specific scientific drilling programs from the SAS.
- The CMO will request responsive program plans from the IOs and will negotiate with IOs and the SAS to produce an integrated Annual IODP Program Plan under budgetary guidance from NSF/ MEXT.
- The Program Plan will include Scientific Operations Costs (SOCs) to be managed by the CMO and Platform Operations Costs (POCs) which will be directly funded to IOs.

Mission Statement (continued)

- The CMO will be responsible for program-wide engineering development; publications; education and outreach; site survey data management; and core sample repositories.
- With advice from the SAS and under the supervision of managers in the CMO, these functions will be sub-contracted to the IOs and third parties as appropriate.

Principles

1) The scientific community is the principal stakeholder of IODP. Through the SAS, it will propose the initial scientific plans and provide advice on the final implementation plans.

2) IODP is a single, integrated, international program of scientific ocean drilling, with multiple drilling platforms. The CMO, the IOs and the SAS are all vital elements of IODP.

Principles

3) All SOC funds are commingled funds to be budgeted and managed by the CMO.

4) Japanese, U.S. and European activities in IODP will be equitably balanced.

Offices and Their Locations

- IODP-MI will initially establish two offices. The *Washington IODP-MI Office* will be located in the U.S., in the Washington, D.C. area, and it will serve as the headquarters and corporate office.
- The *Sapporo IODP-MI Office*, headed by the IODP-MI Vice President for Science Planning, will be located in Sapporo, Japan.
- Video conferencing facilities will be installed in both offices to facilitate communication.

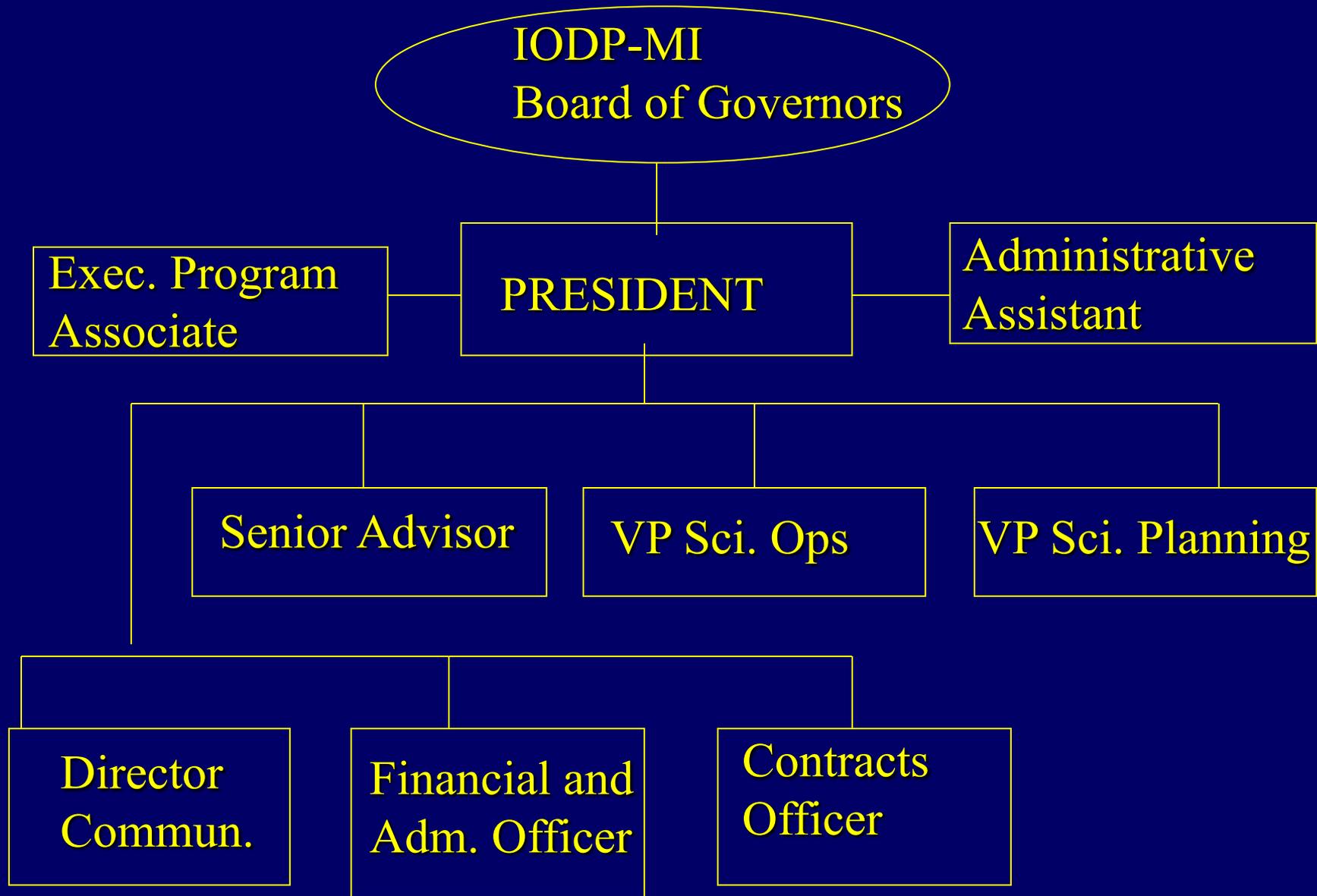
Personnel and Their Duties

The key personnel:

- President
- Vice President for Science Operations
- Vice President for Science Planning
- Senior Advisor to the President

Other Senior personnel:

- Director of Communications
- Finance and Administrative Officer
- Contracts Officer



The IODP-MI President

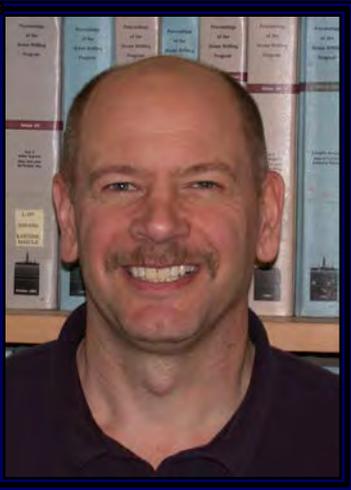
- Responsible for all IODP-MI employees.
- He directly oversees the two IODP-MI Vice Presidents (VPs), the Senior Advisor, the Director of Communications., the Finance and Administrative Officer, and the Contracts Officer.

The VP for Science Operations

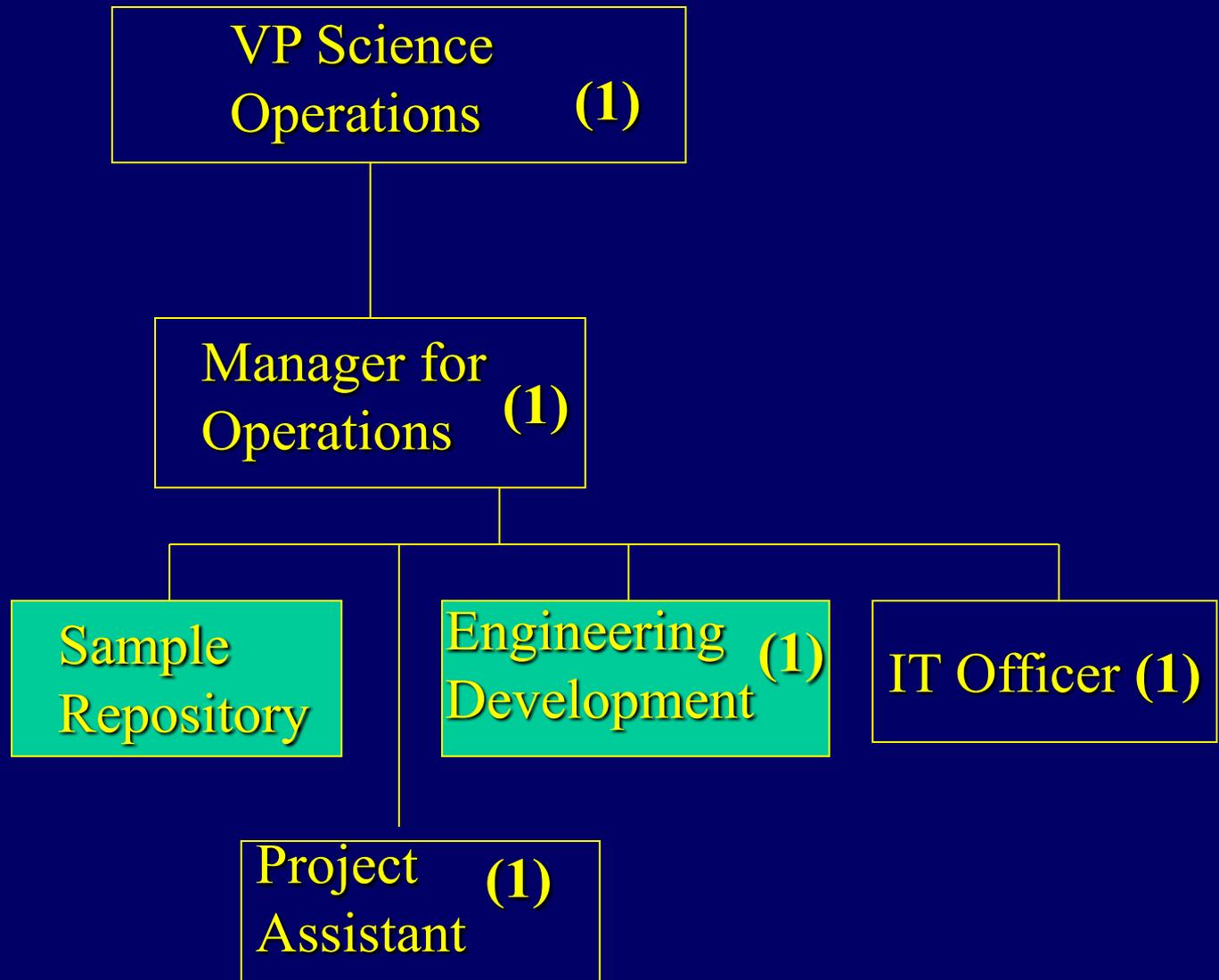
Responsible for oversight of IODP field operations:

- 1) Serves as Chair of the Operations Committee (OPCOM).
- 2) Oversight and overall management for the core sample repositories through subcontracts.
- 3) Supervises the Director of Engineering Development, who will oversee any subcontracts that fund engineering projects, including development funds to IOs.
- 4) Monitors national representation of shipboard scientific parties.

Thomas R. Janecek



Thomas R. Janecek has served as Head Curator/Co-Principal Investigator of the Antarctic Marine Geology Research Facility at Florida State University for the past 10 years. Janecek has been actively engaged in scientific ocean drilling for over 20 years and has sailed on 14 DSDP/ODP drilling legs. He has served on numerous DSDP and ODP Advisory Panels.



