参考資料２

IODP-MI
INTEGRATED OCEAN DRILLING PROGRAM
MANAGEMENT INTERNATIONAL

FY 2006 Program Plan for the Integrated Ocean Drilling Program (IODP)

For Time Period
1 October, 2005 through 30 September, 2006

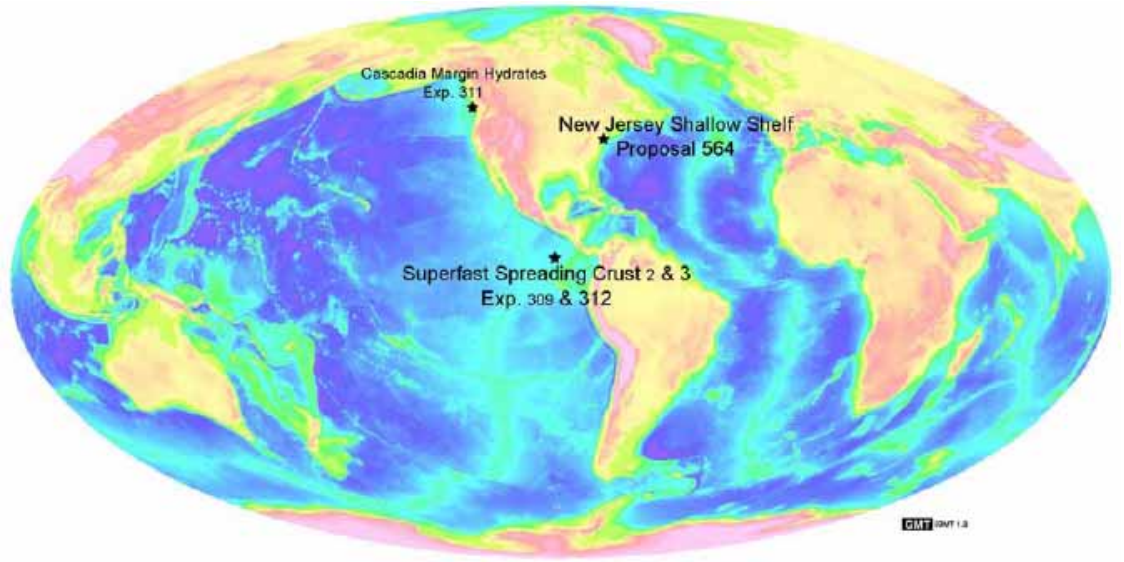

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Table of Contents

A) PREFACE

This document represents the IODP FY2006 Program Plan for the third operational year of the Integrated Ocean Drilling Program (IODP). The Plan contains the scientific rationale for operations spanning from October 1, 2005 to September 30, 2006.

IODP Management International, Inc. (IODP-MI), with input from IODP funding agencies including U.S. National Science Foundation [NSF], Japanese Ministry of Education, Culture, Sports, Science and Technology [MEXT], European Consortium for Ocean Drilling Research, [ECORD] Management Agency [EMA], and Ministry of Science and Technology [MOST] of the People's Republic of China, has provided guidance and instruction to the IODP-USIO (the JOI Alliance), IODP-JPIO (CDEX), IODP-ESO, and the University of Bremen on the preparation of their contributions to the IODP FY2006 Annual Program Plan.

DOCUMENT STRUCTURE

The **Executive Summary** contains three major sections. The first, entitled "Special Challenges," provides the reader with an overview of issues facing IODP in FY2006. The second section briefly describes the results of FY2005 expeditions to date and the upcoming expeditions in FY2006. The final section provides a brief synopsis of IODP-MI activities for the upcoming fiscal year.

The **Program Plan** contains four major sections. The first provides a short introduction to this Program Plan. The second section describes the planning process leading to the development of the FY2006 operational schedule and a description of the scientific and operational aspects of the FY2006 expeditions. The third section summarizes IODP-MI program-wide activities for FY2006, including the budgets associated with those activities. The final section (Appendices) provides summary budgets for AESTO, the Implementing Organizations (IOs), and other subcontractors.

The **Appendices** contain detailed Program Plans and/or budgets from the IOs and other subcontractors, including:
Appendix A Program Plan and budgets for the USIO (JOI Alliance)
Appendix B Program Plan and budgets for the JPIO (CDEX)
Appendix C Program Plan and budgets for the ESO
Appendix D Program Plan and budgets for Bremen University
Appendix E Budgets for AESTO
Appendix F Lead Agency SOC and POC Guidance
Appendix G Glossary of Terms

B) FY 2006 IODP PROGRAM PLAN - EXECUTIVE SUMMARY

SPECIAL CHALLENGES

While we readily accept the view that for IODP planning and budgeting purposes there is no "normal" year, FY2006 presents some very special situations and challenges. Foremost among these is that the USIO drilling vessel, the *JOIDES Resolution* (JR), is scheduled to drill only up to January 2006. When and how riserless drilling will be resumed is not known at this time. For budgeting purposes we have taken the view that while the expedition costs for JOI Alliance will be reduced, the non-expedition costs during the drilling hiatus will remain roughly the same in order to maintain the viability of the drilling support capability for future operations.

The bulk of the offshore portion of the Mission Specific Platform (MSP) Tahiti Sea Level expedition will take place at the start of the FY2006 as a result of delays in acquiring a drilling vessel during FY2005. This delay raises questions about the timing of the proposed FY2006 operation for the New Jersey Margin. However, for budgeting purposes, we have assumed that the offshore and onshore portion of Tahiti Sea Level program and the offshore portion of New Jersey Margin program will be held in FY2006 and the New Jersey Margin onshore party will be held in FY2007.

We are also challenged by the need for consistency among IOs as well as for accountability. The Lead Agencies require the budget to be based on Work Breakdown Elements (WBEs) while JOI Alliance and CDEX are organized by departments. The IOs are then faced with the task of translating the work done by departments into WBEs. They are also supplying (for the first time by JOI Alliance and CDEX) the names of the personnel rather than just titles, which will help in assigning accountability.

Two WBEs: Engineering Development and Data Management require special mention. Although the road map for proceeding with Engineering Development has been approved by the Lead Agencies, the timing for preparing the Annual Program Plan for FY2006 is such that only some preliminary beginnings are being proposed. Progress has been made to reconcile the approaches to Data Management by the IOs, and some technical issues are being resolved, but agreement among the IOs and IODP-MI is necessary on the process forward, before a road map can be finalized.

EXPEDITIONS FOR FY 2005 AND 2006

As of September 2005, seven of the riserless expeditions scheduled for FY2005 have been completed (North Atlantic Climate 1 and 2, Oceanic Core Complex 1 and 2, Porcupine Carbonate Mounds, Gulf of Mexico Hydrogeology and Superfast Spreading 2). Two riserless expeditions (Cascadia Margin Gas Hydrates and Superfast Spreading 3) will be conducted in FY2006. The bulk of the MSP Tahiti Sea Level expedition (both offshore and onshore portions) will now be conducted in FY2006 as will the offshore portion of the New Jersey Sea Level expedition. Brief descriptions of these expeditions follow:

FY 2005 Operations

- North Atlantic Climate 1 (303)
- Oceanic Core Complex 1 (304)
- Oceanic Core Complex 2 (305)
- North Atlantic Climate 2 (306)
- Porcupine Basin Carbonate Mounds (307)
- Gulf of Mexico Hydrogeology (308)
- Superfast Spreading Crust 2 (309)
- Cascadia Margin Gas Hydrates (311)

FY 2006 Operations

- Tahiti Sea Level (310)
- Cascadia Margin Gas Hydrates (311) - continued FY2005
- Superfast Spreading Crust 3 (312)
- New Jersey Sea Level

Preliminary results of FY05 (and all IODP) expeditions to date can be found at http://www.iodp.org/scientific-publications

IODP Expedition 310: Tahiti Sea Level

As a result of delays in the hiring of a drilling vessel for the IODP Tahiti Sea Level Expedition, the offshore portion of the expedition will take place largely at the start of the FY06 period. The main objective of this expedition is to drill to a series of boreholes along a number of transects in order to: (1) reconstruct the deglaciation curve for the period 20,000 to 10,000 yrs BP in order to establish the minimum sea level during the Last Glacial Maximum (LGM); (2) test predictions based on different ice and rheological models; and (3) assess the validity, the timing, and amplitude of meltwater pulses which are thought to have disturbed the general thermohaline oceanic circulation and, hence, global climate.
See http://www.ecord.org/exp/tahiti/310.html for more details of this expedition.

IODP Expedition 311: Cascadia Margin Gas Hydrates

The Cascadia Margin Gas Hydrates proposal, in an accretionary prism environment, is designed to better constrain the models concerning the formation of gas hydrates. The scheduled expedition consists of completing a series of sites across the northern Cascadia accretionary prism to improve the understanding of the deep origin of methane, its upward transport, its incorporation in gas hydrate, and its subsequent loss to the seafloor.
See http://iodp.tamu.edu/scienceops/expeditions/exp311.html for more details of this expedition.

IODP Expeditions 309 and 312: Superfast Spreading Crust

For the first time in scientific ocean drilling, ODP Leg 206 resulted in the successful construction of the borehole infrastructure required for deep drilling into the ocean basement. Expeditions 309 and 312 (Superfast Spreading Crust 2 and 3) will return to ODP Hole 1256B with the objective of recovering a complete section through superfast-spreading (>200 m/yr) oceanic crust. Expedition 309 will be conducted in FY2005. Expedition 312 is a continuation of Expedition 309 and will be conducted in FY2006. See http://iodp.tamu.edu/scienceops/expeditions/exp312.html for more details of this expedition.

IODP Expedition: New Jersey Sea Level

The objective of this IODP expedition is to obtain continuous cores and downhole logging measurements of siliciclastic sequences on this modern continental margin within crucial paleo-inner-shelf facies at three sites, which represent sensitive locations for deciphering amplitudes and testing facies models. The coring has the following goals:

- To date major "Icehouse" (Oligocene-Recent) sequences, a time of known glacioeustatic change;
- To estimate the amplitudes, rates, and mechanisms of sea-level change;
- To evaluate sequence stratigraphic facies models that predict depositional environments, sediment compositions, and stratal geometries in response to sea-level changes, and;
- To provide a baseline for future IODP drilling that will address the effects and timing of sea-level changes on other passive margins.

IODP-MI MANAGEMENT SUMMARY

Below is a summary of the major IODP-MI activities according to Work Breakdown Elements with additional summaries of IODP-MI Task Forces, long-term planning workshops, and budgets for IODP-MI and its subcontractors.

Management and Administration

Personnel

IODP-MI plans to add personnel only as and when a clear need has developed. An Executive Program Associate, who will assist the President, and a Program Assistant are being recruited at the Washington office in FY2005. In FY2006, we plan to recruit an Operations Manager. In the Sapporo office, a Data and Publications Manager (E. Soeding) and a Data Management Specialist (B. Miville) were recruited in FY2005 in response to the initiation of activities at IODP-MI in these areas. A Science Coordinator (B. Zelt) who will assist in Site Survey Data Bank (SSDB) operations is also being added to the staff in FY2005. In FY2006, an Administrative Assistant will also be added to the Sapporo office.

Science Advisory Structure Activity Support

In FY2006 the Science Advisory Structure (SAS) will be supported by IODP-MI through its Sapporo Office. SAS and program support by the IODP-MI science coordinators includes, among other things, processing of drilling proposals, soliciting proposal reviews, overseeing the new electronic Site Survey Data Bank, preparation of site survey data packages, and assistance with SPC and SPPOC meeting agendas.

Subcontracts

IODP-MI has now executed subcontracts with JOI, BGS, University of Bremen, Scripps Institution of Oceanography, and AESTO, and has executed a Memorandum of Understanding with JAMSTEC for SOC activities. The proposals from these entities are being submitted as appendices to this Program Plan. Provision is also being made for the monitoring of subcontracts. John Emmitte (Contracts Officer) is in charge of these activities.

Finance and Administration

Stephanie Murphy, Finance and Administrative Officer, has been busy establishing the administrative office and constructing policy manuals for accounting, human resources, travel, and procurement. IODP-MI favorably passed an audit review. Stephanie assists in recruiting and in establishing video-conferencing. Most of Stephanie's planned work in FY2006 is a necessary continuation of her existing duties.

Expedition Assessment and Review

The operational review has been initiated by IODP-MI through a Review Task Force and is generally conducted one to three months post expedition. The task force consists of the IODP President, Vice President of Operations, expedition co-chiefs, operator representatives and experts representing industry and non-expedition scientists. In FY2006 expedition, reviews will be conducted for expeditions carried out in late FY2005 and in FY2006.

Operations

The IODP-MI Operations Task Force's (formerly known as OPCOM) primary function is to formulate the most logistically, fiscally effective operational plans to meet the objectives set forth in IODP's 10-year science plan, prioritized by the SPC. Committee members include IODP-MI Vice Presidents of Science Operations and Science Planning, three SPC members, IO representatives, and outside experts as needed. The scheduling strategy involves: (1) examining science plans for each proposal; (2) determining operational and environmental constraints; (3) developing a matrix that combines the SPC science plan with operational and environmental constraints and risk, operational days at sea, and transits; and (4) adding fiscal reality to viable options forwarded to the SPC. The Task Force works closely with SPC to ensure that the scheduling option always represents highly ranked science.

Project Scoping

Complex Drilling Projects (CDP) will need scoping groups to oversee and assess the state of readiness of the drilling plans, tool and engineering development, site survey, etc. The Operations Task Force may designate a formal Project Scoping Group (PSG) to take over planning and coordination of the CDP and carry it through the multi-year, multi-leg, and multi-platform project. The NanTroSEIZE Project Scoping Group has been established and the Operations Task Force will address the issue of a CDP Murray Ridge/Indus/Fan scoping group at its June IO meeting in Edinburgh.

Inviting Other Nations

The international partnerships represent a vital element of IODP. In March 2004, ECORD joined IODP as a contributing member, and in April 2004, the Ministry of Science and Technology (MOST) of the People's Republic of China joined the program as an Associate Member. As of May 2005, the program spans three continents and 20 countries. Yoichiro Otsuka is spearheading IODP-MI efforts in expanding IODP membership to other countries such as: Australia, Brazil, India, Korea, New Zealand and Russia. In March 2005, Korean scientists and their funding agency agreed to set up an IODP consortium in Asia and started negotiations with NSF and MEXT.

At its Management Forum and retreat in May 2005 (see below), an IODP-MI proposal to introduce a new category of affiliation with IODP was discussed as a mechanism for involving other countries in IODP.

IODP-Industry Cooperation

The IODP-Industry Workshop included 15 IODP scientists and 13 industry participants from nine companies. The IODP scientists gave presentations that explained the structure and operations of IODP. They also described IODP expeditions of interest to industry that have already been carried out or planned for the future. Industry participants gave a number of presentations on topics relevant to IODP. (PowerPoint slides for some of the presentations are on a CD accompanying this draft report).

Discussions centered about the theme of how IODP and industry could be of assistance to each other. It was generally agreed that there are a number of areas where the two sides could usefully cooperate. There were also a number of areas where the goals and implementation strategies of the two sides diverge. It was agreed that an IODP-Industry Advisory Task Force be formed. This Task Force would provide a central point of contact between IODP and Industry. It would be complementary to the Industry-IODP Science Program Planning Group (IS-PPG) being set up by the SPC, in which individual industry scientists plan joint drilling proposals with academic scientists. The Task Force may, among other tasks, suggest nominations to IS-PPG as well as to other SPC panels.

Management Forum and Retreat

A Management Forum consisting of the heads of JOI Alliance, CDEX, and ESO and the chairs of USSAC, JDESC, and ESSAC, as well as the chairs of SPC and SPPOC and key

staff of IODP-MI has been established. The first meeting was held in Frascati, Italy, May 24-26, 2005.

Position papers prepared by the participants prior to the meeting highlighted both opportunities and challenges for the IODP, incorporating experience gained with planning and executing complex, multi-platform operations since IODP's inception on October 1, 2003. In Frascati, meeting participants initially distilled many ideas and then focused on improving the delivery of community scientific objectives as spelled out in the Initial Science Plan, as effectively and efficiently as possible. A highlight from the meeting is the recommendation for the proactive integration and seamless scientific planning/advice, management, implementation, and assessment of major community-defined thematic scientific goals, perhaps using NanTroSEIZE as a model.

This recommendation, which envisages the formation of mission teams, is being commented on by the scientific community. USSAC and J-DESC, as well as a number of Japanese scientists, have endorsed the concepts in the Frascati recommendation. Comments will be forthcoming from SPC, SSEPS, ESSAC, as well as from other interested scientists. A small group consisting of three members from the Management Forum and four members from SAS is being formed to consider the comments and formulate implementation plans, which will be forwarded to SPPOC, the Management Forum, and ultimately, to the IODP-MI Board of Governors for approval.

Technical, Engineering, and Science Support

The Lead Agencies have agreed on a process by which the roles of the SAS, the IOs, and IODP-MI has been clarified. For the process to be fully implemented, more time is necessary than available for the construction of the FY2006 Program Plan. The IOs have submitted Engineering Development proposals for FY2006, which will be evaluated by IODP-MI with the help of the Engineering Development Task Forces (where necessary), after consideration and recommendation by the newly formed SAS Engineering Development Panel. In general, the route of issuing RFPs and evaluating competing proposals will be followed.

Core Curation

IODP Core Distribution Plan

Following endorsement by the SAS of a plan to distribute IODP core geographically, IODP-MI and the IOs defined the basic guidelines for distribution of IODP cores, whereby cores will be distributed based on geographic distribution at the conclusion of each expedition.

DSDP/ODP Core Redistribution Plan

IODP Management International (IODP-MI) and the IOs have prepared a core consolidation model, which redistributes the DSDP and ODP core collections located at the Gulf Coast Repository (GCR), the East Coast Repository (ECR), and the West Coast Repository (WCR) to the Gulf Coast Repository (GCR), the Bremen Core Repository (BCR), and the Kochi Core Repository (KCR), along the same geographic distribution framework as the proposed plan for IODP core collections.

Data Management
The Site Survey Data Bank (SSDB), which holds the data generated in support of scientific proposals, is being transferred to Scripps Institution of Oceanography as a result of a competitive proposal process. The functionality of the data bank is being enhanced and provision is being made for community advice in its running. As mentioned above, science coordinator Barry Zelt will assist in SSDB operations.

Management of data based on the drill cores and downhole measurements presents a more complex issue because the IOs have developed different systems for storage, retrieval, and applications. This issue is being addressed on two fronts. The issue of technical compatibility is progressing toward a resolution at a number of meetings at which technical issues are discussed. Data Management Specialist Bernard Miville plays a key role in consideration of technical issues. The second issue involves ultimate managerial concerns and we hope to resolve these in FY2005 with the IOs and IODP-MI agreeing on a process to be fully implemented in FY2006. The ultimate goal is to provide the user a single portal at which shipboard data can be extracted.

Publications
The IODP-MI Task Force on Publications recommended that all publications except the new program journal, *Scientific Drilling*, should be electronic. IODP publications will consist of technical notes, pre-expedition reports, expedition reports, data reports, expedition syntheses, and specialty papers. For FY2006, the major portion of the budget provides for JOI Alliance to publish the FY2005 expedition reports. ESO will prepare initial expedition reports through the science editing stage and will hand over final production and publication to JOI Alliance. In cooperation with International Continental Scientific Drilling Program (ICDP), IODP-MI will publish the print journal, *Scientific Drilling*. This will be the successor to the *JOIDES Journal*. Hans Christian Larsen and Emanuel Soeding (IODP-MI) and Uli Harmes (ICDP) will be principally responsible for the contents of *Scientific Drilling.*

Education and Outreach
In FY2005, Nancy Light, director of communications, has been able to establish an active education and outreach program. An IODP logo has been established; a structure for an exhibit booth (which can be shipped to various conference sites) has been created and was on display at the December 2004 AGU meeting and April 2005 EGU meeting. The booth also was shipped to Chiba, Japan, for the Joint Meeting for Earth and Planetary Science, and sent to the AOGS meeting in Singapore. An electronic newsletter was developed and the premier issue introduced, and a vastly improved Web site has been created. A brief IODP-MI Annual Report has been published and a Visiting Scientist Program is under review. In addition to the continuation of these activities in FY2006, several new activities are planned to include: a new publication providing an overview of IODP and emphasizing IODP expeditions during the first two years. Discussions are also underway to participate in an AGI television series on Earth sciences. An IODP

documentary tentatively planned around the NanTroSEIZE Expedition is also under discussion. An Education and Outreach Task Force has been active and is formulating policies on media relations, an editorial style guide, and a graphics standards manual.

Task Forces and Steering Committees

IODP-MI is a very small organization with only a few scientists in key positions. However, IODP-MI is responsible for overseeing the implementation of a large number of tasks, including engineering development, site survey data bank establishment, education and outreach, publications, and database management. While IODP-MI will get advice from SAS on all these matters, the advice in many cases will not be focused enough or decisive enough to launch into implementation. IODP-MI will use task forces to assist in implementation where necessary. The purpose of task forces in each of these areas will be to focus the advice obtained from SAS and provide concrete advice on policy, so that IODP-MI can proceed with implementation. All task forces will, in general, be appointed on an ad hoc basis and usually will include some SAS members, some representatives from the IOs and other experts. The members of the task forces will not be nominated by outside bodies but will be chosen by IODP-MI. Task forces will not be asked to write RFPs. The policy formulations by the task forces, however, will often guide IODP-MI personnel in writing RFPs. The following IODP task forces, whose functions have been largely described above, will be operating next year :

- Operations Task Force
- Review Task Force
- Education and Outreach Task Force
- Publications Task Force
- Engineering and Development Task Force
- Data Management Task Force
- Ocean Bottom Observatory Task Force
- Management Forum
- IODP-Industry Advisory Task Force
- New Membership Task Force

In addition, scoping groups for Complex Drilling Projects (CDPs) will be operational.