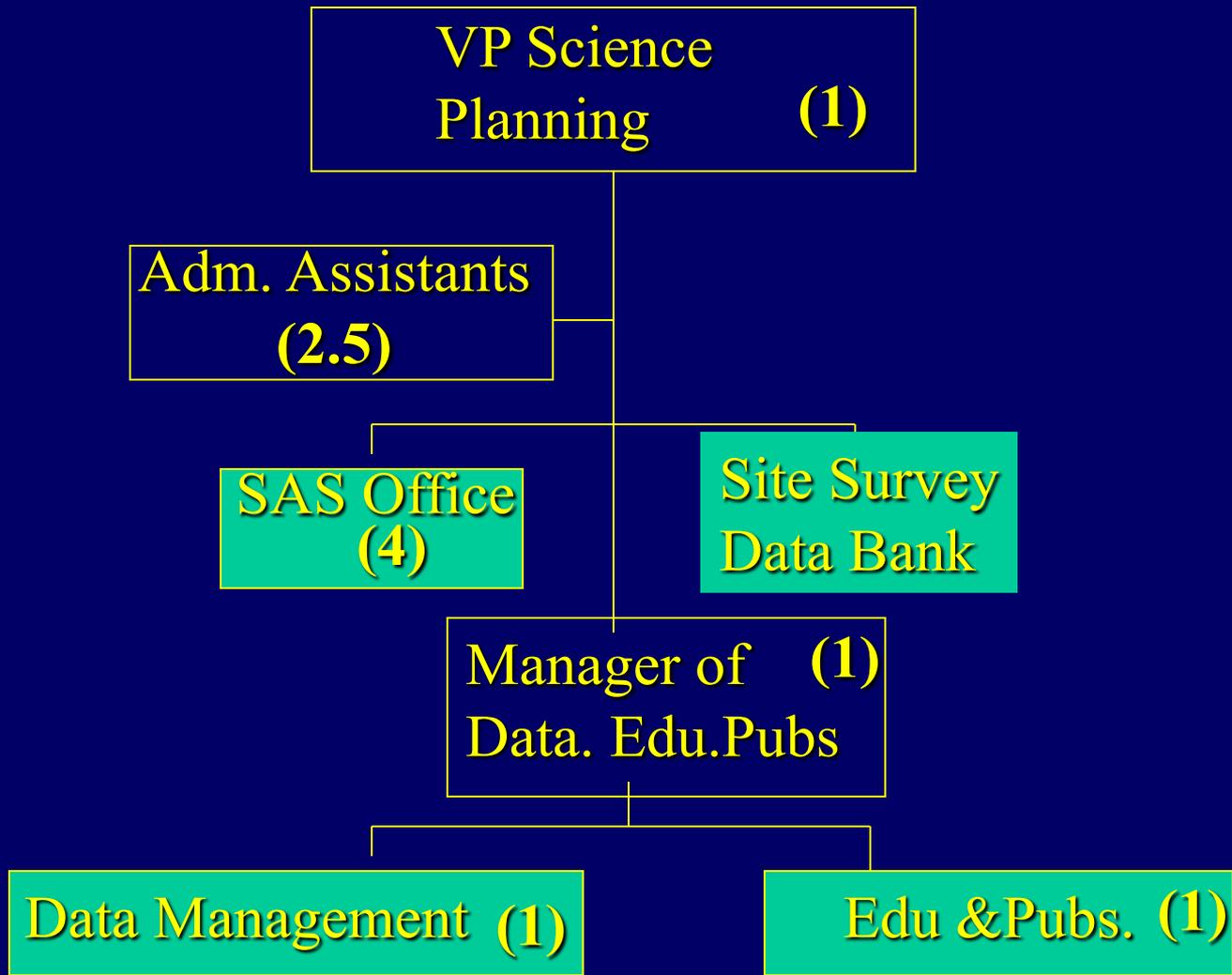
The VP for Science Planning

- 1) Coordinates the SAS and its activities, and serves as a liaison both to the Science Planning Committee (SPC) Chair and to the SPPOC Chair.
- 2) Supervises the production of IODP - data, publications, and education. Oversees data management and education and publication subcontracts.
- 3) Supervises the Sapporo IODP-MI office, which will be subcontracted to Japan's Advanced Earth Science and Technology Organization (AESTO).



Hans-Christian Larsen

Founder and director of the Danish Lithosphere Centre (DLC). He has acted as ODP co-chief scientist twice and has served on a wide range of ODP scientific advisory panels, including PCOM and the final ODP performance evaluation panel (PEC-VI). He co-chaired the international conference (CONCORD) on scientific riser drilling in 1997 and was a member of the JOIDES subcommittee IPSC, tasked with writing the Initial Science Plan for IODP.

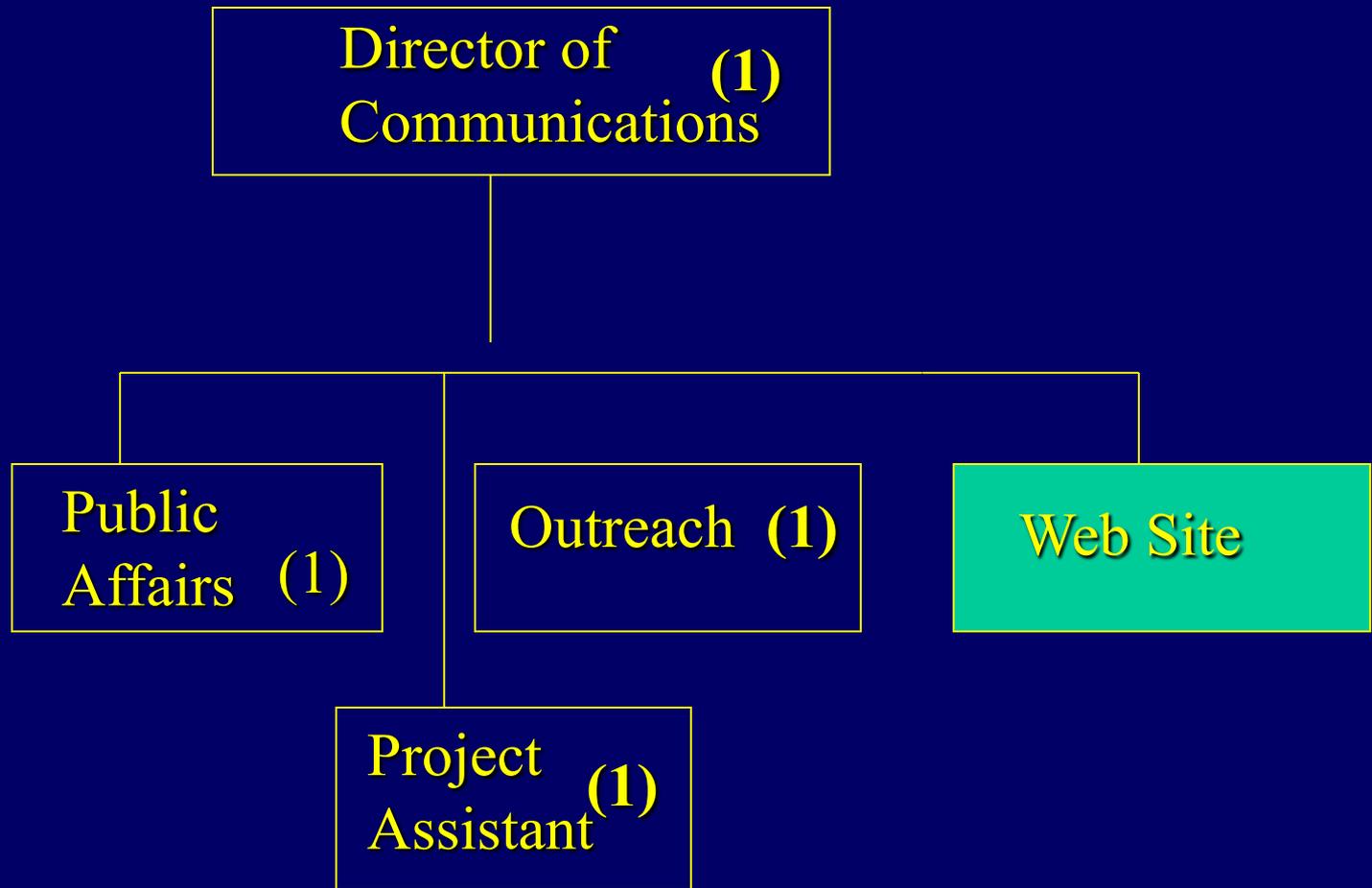


The Senior Advisor to the President

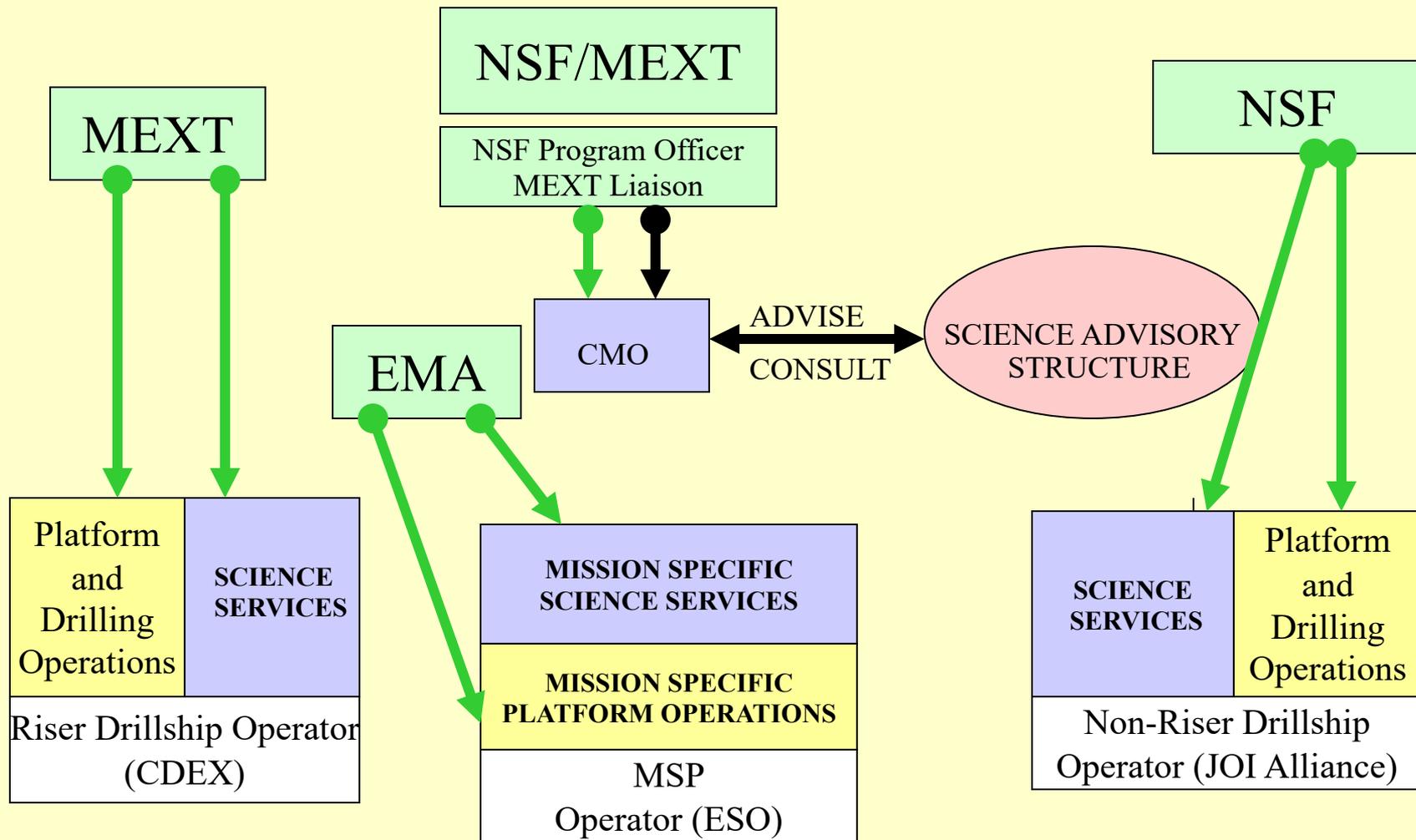
- 1) Maintain liaison with MEXT.
- 2) Proactively initiate and maintain contacts with outside organizations, with a view towards initiating projects where IODP could play a substantial part.
- 3) Proactively interact with scientists, as well as scientific organizations, of other countries to encourage participation & membership in IODP.

The Director of Communications

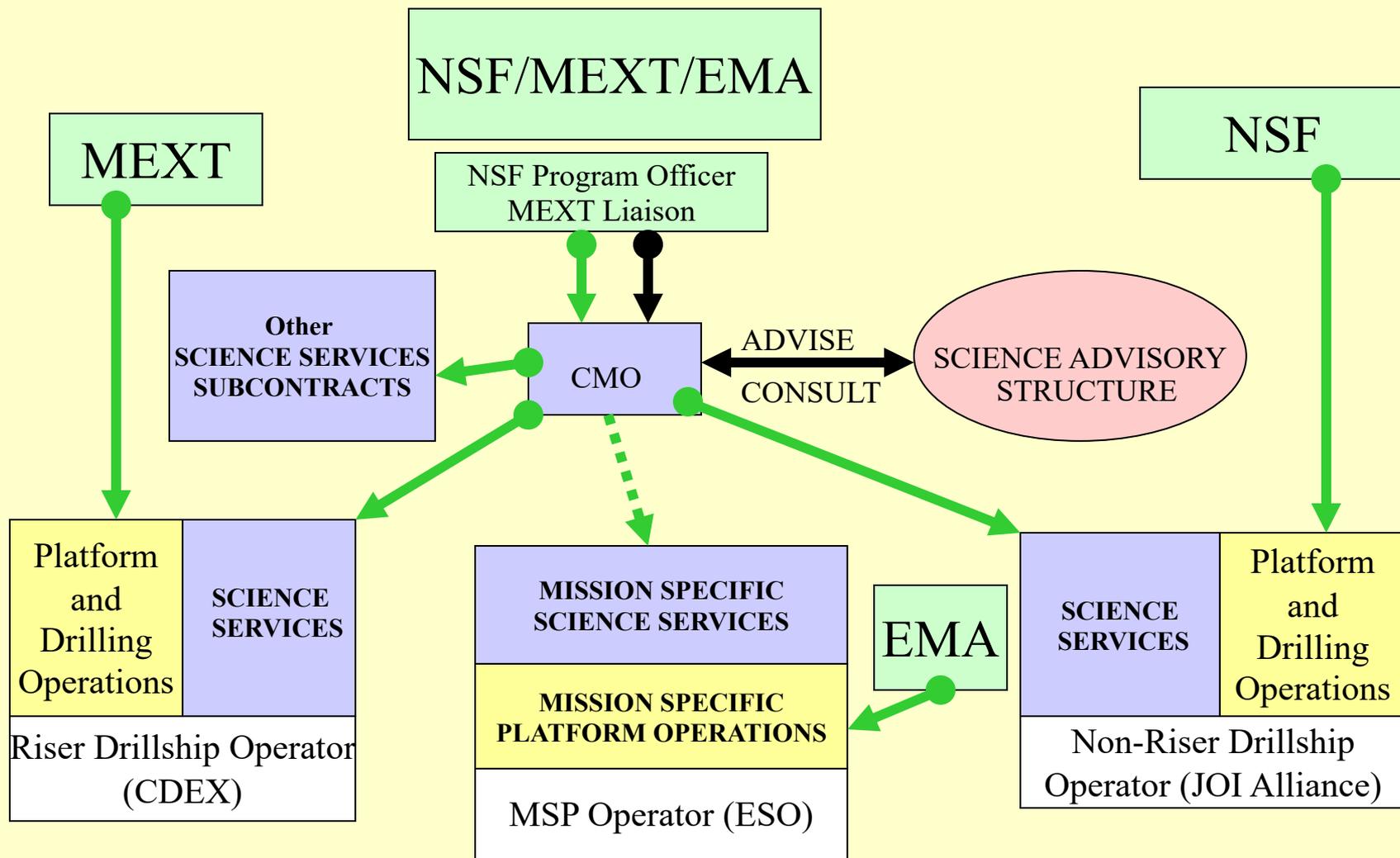
- 1) Supervises Outreach and Public Affairs activities.
- 2) Oversees the subcontract for web based activities.
- 3) Assists the VP of Science Planning, as needed.



FY 2004



FY 2005



CMO

SAS

Ed
Outreach
Pubs

Engin.

Data,
Samples

S.S. Data
Bank

SOCs



AESTO

R F Ps

IOs

2nd Year SOC Funds

Millions of Dollars

Budget for items such as
“OUTREACH” will be supplemented
by and coordinated with similar
budgets from other (US, Japanese, or
European sources).

IODP-MI Sub-contracts

Based on recommendations from SPC committees, IODP-MI will issue RFPs for various functions, such as Data Management, and award subcontracts based solely on the quality (technical factors and cost) of each proposal.

IODP-MI Committees and Task Forces

IODP-MI President and Vice Presidents will set up Committees and Task Forces as required, from time to time. They will generally be set up in consultation with IOs and the SPC and will report to the Vice Presidents or the President.

The first standing committee to be set up will be the OPCOM (“Operations Committee”).

OPCOM

Charge: On the basis of priorities ranked by the SPC, OPCOM will recommend operational plans to IODP-MI, in consultation with the IOs and the SPC.

Membership: VP Science Operations will be the chairperson. Other members will be VP Science Planning, Manager for Science Operations, Chairman SPC and one other member of SPC, IO representatives, and outside experts as needed.

OPCOM - Procedures

OPCOM will obtain prioritized proposals from the SPC and budgetary guidance from IODP-MI

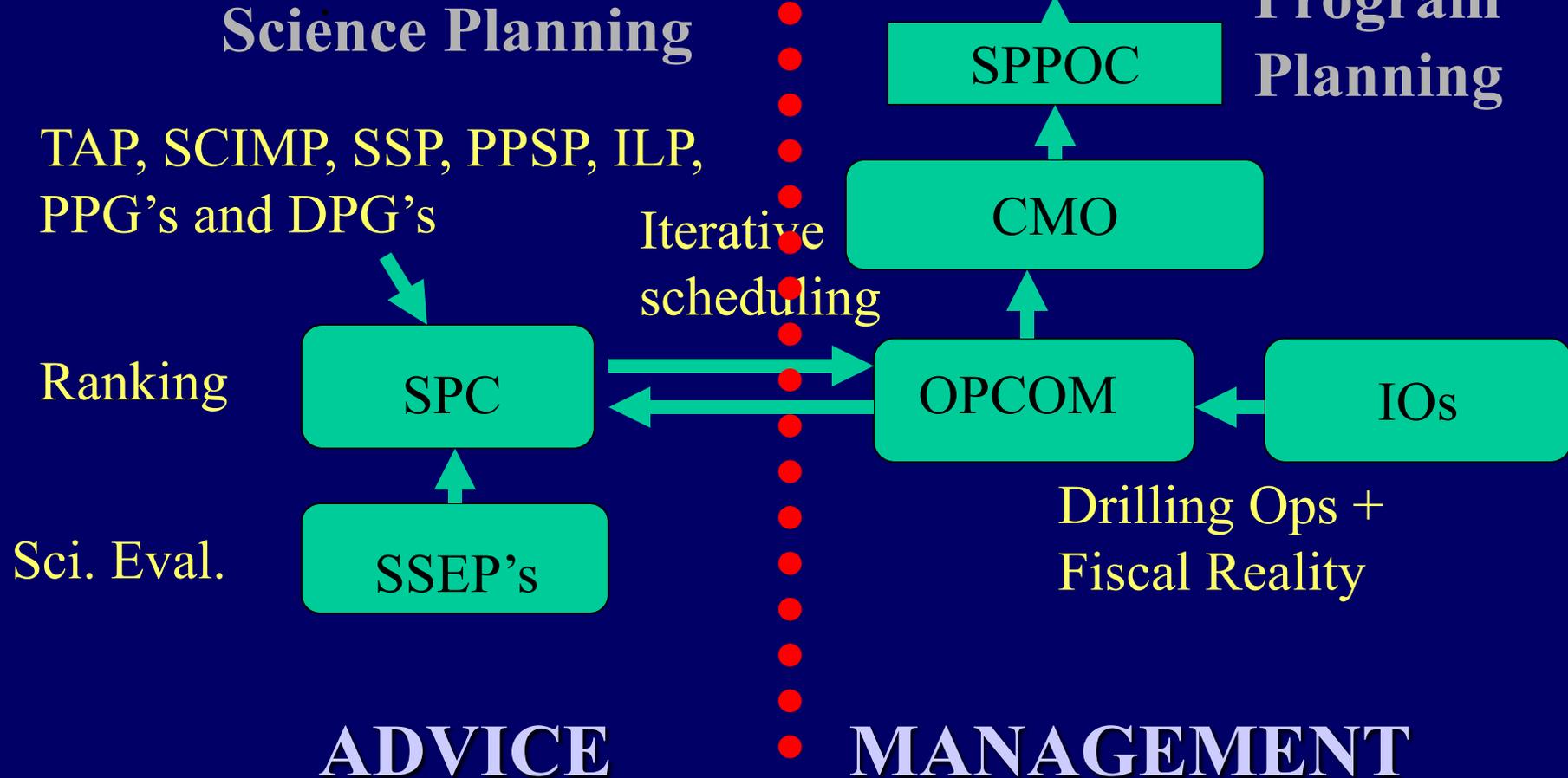
In consultation with the IOs and SPC members, OPCOM will formulate one or more alternative drilling schedules.

The drilling schedule will be iteratively discussed with the SPC to maximize the science.

The OPCOM chairperson will, on the basis of discussions with the IOs and SPC, make a recommendation to the IODP-MI President for inclusion in the Annual Program Plan.