Workshops

Two kinds of workshops are planned—three long-term planning workshops as well as one “Fault Plane” workshop.

The need for holding long-term planning workshops is acute. While important targets have been drilled in IODP, important gaps remain in fulfilling the goals of the Initial Science Plan. Long-term planning is also obviously and absolutely essential for the optimum utilization of *Chikyu*. While SPC and SPPOC have discussed the need for long-term planning, nothing concrete has been implemented. At its June meeting in Nagasaki, the IODP-MI Board of Governors gave specific direction to SPPOC as follows:

"SPPOC should identify as soon as possible workshops to be held during the drilling hiatus that will address long-term planning issues and programmatic needs of the ISP that are not being adequately addressed at present. For each workshop, SPPOC needs to develop a short prospectus, include recommended conveners, SPPOC member advocates, and at least a partial list of attendees. This should be handed to IODP-MI management for funding, organizing, and execution."

Thus, IODP-MI basically has been handed the task of implementing the workshops, based on advice in the form of a short prospectus from SPPOC.

In an informal meeting with the SPPOC vice chair, the following three topics were selected from a longer list adopted by SPPOC at its June meeting in Nagasaki.

- Deep drilling to Moho/crustal drilling
- Deep biosphere/microbiology
- Continental break-up and sedimentary basin formation

SPPOC may alter these topics if it so chooses, but the number of topics and funding level will remain the same.

We believe that the need for the workshops is very urgent, especially in relation to the "missions" being envisaged in the Frascati report. FY2006 is the ideal time to hold these workshops and they need to be organized efficiently and quickly. For this reason, it is felt that the travel of at least 25-30 scientists, who will form the core of the workshops, should be prescribed by SPPOC, and be funded by IODP out of commingled funds . The remaining attendees (20-25 in number) could well be supplied by the national committees, but to depend on the national programs to supply all the attendees will not be responsive to the urgent needs for the workshops. For this reason, $75,000 has been budgeted for each workshop. Support would be provided for US/Japan/European/China participants on a 7:7:3:1 ratio. However, if a nation/consortia does not send the allocated number of participants, those positions may be allocated to another nation/consortia.

By carrying out SAFOD drilling, ICDP has gained much knowledge in the drilling of fault planes. One of the best ways for IODP scientists to come up to speed in fault plane drilling will be by means of the planned workshop. The costs of the workshop will be shared equally by IODP and ICDP. The workshop will have two important focuses. One will be to relate the scientific imperatives to the drilling realities (instrumentation, etc.); the other will be to see if the important scientific questions regarding faults can be addressed by the drilling. $75,000 has been budgeted for this workshop.

USIO WORK PLAN SUMMARY

A USIO Work Plan Summary was not available as of September 15, 2005.

ESO WORK PLAN SUMMARY

Management and Administration

ESO is contracted to carry out MSP operations on behalf of ECORD Council and IODP-MI. Within the 10-year program, mission-specific platforms will be operated as required by the Science Advisory Structure and IODP-MI. ESO will provide a project-based service and continuity of structure that will allow both the planning of operations and the ability to liaise within the IODP structure, including advising the science community of the capabilities of MSP operations, collaboration with other IOs, and cooperating with IODP-MI.

Key areas of responsibility within ESO include: the Science Manager for overall project management; the Operations Manager for operational matters and the running of expeditions; petrophysics management via the European Petrophysics Consortium (EPC) for all downhole logging and petrophysics operations; data management; education and outreach; and the management of curation and laboratory facilities.

Technical, Engineering, and Science Support

The Onshore Party phase for the Tahiti Sea Level Expedition (310) will take place in the early part of US FY 06, but the main focus will be the New Jersey Margin. In addition, because of difficulties in acquiring a suitable vessel, the main offshore portion of Tahiti Sea Level Expedition has been rescheduled to the early part of FY06.

The Tahiti Sea Level Onshore Science Party is to be conducted during February in Bremen under the supervision of Dr. Ursula Röhl, manager of the ODP/IODP Core Repository. Detailed plans for this activity are presented elsewhere in the Tahiti Sea Level Scientific Prospectus and its accompanying Measurements Plan.

Previous drilling has focused on the New Jersey slope, outer shelf, and onshore, but the paleo-inner shelf facies have not been continuously sampled, leaving a critical gap. The objective of this IODP expedition is to obtain continuous cores and downhole logging measurements of siliciclastic sequences on this modern continental margin within crucial paleo-inner-shelf facies at three sites that represent the most sensitive and financially accessible locations for deciphering amplitudes and testing facies models.

The required depth of the boreholes below seabed is 762 meters, and the water depth at all the sites is shallow (35 to 40 meters). It is envisaged that a jack-up rig of sufficient classification to accommodate the operational water depth and depth of penetration will be hired. As a prerequisite to coring, a Logging-While-Drilling (LWD) operation will be carried out. That coring tools system selected will meet the requirements of continuous coring from seabed and will be able to collect core with a minimum diameter of 62 mm. In view of the depths to target and the anticipated sandy lithologies, it is possible that

casing strings may have to be utilized, and polymer drilling mud is likely to be required throughout the coring operation. The core-run lengths will be geared to maximize core recovery, even if this reduces overall penetration speed.

ESO will continue to provide support to the SAS panels and committees, including the attendance of representatives at all meetings. ESO also will contribute to engineering development initiatives in IODP.

Core Curation
No activity

Data Management
ESO will ensure the management of data collected during MSP expeditions. Detailed specification and configuration of data management systems will be developed from the finalized science/operational data requirements and operational logistics.

A specially developed version of DIS, called the Offshore DIS, will provide the basis of the system deployed in consultation with GFZ, who will provide training for field operations and support for mobilization. The DIS system will then be transferred to Bremen for additional data capture during the onshore party. Subsequently, the data will be transferred to WDC-MARE/PANGAEA.

Publications
ESO will prepare text and diagrams for all required publications, but the final editorial and publication phases will be conducted by Texas A & M University (TAMU).

Logging
To facilitate downhole measurements and core petrophysics for MSPs, the EPC has been developing protocols for use both offshore and as part of the shore-based party.
In all expeditions, the downhole logging program will be integrated with the scientific objectives to ensure maximum scientific output. This may include the use of specialist “third party” tools.

This service will be contracted as part of the services for the New Jersey Sea Level Expedition for which a detailed logging and petrophysics program will be developed.
To achieve the scientific objectives, including all minimum measurements, data can be acquired either by a wireline-only option or by combining wireline logging and Logging-While-Drilling (LWD) operations. The optimum logging operation would include both LWD and wireline logging, as the use of LWD should aid drilling strategy and improve core recovery.

Education and Outreach
ESO will take responsibility for Education and Outreach activities associated with its expeditions as well as supporting all IODP-MI and ECORD activities. Comprehensive outreach plans, in line with IODP policy, will be produced prior to both the onshore and offshore phases.

CDEX (JPIO) WORK PLAN SUMMARY

Starting from August 2005, CDEX will conduct the *CHIKYU* shakedown and crew training until August 2007. This activity includes not only crew training but also lab equipment setup, work procedures establishment, drilling exercises, etc. CDEX anticipates that most of the Center's resources will be used for these activities. One riser drilling exercise is planned in August 2006.

Management & Administration

Most of these activities are participating in IODP-related meetings (e.g.. SAS, TF, BOG, Council)

Technical, Engineering & Science Support

Most of these activities are participating in IODP-related meetings/exhibitions (e.g.. SAS, TF, PSG).

Engineering Development

Long-Term Monitoring System Architecture Design

As is clearly indicated in the IODP Initial Science Plan), time-series and in-situ observation data are key elements to understanding Earth dynamics. IODP operations will produce deep boreholes that will give rise to many technical challenges for in-situ monitoring, i.e. high temperature, high pressure, long duration, etc. Even in shallow boreholes, well-controlled and managed borehole monitoring is highly desirable by the scientific community. The NanTroSEIZE proposals have been forwarded to OTF for scheduling. The proposal includes long-term borehole monitoring (LTM) at great depth, near or at the seismogenic zone. The CORK system currently in use by ODP is not sufficient to achieve the objectives outlined in the NanTroSEIZE proposal, which includes seismicity, tilting, strain accumulation, pressure and temperature monitoring at several different levels in the borehole(s). Development is required not only for upgrading individual sensors, but also for redesigning the basic borehole monitoring system configuration, including power supply, telemetry, and data-recording systems.

In order to assess technological achievability of the Long-Term Monitoring System (LTMS), CDEX performed its own technology study in 2004 and concluded that the long-term monitoring system can be developed with existing technologies. In addition, a workshop was held on July 17–19, 2005, in San Jose, Calif. U.S.A., to define scientific requirements for the long-term observatory.

In US FY2006, based on results from CDEX's own technology study and the workshop, the design system architecture and perform high-level design will be conducted . Both designs will be validated through system architecture peer review and high-level design technical review, respectively. The deliverables from these activities include 1) the System Architecture Design Document and 2) High-Level Design Document. These deliverables may be input to the FY07 IODP Engineering Development Plan.

Core Curation
No activity is planned.

Data Management
CDEX plans to complete J-CORES development in 2005. In FY06, J-CORES will be fully tested during actual core-analysis operations on *CHIKYU* and in the Kochi Core Center. DEXIS (CDEX logging and seismic data management/interpretation system) was made fully operational in FY05 and will be in service in FY06 as well.

Publications
No activity is planned.

Logging
No activity is planned.

Education and Outreach
CDEX plans to allocate more efforts to Web-/paper-based "*Chikyu* Hakken" publication and IODP E&O-related activities, including AGU and the Japan Earth Planetary Science Joint Meeting. Making documentary films with BBC and National Geographic may be started if agreed.

SUMMARY BUDGETS

The following budget tables (Table ES-1) are cast in terms of Work Breakdown Elements. A few items in the IODP-MI budget require special explanation. The engineering development budget reflects items proposed in IO budgets. These items will be performed not by IODP-MI, but will be subcontracted. Advice by the Engineering Development Task Force will be sought in this task.

Out of the data management budget, an amount of $380,000 will be provided in a subcontract to Scripps Oceanographic Institute for Site Survey Data Bank purposes. The remaining $180,000 will provide contractual services to begin implementation of the Information Portal for IODP (IPI).

Table ES-1: *FY 2006 IODP-MI Budgets*

	IODP-MI		
	D.C.	Sapporo	Total
Management & Administration[1]	$ 3,562,347	$ 1,653,222	**$ 5,215,569**
Technical, Engineering & Science Support[2]			**$ 600,000**
Technical, Engineering & Science Support	$ -	$ -	
Engineering Development	$ 600,000	$ -	
Core Curation	$ -	$ -	**$ -**
Data Management[3]	$ -	$ 180,000	**$ 180,000**
Publications[4]	$ -	$ 40,000	**$ 40,000**
Logging	$ -	$ -	**$ -**
Education & Outreach[5]	$ 282,000	$ -	**$ 282,000**
Total	**$ 4,444,347**	**$ 1,873,222**	**$ 6,317,569**

1- See Table PP-6 for details
2- See Table PP-7 for details
3- See Table PP-8 for details
4- See Table PP-9 for details
5- See Table PP-10 for details

IODP Operators & Subcontracts					
JOI-Alliance[1]	CDEX[2]	ESO[3, 4]	Bremen	SIO	Total
$ 2,269,358	$ -	$ 443,900	$ -	$ -	**$ 2,713,258**
					$ 6,341,175
$ 4,314,685	$ 378,390	$ 1,648,100	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ 1,251,655		$ -	$ 250,877	$ -	**$ 1,502,532**
$ 942,481	$ 99,000	$ 256,500	$ -	$ 380,000	**$ 1,677,981**
$ 882,468	$ -	$ 34,200	$ -	$ -	**$ 916,668**
$ 659,652	$ -	$ 1,413,300	$ -	$ -	**$ 2,072,952**
$ 221,028	$ 200,047	$ 98,800	$ -	$ -	**$ 519,875**
$ 10,541,327	**$ 677,437**	**$ 3,894,800**	**$ 250,877**	**$ 380,000**	**$ 15,744,441**

Total SOC
Total
$ 7,928,827
$ 6,941,175
$ 1,502,532
$ 1,857,981
$ 956,668
$ 2,072,952
$ 801,875
$ 22,062,010

1- SubContract to JOI
2- CDEX SOC budget directly funded by MEXT in FY06
3- Subcontract to BGS
4- EMA directly funds $160,000 of SOC (Travel) to BGS

Note: The JOI Alliance SOC budget differs from that shown in Appendix A by $425,000. This amount was moved from the JOI Alliance Eng Development line to IODP-MI Engineering Development line

ORIGINAL FY06		BGS Subcontracts		
	BGS	EPC	Bremen	Total
Management & Administration	$ 153,800	$ 161,900	$ 128,200	**$ 443,900**
Technical, Engineering & Science Support				**$ 1,406,300**
Technical, Engineering & Science Support	$ 436,100	$ 253,600	$ 716,600	
Engineering Development	$ -	$ -	$ -	
Core Curation	$ -	$ -	$ -	**$ -**
Data Management	$ 125,400	$ 19,100	$ 60,000	**$ 204,500**
Publications	$ 34,200	$ -	$ -	**$ 34,200**
Logging	$ -	$ 969,300	$ -	**$ 969,300**
Education & Outreach	$ 63,600	$ -	$ 22,500	**$ 86,100**
Total	**$ 813,100**	**$ 1,403,900**	**$ 927,300**	**$ 3,144,300**

	JOI Subcontracts			
	JOI	TAMU	LDEO	Total
Management & Administration	$ 590,715	$ 1,400,924	$ 277,719	**$ 2,269,358**
Technical, Engineering & Science	$ -			**$ 4,314,685**
Technical, Engineering & Science Support	$ -	$ 3,120,249	$ 1,194,436	
Engineering Development[1]	$ -	$ -	$ -	
Core Curation[2]	$ -	$ 1,251,655	$ -	**$ 1,251,655**
Data Management	$ -	$ 784,897	$ 157,584	**$ 942,481**
Publications	$ -	$ 882,468	$ -	**$ 882,468**
Logging	$ -	$ -	$ 659,652	**$ 659,652**
Education & Outreach	$ 221,028	$ -	$ -	**$ 221,028**
Total	**$ 811,743**	**$ 7,440,193**	**$ 2,289,391**	**$ 10,541,327**

FY05 Tasks Transferred to FY06		BGS Subcontracts		
	BGS	EPC	Bremen	Total
Management & Administration	$ -	$ -	$ -	**$ -**
Technical, Engineering & Science Support				**$ 241,800**
Technical, Engineering & Science Support	$ 164,800	$ -	$ 77,000	
Engineering Development	$ -	$ -	$ -	
Core Curation	$ -	$ -	$ -	**$ -**
Data Management	$ 52,000	$ -	$ -	**$ 52,000**
Publications	$ -	$ -	$ -	**$ -**
Logging	$ -	$ 444,000	$ -	**$ 444,000**
Education & Outreach	$ 12,700	$ -	$ -	**$ 12,700**
Total	**$ 229,500**	**$ 444,000**	**$ 77,000**	**$ 750,500**

1- $425,000 was moved to the Engineering Development line in the IODP-MI Engineering Development Budget
2- $1,251,655 is a total of IODP core curation ($745,260) and DSDP/ODP core redistribution ($506,395)
See text for details

New Total FY06		BGS Subcontracts		
	BGS	EPC	Bremen	Total
Management & Administration	$ 153,800	$ 161,900	$ 128,200	**$ 443,900**
Technical, Engineering & Science Support				**$ 1,648,100**
Technical, Engineering & Science Support	$ 600,900	$ 253,600	$ 793,600	
Engineering Development	$ -	$ -	$ -	
Core Curation	$ -	$ -	$ -	**$ -**
Data Management	$ 177,400	$ 19,100	$ 60,000	**$ 256,500**
Publications	$ 34,200	$ -	$ -	**$ 34,200**
Logging	$ -	$ 1,413,300	$ -	**$ 1,413,300**
Education & Outreach	$ 76,300	$ -	$ 22,500	**$ 98,800**
Total	**$ 1,042,600**	**$ 1,847,900**	**$ 1,004,300**	**$ 3,894,800**

NOTE: Actual amount of NSF Contract to IODP-MI is: $21,224, 573
NSF Contract = Total SOC - MEXT direct fund to CDEX - EMA direct fund to BGS
$21, 224, 573 = $22,062,010 - $677,437 -$160,000

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C) FY 2006 IODP PROGRAM PLAN

INTRODUCTION

The Integrated Ocean Drilling Program (IODP) is an international partnership of scientists and research institutions established to explore Earth's history and structure as recorded in the ocean basins. IODP provides sediment and rock samples (cores), shipboard and shore-based facilities to study these samples, downhole geophysical and geochemical measurements (logging/petrophysics), and opportunities for special experiments (i.e., seafloor and subseafloor observatories) to determine in-situ conditions beneath the seafloor. IODP studies will lead to better understanding of plate tectonic processes, Earth's crustal structure and composition, environmental conditions, life in ancient oceans, and climate change.

IODP is sponsored by Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the U.S. National Science Foundation (NSF) as Lead Agencies, by the European Consortium for Ocean Research Drilling (ECORD), and by the People's Republic of China.

Organizational Framework

IODP operation is based on three components:

The Central Management Office (CMO). IODP-Management International (IODP-MI) has received a 10-year contract from the lead agencies to run the CMO.

The Implementing Organizations (IOs). There are three IOs:

- JOI Alliance, which is responsible for the riserless ship, the *JOIDES Resolution;*
- Center for Deep Earth Exploration (CDEX) , which is responsible for the riser-equipped ship, *Chikyu*, and;
- ECORD Science Operator (ESO), which is responsible for mission-specific platforms (MSPs).

The Science Advisory Structure (SAS). The IODP Science Advisory Structure consists of scientists, engineers, and technologists designated by IODP member organizations, such as national or consortia organizations.

According to the principles upon which the Integrated Ocean Drilling Program (IODP) was founded, IODP "Science Operations Costs" (SOCs) will be supplied to the nonprofit corporation known as IODP Management International, Inc. (IODP-MI), which provides the Central Management Organization's (CMO) program functionality (see **Figure PP-1**). In turn, IODP-MI will distribute SOCs to Implementing Organizations (drilling operators) and to other subcontractors according to the budgets outlined in this and subsequent IODP Annual Program Plans. SOC funds will be collected from IODP members, commingled by the U.S. National Science Foundation (NSF), and provided through contract to IODP-MI (see **Figure PP-1**). Currently, the U.S. NSF, Japan, as represented by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the European Consortium for Ocean Research Drilling (ECORD) as represented by the European Management Agency (EMA), and the People's Republic of China as represented by the Ministry of Science and Technology (MOST) are IODP members. The U.S. NSF and Japan's MEXT are designated as Lead Agencies, the EMA is a Contributing Member and the People's Republic of China's MOST is an Associate Member.

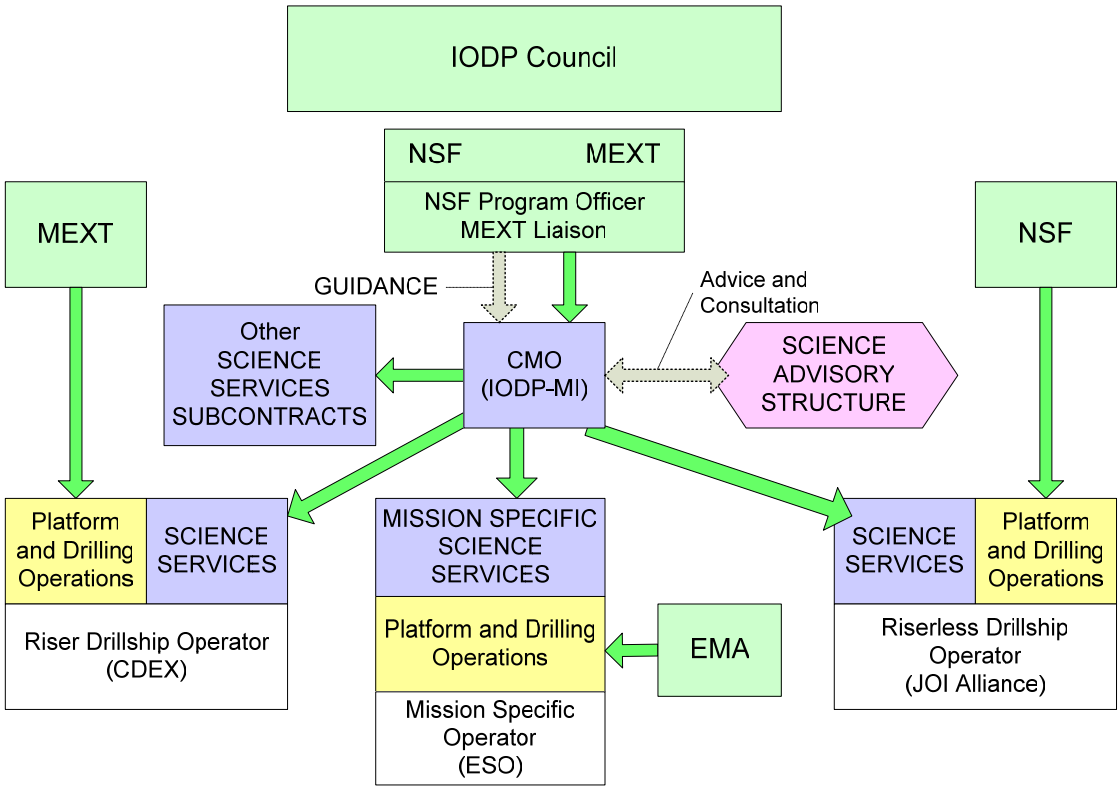

Figure PP- 1: *IODP program management structure.*

SOCs and POCs are detailed in accompanying budgets, both in the Program Plan and in Appendices A-D. The funding agencies consist of NSF and MEXT (as the Lead Agencies), EMA as a contributing member, and MOST (the People's Republic of China) as an Associate Member. Solid arrows indicate flow of funds. Dotted arrows indicate flow of advice.