Functioning of OPCOM

Modified from Keir Becker



OPCOM - optimum timeline

Fall or winter Year Zero

Obtain prioritization from SPC

January Year One

Obtain budgetary guidance from IODP-MI (from NSF/MEXT)

Spring Year One

Formulate operational plan

March Year One

Forward plan to the SPC

April to June

Iterate with SPC and IOs, as necessary

July Year One

IODP-MI incorporates recommendation from OPCOM in Annual Program Plan and submits it to SPPOC.



IODP Implementing Organizations

Exchanges/Sharing of Staff



Recommendations for IODP Exchanges/Sharing of Staff

Discussions held among Tom Davies (JOI Alliance), Dan Evans (ESO), Kazushi Kuroki (CDEX)

Good Idea - Let's Do It!

Apply to both Shorebased and Seagoing Activities:

- Repositories
- Engineering and Technical Development
- Database Development
- Staff Scientists
- Technicians



Recommendations for IODP Exchanges/Sharing of Staff

Proposed Guidelines:

- (1) Exchanged staff member remains an employee of their home institution;
- (2) Employer will pay travel to/from ship or institution where exchange activities will take place;
- (3) Host institution will pay living expenses during term of exchange activity;
- (4) Exchange staff will report to local supervisor at host institution (or onboard vessel);
- (5) Exchange staff will be assigned appropriate tasks to their skills and experience, and will be provided training as necessary to accomplish tasks;



Recommendations for IODP Exchanges/Sharing of Staff

Proposed Guidelines:

- (6) Upon completion of exchange activity, host supervisor will provide a performance evaluation of the exchange staff member following a standardized format.



Recommendations for IODP Exchanges/Sharing of Staff

Issues requiring further discussion:

- Frequency of Exchanges
- Language Proficiency
- Lead-Time Requirements
- Disciplinary Issues and Procedures
- Work Environment
- Visa and Immigration Requirements

Progress on Bozeman Action Items

**IOs Meeting #2
British Geological Survey (ESO)
Edinburgh, Scotland
February 28, 2004**

Action Item #2

“Implement sharing and exchange of technical staff among platforms, tied to annual program planning.”

- pursue (in April) the ongoing discussion (see accompanying .ppt presentation) with the existing group: Davies/Rack, Evans/Roehl, Kuroki.
- prepare a presentation for SPC in June.



Proposal to Consolidate
DSDP and ODP Core Collections
Presentation to SciMP
Nagasaki, Japan
December 2003

Consolidation: Estimated Benefits and Risks

Benefits

- Long-term cost savings of ~\$361,000 U.S./year
- All cores from the same region stored together; less scientist travel
- All cores adjacent to core-related science laboratories

Risks

- Potential damage to cores during consolidation
- Delays in access to cores while in transit during consolidation

Present Distribution of DSDP/ODP Cores

West Coast Repository

- Annual operating costs*: >\$150K
- Regions: Indian and Pacific Oceans and peripheral seas
- Total DSDP core: ~50,000 m
- Samples taken per year: 2,970

Gulf Coast Repository

- Annual operating costs*: >\$150K
- Regions: Indian and Pacific Oceans and peripheral seas
- Total ODP core: ~120,000 m
- Samples taken per year: 40,258

East Coast Repository

- Annual operating costs*: >\$225K
- Regions: Atlantic and Southern Oceans, Caribbean Sea, Gulf of Mexico, other peripheral seas
- Total DSDP/ODP core: ~75,000 m
- Samples taken per year: 8,071

Bremen Core Repository

- Annual operating costs*: >\$30K
- Regions: Atlantic and Southern Oceans, Caribbean Sea, Gulf of Mexico, other peripheral seas
- Total ODP core: ~75,000 m
- Samples taken per year: 37,597

*ODP costs. Does not include TAMU or University of Bremen institutional costs.

Proposed Distribution of DSDP/ODP Cores

Gulf Coast Repository

- Regions: Indian and Pacific Oceans and peripheral seas, Gulf of Mexico and Caribbean
- Total DSDP/ODP core: ~181,000 m
- Remaining capacity: ~220,000 m

Bremen Core Repository

- Regions: Atlantic Ocean, Southern Oceans (>60°S), and peripheral seas
- Total DSDP/ODP core: ~138,000 m
- Remaining capacity: ~62,000 m

This proposal does not assume a particular IODP core distribution model; this will be determined in the future based on independent discussions.

Cost Savings

- Cost to operate ECR, WCR, GCR, and BCR*:
~\$U.S. 6.8 million over 10 years
- Cost to operate consolidated repositories*:
~\$U.S. 4.5 million over 10 years
- Savings from consolidation†:
~\$U.S. 1.5–\$2.3 million over 10 years (range of savings depends on when project begins)
- Annual cost savings after implementation:
~\$ U.S. 361,000

*10-year operation period.

†Savings will vary depending on when project begins.



Risk Management Plan

To Prevent Damage to Cores:

- Shrink-wrap core to secure material during transit
- Fill voids with foam packing inserts; add top sheets to rubbly, heavily sampled and fragile material before shrink-wrapping
- Insert temperature recorders in each shipping container to monitor refrigeration
- Open fragile cores for quality control check at receiving repository
- >20 years experience with packing and shipping cores
- Send working and archive halves in separate shipments

To Minimize Delays in Access to Cores:

- Ship 1–4 containers at a time to minimize loss of access
- Post shipping status/schedule on Web (information and planning)



Repository Institutions Endorsements

- Texas A&M University
- Columbia University/
Lamont Doherty Earth Observatory
- University of California, San Diego/
Scripps Institute of Oceanography
- University of Bremen

All institutions currently housing ODP repositories endorse this plan and are prepared to begin implementation as soon as the plan is approved.

University Commitments

Texas A&M University

- Build new core repository to increase capacity up to 400 km
- Build core-related science laboratories adjacent to GCR facility
- No cost to IODP for building rent and refrigeration

University of Bremen

- Build new core repository with capacity of 200 km
- Build core-related science laboratories adjacent to new BCR facility
- No cost to IODP for building rent and refrigeration

Duration of Project

Before project can begin:

- Build new BCR core facility (~2005 - ready to receive cores)
- Build new GCR core facility (~2007 - ready to receive cores)

Estimated consolidation duration:

- ECR: 56–60 weeks (~14 to 15 months)
- WCR: 40–44 weeks (~10 to 11 months)

Total inaccessible time for any section half:

3.5–6.5 weeks

- Pack: 1.5 weeks
- Ship: 1 week (by truck for WCR)
4 weeks (by ship for ECR)
- Unpack and rack: 1 week



Other IODP-MI - related issues:

Recommendations for IODP Core
Curation Model and Procedures



Recommendations for IODP Core Curation Model and Procedures

Bremen meeting - October 24-25, 2003

Functional Administration of Core Collections

(3 options were discussed):

- 1 Curator Model: ODP situation
- 3 Curator Model: Project Curator at each IODP Repository (GCR, BCR, Kochi)
- 4 Curator Model: as above, plus IODP Curator

Participate in pre-cruise meetings; facilitate the development of cruise-specific sampling plans; review and approve sampling requests; SAC issues; other duties.



Recommendations for IODP Core Curation Model and Procedures

Project Curator for each Implementing Organization:

- Fully responsible for all functional tasks at each IODP repository.
- Meet annually to coordinate and integrate activities, share knowledge, and solve common problems (e.g., Curator's Working Group).
- Report annually to SCIMP and IODP-MI.



Recommendations for IODP Core Curation Model and Procedures

Committee did not recommend 4 Curator Model:

- Responsibilities unclear
- Multiple points of contact
- Confusion among customers
- Additional cost

Potential IMI Roles:

Curation Policies and Oversight (CAB)

- Review/approve permanent archive sample requests
- Act as an appeals board for any sample request issue that is not resolved at the Curator's level
- Integrated communication issues

Recommendations for IODP Core Curation Model and Procedures

Other Discussions?



Progress on Bozeman Action Items

**IOs Meeting #2
British Geological Survey (ESO)
Edinburgh, Scotland
February 28, 2004**

Action Item #3

“Agree upon, then implement, a program-wide sample curation and management policy, in two phases: a) for IODP cores to be collected beginning in FY’04, and b) for older (DSDP, ODP) cores, should the decision be made to move them. Before implementation, SAS should be consulted for advice and input about both phases.”

- Part A: existing DSDP and ODP cores (see accompanying .ppt presentation) - a scheme for moving all cores to the Gulf Coast and Bremen repositories has been developed (as part of the JOI Alliance proposal to NSF) and fully reviewed and endorsed by SciMP. This core redistribution scheme, which can be initiated in summer 04 and begun in 05, will be presented to SPC in March. IODP-MI will be proactive about shepherding this scheme through SPC in June and SPPOC in July for implementation in FY05, assuming that funding is available.

- Part B: IODP cores - will repositories be tied to platforms in IODP? The group decided to hand this issue to Janecek, the new VP of Science Operations of IODP-MI, for expedited decision-making, in further consultation with the IOs and SAS. Additional discussions will take place prior to the June SPC meeting, A decision must be reached by that time, so that the fate of IODP cores can be included as part of the FY05 Annual Program Plan.

Progress on Bozeman Action Items

**IOs Meeting #2
British Geological Survey (ESO)
Edinburgh, Scotland
February 28, 2004**

Action Item #4

“Develop a ‘minimum acceptable’ set of ‘IODP’ data to be derived from all platforms (in consultation with the SAS), so as to distinguish it from proponent-driven data production, analysis and interpretation (some of which may be derived directly from ‘IODP’ data).”

- Evans/Roehl, Kuramoto and Rack will fully incorporate available SciMP WG reports on this subject into their existing list (see accompanying .ppt presentation and table), then forward the integrated input for further consideration by IODP-MI and SAS.



**British
Geological Survey**
NATURAL ENVIRONMENT RESEARCH COUNCIL



IOs Meeting

Edinburgh

IODP Minimum Measurements

Bozeman Minimum Measurements Group





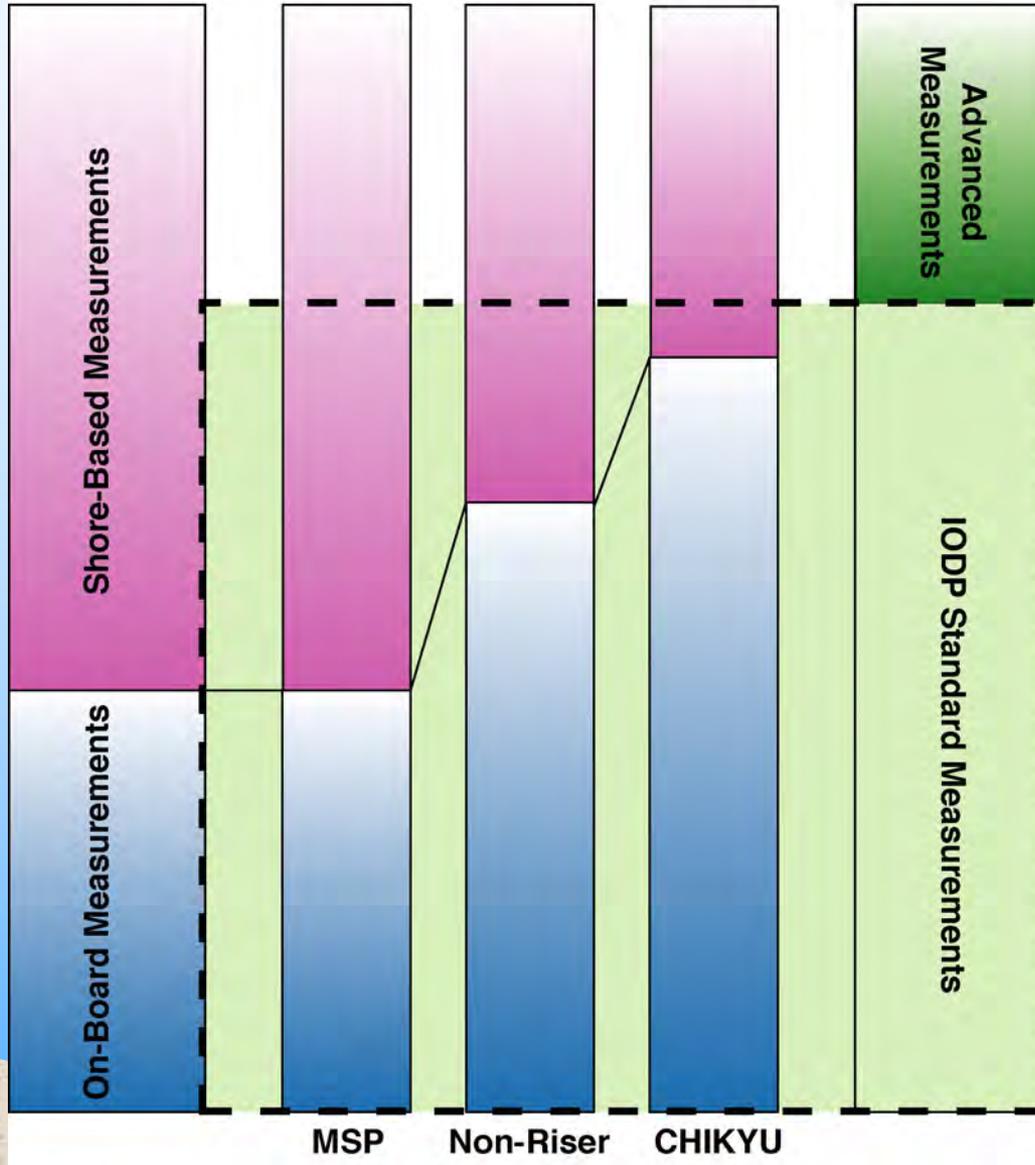
Progress

- **Meetings**
 - **Bremen in October**
 - **SF and Nagasaki in December**
 - **Wednesday (February 25) in Edinburgh**
- **Also e-mail discussions**

- **Summary table produced**
- **More detailed documentation also**



IODP Scientific Measurements





Some Issues.....

- **Core imaging**
 - **SciMP view on film/digital**
- **Core description**
 - **J-Cores, Applecore, DIS**
 - **Long-term goal of integrated system**



Some Issues.....

- **Palaeomagnetism**
 - **Raises issue of what goes in the IR Volume**
 - **Reversal stratigraphy is scientific objective for ACEX**
 - **What if it's not possible to complete analyses at optimum resolution at Bremen ?**
 - **Analyses made in home labs on U channels**
 - **Too late for IR Volume**
 - **If a minimum measurement does not go into IR Volume and is carried out in home lab, is this a SOC?**



Some Issues.....

- **Underway**
 - PDR on MSPs ?
 - No seismic or mag on *Chikyu*
 - Not always provided on MSPs
- **Geochemistry**
 - Pore water
 - Squeezer plus rhisome for ACEX
- **Microbiology**
 - MSPs cannot provide full laboratory



Other points

- **Need for calibration**
 - e.g., EPC producing standard core sticks
- **Japanese want to 'raise the bar' of minimum measurements**
- **Where do we go from here?**

IODP MINIMUM MEASUREMENT REQUIREMENTS

IMPLEMENTATION PRIORITIES

Category = 1: ephemeral properties and safety information (1a is minimum standard for any platform)

Category = 2: standard measurements (*JR & Chikyu* offshore, MSP possibly onshore):

Category = 3: special measurements (IODP Non-Riser Phase II wish list; available on *Chikyu*)

DATA TYPES VS. MEASUREMENT SYSTEMS

Each line item represents a data type, NOT a physical (hardware/software) measurement system

Many data types can be acquired by more than one measurement system

Specific measurement systems are not elaborated here - can of course be done on request

Category	Data type	Acronym	Core logging			Category	Critical equipment, preferably with adequate software and database integration	
			Wh	½	Sp			
CORE DATA TYPES								
CURATION								
	Corelog and depth map		Y	Y	Y		1a	Database, label printer, engraver
	Sampling				Y		2	Application, database
CORE IMAGING								
	Photography	PH		Y	Y		2	Film camera
	Microphotography	MPH			Y		2	Film camera for microscope
	Digital imaging	DI	Y	Y	Y	Y	2	Digital imaging system
	Digital micro imaging	MDI			Y		2	Digital camera for microscope
VISUAL CORE DESCRIPTION								
	Macroscopic description	VCD	Y	Y	Y	Y	2	VCD application/database
	Smear slide microscopy	SS			Y		2	Smear slide prep., microscope
	Thin section microscopy	THS			Y		2	Thin section prep., microscope
STRATIGRAPHY								
	Biostratigraphy	BS			Y		2	Prep. Tools, microscopes; database for datums (and range charts?)
	Paleomagnetism	PMAG	Y	Y	Y	Y	2	Cryogenic magnetometer
PHYSICAL PROPERTIES								
<i>Basic phase relationships</i>								
	Moisture and density*	MAD			Y		1a/2	Balance, pycnometer
<i>Basic core logging</i>								
	Magnetic susceptibility	MS	Y	Y		Y	1a	Susceptibility meter, loop or probe
	Gamma ray attenuation bulk density	GRA	Y	Y		Y	1	Ce-Source, scintillation detector
	Natural gamma radiation	NGR	Y	Y	Y	Y	1/3	Scintillation detector
	Resistivity	RES	Y	Y	Y	Y	1	Resistivity meter, loop
	P-wave velocity	PW	Y	Y	Y	Y	1	Pulser-receiver system
	Diffuse color reflectance	CR		Y		Y	2	Photospectrometer
<i>New core logging opportunities</i>								
	CT-scanning		Y	Y	Y		3	CT scanner
	Thermal imaging		Y	Y		Y	3	IR scanner
<i>Other data</i>								
	Thermal conductivity	TC	Y	Y			2	Custom device
	Vane shear strength	VS	Y	Y			2	Standard vane shear device
	Pocket penetrometer	PEN	Y	Y			2	Standard gadgets
GEOCHEMISTRY								
<i>Fluids</i>								
	Headspace/vacutainer gas comp.	HS			Y		1a	Gas chromatograph
	Interstitial water comp., ephemeral	IW			Y		1a	Squeezer, some equipment
	Interstitial water comp., non-ephemeral	IW			Y		2	More equipment

<i>Solids/minerals</i>						
Carbon, nitrogen, sulfur analyser	CNS		Y	2	CNS analyzer	
Organic matter pyrolysis	PYR		Y	2	RockEval	
Carbonate content (coulometry)	CARB		Y	2	Coulometer	
X-ray diffraction	XRD		Y	2	XRD system	
<i>Elements</i>						
Elemental analysis, ICP-ES	ICP		Y	2	ICP-ES	
Elemental analysis, XRF	XRF	Y	Y	Y	3	XRF system/scanner
<i>Isotopes</i>						
Stable isotopes (bulk/tests)			Y	3	Mass spectrometer, prep. equipment	
Radioisotopes			Y	3	Mass spectrometer, prep. equipment	
MICROBIOLOGY						
Sample fixation			Y	1a	Large glove box, loaded; fluorescent microscope; ECD-GC; -80C freezer	
Contamination records			Y	2		
Total counts			Y	3		
OTHER DATA TYPES						
"UNDERWAY"						
Navigation data	NAV			1a	Navigation system	
Precision depth recordings	PDR			1	PDR system (3.5 & 12 kHz)	
Seismic reflection profiles				2	Seismic reflection system	
Magnetic field data				2	Magnetometer	
DOWNHOLE MEASUREMENTS						
Formation temperature				1a	Temperature probe	
Formation pressure				1		
Formation fluid				1		
Core/hole orientation				1		
Drilling parameters				1		
DOWNHOLE LOGGING						
Borehole diameter (caliper)				1		
Natural gamma radiation				1		
Bulk density				1		
Neutron porosity				2		
Resistivity (induction)				1		
Sonic velocity				1		
Borehole fluid temperature				1		
Borehole imaging/orientation				1		
VSP/checkshot				1		
Magnetic susceptibility				1/3	not available at present	

NOTES

*Moisture and Density could be done onshore, if saturated samples are sealed in pre-measured containers

IO meeting Action Item #5

- Long-Range (multi-year) Expedition planning
 - Draft Timeline : IO-AI#5-1.1

- Key Issues
 - Milestones/Events (SAS, IMI & IOs)
 - OPCOM / Project Scoping Group
 - Science Party / Co-chiefs and staffing



Milestones (events)

- Science Activities (Proposal Handling)
 - Proposal Submission
 - External Review
 - Proponent Response Letter Submission
 - Proposal Ranking/Designating by SPC
 - Tentative Schedule Approval by SPC
 - Safety/Final (Formal) Safety Review
 - Annual Program Plan Approval by SPPOC