As detailed in **Figure PP-1**, "Platform Operations Costs" (POCs) are supplied directly from individual funding agencies of the countries or consortia operating IODP drilling assets: from NSF to the JOI Alliance (JOI, Inc., Texas A&M University [TAMU], Lamont-Doherty Earth Observatory [LDEO] of Columbia University) for operation of the riserless vessel (*JOIDES Resolution* in the first phase of IODP), from MEXT to the Center for Deep Earth Exploration (CDEX) for continued outfitting of the riser-equipped ship *Chikyu* and all preparation activities in support of international operations expected to start in FY 2007, and from ECORD to the ECORD Science Operator (ESO) for mission-specific platform (MSP) operations.

The technical management relationship consists of the following components: a) overall central management tasks and responsibilities for science operations by IODP-MI, with offices in Washington, D.C. and Sapporo, Japan; b) science advice provided by the SAS, supported by a planning office at IODP-MI, Sapporo; and c) multiple IOs, as listed above – JOI Alliance, ESO, and CDEX.

IODP-MI – The Central Management Organization

A Central Management Organization (CMO) has been established with the concurrence of MEXT and NSF to develop and manage IODP science operations and implementation plans. CMO functions are provided by IODP Management International, Inc. through a 10-year contract with NSF. The CMO: a) receives advice and recommendations from SAS on scientific priorities and plans; b) requests plans from IOs responsive to this advice; and c) works with IOs and the SAS to produce an integrated IODP Annual Program Plan (**Figure PP-2**).

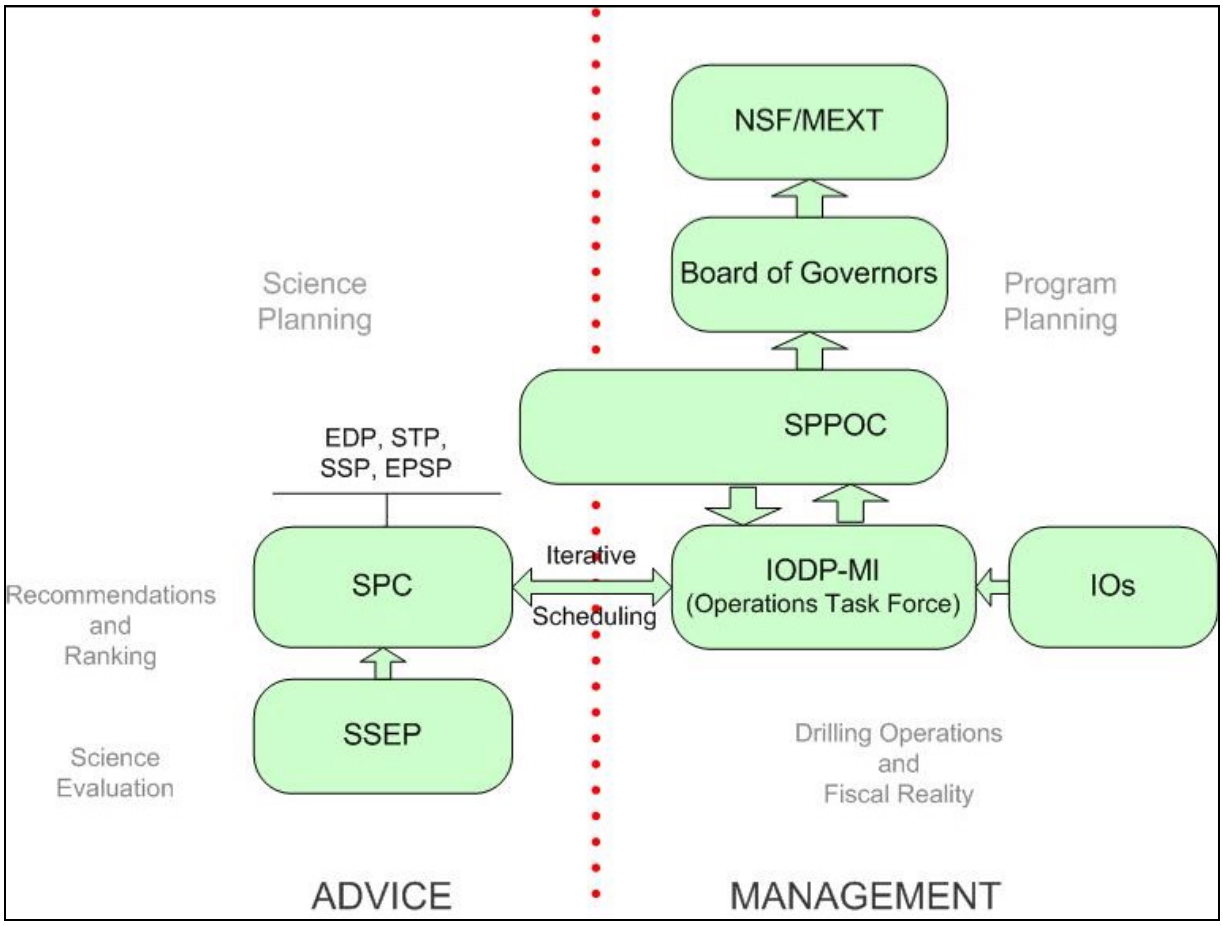

Figure PP- 2: *The flow of scientific advice towards expedition scheduling.*

Scientific advice to the IODP management structure occurs via advisory panels and committees. Scientific planning for the IODP is provided by a Science Advisory Structure led by the Science Planning Committee. IODP-Management International is the Central Management Organization (CMO) that will translate the scientific priorities of the ocean-drilling community into program plans to carry out scientific IODP operations. It will do so based on advice from the international IODP Science Advisory Structure (SAS), and in consultation with vessel operators (referred to as "Implementing Organizations", or IOs).

IODP-MI submits the program's Annual Program Plan to the Science Planning and Policy Oversight Committee (SPPOC), the executive authority of the SAS and an IODP-MI committee, for review and approval prior to consideration by the IODP-MI Board of Governors (BoG) and Lead Agencies. The NSF has responsibility for contractual approval of the Annual Program Plan, in consultation with MEXT. After approval by the Lead Agencies, significant changes in the Annual Program Plan are to be considered and

approved by IODP-MI and the Lead Agencies prior to implementation, in consultation with the SPPOC and the IOs, as appropriate.

The Annual Program Plan is to be consistent with budget guidance provided to IODP-MI by the Lead Agencies. The Annual Program Plan includes a presentation of total program costs, which include both SOCs and POCs. IODP-MI will manage SOC funds provided under contract with the NSF. The NSF is expected to administer the contract with due consideration to the interests of MEXT. POCs will be provided directly to the IOs from the Lead Agencies and EMA (**Figure PP-1**)

Implementing Organizations

Riserless drilling capability will be supplied by the NSF through a contract to the JOI Alliance (see Appendix A), consisting of JOI, Inc. (Prime contractor and overall management); Texas A&M University (subcontractor that operates a riserless drillship and provides associated services and functions such as expedition staffing, logistics, program-specific engineering development and operations, shipboard laboratories, curation, and distribution of core samples and data); and Lamont-Doherty Earth Observatory of Columbia University (geophysical and geochemical logging services aboard the riserless vessel, involving acquisition, processing and interpretation of logging measurements). Details of the JOI Alliance and its operational plans for FY2005 are presented in the **Appendix A.**

Riser-equipped drilling capability by way of the vessel *Chikyu* will be supplied by CDEX and will begin in FY2007 (see **Appendix B**). CDEX is part of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC). CDEX will also provide administrative services to the Kochi University Center for Advanced Marine Core Research (CMCR) repository.

MSP drilling, sampling, and logging capability will be supplied by the ESO, a consortium led by the British Geological Survey (BGS, which will conduct MSP operations and program-specific engineering development), the European Petrophysics Consortium (provides logging services) and the University of Bremen (provides repository services for MSP samples and cores). The ESO has a contractual arrangement with the ECORD Management Agency (EMA), affiliated with the Centre Nationale de la Research Scientific (CNRS), based in Paris. Details of ESO and its operational plans for FY2006 are presented in **Appendix C.** ESO will utilize Bremen curatorial personnel and services during actual MSP operations. These ESO funds are separate from the normal IODP core archive and sampling operations proposed by Bremen in the Annual Program Plan—**See Appendix D**).

Science Advisory Structure

The IODP Science Advisory Structure provides long-term guidance on the scientific planning of the IODP and recommends annual science and engineering plans based on proposals from the international science community. The SAS consists of the Science Planning and Policy Oversight Committee (SPPOC), the Science Planning Committee (SPC), as well as several advisory panels (**see Figure PP-3; next page)**, which contain hundreds of scientists from the international geoscience community in IODP member countries and consortia.

The SPPOC (Kensaku Tamaki, chair; Nick Pisias, vice chair) is considered the Executive Authority of the SAS and is composed of representatives from scientific organizations in IODP member countries. SPPOC is a committee of IODP-MI. The SPPOC, as its name implies, provides scientific oversight. An important responsibility of the SPC (Mike Coffin, chair; Keir Becker, vice chair) is to prioritize the recommendations for the drilling sites. It considers recommendations from the various SAS support panels and is the focus of scientific planning for IODP.

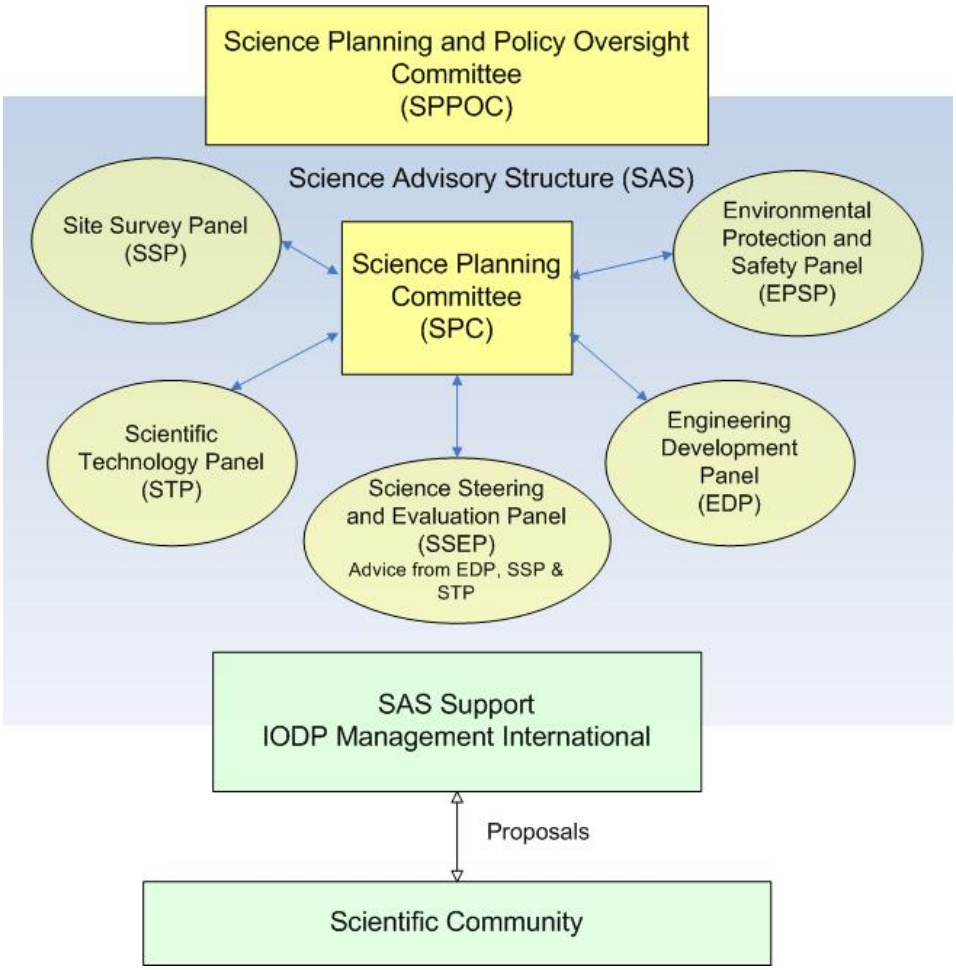

Figure PP- 3: *IODP Science Advisory Structure.*

FY 2006 EXPEDITION OPERATIONS

Development of Riserless Operations

The IODP Science Advisory Structure (SAS) has reviewed and prioritized science proposals submitted to IODP and has recommended the operations schedule presented in this Annual Program Plan, reflecting IODP requirements for the near term (1–2 years). The science presented in this program plan is primarily the product of a ranking exercise of the Science Planning Committee (SPC) of the IODP Science Advisory Structure (SAS) that took place in June 2004.

Just prior to the December, 2004 SPPOC meeting, NSF provided new budget guidance for *JOIDES Resolution* operations, which stated that the ship was to be off contract by February 1, 2006. Given this new guidance, SPPOC requested that a subset of OPCOM (now known as the Operations Task Force) hold an ad hoc meeting to develop a revised FY2006 science plan.

Major determinants used by OPCOM in determining revised FY2006 operations included weather windows, minimal transits, and avoiding operations with long lead-time acquisitions (e.g., CORKs), while trying to add highly ranked science to the schedule. Following this short meeting, the OPCOM chair outlined the general proposal scheduling strategy to SPPOC and then presented the results of the OPCOM deliberations. This plan added an abbreviated Cascadia Margins Gas Hydrates program (which straddled the FY2005 and FY2006 boundary), the engineering portion of the Monterey Bay proposal and additional Superfast Spreading Crust operations. Following these operations, the *JOIDES Resolution* would begin demobilization.

Subsequent to the December 2006 SPPOC meeting, it became apparent that it would not be possible to resolve permitting and liability issues associated with implementing the Monterey Bay Observatory Program in a timely manner and that program was cancelled for FY2006. Discussions with NSF indicated that the operational days originally allocated to the Monterey program should be used for continued delivery of science rather than pursuing an early termination of IODP-USIO FY06 operations. IODP-MI (via the Operations Task Force, formerly OPCOM), the UISO and SPC worked together to develop a strategy to redistribute this time between the Cascadia Margin Gas Hydrates and Superfast Spreading Crust programs. The revised FY2006 operations schedule is provided below in **Table PP-1**

Riserless Expedition Operations

The FY2006 Program consists of the conclusion of Expedition 311, followed by one expedition in the eastern Pacific and demobilization. A total of 123 operating days are proposed in FY2006, consisting of 29 days in transit, 31 port call days, and 63 days focused on science delivery (onsite and between-site transit). Note that only 29 days of Expedition 311 (consisting of three days in transit and 26 days on site) are included in the FY06 Program. The expedition schedule is summarized below.

Table PP-1: *Proposed Schedule of Riserless Operations for FY2006*

Date of Expedition	Expedition
28 August–29 October 2005	Expedition 311: Cascadia Margin Gas Hydrates*
29 October 2005–29 December 2006	Expedition 312: Superfast Spreading Crust 3

*Expedition straddles FY2005/2006 boundary

IODP Expedition 311: Cascadia Margin Gas Hydrates

Proposal	**553-Full2:** Gas Hydrates on the Cascadia Margin
Proponents	Michael Riedel, Roy D Hyndman, Earl E. Davis, Tim S. Collet, Douglas Bartlett, Miriam A. Kastner, George D. Spence and Scott R. Dallimore

The Cascadia Margin Gas Hydrates proposal successfully demonstrated the need for scientific ocean drilling in an accretionary prism environment to better constrain the models concerning the formation of gas hydrates. The original proposal has been adapted to accommodate a shortened coring program consisting of 37 days, with the understanding that the remaining aspects of the proposal will be completed during a future expedition. The scheduled expedition will consist of completing a series of sites across the northern Cascadia accretionary prism to improve understanding of the deep origin of methane, its upward transport, its incorporation in gas hydrate, and its subsequent loss to the seafloor (**Figure PP-5; Table PP-2**) A primary focus will be to document the widespread seafloor-parallel layer of dispersed hydrate associated with bottom seismic reflectors.

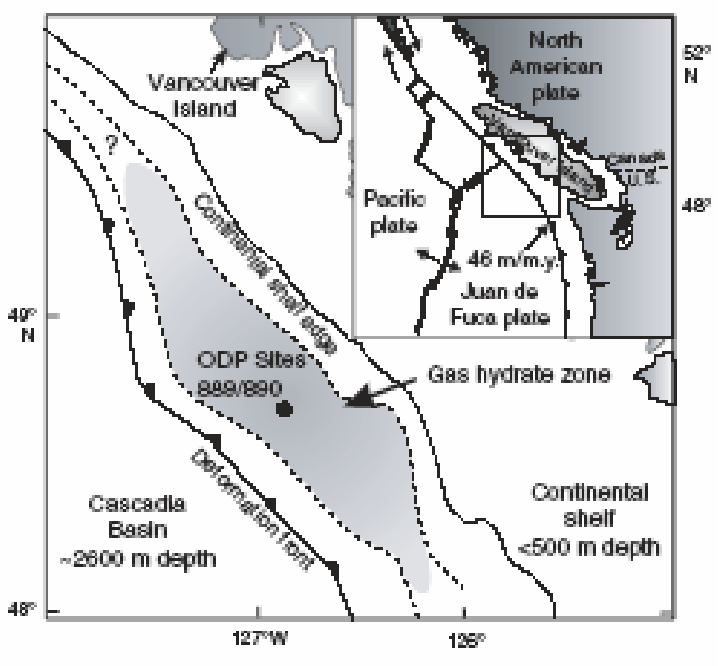

Figure PP-5:
General location of proposed drilling transect near previous ODP Sites 889/890. A BSR is present on ~50% of the mid-continental slope (shaded area).

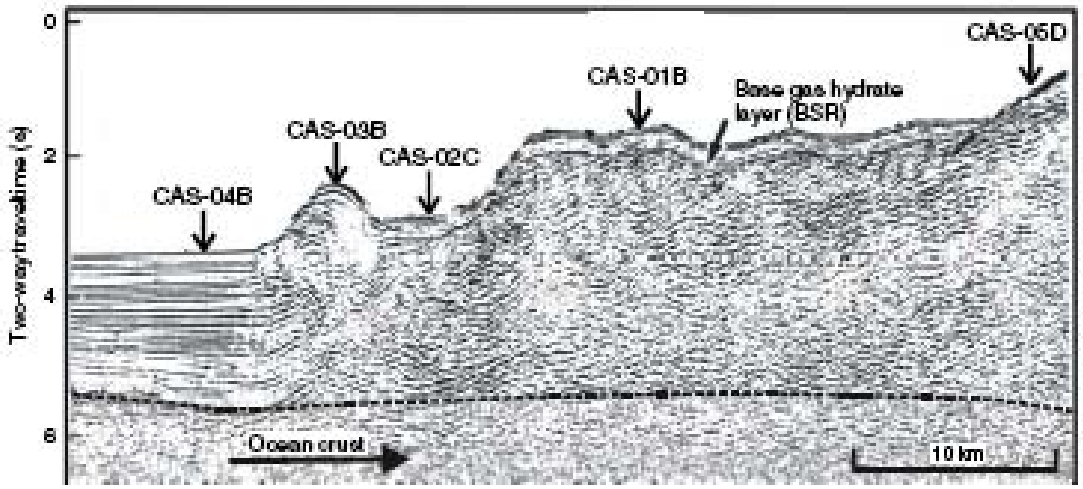

Figure PP-6: *Seismic section (line 89-08) showing proposed Expedition 311 sites. BSR = bottom-simulating reflector.*

Proposed Operations

A revised science plan that maximizes the delivered science within the constraints of available operating days and resources (**Table PP-2**) was developed with the lead proponents. The reduced program maintains the spirit of the original proposal, thereby focusing on completing a number of holes across the accretionary prism to examine the time-space progression of gas hydrate formation and dissociation in this environment. Primary tools will include advanced piston-core barrel (APC) and extended-core barrel (XCB) coring, logging-while-drilling (LWD), and a zero offset vertical seismic profile (VSP). Significant sampling for gas hydrates and microbiology is anticipated. Many of the downhole experiments and monitoring originally proposed will not be possible.

Experiments

No downhole experiments other than a VSP are planned during Expedition 311.

Environment and Safety

Potential problems include hole stability and gas or fluid flow.

Logistics

Operations for the Cascadia Margin Gas Hydrates require an estimated 61 days (5 in port, 19 in transit, and 37 on site).