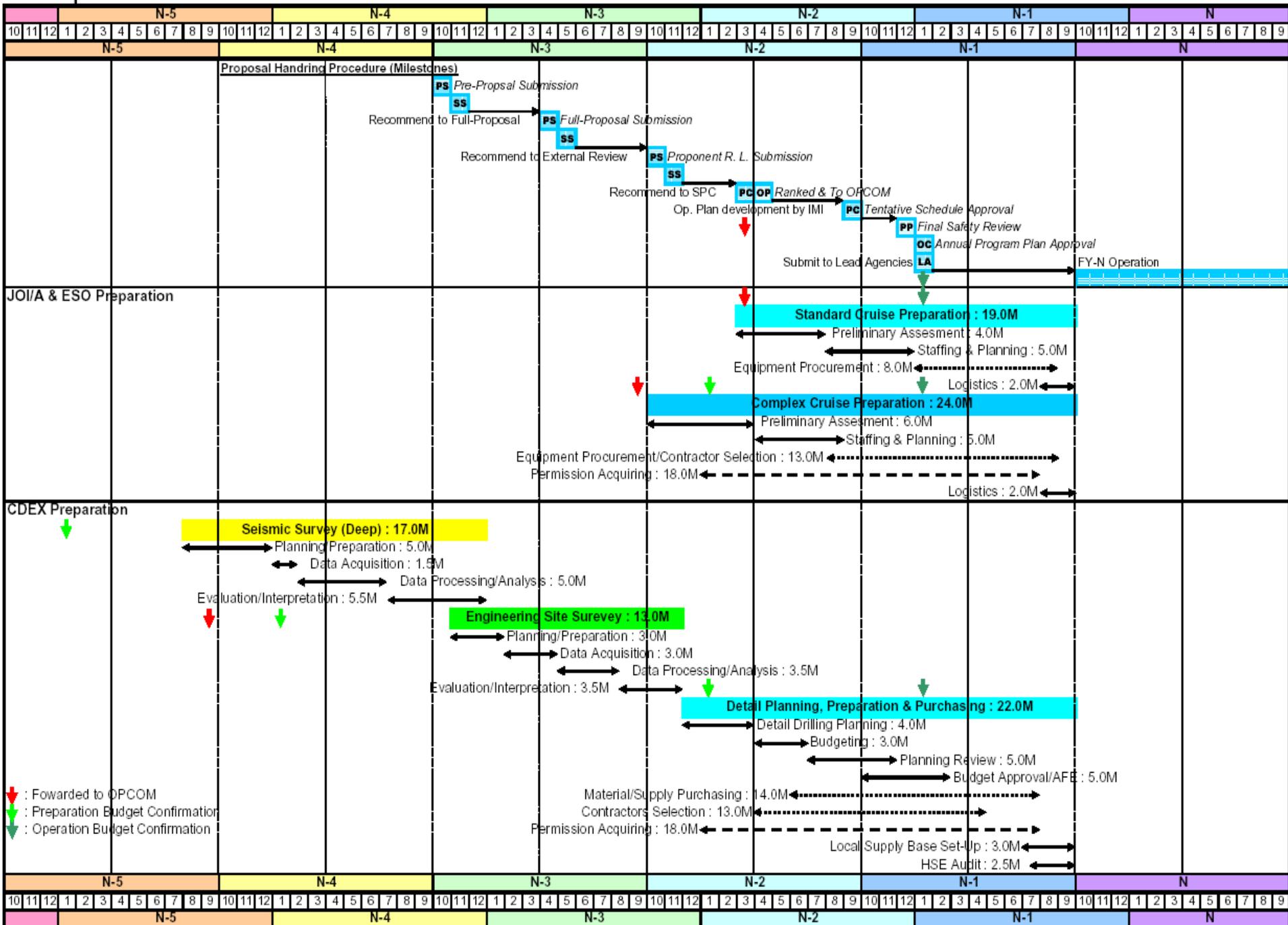
Milestones (events)

cont.

- Operating Activities
 - Proposal Reception by OPCOM
 - Operation Plan Development
 - Budget Confirmation
 - Final (Formal) Safety Review
 - Annual Program Plan Submission
 - Co-chief Scientist Selection & Staffing



IODP Operation Timeline

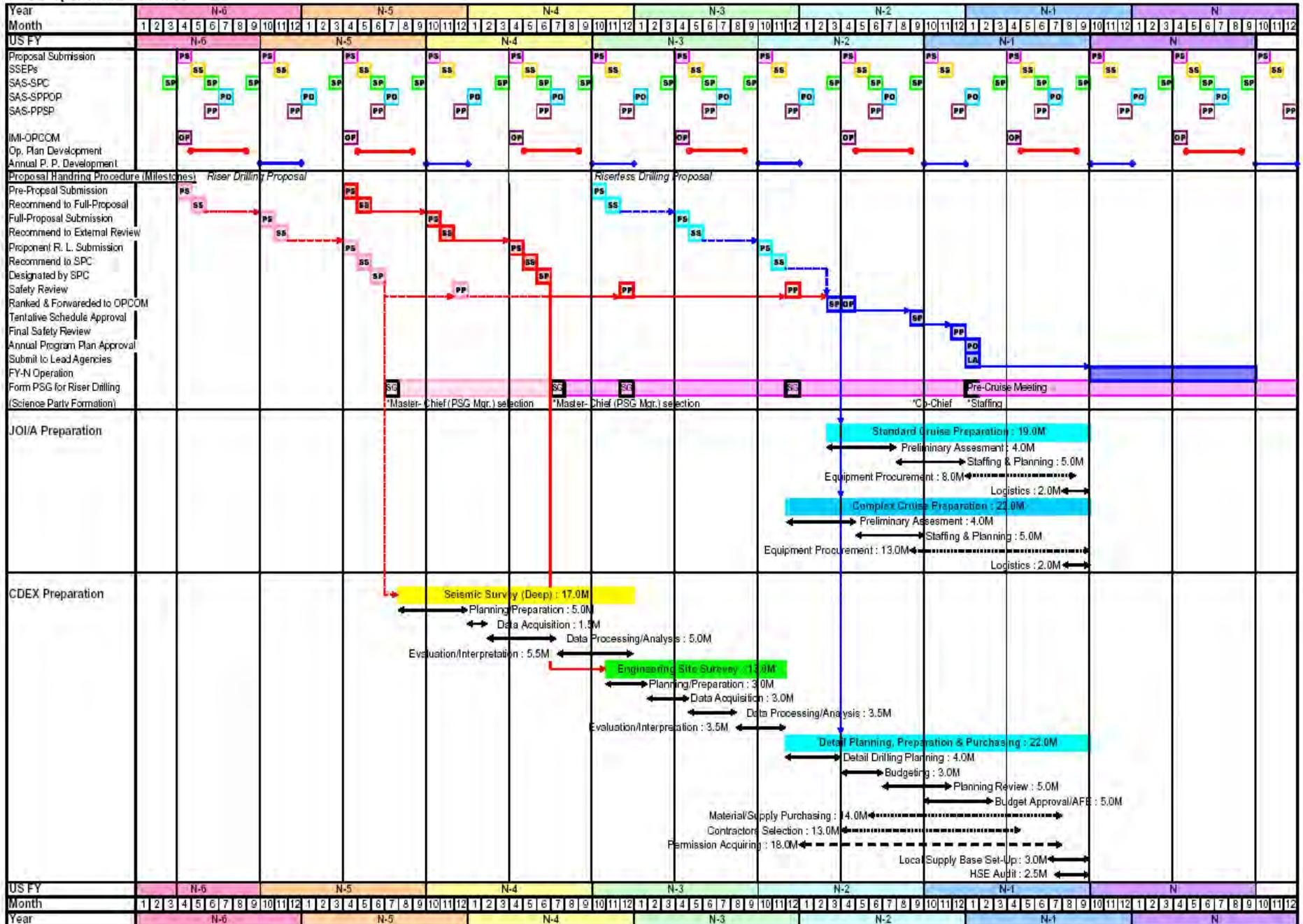


Issues

- Education/Publish information
 - IODP Guideline
- OPCOM/Project Scoping Group
 - Mandate
- Science Party
 - Co-chief Scientist Selection
 - Staffing
- Engineering Development
 - Long term monitoring (Observatory)
 - Third Party Equipment



IODP Operation Timeline



Progress on Bozeman Action Items

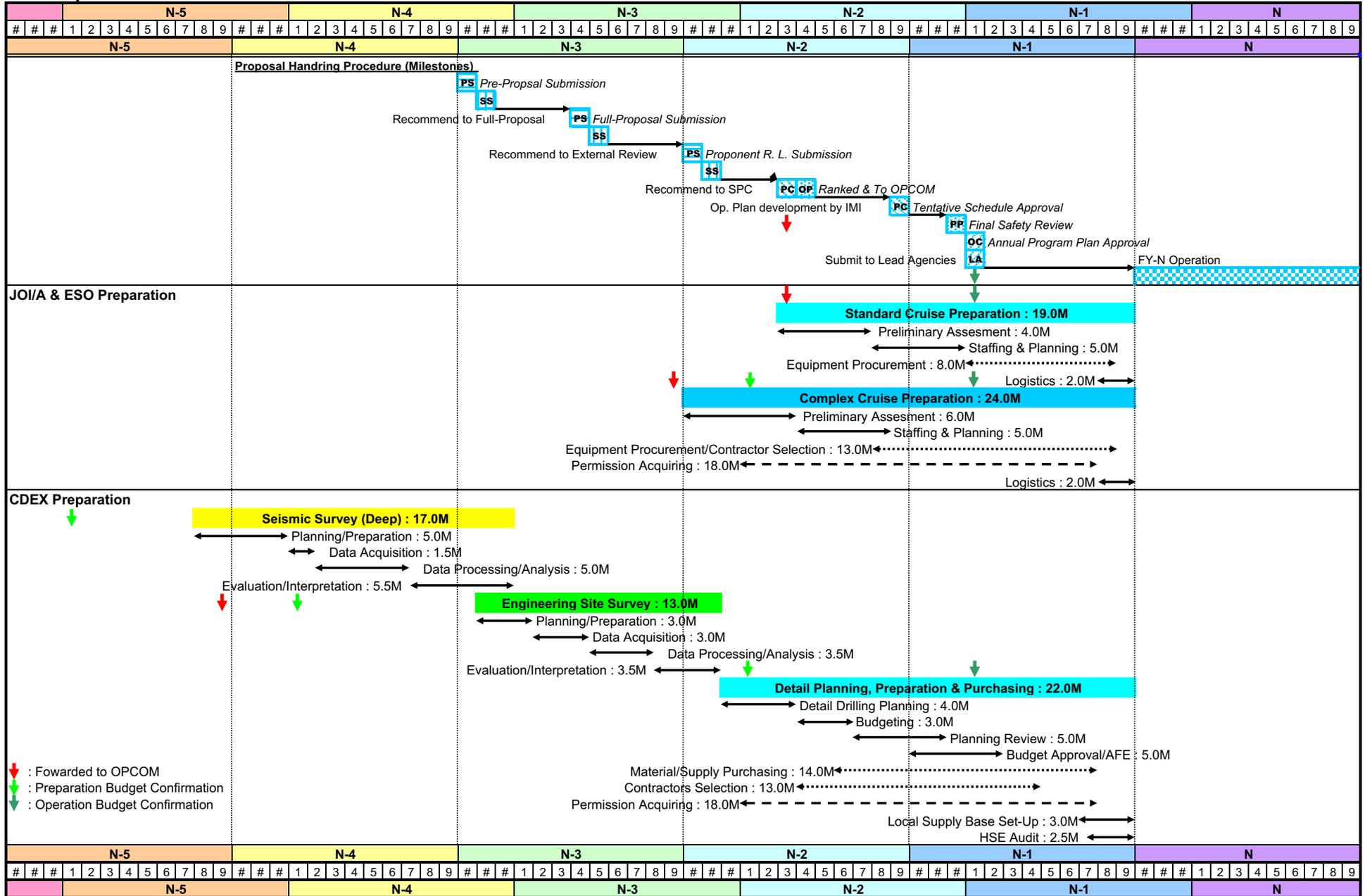
**IOs Meeting #2
British Geological Survey (ESO)
Edinburgh, Scotland
February 28, 2004**

Action Item #5

"Collectively, educate our 'customer base', the international scientific community submitting proposals to IODP, about the need to commit to long-range (multi-year) expedition planning. Reemphasize (to SAS, the Lead Agencies,...) that a successful IODP will require such a commitment, constrained by annual (budget-based) program planning."