Table PP-2. *Proposed Operations for Expedition 311*

Site No.	Location (Latitude Longitude)	Sea Floor Depth (mbrf)	Operations Description	(days)	Transit (days)	Drilling Coring (days)	Wireline Logging (days)
Balboa, Panama			**Start of Expedition 311**	**4.0**	**(In Port)**		
			Transit ~3800 nmi to Astoria, Oregon @ 10.5 kt		15.1		
Astoria, Oregon			**Science Party Boards Ship in Astoria**	**2.0**	**(In Port)**		
			Transit ~206 nmi to Site CAS-03B @ 10.5 kt		0.8		
CAS-03B	48 37.058' N	1791	Hole A: Logging/Measurement-While-Drilling (LWD/MWD) to 300 mbsf			1.4	
	127 02.413' W		**BSR @ ~230 mbsf**				
			DP move ~2.8 nmi to Site CAS-02C @ 1.0 kt		0.0		
CAS-02C	48 38.688' N	2241	Hole A: Logging/Measurement-While-Drilling (LWD/MWD) to 300 mbsf			1.1	
	126 58.993' W		**BSR @ ~230 mbsf**				
			DP move ~5.7 nmi to Site CAS-01B @ 1.0 kt		0.2		
CAS-01B	48 41.884' N	1336	Hole A: Logging/Measurement-While-Drilling (LWD/MWD) to 380 mbsf			1.2	
	126 51.924' W		**BSR @ ~215 mbsf**				
			DP move ~0.8 nmi to Site CAS-06A @ 1.0 kt		0.0		
CAS-06A	48 40.050' N	1291	Hole A: Logging/Measurement-While-Drilling (LWD/MWD) to 300 mbsf			1.0	
	126 51.053' W		**BSR @ ~215 mbsf**				
			DP move ~9.9 nmi to Site CAS-05D @ 1.0 kt		0.4		
CAS-05D	48 47.367' N	981	Hole A: Logging/Measurement-While-Drilling (LWD/MWD) to 220 mbsf			0.8	
			Hole B: APC/APCT to ~200 mbsf, XCB/DVTP, PCS to TD @ 220 mbsf			2.2	
	126 40.717' W		Hole C: APC 2 cores, Drill Ahead, XCB/Half cores to TD @ 220 mbsf			2.5	0.4
			(PCS/HYACINTH pressure coring/Log w/Triple Combo & FMS-Sonic)				
			BSR @ ~130 mbsf				
			DP move ~9.9 nmi to Site CAS-06A @ 1.0 kt		0.4		
CAS-06A	48 40.050' N	1291	Hole B: APC to ~15 mbsf (2 ea MBio Cores)			0.3	
	126 51.053' W		Hole C: APC to ~15 mbsf (2 ea MBio Cores)			0.1	
(Active Cold Vent)			Hole D: APC/APCT to ~200 mbsf, XCB/DVTP, PCS to TD @ 300 mbsf			2.3	
			Hole E: APC 2 cores, Drill Ahead, XCB/Half cores to TD @ 300 mbsf			2.9	1.0
			(PCS/HYACINTH pressure coring/Log w/Triple Combo & FMS-Sonic)				
			VSP (5 meter spacing - 12 hr)				
			DP move ~0.8 nmi to Site CAS-01B @ 1.0 kt		0.1		
CAS-01B	48 41.884' N	1336	Hole B: APC to ~15 mbsf (2 ea MBio Cores)			0.3	
	126 51.924' W		Hole C: APC to ~15 mbsf (2 ea MBio Cores)			0.1	
(Site 889)			Hole D: APC/APCT to ~200 mbsf, XCB/DVTP, PCS to TD @ 350 mbsf			2.6	
			Hole E: APC 2 cores, Drill Ahead, XCB/Half cores to TD @ 350 mbsf			3.1	1.0
			(PCS/HYACINTH pressure coring/Log w/Triple Combo & FMS-Sonic)				
			VSP (5 meter spacing - 13 hr)				
			DP move ~5.7 nmi to Site CAS-02C @ 1.0 kt		0.3		
CAS-02C	48 38.688' N	2241	Hole B: APC/APCT to ~200 mbsf, XCB/DVTP, PCS to TD @ 300 mbsf			2.9	
	126 58.993' W		Hole C: APC 2 cores, Drill Ahead, XCB/Half cores to TD @ 300 mbsf			3.1	0.5
(First Slope Basin)			(PCS/HYACINTH pressure coring/Log w/Triple Combo & FMS-Sonic)				
			DP move ~2.8 nmi to Site CAS-03B @ 1.0 kt		0.1		
CAS-03B	48 37.058' N	1791	Hole B: APC/APCT to ~200 mbsf, XCB/DVTP, PCS to TD @ 300 mbsf			2.7	
	127 02.413' W		Hole C: APC 2 cores, Drill Ahead, XCB/Half cores to TD @ 300 mbsf			3.0	0.5
			(PCS/HYACINTH pressure coring/Log w/Triple Combo & FMS-Sonic)				
			Transit ~134.0 nmi to Victoria @ 10.5 kt		0.6		
Victoria, B.C., Canada			**End of Expedition 311**		**18.0**	**33.6**	**3.4**

Subtotal Transit Time:	**18.0**
Subtotal On-Site Time:	**37.0**
Total Operating Days:	**55.0**
Total Expedition including 6.0 days of Port Call(s):	**61.0**

Note-1: Sea floor depth is prospectus water depth plus 11.0 m adjustment from water line to rig floor (i.e. drillers depth).

Note-2: Astoria is shown as a 2 day port call due to timing of port entry (crossing the Columbia Bar) & possibly increasing loading issues.

Note-3: Each deep cored hole has 16 hr contingency to allow for hole instability, H2S, and hydrate handling slow downs.

IODP Expedition 312: Superfast Spreading Crust 3

Proposal	522-Full3: A Complete in-situ Section of Upper Oceanic Crust Formed at a Superfast Spreading Rate - Part II: Testing Fundamental Paradigms for Formation of the Oceanic Lithosphere
Proponents	Jeffrey C. Alt, Damon A.H. Teagle, Douglas S. Wilson, Robert S. Detrick, Susumo Umino, Kari M. Cooper, Neil R. Banerjee

This expedition is the part of a multi-expedition drilling strategy to sample at ODP Site 1256 a complete section of the upper oceanic crust formed at a superfast (>200 mm/yr) spreading rate. The observed relationship between ocean ridge spreading rate and the depth to axial low-velocity zones, interpreted to be melt lenses, predicts that the dike-gabbro transition should be at its shallowest in crust formed at superfast spreading rates, and gabbros are predicted to occur at the depth range 900 to 1300 meters sub-basement (msb). This proposal follows successful operations during ODP Leg 206 at Site 1256 that resulted, for the first time in scientific ocean drilling, in successful construction of the borehole infrastructure required for deep drilling into the ocean basement. Expeditions 309 and 312 (Superfast Spreading Crust 2 and 3) will return to ODP Hole 1256B with the objective of recovering a complete section through superfast-spreading (>200 m/yr) oceanic crust (**Figure PP-7 and Table PP-3**). Expedition 309 was conducted in FY2005. Expedition 312 is a continuation of Expedition 309 activities conducted in FY2005.

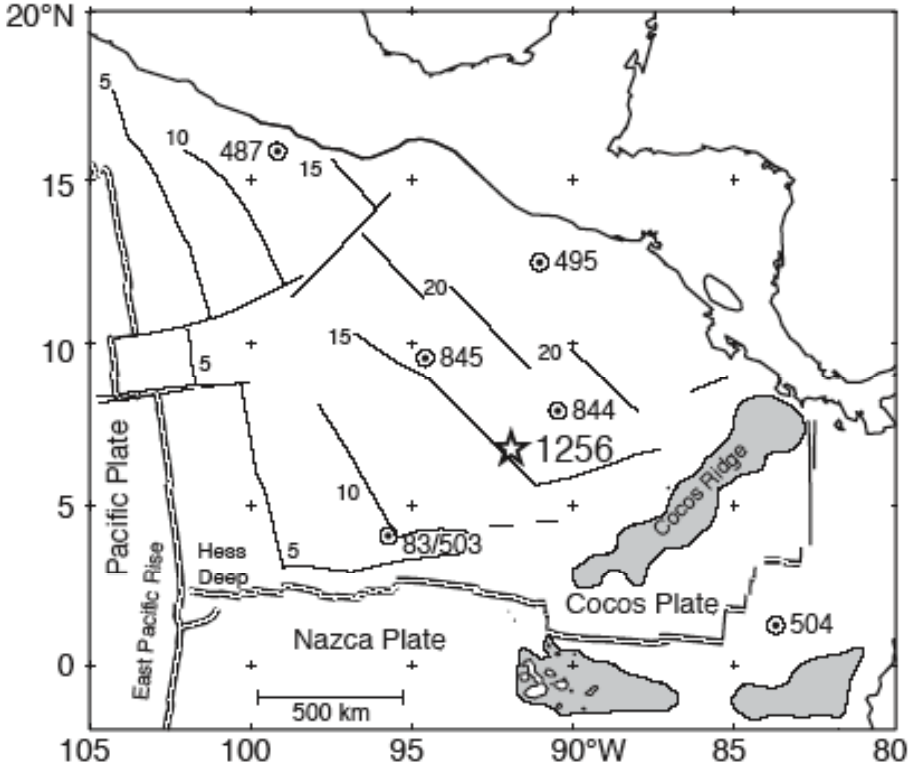

Figure PP-7: *Location map of proposed operations for Expeditions 309 and 312*

Proposed Operations

From on operational standpoint, Expedition 312 will be a routine hard-rock expedition. During ODP Leg 206, Hole 1256B was cased into basement and cored 500 meters into basement. The hole was left clean and open for further deepening, which will have taken place during Expedition 309. Expedition 312 will deepen Hole 1256B by RCB coring to the maximum depth possible (**Table PP-3**). The hole will be logged with standard tool strings as well as the ultrasonic borehole imager and a zero-offset VSP experiment. Significant microbiological sampling is expected as we continue to probe the depth of the deep crustal biosphere.

Table PP-3: *Operations and time estimate for Expeditions 309 and 312**

Proposed site	Location (lat/long)	Water depth (mbsl)	Operations description	Task duration	Transit (days)	Drilling/ coring (days)	Logging (days)
			Start of Expedition 309	(5 days)	In port		
			Sea voyage to Hole 1256D 823 nmi @ 10.5 kt		3.3		
		3645	**Hole 1256D:** Temperature measurement, water sample, Wireline log				2.5
			RCB core 752 to 1360mbsf			30.4	
			Wireline logging, triple combo, FMS-Sonic, UBI, Magnetometer, WST				4.5
			Sea voyage to Balboa, Panama 823 nmi @10.5 kt		3.3		
			Subtotal days on Hole :		6.6	30.4	7.0
			Total operating days Expedition 309:	44.0			
			Start of Expedition 312				
			Sea voyage to Hole 1256D 823 nmi @10.5 kt		3.3		
1256D		3646	**Hole 1256D:** Locate and reenter Hole 1256D				
			Temperature measurement, water sample, RCB core			30.5	
			Wireline logging, Triple combo, FMS-Sonic, UBI, magnetometer, WST				4.5
			Sea voyage to Balboa, Panama 823 nmi @10.5 kt		3.3		
			Subtotal:		6.6	30.5	4.5
			Total operating days Expedition 312	41.6*			

*** Times for Exp 312 only rough estimates until final ports, transits and drilling time finalized**

Experiments

No downhole experiments other than a VSP are planned during Expedition 312.

Environment and Safety

Hole stability and slow rates of penetration may limit the achievable depth of the hole, although instability in the sedimentary part of the section has been minimized because Hole 1256B is cased into basement and during ODP Leg 206 the basement drilled cleanly and relatively rapidly.

Logistics
Operations for Expedition 312 require an estimated 61days (5 in port, 19 in transit, and 37 on site).

Demobilization: Galveston, Texas

The costs to accomplish the demobilization of the *JOIDES Resolution* will be submitted as a separate budget request to NSF as part of the JOI Alliance's role as the U.S. systems integration contractor (SIC). Information is provided here to highlight these plans for the vessel. At the demobilization port, all laboratory equipment and supplies, drilling operations equipment and hardware, logging systems, and IT equipment will be removed from the vessel to a storage yard in either: the Houston, Texas; College Station, Texas; or Palisades, New York area. Leased subcontractor equipment will be removed from the vessel and delivered to the appropriate vendor location. Selected equipment such as positive displacement motors, under-reamers, cementing manifold, fishing tools, and so forth will be refurbished as required during the drilling hiatus. All laboratory and computer equipment will be taken to College Station, Texas, and either declared surplus or refurbished and placed in storage ready for installation on the IODP-USIO Phase 2 vessel. Logging tools and acquisition systems will be returned to IODP-USIO Science Services, LDEO, for maintenance and repair work. Demobilization of IODP-USIO equipment off the *JOIDES Resolution* will require an estimated 26 days in port.

Mission-Specific Platform Operations

New Jersey Margin

Proposal	564-Full: Global Sea Level Architecture of Passive Margin Sediments: Shallow-Water Drilling off the New Jersey Continental Shelf
Proponents	K.G. Miller, G.S. Mountain, N. Christie-Blick, J.A. Austin, C.S. Fulthorpe, P.J. Sugarman

The objective of this IODP expedition is to obtain continuous cores and downhole logging measurements of siliciclastic sequences on this modern continental margin within crucial paleo-inner-shelf facies at three sites, MAT 1–3, that represent locations for deciphering amplitudes and testing facies models (**Figures PP-8 and -9**). The coring has the following goals:

1) To date major "Icehouse" (Oligocene-Recent) sequences, a time of known glacioeustatic change, and compare ages of the unconformable surfaces bracketing these sequences with ages of sea-level lowerings predicted from the $\delta^{18}O$ glacioeustatic proxy.
2) To estimate the amplitudes, rates, and mechanisms of sea-level change.
3) To evaluate sequence stratigraphic facies models (e.g., systems tracts), which predict depositional environments, sediment compositions, and stratal geometries in response to sea-level changes.
4) To provide a baseline for future IODP drilling that will address the effects and timing of sea-level changes on other passive margins.

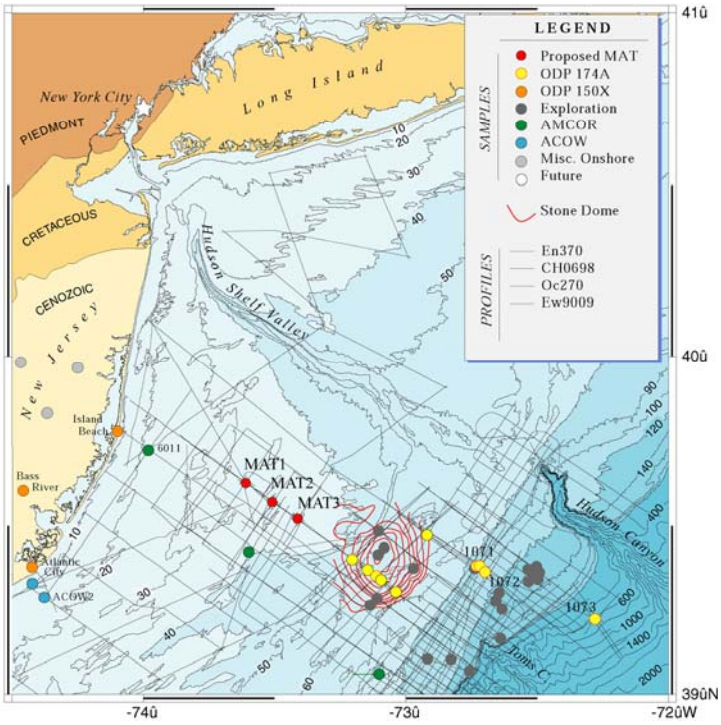

Figure PP-8: *Location map of the NJ/Mid-Atlantic Transect (MAT) and the general location of sites to be drilled for sea-level history. Reconnaissance seismic lines and commercial oil exploration wells are also shown.*

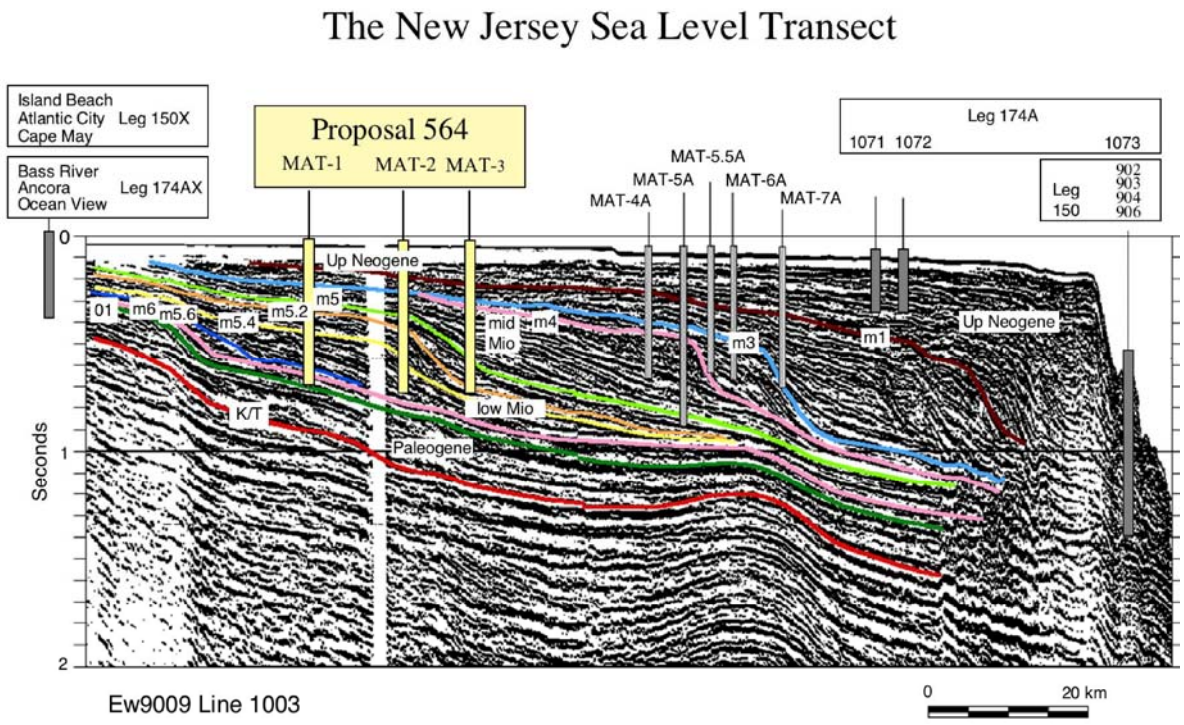

Figure PP-9: *Compressed display of Ew9009 MCS Line 1003 across the NJ continental shelf showing the general locations of existing wells (white subseafloor columns) and those yet to be drilled (gray columns). Several key surfaces (K/T = Cretaceous/Tertiary boundary, ~65 Ma, o1 ~33.5 Ma, m5 ~16.5 Ma, m4 ~14 Ma, m3 ~13.5 Ma, and m1 ~11.5 Ma) can be traced all the way to the slope. The sigmoidal shape of sediments bracketed by these unconformities is thought to result from the effects of large sea-level fluctuations. The JOIDES Resolution drilled five sites on the slope (Sites 902, 903, 904, 906, and 1073) and two sites on the shelf (Sites 1071 and 1072).*

Proposed Operations

The operations for this expedition are not well defined at this stage. A typical method of operation for the project is outlined below. Note that this scenario integrates LWD and coring at each borehole location. Other operational or cost reasons may dictate that these operations require being carried out as two separate operations on all three sites (i.e. complete the LWD at three sites, offload the LWD equipment and then core the three sites), but this is not known at this stage. The elements and steps are the same, although the timing may differ.

1. The jack-up will be equipped with modified API drill collars and drill pipe capable of operating the LWD and coring tools. The coring tools will have a maximum wireline retrievable diameter of 4” (101mm) to allow for the selected suite of coring tools to pass through to the selected BHA.

2. Set up the jack-up on site and prepare for drilling with LWD tools and personnel. Commence and complete LWD; from these data determine gross ideologies, critical geological boundaries, and any other parameters that will aid coring practice and recovery in the associated cored borehole.

3. Transfer from LWD mode to coring mode by the replacement of LWD system with BHA tools and personnel. Rig up BHA and wireline tools and prepare for coring.

4. Move rig and re-spud. If the rig can accommodate a move of sufficient horizontal displacement to avoid fluid invasion between holes, it may simply mean moving the rig on its already established footings. If the LWD and coring operations are run consecutively, this would take place at the site of the final LWD operation.

5. Using the parameters determined from LWD, commence coring using the selected coring tools. Progress coring in suitable increments to allow optimum recovery at a pace suitable to maintaining borehole stability and maximum penetration rates. Use different inner-barrel systems to maximize core recovery from the formations encountered within the envelope allowed by the selected wireline coring system.

The core-run lengths will be geared to maximize core recovery, even if this reduces overall penetration speed. In unconsolidated, sandy or silty formations these core runs could be less than three meters in length, and if specialized geotechnical tools are used, may be as short as one meter in run length. The maximum core-run length envisaged at this stage is a capability for 4.5-meter lengths. All cores will be collected in plastic liners and curated and stored in sections with a maximum 1.5- meter length.

Environment and Safety

All operations must be carried out to the highest standards for the health and safety of all personnel involved and for environmental protection. The IODP statement on the conduct of operations with due regard to the environment shall form the baseline for any requirements in any area of work.

The ESO will operate to its own set of guidelines that will follow established NERC/BGS Health and Safety Policy. These will be integrated with the IODP Health and Safety Policy and the specific platform HSE requirements. In the event that all encompassing policies have different standards, the highest practicable will be used.

Tahiti Sea Level

Ship tenders for the Tahiti Sea Level expedition were issued in January 2005 and opened/evaluated in March 2005. Three ship contractors responded, but one of the vessels was not fully tender-compliant yet within budget, whereas the two compliant vessels were well above budget. BGS planned several visits to the noncompliant vessel to determine if it could be made suitable for the expedition. Visits by BGS personnel to the noncompliant ship were cancelled four times for various reasons by ship contractor. Subsequently, a preferred contractor was nominated in May 2005 after additional funds were brought forward by ECORD Council to allow negotiation with a tender-compliant vessel. However, the ship manager took on another contract for ROV opportunities in the North Sea. ESO (and its drilling contractor, SeaCore) continued investigations for other vessels and were finally able to acquire the *D.P. Hunter* in August 2005. Mobilization of the vessel is expected to begin early September 2005 in Tampa, Fla., after which the vessel will proceed to Papeete, Tahiti, with an expected arrival in late September.

As a result of delays in the hiring of a drilling vessel for the IODP Tahiti Sea Level Expedition, the offshore portion of the expedition will take place at the start of the FY06 period. Therefore, SOC funds associated with the offshore phase will not be spent during the FY05 period and the projected sum

($750,500) associated with the offshore work will be transferred to the FY06 contract as described in the five categories below.

Management and Administration

All work and expenditure related to management and administration will be completed within FY05. The large committed sum relates to the payment of the delayed Bremen and Leicester (EPC) contracts, which would normally be paid in regular installments. (Please note that this factor also relates to some other cost categories.)

Technical, Engineering and Science Support

Work related to SAS support and expedition preparation will be spent in FY05, but the offshore and demobilization costs are deferred to FY06. As the dates of the sailing are presently uncertain, all offshore costs are placed in the projected column, as is an element of supplies.

Data Management

Staff costs associated with data management are equally spread through the FY but some equipment costs and DIS training are deferred to FY06 due to invoicing uncertainty.

Logging

All costs relate to the offshore phase and will be invoiced subsequently. Note that the hire of a core container that was included in this cost category has been moved to 'Technical, Engineering, and Science Support," where it should have been placed.

Education and Outreach

While costs are partly spread across the year, much effort will be concentrated on the offshore phase (including part of the Bremen contract that for convenience is placed in "committed").

The Tahiti Sea Level Onshore Science Party is presently scheduled to take place early in 2006. The Onshore Science Party is to be conducted under the supervision of Dr. Ursula Röhl, manager of the ODP/IODP Core Repository.

The following "Minimum Measurements" activities will take place at this Onshore Science party: core splitting, core description, core photography, core sampling, micropaleontology, inorganic geochemistry, X-diffraction, petrophysical measurements. More detailed plans for this activity are presented elsewhere in Appendix D of this program plan and in the Tahiti Sea Level Scientific Prospectus and its accompanying Measurements Plan.

The cores recovered during the Tahiti expedition will be initially processed and stored at the Bremen repository. The ultimate disposition of the cores will await implementation input from the Operations Task Force and implementation of the geographic core distribution plan approved by the Lead Agencies.

IODP-MI MANAGEMENT PLAN

IODP-MI Activities

Below is a description and budget associated with each Work Breakdown Element that pertains to tasks conducted by IODP-MI including, (1) Management and Administration, (2) Technical, Engineering, and Science Support, (3) Data Management, (4) Publications, and (5) Education and Outreach. Details of tasks and budgets associated with each Implementing Organization are presented in the Appendices of the Annual Program Plan

Management and Administration

IODP-MI has two offices (**Tables PP-4, PP-5** and **Figure PP-10**). The *primary IODP-MI Office* is located in Washington, DC, and serves as the headquarters and corporate office. The *Sapporo IODP-MI Office*, headed by the IODP-MI Vice President for Science Planning, is located in Japan. The Sapporo IODP-MI office is supported, in large part, via a subcontract to Japan's Advanced Earth Science and Technology Organization (AESTO). The subsections below describe the personnel in IODP-MI and the tasks associated with the Management and Administrative work breakdown element.

Personnel and Their Duties - Washington, DC

Table PP-4 *Personnel in IODP-Washington D.C. office and date position filled*

		FY 2004	FY 2005	FY 2006
President	Manik Talwani	Jan. 1, 2004		
VP, Science Operations	Thomas Janecek	Apr. 1, 2004		
Senior Advisor to the President	Yoichiro Otsuka	Apr. 13, 2004		
Finance & Administrative Officer	Stephanie Murphy	Feb. 17, 2004		
Contracts Officer (budget in Consultants line)	John Emmitte	Apr. 1, 2004		
Director of Communications	Nancy Light	Aug. 2, 2004		
Operations Manager				Apr. 1, 2006
Engineering Development Manager				FY 2007
Program Assistant	Thérèse Lowe	June 14, 2004		
Executive Assistant	Diane Giuliani	June 28, 2004		
Executive Program Assoc.			Sept. 1, 2005	
Web Master	Laura Paris	Aug. 30, 2004		
Program Assistant	Heather Mandelkorn		May 9, 2005	

The *IODP-MI President* is responsible for all IODP-MI employees and the overall IODP-MI relationship with SPPOC, SPC, the IOs and the national/consortia program offices. He directly oversees the two IODP-MI Vice Presidents (VPs), the Senior Advisor to the President, the Director of Communications, the Finance and Administrative Officer, the Contracts Officer, and the Executive

Assistant to the President. The President is the Chief Executive Officer of IODP-MI responsible for the operation of the CMO. In this capacity, he constructs the IODP Annual Program Plan, obtains approvals from the IODP-MI Board of Governors, and negotiates the contract for its implementation with NSF (on behalf of NSF/MEXT). He is ultimately responsible for the execution of the Annual Program Plan and within the program plan he is, jointly with the relevant Vice President, responsible for the various subcontracts to be awarded. While the Vice Presidents are responsible for timely budgetary and programmatic monitoring of the work done under the subcontracts along with the Contracts Officer, the President will be ultimately responsible for all the work done under the contract with NSF.

The *VP for Science Operations* is responsible for oversight of IODP field operations and planning. The VP for Science Operations works closely with the IOs to develop implementation strategies to achieve the science objectives of IODP. Since core sample repositories will be subcontracted, their oversight and overall management is one of the responsibilities of the VP for Science Operations. He also serves as chair of the Operations and Review Task Forces.

The principal role of the *Senior Advisor to the President* is to advise the President with regard to liaison with MEXT, NSF, and other IODP funding agencies. We believe that continuous and thoughtful liaison is of vital importance, and therefore needs to be handled at a very high level within IODP-MI. The Senior Advisor also works closely with the President to encourage other nations to join IODP.

The *Director of Communications* heads the Education/Outreach effort at IODP-MI and is responsible for coordinating Education/Outreach with the IOs and the national organizations involved in IODP-MI. The Director's tasks also include developing and monitoring the principal IODP web site, arranging IODP outreach events such as maintaining booths at scientific meetings, arranging town hall meetings, cultivating media contacts, writing and releasing press releases, and publishing IODP brochures and informational letters. The Director of Communications supervises a Web Master.

The *Finance and Administrative Officer* is responsible for all aspects of accounting, human resources, office management, and in-house information technology needs. The information technology work is outsourced to a third-party contractor on a part-time basis. In addition, the Finance and Administrative Officer is responsible for interacting with the independent auditors and works closely with the Contracts Officer on procurement and monitoring of contracts.

The *Contracts Officer* is responsible for the NSF contract, all subcontracts and managing RFP processes as needed. The Contracts Officer monitors reporting requirements for the NSF contract and all subcontracts, regulatory changes, and approves reimbursement requests under subcontracts.

The *Operations Manager* will assist the Vice President for Science Operations, particularly in coordinating and overseeing engineering development. S/he will also head the Project Scoping Groups.

The *Engineering Development Manager* will not be filled until at least 2007. However, IODP-MI may combine this position with that of the Operations Manager.

The *Executive Assistant* is responsible for all aspects of support for the President and the Executive Program Associate. The Executive Assistant is also responsible for coordination and communication with the IODP-MI Board of Governors and the IODP-MI Members.

The *Executive Program Associate* will help the president in scientific matters including the preparation of presentations, liaison with the scientific community, and assembling information of activities related to but lying outside IODP. This person might work at IODP-MI on a two-year rotating basis on loan from an IODP-MI member.

The *Web Master* organizes content and serves as information architect of the IODP Web portal. A multimedia developer and designer, this individual applies current Internet standards and scripting languages to the IODP-MI web site to expand, collapse, and link material as appropriate, under the guidance of the Director of Communications. The Web Master also provides technical problem-solving capacity to IODP-MI personnel as needed, and creative and technical input to a variety of electronically published information products created during the year.

The *Program Assistant* supports the Vice President of Science Operations and the Senior Advisor to the President. This position is also responsible for meeting planning for all task forces, project scoping groups, IODP-MI BoG, IODP-MI membership and other meetings as needed that are held in the US and Europe.

The *Program Assistant* supports the Communications mission of IODP-MI by fostering relationships with related organizations and the media that result in information exchange and network building. The Program Assistant will update and maintain a database of reporters, producers, editors, writers, and public relations professionals to be used in the dissemination of IODP news and information products. He/she will contribute to coordination of special events, and written materials as assigned. He/she will respond to routine media inquiries and maintain a news clipping archive. This position also supports the Finance and Administrative Officer and the Contracts Officer.

Personnel and Their Duties - Sapporo, Japan

Table PP-5: *Personnel in IODP-MI Sapporo office and the date position filled*

		FY 2004	**FY 2005**	**FY 2006**
VP, Science Planning	Hans Christian Larsen	Apr. 1, 2004		
Executive Program Associate	Saneatsu Saito	Apr. 1, 2004		
Science Coordinator	Jeffrey Schuffert	Apr. 1, 2004		
Science Coordinator	Nobuhisa Eguchi	Apr. 1, 2004		
Associate Science Coordinator	Barry Zelt		May 1, 2005	
SAS Support Assistant	Yumi Baba	Apr. 1, 2004		
Publications Manager	Emanuel Soeding		Jan. 1, 2005	
Data Manager	Bernard Miville		Jan. 1, 2005	
Contracts Officer (.5 FTE)	Mariko Tanaka	Apr. 1, 2004		
Administrative Assistant	Kozue Shimada	Apr. 1, 2004		
Administrative Assistant				Oct. 1, 2005

The *VP for Science Planning* represents the main interface between the international scientific community and IODP. Key responsibilities are to provide the management interface to the SAS by supporting and coordinating the SAS Support group in the IODP-MI Sapporo office and to oversee the production of the key products of IODP — data and publications. He serves as an advisor to the Science Planning Committee (SPC) Chair and the SPPOC Chair. He directly oversees the subcontract for the Site Survey Data Bank. The Sapporo IODP-MI Office is supported via a subcontract to Japan's Advanced Earth Science and Technology Organization (AESTO). The VP for Science Planning oversees this subcontract. In addition to the SAS Support functions, staff in the Sapporo office, under the supervision of the VP for Science Planning, will plan for data management as well as publication subcontracts as needed.

The *Publications Manager* implements and oversees IODP policies in the area of publications. The publications manager is the managing editor of *Scientific Drilling* and is responsible for all aspects of production of the journal. Oversees collaborative agreement with ICDP and manages co-editors and reports to the Editor in Chief (VP, SP). The PM works directly with IOs and external vendors in the area of publications and leads task forces regarding publications.

The *Data Manager* oversees and directs development of data management systems that meet IODP requests in this area, oversees proper maintenance of data archival (legacy) functions, liaises with the SAS Support personnel and designated Task Forces on matters regarding data management and works directly with IO technical staff and external vendors in the area of data management. The data manager also provides specifications for RFPs regarding data management, establishes links between IODP data management systems and other large databases in Earth sciences, develops tools for improved data outreach of programmatic data and provides in-house IT expertise for the daily running of the IODP-MI Sapporo Office.

The *Science Coordinators* provide SPPOC, SPC, and VP, SP with support in all areas of SAS Support activities including, but not limited to: meeting coordination, meeting logistics, meeting approvals, drafting of agendas, preparing agenda books, providing meeting minutes and VP, SP support with Task Force groups, if applicable. The coordinators also are responsible for the handling of drilling proposals, including receiving, filing, maintaining the proposal database, generating proposal statistics (theme, nationality), arranging for external peer review, summarizing panel reviews, and communications with proponents for information and nurturing purposes. They represent IODP-MI as liaisons on SAS panels as required, enhance cross-panel communication, and lead coordination between IODP National Program Offices. In addition to these tasks, one science coordinator (Jeff Schuffert) co-edits the journal *Scientific Drilling*. One science coordinator (Barry Zelt) is in charge of overseeing the new electronic Site Survey Data Bank, including all support of SAS panels with site survey data and preparing data packages to the IOs for IODP expeditions.

The *SAS Support Assistant* is an administrative position that assists science coordinators in their service of panels, filing and retrieval of proposals. This position is also responsible for coordinating meeting and travel logistics domestically and internationally, for routine contact and coordination with IODP National Program Offices, and for helping international staff settling in Sapporo.

The *Administrative Assistant* is the personal assistant to the VP, SP in all administrative matters, travel arrangements, reporting, and contact with local authorities. The second Administrative Assistant is responsible for office-wide administrative issues on a daily basis.

The *Executive Program Associate* is responsible for office administration and protocols in relation to the contract with AESTO. This individual also assists the VP, SP in all communications with Japanese agencies and institutions and provides support and advice to the VP, SP, the Data Manager and the Publications Manager.

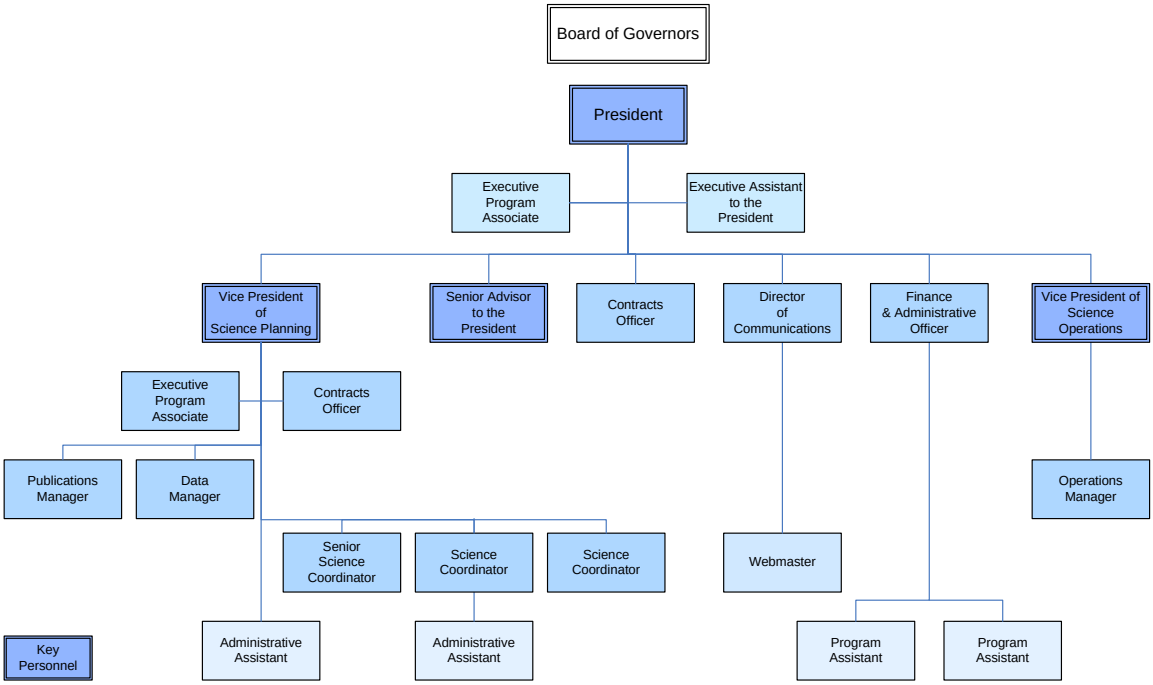

Figure PP-10: *Organization Chart for IODP-MI Personnel.*
Note: some titles abbreviated as compared to text.

Science Advisory Structure (SAS) Support
The SAS is supported by the IODP-MI through its Sapporo Office. In FY2006 this includes: (1) support for SPC Chair (part-time salary) and (2) support of the SPC and SPPOC chair and the entire SAS structure by three science coordinators and one SAS assistant. SAS and program support by science coordinators and SAS assistant includes (but is not limited to) the following:

- Receiving and distributing drilling proposals including interactive web pages to underpin this process and maintain communication with proponents on all related matters;
- Providing proposal statistics (themes, initiatives, platforms type, nationality);
- Coordination of all SAS panel and committee meetings with presence at meetings as necessary, and overseeing inter-panel communication and liaison functions;
- Helping prepare SPC and SPPOC agenda, preparing agenda books for these meetings, provide executive minutes as well as full minutes according to program policy on this and support with other documents necessary for SAS functions;
- Soliciting external reviews of proposals, coordinating and editing reviews for SSEP;
- Overseeing the new electronic Site Survey Data Bank;
- Preparing (electronic) site survey data packages for SAS reviews;

- Assisting SSP, EPSP, and SSEP as necessary for their reviews of site survey data;
- Assisting with STP and EDP;
- Preparing (electronic) site survey data packages for scheduled expeditions;
- Assisting with science planning and reviews of scientific achievements; and
- Overseeing panel and committee membership issues, including adherence to COI policy

Subcontract Monitoring
In monitoring subcontractor performance, IODP-MI is primarily interested in progress toward successful completion of the specified requirements of the Annual Program Plan (APP) and the financial status of each sub-award.

Subcontract monitoring is done to ensure:
- compliance with relevant federal government and NSF statutes, regulations, policies, and guidelines;
- compliance with the terms and conditions of the subcontract;
- responsible oversight of awarded funds;
- efficient implementation of APP objectives, tasks, time-lines, budgets, and schedules;
- identification of issues and problems that may impede APP or subcontract performance; and
- implementation of subcontract change orders or modifications as approved by IODP-MI.

The Contracts Officer (CO) primarily carries out the programmatic monitoring aspects of the subcontracts awarded by IODP-MI. According to the terms of all IODP-MI sub-awards, contractors are required to submit periodic progress reports that summarize project activities in order to aid the Central Management Organization in carrying out its responsibilities.

The CO is responsible for ensuring that subcontractors submit timely progress and financial status reports and contacts the subcontractor if reports are delinquent. Both the CO and the Finance and Administrative Officer monitor the fiscal aspects of all IODP-MI-awarded subcontracts.

The CO is the gatekeeper of all progress reports, financial reports, and subcontractor invoices. Reports, invoices, and supporting documentation are reviewed for programmatic and fiscal compliance, sent forward to the relevant IODP-MI program managers, saved to the master files (both electronic and hard copies), and ultimately included in IODP-MI's quarterly reports to NSF.

Monitoring information is collected using such techniques as telephone calls, reviewing A-133 audit reports annually, site visits, and desk reviews (to ensure that the contract files are complete and the subcontractor is in compliance).
During the course of performance of every major subcontract (those recipients holding an IODP-MI subcontract directly pertinent to the APP process), IODP-MI reserves the right to make site visits to inspect or review the progress of work or the management control systems of the subcontractor or its lower-tier subcontractors.

Beginning in FY2006, IODP-MI will conduct systematic post-award site visits to all major IODP-MI subcontractors (Implementing Organizations, IODP-MI Sapporo operations, the Bremen Core Repository, and the manager of the Site Survey Data Bank).

The purpose of these site visits will be:

- to monitor a subcontractor's administrative and financial capabilities;
- to perform onsite programmatic and/or financial reviews;
- to discuss any issues of concern and provide technical assistance that may be needed;
- to tour the subcontracting facility; and
- to receive a briefing on the status of the deliverables required under the APP.

Site visits also will assist IODP-MI in evaluating the success of the program and in identifying potential future modifications. Subcontractors will receive at least two weeks advance notice prior to a site visit from the IODP-MI CO.

Each subcontractor will provide all reasonable facilities and assistance for the safety and convenience of IODP-MI in the performance of their duties. Such access shall include the right to inspect the subcontractor's financial accounts or records that pertain to the subcontract.

Once a visit is completed and assistance is provided, the CO will prepare a site visit report for the IODP-MI President.

Although unlikely, any discovery of subcontractor or APP noncompliance could result in a temporary suspension or withholding of payments, depending upon the nature of the finding(s). The CO would state any and all deficiencies along with corrective action and allow the subcontractor thirty (30) days from receipt of the letter to respond to the deficiencies. If necessary, IODP-MI would conduct a follow-up visit in order to make further compliance observations and to provide technical assistance and training.

IODP-MI's long-term onsite monitoring plan of subcontractors is as follows:

Fiscal Year 2006:	Joint Oceanographic Institutions (IODP-MI-05-03)
Fiscal Year 2007:	British Geological Survey/Natural Environment Research Council (IODP-MI-05-02)
	Bremen Core Repository/Bremen University (IODP-MI-05-01)
Fiscal Year 2008:	AESTO (IODP-MI-04-01)
	CDEX
Fiscal Year 2009:	University of California, San Diego/Scripps Institution of Oceanography (IODP-MI-05-04)
Fiscal Year 2010:	Joint Oceanographic Institutions (IODP-MI-05-03)

Fiscal Year 2011:	British Geological Survey/Natural Environment Research Council (IODP-MI-05-02)
	Bremen Core Repository/Bremen University (IODP-MI-05-01)
Fiscal Year 2012:	AESTO (IODP-MI-04-01)
	CDEX
Fiscal Year 2013:	University of California, San Diego/Scripps Institution of Oceanography (IODP-MI-05-04)

At the end of a subcontractor's period of performance, the CO will close out the sub-award. Closing out subcontracts is the final step in a process by which IODP-MI ensures that all required deliverables are complete and all reporting has been submitted, reviewed, and accepted. IODP-MI also performs a final reconciliation of the federal funds passed through to the recipient.

Operations (platform scheduling)
The IODP-MI Operations Task Force's (formerly known as OPCOM) primary function is to formulate the most logistically, fiscally effective operational plans to meet the objectives set forth in IODP's 10-year science plan, prioritized by the SPC. Task Force members include IODP-MI Vice Presidents of Science Operations and Science Planning, three SPC members, IO representatives, and outside experts, as needed.

The Task Force generally meets in June (after the yearly proposal ranking exercise by SPC) to develop scheduling options for the riser, riserless, and MSP platforms. The scheduling strategy involves: (1) examining science plans for each proposal; (2) determining operational and environmental constraints; (3) developing a matrix that combines the SPC science plan with operational and environmental constraints and risk, operational days at sea, and transits; and (4) adding fiscal reality to viable options forwarded to the SPC. The Task Force works closely with SPC to ensure that the scheduling option always represents highly ranked science.

At this yearly scheduling meeting, the Task Force develops detailed scheduling options (i.e., specific dates of operation, port calls, transits, drilling options, etc.) for the fiscal year beginning ~16 months from the time of the meeting and a conceptual science plan (i.e., what proposals will most likely be scheduled but without specific dates, port calls, etc.) for the fiscal year beginning ~28 months from the time of the meeting. This scheduling plan provides the IOs with sufficient lead time to plan for long-term acquisitions and properly budget for the expeditions. For example, during its June meeting in 2006, the Operations Task Force will develop a detailed schedule for FY2008 and a conceptual schedule for FY2009.