- the group's spreadsheet (see the accompanying attachment, presented by Kawamura [CDEX] for Suzuki [CDEX], Baldauf [JOI Alliance], and Skinner [ESO]), very usefully relating SAS activities with preparation required for operations on each of IODP's drilling capabilities, will be evaluated by SPC at their March meeting, as part of the anticipated discussion at that meeting on Project Management. The group will then work with SAS representatives (as appropriate) on clarifying the details of SAS interactions specified on the spreadsheet, as an aid to IODP-MI (specifically OPCOM) functioning.

IODP Operation Timeline



**IO's Meeting #2: The Roles of
Implementing Organizations in
IODP – Continuing Cross-Platform
Integration in a Multi-Platform
Scientific Ocean Drilling Program**

**British Geological Survey (ESO)
Edinburgh, Scotland
February 27-28, 2004**

Premise

The primary objective of the IODP is to deliver the science summarized in IODP's Initial Science Plan in a cost-efficient, seamless fashion, using multiple drilling capabilities. IODP will provide two primary drilling and sampling capabilities, the riser-equipped *Chikyu* and a riserless capability (in two phases), which for Phase 1 (FY04 and FY05) will be the *JOIDES Resolution*. In addition, mission-specific platform (MSP) drilling and sampling will be supplied on an as-needed basis for shallow water and Arctic drilling that cannot be effectively done through the use of the riser-capable or riserless vessel, as science prioritization by the international community dictates. A FY04 Program Plan for IODP has now been submitted by the interim planning office, in concert with the Chair of SPC and the IOs, and approved by the Lead Agencies. Riserless operations for science prioritized by the SAS will begin in ~June 2004 in the northeast Pacific, while MSP operations will likely begin in ~August 2004 with a multi-icebreaker expedition to the Lomonosov Ridge in the high Arctic. *Chikyu* continues to be outfitted, in expectation that sea trials for the riser vessel will begin sometime in FY05.

Goals of this Meeting

The immediate and continuing challenge will be to integrate the operations and output of IODP's various drilling assets efficiently, for the benefit of the international science community. This meeting once again assembles representatives from designated Implementing Organizations (IO's), along with representatives from IODP Management International, Inc. (IODP-MI, the Central Management Organization of IODP), SAS and Lead Agency representatives, to discuss cross-platform integration in an informal atmosphere.

- Day 1: hear reports from IODP-MI and SAS, then proceed to Action Items identified in Bozeman (IOs Meeting #1, August 2003).
- Day 2: address mutually agreed upon items of importance (e.g., OPCOM functioning).

This meeting will augment lines of communication among the IOs, acquaint the IOs with new personnel recently hired at IODP-MI, and continue to pursue those issues that have to be resolved by IODP-MI, working with the IOs, SAS and MEXT/NSF over the next 1-2 years, in order to realize the primary objective stated in the premise.

Day 2: February 28

8:00-8:30 – light refreshments.

8:30-9:00 – *Summary by the convenor of Day 1 discussions.*

(Note: Lead Agency representatives will be asked at this time for their input.)

9:00-9:30 – *Evans (ESO): items from the “IOs only” meeting held on February 26.*

9:30-10:15 – *Continued group discussion of Action Items, Day 1, in light of IOs meeting.*

10:15-10:30 - Coffee Break

10:30-12:00 - *Austin et al.: the evolving role of OPCOM in IODP.*

- “SPPOC Consensus 03-12-02: The SPPOC transfers the OPCOM responsibilities from the SAS to the IMI, with the IMI vice president for science operations serving as the chair of the OPCOM.”

- How will OPCOM function in this new mode?

- How will the new relationship of OPCOM to the rest of IODP affect: operational planning, the relationships between the CMO and the IOs, the relationships between the CMO and the SAS?

- Will this new OPCOM help the IO’s interact with the CMO to assure that program-wide engineering development is carried out properly (e.g., regularly scheduled, platform-specific engineering tests, external oversight, other?)

February 28 (cont.)

1:00-3:00 – *Other items brought forward by meeting participants:*

- expedition numbering in IODP (Murray, Chair SciMP; Graham, ESO; Rack, JOI Alliance).
- prospectus preparation in IODP (Evans, ESO).
- CDEX proposal for make-up of the Science Party (science & research structure) for long-duration expeditions (e.g., *Chikyu* riser drilling)

3:00-3:15 – Coffee break

3:15-4:45 – *Continued discussion (convenor). How would the participants like to carry forward action items from this meeting, as the interim planning office gives way to IMI?*

4:45-5:00 – *IOs meeting #3 – where and when?*

- Suggested (by the convenor) venue: Japan, CDEX to host.
- late summer 2004?

5:00 (approx.) – Adjourn.



**British
Geological Survey**
NATURAL ENVIRONMENT RESEARCH COUNCIL



IOs Meeting

Edinburgh

Report on IOs-Only Meeting





IOs-Only Meeting

- **Bozeman topics**
- **Outreach**
- **Decision making in IODP**
- **Numbering**
- **Staffing**
- **Publication**
- **Science Prospectus**
- **Core storage**



Bigger issues

- **Role of OPCOM**
- **Role of IODP-MI**
- **Decision making in IODP – IODP-MI, SAS, IOs etc.**
 - **Repositories, numbering**
- **Looking for partnership with IOs**
 - **Staffing, outreach, publications, repositories, planning, HSE,..... etc.**
 - **Joint sub-groups with IODP-MI/SAS**
 - **Operation and tool enhancement**
 - **Publication**
 - **Database.....and other relevant topics**



Some concerns/suggestions

- Timelines in planning
- IOs (JOI Alliance) to develop web-access system for sharing documents
 - Include staff listing
- Environmental issues – cuttings piles
- Investigate training berths
- Want quick production of SAS Panel minutes
- IO SAS representation
- Science creep
- IOs have responsibility for expedition-specific outreach within overall IODP communication strategy



Some concerns/suggestions

- **Platforms to balance Science party representation? Is this an integrated approach? IODP-MI overview**
- **Publication. IOs to control IR production up to completion of editing**
 - **Hand to single book producer**
 - **? SR**
- **Laboratory working group at TAMU**
 - **Investigate expansion**
- **Core repository: ? Geographical policy for IODP**



IOs-Only Meeting

- A useful meeting format
- Implement prior to future IO meetings
- Also have IO sub-groups

*Operations Committee (OPCOM)

Mandate

- **1. General Purpose:** OPCOM is an independent committee within the SAS whose general purpose is to recommend the most logistically and fiscally effective means to achieve IODP scientific objectives as defined in the long-range IODP Science Plan and prioritized by the SPC. OPCOM reports to SPC and, through SPC, to the SAS Executive Authority (*SPPOC*).
- **2. Mandate:** OPCOM is responsible for recommending the optimal means to implement IODP drilling projects that are highly ranked and prioritized by SPC. Following IODP project management principles, OPCOM should consider, in addition to SPC prioritizations, (a) capabilities of IODP drilling platforms, (b) budgetary and logistical constraints, and (c) advice from SAS service panels on safety, environmental, and technological factors. Following the annual SPC prioritization and ranking of proposed IODP drilling programs, OPCOM will specifically recommend options for the schedules of IODP drilling platforms for the appropriate year(s) (as defined by the annual IODP Program Plan) and will also project a longer-term schedule for future drilling operations. In addition, OPCOM must monitor progress toward achieving the longer-term drilling schedule and therefore is also responsible for recommending any modifications to both the short- and long-term drilling schedules that may be necessary as developments occur or constraints arise after SPC has prioritized relevant IODP science projects.

*OPCOM Mandate (cont.)

- **3. Consensus and Quorum:** The Operations Committee will reach all decisions by consensus. In defining consensus, a quorum shall be required consisting of 2/3 of the scientific participants and 2/3 of the management representatives as defined in Section 4.
- **4. Participants Counting Toward Consensus and Quorum:** The Operations Committee will be chaired by a knowledgeable scientist who is non-conflicted in both scientific and operational matters and is appointed by the SAS executive authority. Participants from SAS shall include the SPC chair and as many additional representatives from the SPC as there are implementing organizations (IOs). Participants from IODP management shall include one designated representative from each IO and one designated representative from the central management organization (CMO). The terms of the chair and representatives from SPC should extend no longer than three years, and rotations should be staggered.

*OPCOM Mandate (cont.)

- **5. Liaisons, Observers, and Guests:** Each Lead Agency is expected to nominate one liaison to OPCOM. Lead Agencies, the CMO, and IOs may send additional observers as needed. A chair of each of the SSEPs, SciMP, PPSP, SSP, TAP and ILP will serve as liaisons to OPCOM. When necessary to provide additional expertise, guests may be invited at the discretion of the chair. Approximately one year before the end of the chair's term, the next chair should be identified and he or she should attend that year's meetings as a guest.
- **6. Meetings:** OPCOM shall meet at least twice per year. One of the OPCOM meetings will be coordinated with the annual SPC ranking exercise, in order to construct the appropriate year's schedules of the IODP drilling platforms. The other meeting will be held about half a year apart, to recommend adjustments to the drilling schedules if needed. If drilling schedules or modifications recommended by OPCOM are not approved by SPC and/or the SAS executive authority, then additional OPCOM meetings may be required to recommend alternative schedules.

Expedition Numbering in IODP...A Progress Report

Action Item 03-02-20: Murray chair an *ad hoc* WG on the naming of IODP expeditions, sites, and holes. This WG will meet by email and develop a recommendation to the SPC that will be voted upon by the SciMP by email in advance of the IO meeting in Scotland. Members of the WG will include representatives from the IO's and SciMP members (Okada, Screaton, Gulick, Aita, Escartin).

Expedition Numbering in IODP...A Progress Report

Results

- IO's tend to prefer a scheme based on numbering for consistency, ease of reference, minimal impact on databases, etc.

Options include...

- Starting with 300 ("3" because 3 ≠ 2, and 3 = 3rd drilling program).
- An entirely new scheme, such as...

<u>Expedition #</u>	<u>Expedition Name</u>	<u>Site</u>	<u>Hole</u>	<u>Core</u>	<u>Type</u>	<u>Section</u>
CK06-01-1	NanTroSEIZ I	Co01	A/R/D	5	H	3
CK07-02-2	Indus Fan	Co04	Ba/N/V	45	R	2
JR06-01	Juan de Fuca	Jo13	A	20	X	CC
MS06-03	Lomonosov Ridge	Mo8	C	6	H	4
JR09-04	Indus Fan II	Co04	F	25	X	1

Expedition: year – expedition no. – leg no.

Hole: hole code / method (riser or riserless) / hole type (vertical, deviated or horizontal)

Expedition Numbering in IODP...A Progress Report

Results

- SciMP prefers a new scheme based on science related “brief title”, followed by abbreviated site #'s, and standard hole/core/section. Options include...

W. Pac. Observatories-99

WPO-99-1, WPO-99-2, WPO-99-3...

Hydrate Ridge-02

HR-02-1, HR-02-2, HR-02-3...

SE Pac Paleoceanography-02

SPP-02-1, SPP-02-2, SPP-02-2...

- Quite similar to previous slide...