Project Scoping

Complex Drilling Projects will need Scoping Groups to oversee and assess the state of readiness of the drilling plans, tool and engineering development, engineering site surveys, etc. The Operations Task Force will determine the level of scoping needed for a CDP and may designate a formal Project Scoping Group (PSG). The PSG will take over planning and coordination of the CDP and carry it through the multi-year, multi-leg, and multi-platform project. Each scoping group will have either the Vice President of Operations or the IODP-MI Operations Manager as head. This group also will include one or two designated (co) "Chief Project Scientists," to provide the scientific leadership necessary to plan and coordinate all aspects of the project, in close collaboration with the TAMU and CDEX staff scientists and project engineers, as well as with the SAS for overall scientific oversight and review, and national organizations for coordination of outreach, public relations, and education. It would also include co-chiefs of individual expeditions, IO representation, SAS representation, and outside engineers and/or scientists as needed for specific expertise or peer review.

The IODP-MI Operations Task Force has established one Scoping Group to date, the NanTroSEIZE Project Scoping Group. This group has met for two full meetings (October 2004 and February 2005) and has developed a series of drilling of increasingly complex "stages" for NanTroSEIZE operations. Each "stage" involves multiple expeditions. The first stage (which could begin in late 2007 using the *Chikyu* and/or the new USIO Phase 2 vessel) includes riserless drilling at the NanTroSEIZE reference sites, shallow riserless pilot holes at the riser sites, and simple "CORK-style" installations.

The SPC has forwarded a second CDP Murray Ridge/Indus Fan to the Operations Task Force to initiate scoping. The Operations Task Force will address this issue at its next meeting (October, 2005; Kyoto, Japan).

Expedition Assessment

IODP-MI has initiated a formal expedition review process. The operational review is conducted by the IODP-MI Expedition Review Task Force and is generally conducted one to six months post expedition. Each Review Task Force meeting consists of IODP-MI personnel (the president of IODP-MI and the vice president of operations), the expedition co-chiefs, representatives of the operators, three industry experts, and three non-expedition scientists knowledgeable about the expedition objectives or goals. The Task Force review is based upon confidential reports submitted by the Implementing Organization and expedition co-chief scientists. These operational reviews focus on "lessons learned" and "how do we do things better in the future?" Areas of discussion include pre-cruise planning, syn-cruise drilling operations, communications between scientists and operators, roles and responsibilities of scientists and operators, general procedures and policies (e.g., curation, communications), laboratory operations, etc. Each of these operational reviews results in recommendations that are compiled into a short summary report, which is posted on the IODP web site (http://www.iodp.org/iodp-mi/meetings/default.html).

The expedition-based science review falls into two phases: An initial review to be included in the Preliminary Report and a later second phase conducted by the Science Advisory Structure in conjunction with the IODP-MI VP for Science Planning. This second phase will be held well after the Expedition Report has been completed to more properly assess the long-term science impact from the expedition or a group of related expeditions. The co-chiefs' report to the SAS Science Planning Committee 9-12 months post expedition will be part of the second-phase science review.

Long-Term Planning Workshops
Two kinds of workshops are planned: three long-term planning workshops as well as one "Fault Plane" workshop.

The need for holding long-term planning workshops is acute. While important targets have been drilled in IODP, important gaps remain in fulfilling the goals of the Initial Science Plan. Long-term planning is obviously and absolutely essential for the optimum utilization of *Chikyu*. While SPC and SPPOC have discussed the need for long- term planning, nothing concrete has been implemented. At its June meeting in Nagasaki, the IODP-MI Board of Governors gave specific direction to SPPOC as follows:

"SPPOC should identify as soon as possible workshops to be held during the drilling hiatus that will address long-term planning issues and programmatic needs of the ISP that are not being adequately addressed at present. For each workshop, SPPOC needs to develop a short prospectus, include recommended conveners, SPPOC member advocates, and at least a partial list of attendees. This should be handed to IODP-MI management for funding, organizing, and execution."

Thus, IODP-MI basically was handed the task of implementing the workshop based on advice in the form of a short prospectus from SPPOC.

In an informal meeting with the SPPOC vice chair, the following three topics were selected from a longer list adopted by SPPOC at its June meeting in Nagasaki.

- Deep drilling to Moho/crustal drilling
- Deep biosphere/microbiology
- Continental break-up and sedimentary basin formation

We believe that the need for these workshops is very urgent, especially in relation to the "missions" being envisaged in the Frascati report. FY2006 is the ideal time to hold these workshops and they need to be organized efficiently and quickly. For this reason, it is felt that the travel of at least 25-30 scientists, who will form the core of the workshops, should be prescribed by SPPOC, and be funded out of commingled funds by IODP. The remaining attendees (20-25 in number) could well be supplied by the national committees, but to depend on the national programs to supply all the attendees will not be responsive to the urgent needs for the workshops. For this reason, $75,000 has been budgeted for each workshop.

By carrying out SAFOD drilling, ICDP has gained much knowledge in the drilling of fault planes. One of the best ways for IODP scientists to come up to speed in fault plane drilling will be by means of the planned workshop. The costs of the workshop will be shared equally by IODP and ICDP. The workshop will have two important focuses. One will be to relate the scientific imperatives to the drilling realities (instrumentation, etc.) and the other will be to see if the important scientific questions regarding faults can be addressed by the drilling. $75,000 has been budgeted for this workshop

Inviting other Nations to Join IODP
The international partnerships represent a vital element of IODP. The Memorandum between the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan and the National Science Foundation (NSF) of United States of America was signed in April 2003, after a few years of

discussion in the International Working Group which represented more than a dozen countries. In March 2004, the European Consortium for Ocean Research Drilling (ECORD) joined IODP as a Contributing Member and in April 2004, the Ministry of Science and Technology (MOST) of the People's Republic of China joined the program as an Associate Member. As of May 2005, the program spans three continents and 20 countries.

Continuous efforts are in place to expand IODP's membership. IODP-MI is in contact with scientists in Australia, Brazil, India, Korea, New Zealand and Russia. In February 2005, a group of scientists in Australia applied to its government for the budget for participating in the program. In March 2005, Korean scientists and their funding agency agreed to set up an IODP consortium in Asia and started negotiating with NSF and MEXT. The Management and Retreat meeting in Rome in May 2005 also discussed how the program membership can be effectively extended.

In FY2006 IODP-MI continues its efforts to encourage other nations to join the program. An international Workshop is planned to facilitate this process.

Task Forces

IODP-MI is a very small organization with only a few scientists in key positions. However, IODP-MI is responsible for overseeing the implementation of a large number of tasks, including engineering development, site survey data base establishment, education and outreach, publications, and database management. While on all of these matters, IODP-MI will get advice from SAS, the advice in many cases will not be focused enough or decisive enough to launch into implementation. IODP-MI will use task forces to assist in implementation where necessary. The purpose of task forces in each of these areas will be to focus the advice obtained from SAS and provide concrete advice on policy so that IODP-MI can proceed with implementation. All task forces will, in general, be appointed on an ad hoc basis and usually will include some SAS members, some representatives from the IOs and other experts. The members of the task forces will not be nominated by outside bodies but will be chosen by IODP-MI. Task forces will not be asked to write RFPs. The policy formulations by the task forces, however, will often guide IODP-MI personnel in writing RFPs. The following IODP task forces will be operating next year whose functions have been largely described above:

Operations Task Force

The IODP-MI Operations Task Force's (formerly known as OPCOM) primary function is to formulate the most logistically, fiscally effective operational plans to meet the objectives set forth in IODP's 10-year science plan, prioritized by the SPC. Committee members include IODP-MI Vice Presidents of Science Operations and Science Planning, three SPC members, IO representatives, and outside experts, as needed. The scheduling strategy involves: (1) examining science plans for each proposal; (2) determining operational and environmental constraints; (3) developing a matrix that combines the SPC science plan with operational and environmental constraints and risk, operational days at sea, and transits; and (4) adding fiscal reality to viable options forwarded to the SPC. The Task Force meets three times/year and works closely with SPC to ensure that the scheduling option always represents highly ranked science.

Review Task Force

IODP-MI has initiated a formal expedition review process. The operational review is conducted by the IODP-MI Expedition Review Task Force and is generally conducted one to six months post expedition. Each Review Task Force meeting consists of IODP-MI personnel (the president of IODP-

MI and the vice president of operations), the expedition co-chiefs, representatives of the operators, three industry experts, and three non-expedition scientists knowledgeable about the expedition objectives or goals. The Task Force review is based upon confidential reports submitted by the Implementing Organization and expedition co-chief scientists. These operational reviews focus on "lessons learned" and "how do we do things better in the future?" Areas of discussion include pre-cruise planning, sin-cruise drilling operations, communications between scientists and operators, roles and responsibilities of scientists and operators, general procedures and policies (e.g., curation, communications), laboratory operations, etc. Each of these operational reviews results in recommendations that are compiled into a short summary report, which is posted on the IODP web site (http://www.iodp.org/iodp-mi/meetings/default.html).

Education and Outreach Task Force

The Education & Outreach Task Force meets once a year to discuss and establish common outreach and communications themes, procedures, tools, strategies, and tactics in areas including media relations, web development, education outreach, publications, program branding, and special projects. The Task Force, led by the IODP-MI director of communications, aims to integrate, support, and streamline program activities worldwide throughout the fiscal year. The annual meeting provides a face-to-face opportunity to discuss challenges, share best practices and tools, and provide information with one another about regional and national activities as well as customary communications practices which must be mutually understood and respected. Several working groups were established at the 2004 meeting and program activities were conducted throughout 04-05 via e-mail and telephone in consultation with one another on specific tasks (web development, media policy, media relations support).

The TF meeting agenda is constructed by the Task Force leader based on global program needs and direction, and with consideration as to where emphasis is most needed to support greater collaboration and integration that can result in heightened program visibility and identity. Two-thirds of the Task Force's participants are responsible for rolling out consistent IODP program messages —consensus on descriptive language, content, format, style, and methodology is essential.

Task Force Membership includes three representatives from each IO. Of the three, one representative is a scientist selected from each respective Program Office; the other two representatives provide communications or education expertise to the IO.

Other program scientists are invited and welcome to observe E & O Task Force Meetings.

The next Task Force meeting will be held in Hachinohe, Japan, Nov. 14-15, 2005. The Task Force will meet aboard the *CHIKYU* for one of those days and learn as much about its unique technologies, capabilities, and operations as possible for future promotional opportunities.

Publications Task Force

The Publications Task Force completed its work in August 2005 and was formally dissolved in September 2005. The final description of the IODP publication structure was posted on the IODP web site in September, 2005. The task force for publications included representatives from the SAS, the IOs, from publishing societies (AGU and U.S. Academy of Science) and was chaired by IODP-MI VP, SP. It had its only actual meeting in fall 2004 during which a general publications policy and implementation plan was completed and subsequently presented for SPPOC approval in December

2004. The key issues addressed were format of publications, a program peer-reviewed publications series, concepts of open-access journals, and IODP access to such journals. Frequent videoconference meetings within the first half of 2005 between IODP-MI and the IOs detailed the implementation plan, finalized formats of publications and an interim IODP Obligations, Sample, and Data Policy posted on the IODP web site.

Engineering and Development Task Force
The primary function of the IODP-MI Engineering and Development Task Force will be to assist IODP-MI personnel in evaluating the specific Engineering Development proposals submitted by IOs and/or other subcontractors in their Annual Program Plan.
Specifically, the Task Force will assist IODP-MI in assessing appropriate timelines, cost estimates, scope of work, planning requirements, etc. for inclusion into RFPs, if required, that are issued at the start of the fiscal year (October). The Task Force will consist of IODP-MI personnel, industry experts, and SAS members (e.g., EDP and STP chair) and will meet two to three times/year.

Data Management Task Force
Data management activities have been extensively conducted through the IODP-MI-chaired data management coordination group (DMCG), which has representatives from each of the three IOs. The DMCG physically met twice in FY2005, and had several videoconference meetings. A subset of the DMCG joined the *JOIDES Resolution* in September 2005 during the initial two weeks of Expedition 311 for ongoing tests of J-CORES data management system and other work. The main outcome of the FY2005 activity has been a principal agreement on how to create a single-entrance data portal to all IODP data, regardless of drilling platform or place where the data is generated or stored. The solution agreed on is the application of metadata to all IODP data.

In FY2006 the DMCG will be formalized as a task force and external expertise from the science and IT communities will be added. It will address a number of issues including, but not limited to the definition of metadata to characterize data in JANUS and J-CORES for data harvesting and interconnectivity with non-IODP data bases, information portal for IODP (IPI, formerly known as information service center), data visualization tools, core curation data management system, and IODP data management within the larger global cyberspace infrastructure.

Ocean Bottom Observatory Task Force
The Ocean Bottom Observatory Task Force will (1) provide oversight of IODP borehole/observatory management, (2) develop observatory data use and distribution protocols, and (3) provide advice on specific engineering/equipment issues. The task force will consist of IODP-MI personnel, community scientists involved in observatory science and management, equipment specialists/engineers and will meet two to three times/year. This Task Force will also interact (e.g. liaise) with specific groups (e.g., Scoping groups) that are involved in the implementation of CDPs.

New Membership Task Force
Encouragement of new IODP membership is important, since international partnerships represent a vital element of IODP. In FY2005 Korea and India expressed their intentions to join IODP, and a group of Australian scientists requested that its government fund participation in IODP. The Management Forum and Retreat in Italy also recommended the development of a stepwise mechanism to encourage new membership. With this in mind a “New Membership Task Force” will develop the measures and procedures to encourage new IODP membership. A workshop inviting scientists in

nonmember countries is considered to be a useful step for this purpose. One task force meeting is planned in FY2006. The optimum membership of task force will be defined by further discussion with funding agencies.

IODP-Industry Advisory Task Force

The IODP-Industry Workshop included 15 IODP scientists and 13 Industry participants from nine companies. The IODP scientists gave presentations that explained the structure and working of IODP. They also described IODP expeditions of interest to industry that have already been carried out or are planned for the future. Industry participants also gave a number of presentations on topics relevant to IODP. (PowerPoint slides for some of the presentations are on a CD accompanying this draft report.)

Discussions centered on how IODP and industry could be of assistance to each other. It was generally agreed that there are a number of areas where the two sides could usefully cooperate. There were also a number of areas where the goals and implementation strategies of the two sides diverge.

It was agreed that an IODP-Industry Advisory Task Force be formed. This Task Force would provide a central point of contact between IODP and Industry. It would be complementary to the Industry-IODP Science Program Planning Group (IS-PPG) being set up by the SPC (Science Planning Committee) in which individual industry scientists plan joint drilling proposals with academic scientists. The Task Force may, among other tasks, suggest nominations to IS-PPG as well as other SPC panels.

Management Forum

A Management Forum, consisting of the heads of JOI Alliance, CDEX, and ESO and the chairs of USSAC, J-DESC, and ESSAC, as well as the chairs of SPC and SPPOC and key staff of IODP-MI, has been established.

Participants in the first Forum held at Frascati, Italy May 24-26, 2005 include:

Manik Talwani	President, IODP-MI
Steve Bohlen	President, JOI
Mike Coffin	Chair, SPC
Dan Evans	Science Manager, ESO
Gabriel Filippelli	Chair, USSAC
Tom Janecek	Vice President, IODP-MI
Jeroen Kenter	Chair, ESSAC
Hans Christian Larsen,	Vice President, IODP-MI
Catherine Mevel	Director, EMA
Yoichiro Otsuka	Senior Advisor to the President, IODP-MI
Noriyuki Suzuki	Chair, J-DESC
Asahiko Taira	Director-General, CDEX
Kensaku Tamaki	Chair, SPPOC

Position papers prepared by the participants prior to the meeting highlighted both opportunities and challenges for the IODP, incorporating experience gained with planning and executing complex, multi-platform operations since IODP's inception on October 1, 2003. In Frascati, meeting participants distilled many ideas and then focused on improving the delivery of community scientific objectives, as spelled out in the Initial Science Plan, as effectively and efficiently as possible. A highlight from the

meeting is the recommendation for proactively integrating and providing seamless scientific planning/advice, management, implementation, and assessment of major community-defined thematic scientific goals, perhaps using NanTroSEIZE as a model.

This recommendation, which envisages the formation of mission teams, is being commented on by the scientific community. USSAC and J-DESC, as well as a number of Japanese scientists have endorsed the concepts in the Frascati recommendation. Comments will be forthcoming from SPC, SSEPS, ESSAC, as well from other interested scientists. A small group consisting of three members from the Management Forum and from and four members of the SAS is being formed to consider the comments and formulate implementation plans which will be forwarded to SPPOC, the Management Forum and ultimately, the IODP-MI Board of Governors for approval.

In FY2006, Kensaku Tamaki, Mike Coffin, and Jeroen Kenter will be replaced, respectively, by Nick Pisias, Keir Becker and Julian Pearce. Pinxian Wang will be also be added to the Forum. Funding Agencies will be invited as observers.

Management and Administration Budgets

Table PP- 6: *Management and Administrative costs for IODP-MI Offices*

Item	Specifics	Sub Total		Total
		Washington DC	Sapporo	
Salaries & Fringe	Key Personnel	792,371	237,035	
	Managers & Officers	450,471		
	Technical & Administrative	317,205		
	Subtotal Salaries & Fringe			1,797,082
Travel		688,800	117,800	806,600
Supplies		32,000		32,000
Shipping		17,500		17,500
Communication		44,500		44,500
Contractual Services		235,500		235,500
Equipment		-	-	-
Other	Software	10,000		
	Insurance	20,000		
	Relocation & Recruiting	25,000		
	Assoc. dues & Subs	7,000		
	Bank Charges	10,000		
	Meeting Expenses	40,000		
	Honorarium - Panel Chairs	40,000		
	SPC Chair & Asst.	180,000		
	Office & Equip. Rental	292,000		
	Management Fee	60,000		
	Planning Workshops	300,000		
	Subcontract: AESTO		1,298,387	
	Subtotal Other			2,282,387
FY06 Total Budget		**3,562,347**	**1,653,222**	**5,215,569**

• Management and Administration non-personnel budget justification

-Travel
Travel includes all domestic and foreign travel for the IODP-MI staff (DC and Sapporo), AESTO staff, the SPC chair, multiple task forces (Education and Outreach, Publications, Data Management, Engineering Development, Observatories, Expedition Reviews), Project Scoping Groups, an advisory group (Management Retreat), Board of Governors and Executive Committee meetings and one Industry Workshop.

-Supplies
Office supplies are based on full staffing during the year, computer additions and upgrades as needed.

-Shipping
Shipping includes costs for regular postage, overnight deliveries and bulk mailings.

-Communications
Communications includes costs for telecommunications, network operations and video conferencing.

-Contractual Services
Contractual services includes scientific advisors/experts, Contracts Officer position (currently a contractor), outsourced IT services (instead of a staff position), annual audit fee and legal expenses.

-Equipment
There are no costs anticipated for equipment (defined as over $5,000 each item) for FY 06.

-Other
Software – Software costs cover renewal of licenses for existing software.

Insurance –includes all corporate insurance for liability, property, international, etc.

Relocation and recruiting - This is based on the hiring assumptions noted in the personnel section.

Association dues and subscriptions – This covers organizational membership and subscriptions.

Bank charges – Bank charges include wire transfers, ACH processing and monthly account fees.

Meeting expenses – Meeting expenses include the costs of meeting rooms, working lunches, audiovisual equipment, etc.

Honoraria for Panel Chairpersons - Panel Chairs are very important to IODP. They arrange meetings, run the meetings, take and distribute the minutes. In the United States, all scientists

must account for their time away from their main (funded) duties. IODP advisory duties take the chairs away from their main duties, so they need to be compensated. Annual honoraria for SAS panel chairs are $5,000. Co-chairs will receive $2,500 each. Vice chairs will not receive honoraria. The three SSEP chairs each will receive $5,000. This plan for Chairperson compensation has been approved unanimously by the IODP-MI Board of Governors.

SPC Chair and assistant – The SPC chair in FY2005 was located in Japan and paid out of the AESTO subcontract. In FY2006, the SPC chair is located in the United States and will be paid by IODP-MI directly.

Space and Furniture – This represents our estimate of rent for the full year and additional furniture needs to complete our space. Office machine rentals include a copier, printer, and postage machine.

Technical, Engineering, and Science Support

The Lead Agencies have agreed on a process by which the roles of the SAS, the IOs, and IODP-MI has been clarified. The process can be fully implemented for FY2007. However, as this process requires more time than is available for the construction of the FY2006 Program Plan, an abbreviated evaluation process has been implemented. (See FY2007 and FY2006 Engineering Development procedures below.)

The IOs have submitted Engineering Development proposals for FY2006 that will be evaluated by IODP-MI with the help of Task Forces and the Science Advisory Structure and, in general, the route of issuing RFPs and evaluating competing proposals will be followed, if deemed necessary.

Below are the details of:

1) Technical Engineering and Science Support Definitions as agreed upon by the Lead Agencies;
2) General procedures for implementing Technical, Engineering, and Science Support in FY2007 and beyond;
3) One-time only procedures for implementing Technical, Engineering, and Science Support in FY2006;
4) Specific “Class B Engineering Development Projects” for FY2006.

Definitions of Technical, Engineering, and Science Support

Engineering and Technology developments for the different platforms will be needed at various stages of IODP. By Lead Agency agreement, Engineering and Technology development projects are split into two classes, with both representing SOC costs.

Class A: Engineering Science Support Projects:

For a project to be defined as Engineering Science Support, it cannot exceed $500,000 in total expenditures. These projects are primarily the maintenance and upgrade of existing tools and support facilities to meet user needs for better tool performance and integrated science requirements. IOs will be responsible for initiating these projects.

Class B: Engineering Development Projects:

Projects with total development costs over $500,000 are defined as Engineering Development Projects. In addition, any project determined by IODP-MI as more representative of Engineering Development, but with total costs less than $500,000 may also be defined as and Engineering Development Project and subject to implementation under the protocols defined for this category (see below). This development will be based primarily upon priorities established by the Science Advisory Structure (SAS) as it reviews proposals and determines the engineering needs to address the objectives set forth in the Initial Science Plan.

Implementation of Technical, Engineering, and Science Support (For FY2007)

The following outline presents the implementation process for these two classes of Engineering and Technology development for FY2007 and beyond.

Class A: **Engineering Science Support Projects** (for FY2007 and beyond**)**

1) Implementing Organizations (IOs) to develop proposals for ***Engineering Science Support*** projects on an IO-by-IO basis.

2) Preliminary ***Engineering Science Support*** plans/proposals are presented by IOs at winter Engineering Development Panel (EDP) meeting.

3) At annual spring IO meeting, the IOs and IODP-MI develop an integrated plan for these ***Engineering Science Support*** projects based on operational and scientific needs as identified by SAS.

4) IODP-MI updates the Science Planning Committee (SPC) on this integrated plan for ***Engineering Science Support*** projects at the spring SPC meeting to insure that key scientific needs are addressed.

5) IODP-MI determines how to best address these ***Engineering Science Support*** projects within the context of the Annual Program Plan.

Class B: Engineering Development Projects (FY2007 and beyond)

1) Science Advisory Structure (SAS) prioritizes Engineering and Technology needs.
Each summer, the Engineering Development Panel (EDP) develops new short (~1 yr) and long-term (~2-5 yr) ***Engineering Development*** priorities (and reviews/refines previous priorities). This evaluation/prioritization is based upon review of proposals in the system and consultation/discussion with the IOs. EDP reports these ***Engineering Development*** priorities at the Fall Science Planning Committee meeting, where SPC discusses and refines priorities.

2) Once the Engineering and Technology development needs are prioritized by the SAS, IODP-MI will utilize an Engineering Task Force (late fall/early winter) to focus this advice into an integrated plan of ***Engineering Development*** based upon both operational and scientific needs.

3) IODP-MI then presents this integrated plan of ***Engineering Development*** to SPC at its spring meeting to insure that key scientific needs are addressed.

4) IODP-MI Engineering Task Force meets in April to assist IODP-MI in assessing appropriate timelines, cost estimates, scope of work, planning requirements, etc. for inclusion into RFPs, if required, that are issued at the start of the fiscal year (October). If RFPs are not deemed necessary by IODP-MI, then funds will be released directly to IOs.

5) If required, RFPs for ***Engineering Development*** are issued in October and proposals (by IOs and/or other interested third parties) are received and evaluated by IODP-MI in a December/January/February time frame.

6) Awards for ***Engineering Development*** projects are made in early spring (~March).

Implementation of Engineering Development (For FY2006)

The SAS has not been in a position to provide advice to IODP-MI until late in the process of developing the FY2006 Annual Program Plan (see section on Specific Engineering Projects below). The following scenario was developed prior to the start of the writing of the FY2006 Annual Program Plan to: (1) determine FY2006 Engineering Development needs; (2) provide a mechanism to receive and evaluate proposals from the IOs in the short period we have before the FY2006 program plan is due to be submitted; and (3) implement the required Engineering Development.

NOTE: Items 1-3 completed. Items 4-6 are in progress.

1) IODP-MI requests proposals for both classes of engineering and technology development on an IO-by-IO basis as part of their Annual Program Plan submission to IODP-MI (due date April 15).

2) IODP-MI sends the SPC these IO-specific proposals in order to receive guidance on prioritization of the engineering development (only) programs detailed in these proposals. The SPC provides advice on scientific needs and prioritizations to IODP-MI by May 1.

3) A provisional cost estimate for Engineering Development projects will be placed in the Annual Program Plan. This estimate will be refined during the period of May to August as described below in item 4.

4) IODP-MI, with the help of a newly established Engineering Task Force and/or consultants, will develop appropriate timelines, cost estimates, scope of work, planning requirements, etc. for **Engineering Development** projects. This information will be used to develop RFP(s), if necessary, to be issued at the start of the fiscal year. If RFPs are not deemed necessary by IODP-MI, then funds will be released directly to IOs.

5) If required, RFPs for ***Engineering Development*** are issued in October and proposals (by IOs and/or other interested third parties) are received and evaluated by IODP-MI in a December/January/February time frame.

6) Awards for ***Engineering Development*** projects are made in early spring (~March).

Engineering Development Project and Budgets (FY2006)
Three "Class B Engineering Development" Proposals have been received by IODP-MI for FY2006 (see below). Although the total development costs of two proposals from USIO are below the $500,000 threshold to be automatically classified as "Engineering Development," and the total development cost of proposal from JPIO is not yet known (but most likely will be well above the $500,000 threshold), IODP-MI considers these proposals as new engineering ventures, and not upgrades, improvements, or maintenance of existing systems. In keeping with the FY2006 Engineering Development evaluation procedures outlined above, the Science Planning Committee provided IODP-MI with a sense of how these three proposals fit into the overall objectives of the Initial Science Plan and the objectives of the proposals most likely to be conducted in FY2007 and FY08.

On the basis of other SPC member input, all three proposed engineering developments are responsive to the goals of the Initial Science Plan as well as the scientific community, and all three deserve to be supported at some point. However, the SPC considered the JPIO and USIO proposals as quite different; the former could be characterized as strategic for the IODP, and the latter as tactical. That is, development of the Long-Term Monitoring System is critical to the success of NanTroSEIZE and other proposals requiring such installations; development of the pulsed Telemetry Module and Common Bottom-Hole Assembly are incremental, although not insignificant improvements of existing technology that would benefit many expeditions. Overall, given the levels of innovation, effort, and time involved in developing the Long- Term Monitoring System and the widely held opinion that NanTroSEIZE in particular and borehole observatories in general will be centerpieces of the first decade of the IODP, it is urgent to commence engineering of this system.

Based upon this advice by SPC, IODP-MI has reserved $600,000 to potentially allocate toward the funding of these three projects. These funds have been temporarily put into the IODP-MI budget until decisions have been finalized regarding the allocation of these funds. IODP-MI will seek additional advice from the newly-formed Engineering Development Panel before making a final decision on the allocation of these funds. According to the protocols outlined above, IODP-MI, with the help of a Task Force and/or consultants, will issue appropriate timelines, cost estimates, scope of work, planning requirements, etc. for Engineering Development projects. This information will be used to develop RFP(s), if necessary, to be issued at the start of the fiscal year. If RFPs are not deemed necessary by IODP-MI and the Task Force/consultants, then funds will be released directly to IOs.

A summary of the "Class B Engineering Development Projects" is provided below. More details are found in the specific program plans submitted by the USIO and JPIO.

1) *Pulsed Telemetry Module* ($175,000) — The purpose of this project is to provide real-time, at-the-bit drilling dynamics data to the driller. This will be done by integrating a commercial, retrievable PTM with IODP's existing Measurement-While-Drilling (MWD) tool. The MWD tool consists of the Drilling Sensor Sub (DSS), which records drilling dynamics data and the Core Barrel Retrievable Memory Module (CB-RMM), which is located on top of the core barrel and receives the data transmitted from the DSS. Since the CB-RMM is retrieved along with the core barrel, the current capabilities delay access to the data until the data is downloaded on the surface. This means that the data can only be viewed and analyzed in near-time (~1 hr) after the hole interval is drilled or cored.

With the integration of the PTM, weight on bit (WOB), torque on bit (TOB), annulus pressure, and annulus temperature will be transmitted in real time to the surface during coring operations. These data

will be instantly displayed on the Rig Instrumentation System (RIS) monitor in the driller's cabin, allowing on-the-spot adjustments to improve core recovery.

This project is a joint effort between IODP-USIO Science Services, TAMU, and Lamont-Doherty Earth Observatory (LDEO) of Columbia University. An industry survey will be conducted to locate service companies who sell or lease retrievable pulser systems, and who are willing to work with IODP to adapt it to IODP drilling operations. Once the service companies are identified, a request for quote with a detailed statement of work will be distributed to interested companies. LDEO and TAMU will work with the selected vendor on design integration. Working closely with the vendor, the interface hardware will be designed and fabricated. Following bench testing, the IODP pulser system will be land-tested (flow loop and drilling). The TAMU budget will deal with the purchase of the PTM system and custom bottom-hole assembly (BHA) components and the LDEO budget will deal with the adaptation of the PTM pulser unit with the CB-RMM. Testing will be shared between TAMU and LDEO.

This project is a two-year development effort with an estimated cost of $215K. The FY06 deliverables totaling $175K include:

1) Industry survey;
2) Request for Quote with Statement of Work for acquiring pulser system;
3) Selection of vendor;
4) Design integration of pulser with CB-RMM (LDEO) and with BHA (TAMU);
5) Fabricate interface hardware; and
6) Bench-test the IODP PTM system.

A summary of the FY07 deliverables totaling $40,000 include:

1) Land-test the IODP PTM system; and
2) Sea trials.

Common Bottom-Hole Assembly (BHA) ($250,000)— The purpose of this project is to develop a common BHA with interchangeable coring systems to replace the two ODP BHAs. The current practice uses the rotary core barrel (RCB) BHA with a dedicated coring system for recovering core samples in medium to hard formations, and uses the APC/extended core barrel (XCB) BHA with its special coring systems for soft to medium formations. The APC/XCB BHA can also be configured to run the motor-driven core barrel (MDCB) for use in hard, fractured rock, although it is seldom used. The four coring systems each have different core sizes (APC = 66 mm, XCB = 60 mm, MDCB = 57 mm, RCB = 59 mm).

Operational time required to round-trip the BHA when formations become too hard for APC/XCB coring can take up to a day in deep water. A common BHA with interchangeable coring assemblies will save operational time as well as long-term costs; however, the biggest impact of a common BHA will be the cost savings associated with a simplified inventory.

Prior to the design of a common BHA with interchangeable coring systems, a review of the current system's strengths and weaknesses will be made and multiple concepts developed for consideration. Mock-ups of the concepts will be fabricated and their operation evaluated. Costs and implementation strategies of the best concepts will be compared and a final design selected. A prototype of the common BHA and the coring systems will be fabricated and qualified during a series of land-tests. After successful land-drilling/coring tests, three BHAs and two different coring systems consisting of three coring units each will be procured for sea trials.

This project is a two-year development effort with an estimated cost of $470K. A summary of the FY06 deliverables totaling $250K includes:

1) Review of the current system;
2) Development of multiple concepts;
3) Fabrication of mock-ups of the concepts;
4) Evaluation of costs and implementation strategies for the concepts;
5) Selection of a final design; and
6) Begin fabrication of a prototype BHA and integral coring systems.

A summary of the FY07 deliverables totaling $220K includes:

1) Land-tests;
2) Short production run of new BHA and coring systems; and
3) Sea trials.

3) *Long-Term Monitoring system ($175,000)* — The purpose of this proposal is to conduct a feasibility study for the development of a standard long-term monitoring system infrastructure that will be used in deep and/or shallow boreholes drilled by IODP. The long-term monitoring system consists of five subsystems; Sensor/Control, Telemetry/Cable, Data Recording, Communication/Data transmission and Power Supply. CDEX's proposal is mainly targeted to the Telemetry, Data Recording, Communication, and Power Supply subsystems, since the sensor subsystem is assumed to be provided by proponents.

   This proposal focuses on initial development and engineering feasibility studies with the goal in FY2006; (1) to complete the system architecture and high-level design; and (2) conduct a system architecture and design peer review. Future development would proceed according to the Lead Agency/IODP-MI established Engineering Development protocols outlined in this Annual Program Plan.

Table PP-7: *Engineering Development Budgets for FY 2006.*

Item	Specifics	Sub Total	Total
Salaries & Fringe			
Travel			
Supplies			
Shipping			
Communication			
Contractual Services			600,000
	CDEX-Long Term Monitoring	175,000	
	USIO Common BHA	250,000	
	USIO Pulsed Telemetry	175,000	
Equipment			
Other			
FY06 Total Budget			**600,000**

NOTE: The specific funds requested by the USIO and JPIO (see Appendix A and B, respectively) have been temporarily put into the IODP-MI budget until decisions have been finalized regarding the allocation of these funds.

Core Curation

IODP Core Distribution Plan

Following endorsement by the Science Advisory Structure to distribute IODP core geographically, IODP-MI and the IODP Implementing Organizations defined the basic guidelines that may be used for distribution of IODP cores, whereby cores will be distributed based on geographic distribution at the conclusion of each expedition.

The following would be used as basic guidelines; final distribution is to be determined by the Operations Task Force at the time expeditions are scheduled.

Repository	Institution	Geographic Location
GCR	Texas A&M University	Pacific Ocean (east of western trench boundaries); Caribbean Sea and Gulf of Mexico; Southern Ocean (>60ºS, except Kerguelan Plateau)
BCR	University of Bremen	Atlantic Ocean, Mediterranean Sea, Arctic Ocean (north of Bering Strait)
KCR	Kochi University	Western Pacific Ocean (west of trench boundaries); Indian Ocean

This model is based on estimated annual recovery of 14.5 km/yr beginning in FY05, rising to17.5 km/yr beginning in FY07.

Estimated average recovery per platform:

- Riserless—12 km/yr, FY05–FY13 (average based on 20-yr annual recovery rate of ODP).
- Riser—3–4 km/yr, FY07–FY13 (Note: no estimate provided by CDEX; this estimated provided by USIO).
- Mission-specific platform (MSP)—1.5 km/yr, FY05–FY13 (average based on expected recovery from first two MSP projects, with expected better recovery in outlying years).

Estimate of core distribution from platform to each repository (average of one-third of total cores to each repository):

- To KCR: 4.5–6.15 km/yr
- To BCR: 4.5–6.15 km/yr
- To GCR: 4.5–6.15 km/yr

DSDP/ODP Core Redistribution Plan

IODP Management International (IODP-MI) and the IODP Implementing Organizations have prepared a core consolidation model, which redistributes the DSDP and ODP core collections located at the Gulf Coast Repository (GCR), the East Coast Repository (ECR), and the West Coast Repository (WCR) to the Gulf Coast Repository (GCR), the Bremen Core Repository (BCR), and the Kochi Core Repository (KCR) along the same geographic distribution framework as the proposed plan for IODP core collections

Current distribution of DSDP and ODP cores:

Repository	Institution	Amount of Core/Program	Geographic Location
WCR	Scripps Institute of Oceanography, University of California, San Diego	50 km DSDP	Indian and Pacific Oceans and peripheral seas
ECR	Lamont-Doherty Earth Observatory, Columbia University	75 km DSDP & ODP	Atlantic and Southern Oceans, Gulf of Mexico, Caribbean Sea, and other peripheral seas
GCR	Texas A&M University	120 km ODP	Pacific and Indian Oceans and peripheral seas
BCR	University of Bremen	80 km ODP	Atlantic and Southern Oceans (>60ºS), Gulf of Mexico, Caribbean Sea, and other peripheral seas
KCR	Kochi University	0 km	None

Proposed redistribution of DSDP and ODP cores:

Repository	Institution	Amount of Core/Program	Geographic Location
GCR	Texas A&M University	106 km DSDP & ODP	Pacific (Pacific plate east of western boundary); Caribbean Sea and Gulf of Mexico; Southern Oceans (S of 60º except Kerguelan Plateau)
BCR	University of Bremen	135 km DSDP & ODP	Atlantic and Arctic Oceans, (north of Bering Strait)
KCR	Kochi University	83 km DSDP & ODP	Pacific (west of western boundary of Pacific plate); Indian Ocean (N of 60ºS), and all of Kerguelan Plateau
NJ Geological Survey	Rutgers University	0.62 km ODP Leg 150X	Land-based New Jersey and Delaware cores (to be stored with Leg 174X land cores from New Jersey)

The plan consists of four parts:

1. Purchase supplies and equipment and secure labor to pack and receive all cores.
2. Redistribution of DSDP and ODP cores to KCR.
3. Redistribution of DSDP and ODP cores to GCR.
4. Redistribution of DSDP and ODP cores to BCR.

The total amount of core to be redistributed in Plan 2 equals 190 km.

The exact start date and schedule for each project is dependent upon the timing of key milestones, approximated in this draft. The proposed schedule may vary depending upon the timing of these milestones.

The new BCR, opening in January 2005, will have a capacity of ~197 km of cores. This space will accommodate the current BCR collection and the ECR collection, with room for 15–20 km of IODP cores.

The GCR currently has 150 km of core capacity, with 120 km of cores stored. This plan would result in a net loss of core to 106 km after redistribution, resulting in more than 40 km of available space for IODP cores. Texas A&M University has committed $1.2M to expand the GCR to accommodate both the DSDP/ODP cores and future IODP cores through 2013. TAMU is pursuing the following options: retrofitting the current GCR with more densely packed movable rack systems, adding a fifth core refrigerator in the GCR warehouse, and/or building a separate core storage building for the older DSDP/ODP cores. Initiation of this commitment is dependent upon how much IODP core will be received through 2013.

The KCR has a core capacity of ~120 km. After redistribution, KCR would have as much as 40 km of remaining core storage space for IODP cores. The operational costs of curating the KCR would begin in FY06, roughly a year earlier than if DSDP/ODP cores are not distributed to the KCR.

In order to complete this plan in the shortest possible time, so to save operational costs by closing the ECR and WCR as soon as possible, a third automated shrink-wrap machine will need to be purchased so that all three U.S. repositories can pack and ship cores at the same time.

The following summarizes the tasks that are outlined in the project timeline

The schedule of this project is designed to prepare for the moves (secure all necessary supplies, equipment, and labor) in early FY06 necessary for redistributing the cores listed in Projects 2–4, below. Purchasing everything as early as possible (beginning in October 2005) will avoid future purchases at higher prices for certain expensive materials (shrink-wrap, steel core racks, etc.) that are rising in cost at a rate faster than inflation. In addition, a small amount of core (0.62 km) from the New Jersey land-based Leg 150X will be moved from the ECR to the New Jersey Geological Survey.

Project 1. Purchase supplies and equipment, and secure labor at BCR, ECR, GCR, KCR, and WCR

Task 1. Move Leg 105X cores (0.62 km) from ECR to Rutgers University/New Jersey Geological Survey (FY06).

- Activity: Rent van, load 491 core boxes in van (4–6 hours); drive to Rutgers University (1–2 hours); unload and rack core boxes (4–6 hours); return van. Rutgers University will curate and sample cores under the direction of the IODP USIO Curator.
- Timing: October 2005.

Task 2. Purchase and build earthquake-proof core racks at KCR (FY06).

- Activity: Purchase and assemble core racks (assembly ~24 weeks; may require longer lead time for ordering and longer lag time for building).
- Timing: Begin before KCR is ready to receive cores; however, rack assembly can take place in parallel with shipping cores from the ECR, WCR, and GCR.

January – July 2006

Task 3. Purchase all supplies and equipment and secure labor for packing and shipping ECR cores to KCR, BCR, and GCR (FY06).

- Activity: Order necessary supplies and equipment and procure labor (8 weeks); prepare all supplies and equipment (deliver existing shrink-wrap machine from GCR).
- Timing: Begin after receipt of FY06 funding.

August – September 2006

Task 4. Purchase all supplies and equipment and secure labor for packing and shipping WCR cores to KCR and GCR (FY06).

- Activity: Order necessary supplies and equipment and procure labor (8 weeks); prepare all supplies and equipment (deliver existing shrink-wrap machine from GCR).
- Timing: Begin after receipt of FY06 funding.

August – September 2006

Task 5. Purchase all supplies and equipment and secure labor for packing and shipping GCR cores to KCR (FY06).

- Activity: Order necessary supplies and equipment and procure labor (24 weeks); prepare all supplies and equipment (order and delivery of new shrink-wrap machine to GCR will take at least 12 weeks).
- Timing: Begin after receipt of FY06 funding.

October 2005 – April 2006

Task 6. Purchase all supplies and equipment and secure labor for packing and shipping BCR cores to GCR (FY06).

- Activity: Order necessary supplies and equipment and procure labor (12 weeks); prepare all supplies and equipment. BCR will use tubular shrink-wrap to manually wrap cores in the absence of an automated shrink-wrap machine.

Timing: Begin after receipt of FY06 funding.

April – July 2006

Project 2. Core Redistribution to KCR

Task 1. KCR facility ready to receive cores (FY06).
• Activity: Facility ready to receive cores.
• Timing (key milestone): Begin before all racks are built, as long as rack-building keeps pace ahead of receipt and racking of cores (estimated January 2006).

Task 2. Pack and ship GCR cores to KCR; (FY06-FY07).
• Activity: Pack (57 weeks), ship (8 weeks for last shipment), Shipping from ECR to KCR will be via ship; 1–4 containers will ship at the same time.
• Timing: Begin when supplies, equipment, and labor are ready at GCR (January 2006).
July 2006 – August 2007

Task 3. Unload and rack GCR cores at KCR (FY06-FY07).
• Activity: Unload and rack 85,485 d-tubes (50 weeks), 1–4 containers will ship at the same time.
• Timing: Begin when supplies, equipment, and labor are ready at GCR (January 2006).
September 2006 – September 2007

Task 4. Pack and ship ECR cores; (FY06).
• Activity: Pack (4 weeks), ship (8 weeks for last shipment). Shipping from ECR to KCR will be via ship; 1–4 containers will ship at the same time.
• Timing: Begin when supplies, equipment, and labor are ready at ECR (December 1, 2005).
October – December 2006

Task 5. Unload and rack ECR cores at KCR (FY06).
• Activity: Unload and rack 5375 d-tubes (2 weeks for last shipment). 1–4 containers will ship at the same time.
• Timing: Begin when supplies, equipment, and labor are ready at ECR (December 1, 2005).
January 2007

Task 6. Pack and ship WCR cores; (FY06).
• Activity: Pack (20 weeks), ship (8 weeks for last shipment), Shipping from ECR to KCR will be via ship; 1–4 containers will ship at the same time.
• Timing: Begin when supplies, equipment, and labor are ready at WCR (December 1, 2005).
October 2006 – April 2007

Task 7. Unload and rack WCR cores at KCR (FY06).
• Activity: Unload and rack 33,325 d-tubes (20 weeks). 1–4 containers will ship at the same time.
• Timing: Begin when supplies, equipment, and labor are ready at WCR (December 1, 2005).
November 2006-April 2007

Task 8. KCR completes racking of cores (FY07).
• Activity: Racking complete.
• Timing (key milestone): September 2007.