<u>Expedition #</u>	<u>Expedition Name</u>	<u>Site</u>	<u>Hole</u>	<u>Core</u>	<u>Type</u>	<u>Section</u>
CKo6-01-1	NanTroSEIZ I	Co01	A/R/D	5	H	3
CKo7-02-2	Indus Fan	Co04	Ba/N/V	45	R	2
JRo6-01	Juan de Fuca	Jo13	A	20	X	CC
MSo6-03	Lomonosov Ridge	Mo8	C	6	H	4
JRo9-04	Indus Fan II	Co04	F	25	X	1

Expedition Numbering in IODP...A Progress Report

Some Points to Consider

- Numbering scheme fine for multiple expeditions at same time (could choose number based on departure date), but is difficult for sites being drilled simultaneously by two or more different platforms. Would have to 'reserve' anticipated site numbers ahead of time.
- Title scheme does not preclude database-curation / IO from using internal tracking. Must have 'science-y' titles, not "Poseidon" etc. Allows for different expeditions going to same spot for different objectives or repeating. Expedition titles initially selected by proponents (on cover sheet).
- SciMP does not recommend be platform explicitly identified in title. Did not consider different schemes for different platforms (e.g., 3xx for non-riser only).



**British
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NATURAL ENVIRONMENT RESEARCH COUNCIL



IOs Meeting

Edinburgh

Scientific prospectus

Dan Evans



Questions

- **Who's document is it?**
 - **Agreed between IO and Co-Chiefs?**
 - **Does anyone approve it?**
- **Who is to publish it ? (Publisher's Notes and Disclaimer)**
- **Numbering system?**
- **Format?**
- **Distribution?**
- **Content?**
 - **More on operational, coring, sampling and measurement strategies for MSPs**
 - **Definitive protocols for the expedition**

Scientific Party on *Chikyu*

- Tasks of Co-Chief Scientists and Staff Scientists
- Expedition and Legs Project Management
- Pre-Expedition and Post-Expedition Project Management
- Staffing
- Technicians Rotation Rule



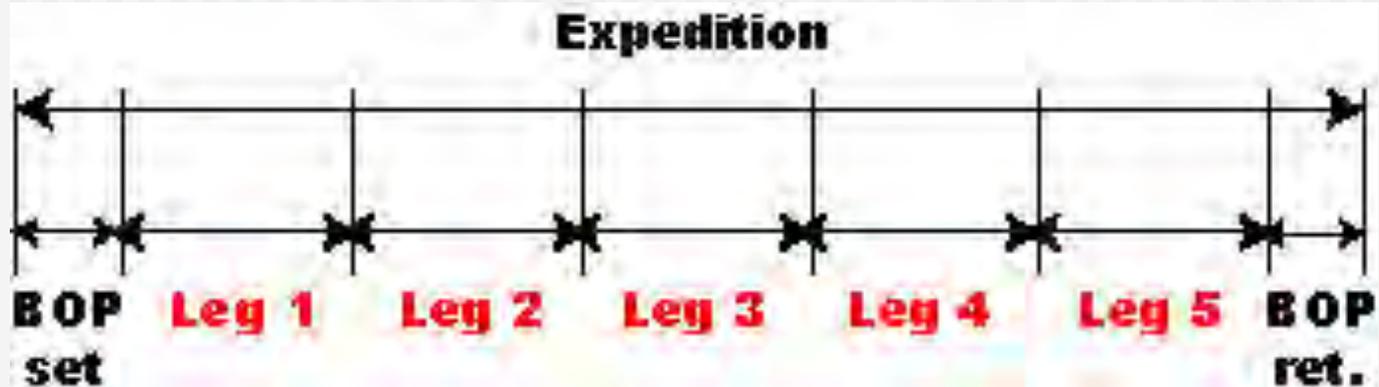
Expedition of *Chikyu*

- Composed of several Legs
- Each Leg has an individual science party (co-chief scientists and scientists)
- Each Leg is planned by individual scientific objectives
- The maximum duration of each Leg is less than 2 months



Expedition (example)

- Leg 1: Sediment Coring & Logging
- Leg 2: Sediment Coring & Logging
- Leg 3: Washout & Logging
- Leg 4: Hardrock Coring & Logging
- Leg 5: Set Observatories & Logging



Tasks of Co-Chief Scientists

- Two categories of co-chief scientist
- Expedition co-chief scientists (super co-chief scientists) have a responsibility to manage the expedition; assign by the relevant scoping group
- Co-chief scientists of each Leg have almost the same responsibility as those of other platform operations



Project Management

- designate expedition co-chief scientists
- designate an expedition staff scientist



Staffing

- designate expedition co-chief scientists and a staff scientist before the 1st PSG
- PSG will work with them from site survey stage
- CDEX will decide scientific party more than 2 years prior to spud-in



Rotation of Supporting Staffs on Chikyu

- Laboratory Officer (1) CDEX
- Assist. L.O. (1) MWJ
- Curator (1) CDEX
- Assist. Curator (1) MWJ
- Technical Staffs (11) MWJ
- Computer System Admin. (1) CDEX
- Assist. Computer System Admin. (2) MWJ
- Electronic Specialist (2) MWJ

Same rotation interval with scientific parties.

Total about 60 personnel rotate every 3rd segment on *Chikyu* and the Kochi repository.





IODP Implementing Organizations

JOI Alliance

Activities since Bozeman, MT
IMI/IO meeting



JOI Alliance Activities

- NSF Award of Systems Integration Contractor
- JOI Negotiates Contract with NSF for SIC
- ODP Field Operations End/Demobilization of JR
- FY04 Program Plan Prepared - Submitted to IMI
- DRAFT Project Execution Plan Submitted to NSF
- Subcontracts Established with LDEO and TAMRF
- Begin Environmental Assessment (EA) Process
- Market Survey Issued to Vendors
- Invitation to Tender (ITT) Issued to Contractors
- JOI Alliance Organizational Structure Established
- U.S. Vessel(s) Indemnification Request to NSF
- Revised Project Execution Plan Submitted to NSF
- IMI/IO Meeting in Edinburgh
- Preparation of FY05 Program Plan Budgets

**PROJECT EXECUTION PLAN
SCIENTIFIC OCEAN DRILLING VESSEL**

**Scientific Ocean Drilling Vessel (SODV)
Acquisition, Conversion, Acceptance &
Commissioning**

**Submitted to the National Science Foundation(NSF) by
The JOI Alliance (Joint Oceanographic Institutions,
Inc., in collaboration with Lamont-Doherty Earth
Observatory of Columbia University and Texas A&M
University/Texas A&M Research Foundation)**

February 17, 2004



JOI Alliance Phase 2 Activities

- NSF Review of Project Execution Plan (PEP) by Internal NSF MREFC Committee
- Monthly Updates of PEP by JOI Alliance (March 1)
- Evaluation of Market Survey Results (3/04)
- Evaluation of ITT Results (4/04)
- JOI Alliance will Establish a PEP Website
- Stakeholder Input on Laboratory Design Plan
- Preparation of RFP for U.S. IODP-Phase 2 Vessel and for Logging Subcontractor (7/04)
- Evaluation of RFP Responses (11/04)
- Engineering Design Phase for U.S. IODP (1/05)
- Negotiation with Vessel Contractor (12/04-2/05)
- Contract for U.S. IODP-Phase 2 Vessel (2/05)



JOI Alliance Proposed Outreach to Stakeholders

- **Element 1 - Invite the USSAC chair, or delegate, to serve as a nonvoting member on the U.S. SODV selection team. Note that this team will be required to sign confidentiality statements.**
- **Element 2 - Invite selected individuals from USSAC and/or SciMP to serve as community representatives on each of the design teams for the onboard science capability of the U.S. SODV.**
- **Element 3 - Invite IODP-MI to coordinate an IODP SAS process to provide comments on the design document for the onboard science capability of the U.S. SODV. The vision here would be that the design document would be forwarded to appropriate SAS panels for review and comments and that IODP-MI would integrate these comments into a single SAS assessment.**



JOI Alliance Proposed Outreach to Stakeholders

- **Element 4 - Hold, as appropriate, "town meetings" and/or provide updates at appropriate SAS or USSAC panel meetings to ensure community awareness as to the progress and current issues.**
- **Element 5 - Introduce the community to the MREFC web site and encourage their use of this venue for remaining informed about U.S. IODP-Phase 2 activities. Also consider providing updates via community list servers, if and when appropriate.**
- **Element 6 - Invite selected members of the community to review and provide comments on the ITT responses in conjunction with the platform team in preparation for the RFP. This also would be a confidential activity.**



QUESTIONS?

NSF negotiating USSSP 36-month Cooperative Agreement w/JOI Alliance

- **March 1, 2004 start date**
- **\$15 million**

NSF and MEXT have evaluated IMI CMO Proposal

- **Contract negotiations starting**
- **Contract target award April 1 or sooner**

POC-SOC FY05 budget guidance given to IMI

IODP light drillship MREFC funds

- **Acquisition and conversion activity**
- **Needs defined by CDC report (2000)**
- **\$41 million in FY05 NSF budget**
- **Balance (about U.S. \$60 million) expected in FY06**
- **Project planning underway**
- **Expect to ID vessel by middle of FY05**

Extensive vessel acceptance trials, including months of sea trials, occurring in FY06

Lead Agencies visit China late March

- **Finalize memorandum regarding IODP participation**

NSF Personnel Developments

- **Laura Snow, ODP Science Assistant**
- **Jim Yoder leaving October 1, 2004**
- **Rita R. Colwell has left NSF**
- **Arden L. Bement Jr., NIST Director, is Acting Director**

2 Process of Annual Program Plan approval

This process is in conformity with the Memorandum between NSF and MEXT signed April 22, 2003.

- ? Principal Officials provide IMI with guidance for developing APP – **JANUARY**
- ? IMI sends draft APP to NSF for NSF and MEXT information - **JUNE**
- ? NSF sends draft APP to MEXT - **UPON RECEIPT**
- ? Draft APP presented by IMI to SPPOC for approval – **JUNE/JULY**
- ? Draft APP submitted by IMI to NSF for approval by Principal Officials - **AUGUST**
- ? NSF sends draft APP to MEXT – **UPON RECEIPT**

- ? Principal Officials reach agreement to approve the draft APP (by having NSF-MEXT meeting if necessary) -- **AUGUST**
- ? Modify the draft APP by IMI if any changes requested by NSF based on concurrence of Principal Officials -- **AUGUST**
- ? Lead Agencies' approval letter signed by Principal Officials -- **SEPTEMBER**
- ? Technical representative (Jamie) recommends approval of APP to NSF Contracting officer -- **SEPTEMBER**
- ? NSF Contracting officer sends letter formally approving APP (with Principal Officials' letter) to IMI -- **SEPTEMBER**
- ? Funding starts -- **OCTOBER**

(MEXT Liaison acts to transfer all relevant information to MEXT and to provide NSF with opinions on behalf of MEXT during the process of APP approval with associated annual budget)

SPPOC Consensus 03-12-02: The SPPOC transfers the OPCOM responsibilities from the SAS to the IMI, with the IMI vice president for science operations serving as the chair of the OPCOM.