Project 3. Core Redistribution to BCR

Task 1. BCR facility ready to receive ECR cores (FY07).
• Activity: Receive FY07 funding to initiate project.
• Timing (key milestone): October 1, 2006.

Task 2. Pack and ship ECR cores (FY07–FY08).
• Activity: Pack (58 weeks), ship (4 week per shipment).Shipping from ECR to KCR will be via ship; 1–4 containers will ship at the same time.
• Timing: Begins as soon as last shipment of ECR to KCR cores is sent.
December 2006 – February 2008

Task 3. Unload and rack ECR cores at BCR (FY07–FY08).
• Activity: Unload and rack 94,323d-tubes (54 weeks). Shipping from ECR to KCR will be via ship; 1–4 containers will ship at the same time.
• Timing: Begins as soon as last shipment of ECR to KCR cores is sent and first container arrives.
February 2007 – March 2008

Task 4. BCR completes racking of cores (FY08).
• Activity: Racking complete.
• Timing (key milestone): March 2008.

Project 4. Core Redistribution to GCR

Task 1.Rearrange ~65 km core to enable incorporation of BCR, ECR and WCR cores (FY07-FY08).
• Activity: (24 weeks)
• Timing: Begins after GCR to KCR cores are shipped.
July 2007 – January 2008

Task 2. Purchase supplies and equipment and secure labor to pack BCR cores (FY07-FY08).
• Activity: Receive FY07 funding to initiate project.
• Timing:
August - October 2007

Task 3. GCR facility ready to receive BCR cores (FY06).
• Activity: Receive FY08 funding to initiate project.
• Timing (key milestone): February, 2008.

Task 4. Pack and ship BCR core (FY08).
• Activity: Pack (6 weeks), ship (4 weeks for last shipment), Shipping from BCR to GCR will be via ship; 1–3 containers will be shipped at the same time.
• Timing: Begin when supplies, equipment, and labor are ready at ECR.
November 2007

Task 5. Unload and rack BCR cores at GCR (FY08).
• Activity: Unload and rack 9263 d-tubes (2 weeks for last shipment). 1–3 containers will be shipped at the same time.
• Timing: Begin when supplies, equipment, and labor are ready at ECR.
November 2007

Task 6. GCR facility ready to receive WCR and ECR cores.
• Activity: GCR rack space open for WCR core.
• Timing (key milestone): Begins after sufficient space has been vacated in the GCR by outgoing cores to the KCR and after rearrangement of remaining cores.
January 2008

Task 7. Pack and ship ECR cores (FY08).
• Activity: Pack (9 weeks), ship (1 week for last shipment). Trucking time is estimated to be 1 week. Shipping from ECR to GCR will be by truck; one container will be sent at a time.
• Timing: After last ECR cores shipped to BCR.
January – March 2008

Task 8. Unload and rack ECR cores at GCR (FY08).
• Activity: Unload and rack d-tubes. Trucking time is estimated to be 1 week, and unloading and racking one container is estimated to take 1 week.
• Timing: After last ECR cores shipped to BCR.
February – April 2008

Task 9. Close ECR facility (FY08).
• Activity: Close facility.
• Timing (key milestone): Begins as soon as last shipment is sent (March 2007).
April/May 2008

Task 10. Pack and ship WCR cores (FY08).
• Activity: Pack (25 weeks), ship (1 week for last shipment). Trucking time is estimated to be 1 week. Shipping from WCR to GCR will be by truck; one container will be sent at a time.
• Timing: Dependent upon space available in GCR after GCR cores sent to KCR.
January – July 2008

Task 11. Unload and rack WCR cores at GCR (FY08).
• Activity: Unload and rack 46,546 d-tubes. Trucking time is estimated to be 1 week, and unloading and racking one container is estimated to take 1 week.
• Timing: Dependent upon space available in GCR after GCR cores sent to KCR.
February – August 2008

Task 12. Close WCR facility (FY08).
• Activity: Close WCR.
• Timing (key milestone): Begins as soon as last shipment is sent (February 2007).
July/August 2008

Task 13. GCR completes racking of last DSDP/ODP core (FY08).
• Activity: Racking complete.
• Timing (key milestone): August 2008.

Funds ($506,395 in FY06 – See JOI Alliance Appendix, pg. 99) are requested by the USIO to begin this redistribution plan. Total multi-year costs for this core redistribution plan are approximately $2,039,000.

Data Management

Site Survey Data Bank
The new electronic site survey data bank (SSDB) established at Scripps Institution of Oceanography (SIO) and San Diego Super Computer Center (SDSC) in FY2005 will be fully implemented in FY2006 on the basis of advice received from SSP and the SSDB advisory committee in September 2005. A new fully web-based proposal data bank with links to the SSDB initiated in FY2005 will be fully implemented in FY2006.

Data Coordination and Integration- progress and plans
The Data Management Coordination Group determined that initial data gathering at sea is an IO responsibility and each IO use their own proven data base systems for this initial data gathering. These are: J-CORES (CDEX), JANUS (USIO) and DIS (ESO). After the seagoing expedition, DIS data are transported into JANUS format database (this might later change into PANGEA). These databases are also the long- term legacy data archive (again, PANGEA may take that role in the future for ESO-generated data).

Single-point user access will be generated by a data portal (Information Portal for IODP, IPI) drawing on metadata generated for all IODP data in J-CORES and JANUS. IODP-MI will coordinate the development of IPI, in close consultation with IOs. The IOs are responsible for generating and supplying the necessary metadata. IPI will also be the focal point for interconnectivity with non-IODP databases and node in the global cyberspace infrastructure. The actual generation of the IPI structure will be achieved mainly through outsourcing. Sole source and competitive RFPs will be used as required and when most beneficial. Implementing Organizations, IT groups/institutions within the science community and commercial organizations can be chosen as vendors. IODP-MI and IOs will present perspectives on IPI at the AGU Fall 2005 meeting in a session on cyberspace infrastructure.

Development of data visualization and data application tools will be coordinated by IODP-MI. Vendors will include IOs and the broader community (e.g., VCD from J-CORES, Core Wall initiative etc.).

IODP site survey data will, in FY2006, turn to web-based and electronic data storage. A contract with Scripps Oceanographic Institution (SIO) to develop and run a new data bank was signed in FY05. This new Site Survey Data Bank (SSDB) will be fully implemented in FY06 (April 1, 2006). IODP-MI will be responsible for service of SAS panels and IOs with relevant data from the SSDB for panel meetings and expedition use.

Handling of drilling proposals in IODP will in FY2006 change to a web- and data-based system with strong links to the new SSDB. A contract for developing this new system was the subject of restricted RFP (IODP-MI invited three vendors to bid). The application of the new system will be introduced and adjusted as need be in early FY06 following the October 1, 2005 proposal deadline, the last to make use of the existing system.

A system to manage sample requests and data management within the three different IODP core repositories intended to host cores from all three different platforms is in need for development in FY06. Currently, the JANUS system is used at all IODP repositories that have material either from DSDP, ODP, and/or IODP. In the future, when all cores will be distributed according to a

geographically based model, shipboard and repository data- gathering systems could become incompatible as new contributors start using their own databases and tools. The DMCG has resolved that there is a quite-urgent need for a common curation management system. The initial requirements for this were defined late August 2005. IODP-MI plans to quickly move forward with the creation of a common curation management system via both external vendors (as needed/feasible) and IO resources. IODP-MI is currently in discussion with all IOs in finalizing the system requirements for system creation and implementation within the first part of FY06. Because of timing issues, no resources have been requested by the IOs to solve this problem in FY06, nor does the general plan for a geographical distribution of cores include costs for establishing this system. IODP-MI requests $80K in FY06 to establish this system. The deployment of funds may involve a combination of additional SOC funds to one or more IOs and external vendors from which proposals will be solicited.

Table PP-8: *IODP Data Management Budgets*

Item	Specifics	Sub Total		Total
		Sapporo	SIO Subcontract	
Salaries & Fringe	Key Personnel			
	Managers & Officers			
	Technical & Administrative		214,372	214,372
Travel			9,330	9,330
Supplies			21,298	21,298
Shipping				-
Communication				-
Contractual Services		180,000		180,000
Equipment				-
Other	Software			
	Insurance			
	Relocation & Recruiting			
	Assoc. dues & Subs			
	Bank Charges			
	Meeting Expenses			
	Honorarium - Panel Chairs			
	SPC Chair & Asst.			
	Office & Equip. Rental			
	Overhead		135,000	
	Consumption tax			
	Sub total of Other			135,000
FY06 Total Budget		**180,000**	**380,000**	**560,000**

Publications

The principles of implementing IODP publication policy developed in FY2005 by the IODP-MI Task Force on Publications implies exclusively electronic publications of all program publications except the program journal *Scientific Drilling* of which a printed version also will be produced.
The publication structure comprises a number of categories of publications:

(1) Technical Notes;
(2) Pre-expedition Data Reports;
(3) Scientific Prospectus
(4) Preliminary Reports;
(5) Expedition Reports;

(6) Postcruise Data Reports;
(7) Expedition Synthesis; and
(8) Specialty Papers (in peer-reviewed, open literature only).

Publication 5 is equivalent to ODP Initial Report. Publications 5 through 8 (electronic bibliography) will constitute the web-based *Proceedings of the Integrated Ocean Drilling Program*. Electronic publications will be web-based (PDF and html formats); Proceedings (including Expedition Reports) also will be available as a DVD release in 2,000 copies for program-wide distribution.

For FY2006, the major portion of the publication budget is for USIO to publish the expedition reports related to FY2005 expeditions. ESO will prepare its initial expedition reports through the science editing stage; the final production and publication will be handed over to USIO. CDEX publication activity will include, at this time, only technical notes and pre-expedition reports.

IODP-MI will publish, on behalf of the IODP, *Scientific Drilling – Reports on Sampling and Monitoring the Deep Earth*, in collaboration with the International Continental Scientific Drilling Program (ICDP). This journal, available on the web and in full color printing, (print target: 5000/1000 for IODP/ICDP respectively) will accept contributions from IODP and other scientific-drilling efforts. IODP-MI will provide the Editor in Chief, one editor, and one co-editor. ICDP will provide one co-editor. Printing and distributions costs will be shared proportionally between IODP and ICDP without exchange of funds between the two programs. IODP-MI has contracted AESTO to provide technical editing and printing of *Scientific Drilling.* Two issues are planned for FY2006.

In FY2006, IODP-MI jointly with the IOs, will pursue maximum direct access to specialty papers published in the open literature and include them in the electronic bibliography within the *Proceedings* of the IODP. Direct links and open access to all abstracts will be the first goal. Contacts to journals considered key to the IODP mission, with web-based publications will be approached to seek agreements for direct electronic and open access to full papers and associated data files. The Publications Task Force, established in FY2005, will be reconfigured to assist IODP-MI in these activities.

Publications Budgets

Table PP-9: *Publication Budgets for IODP-MI*

Item	Specifics	Sub Total	Total
Salaries & Fringe			-
Travel			-
Supplies			-
Shipping		10,000	10,000
Communication			-
Contractual Services			30,000
	Design	15,000	
	Printing	15,000	
Equipment			
Other			
FY06 Total Budget			**40,000**

Education and Outreach

1) Outreach to Scientists
The Education and Outreach budget primarily supports outgoing communications to scientists. The budget represents outreach development through a variety of media and includes tactical outreach plans combined with strategic communications planning for message development, leadership speaking, and crisis communications.

A) After a forward step (in 2005) coordinating the IOs and IODP-MI in a cosponsorship agreement for booth exhibition at professional conferences, the FY2006 budget continues that initiative, both to build consistency and to take advantage of a plan that seems to be working and cost-effective in terms of global outreach. The budget supports booth outreach at four scientific meetings in four different regions of the world (Europe, United States., Southeast Asia, and Japan). The E & O budget provides support of booth registration fees, updated booth signage, printed collateral, and transport and insurance. There is also a sum earmarked for a U.S.-based Town Hall Meeting. Promotional support also is to be provided for a European-based Town Hall Meeting.

B) An international Visiting Scientist Program is being created to bring higher visibility to IODP globally and to provide opportunities for prominent scientists in the ocean-drilling and marine research disciplines to share information about the program and its scientific achievements to a greater audience of academics. Budgetary support for this program includes poster design, printing, and distribution and other promotional costs that may be incurred locally or regionally. This program will dovetail as an IODP activity in support of a nationally or internationally designated science event, such as Earth Science Week in the United States. Original materials such as a poster promoting the Visiting Scientists and their tour dates and locations may be translated and reprinted in Japan or Europe in local languages, or with banner headlines modified to tie in with local or regional science events (such as Earth Science Week). Advertising costs and targeted e-messaging costs will help promote the Visiting Scientists Program.

C) The IODP web site is a powerful and essential tool in effectively providing information to scientists. Newly launched in May 2005, its functionality and content will be vital to keeping scientists abreast of current and future activities. Phase II of web site development will include building a database to support a robust online search mechanism to find people, programs, and science, i.e. proposals, research results, papers on a particular subject/topic, etc.. The second development phase also will expand work spaces for Task Forces and other panels and committees, and bring real-time action to the web site from ships at sea.

2) Outreach to the Media:
A secondary emphasis is on communications to the media, including the development of media readiness among program leaders. The budget supports acquisition of online media tools (media atlas database tool for global access to journalists), an online news distribution subscription (EurekAlert), and outreach via face-to-face briefings. Informal small meetings will become routine events throughout 2006. A news monitoring initiative will also begin in FY2006, through vendor collection services in print, online, TV and radio. Monitoring will effectively gather for analysis and

measurement all the program's publicity and effectively demonstrate whether we are communicating and placing accurate information about IODP. The body of information collected will inform us about how we can better support leadership speaking, message development, and other media relations improvements.

3) Multimedia Outreach:
Special multimedia projects focused on IODP offshore expeditions are planned for FY2006. These special productions will effectively serve as mass outreach tools, i.e., large media projects that also generate smaller, informational by-products for web streaming, media distribution, and for other visual effects:

- NanTroSEIZE documentary filmmaking—This scientific program is on the horizon early enough to allow early outreach planning. By creating documentation in person with the science proponents, and with the *Chikyu*, we can build "b-roll" that is useful for video news release and web streaming while advancing to a major news release when NanTroSEIZE gets underway in 2007-08. (Content will also benefit from emphasis on the intricacies of the work, the planning, the scientific process.) From the earliest digitized film products made, we can edit and produce online video streams, DVDs for media outreach, dynamic PowerPoint presentations for use at professional conferences--all based on this newsworthy initiative; a "first" in many respects.
- Discovery TV series (with AGI)—Support for this series is not yet in actual production with the Science Channel, a subsidiary of Discovery TV. We plan to work with the other nonprofit science exploration groups involved in the TV series to mount an online education component that emphasizes the "how" and "why" of pursuing a career as a scientific investigator. Support for the series will ensure scientific ocean drilling is represented in the final TV cut.
- Smithsonian Institution video production on scientific ocean drilling (history, science plan, overview) produced in coordination with staff from the National Museum of Natural History for the upcoming Oceans Hall exhibition (2008). Our investment will assure control of the content of the video, and also will create a by-product: an online education component linked to the Smithsonian exhibition.

4) Print Production:
Print material about IODP is to include a second IODP-MI Annual Report (design, print, distribution) and the production of a comprehensive program brochure that includes:

- IODP history;
- Background on science(s) involved, drilling technology, program vessels and platforms;
- Funding agencies and program structure;
- Implementing Agencies and expeditions;
- Phase I Operations, including goals and achievements; and
- Long-range program goals.

Specifications: glossy finish, multi-page, full-color, saddle-stitched brochure, exact size to be determined, but trending toward a portfolio-style presentation. Brochure/booklet will include photographs, charts, graphs, text (original written in English). A high-end, professionally designed publication, the text will be designed as the program's signature piece, suitable for both general outreach, introductory purposes, as well as presentation of the program to foreign dignitaries and officials at all levels of government and academia. Brochure will be shared through IODP offices worldwide.

Table PP-10 Education and Outreach Budgets

Item	Specifics		Sub Total	Total
Salaries & Fringe			-	
Travel			-	
Supplies	Info Production (1 A)	Packing & mailing materials	10,000	
	Promotion (2)	Subscriptions/Resources (Media Relations)	5,000	
	Subtotal Supplies			15,000
Shipping	Exhibition (1 A)	Shipping		5,000
Communication	Promotion (1 B)	Distribution/Briefings	10,000	
	Exhibition (1 A)	Signage	5,000	
		Promotional Materials	14,000	
	E-messaging (2)		5,000	
	Town Hall Mtg (1 A)	Collateral	5,000	
	Advertising (4)		2,000	
	Message Dev/ Media Training (2)	Phase II (ESO; E&O Task Force; Media Rel. Subgroup)	15,000	
	Subtotal Communication			56,000
Contractual Services	Town Hall Mtg (1 A)	Hospitality	15,000	
	Exhibition (1 A)	Booth space (4 per year)	20,000	
	Web Development (1 C)	Phase II (Search engine; database; online work areas; web-cam)	40,000	
	Info Production (1 B)	Design Poster (Visiting scientist/Earth Science Week; Expeditions Collateral)	12,500	
	Printing (4)		12,500	
	Promotion (2)	Media Relations: Monitoring	10,000	
		Media Relations: Photography	5,000	
	Documentary Video, TV & Filmmaking (3)	NanTroSEIZE: Production	14,500	
		NanTroSEIZE: Post-production	5,000	
		Smithsonian: Video production	25,000	
		Science Channel: TV Production	25,000	
		Science Channel: Post-production	5,000	
	National PR Counsel for strategic development (2)		12,000	
	Subtotal Contractual Services			201,500
Equipment	Exhibition (1 B)	Onsite expenses		2,000
Other	Professional Development (2)			2,500
FY06 Total Budget				**282,000**

Note: *Numbers in ( ) in "specifics" column indicate section of E & O text to which the specific budget applies*

SUMMARY BUDGETS

This Program Plan budget identifies a total program cost of $47,072,125 for FY2006 (see **Table PP-12**) to meet the high-priority needs identified by the SAS. Of this cost, 47% is considered to be Science Operation Costs (SOCs) and the remaining 53% is Platform Operation Costs (POCs).

	IODP-MI		IODP-MI Operators & Subcontracts					Totals
	Washington DC	Sapporo	JOI-Alliance	CDEX	ESO	Bremen	SIO	
SOCs	$ 4,444,347	$ 1,873,222	$ 10,541,327	$ 677,437	$ 3,894,800	$ 250,877	$ 380,000	**$ 22,062,010**
POCs			$ 9,782,325	$ 8,440,690	$ 6,405,600			**$ 24,628,615**
Total	**$ 4,444,347**	**$ 1,873,222**	**$ 20,323,652**	**$ 9,118,127**	**$ 10,300,400**	**$ 250,877**	**$ 380,000**	**$ 46,690,625**

Table PP-11*: Summary SOC and POC Budgets*

IODP-MI's Washington office budget is $4,444,347 (**Table PP-11 and 12).** The base Management and Administrative budget is $3,562,347. The cost of several activities and services, such as the Engineering Development ($600,000) and Education and Outreach Activities ($282,000) will be supported, in part or entirely, under subcontracts to IOs or other entities.

IODP-MI Sapporo Office budget is $1,873,222 (**Table PP-11 and 12**). The Sapporo IODP-MI Office will be supported, in part ($1,298,387) via a subcontract to Japan's Advanced Earth Science and Technology Organization (AESTO). This office coordinates the SAS and assists with the other activities managed by the Vice President for Science Planning including oversight of data management ($180,000), the Site Survey Data Bank, and publication activities. The remaining costs are for key personnel and travel ($354,835) and production of the journal *Scientific Drilling* ($40,000).

The JOI Alliance budget of $20,323,652 for FY2006 includes support for one full expeditions in FY2006 (Superfast Spreading Crust 3), and partial costs for Cascadia Margin Gas Hydrates (which straddles the FY2005 and FY2006), in addition to non-expedition related costs for such things as data management, publications, curation, and education and outreach. Of the Alliance's total budget (see **Tables PP-11 and 12**), 48% are POCs, 52% are SOCs. The JOI Alliance SOC budget of $20,323,652 reflects the removal of $425,000 of Engineering Development funds that have been placed into the IODP-MI budget.

The ESO budget of $10,681,900 is primarily for the support of (1) the offshore operations associated with the New Jersey Margin proposal, (2) some offshore expenses for Tahiti ($750,500) and (3) for the Onshore Core Processing and Sampling Party for the Tahiti Expedition. Of ESO's total budget (see **Tables PP-11 and 12**), 62% are POCs, 38% are SOCs.

The CDEX budget is $9,118,127 (93% POC). These funds (**Tables PP-11 and 12**) are to support engineering site surveys, administration and operations personnel, education and outreach, publications, project scoping, and data management.

The University of Bremen Core Repository budget is $250,877 (100% SOC). These funds are primarily for personnel and operating costs (consumables, supplies, telecommunications, etc) associated with normal IODP/ODP core sampling and core archiving operations. Funds for curatorial support for MSP operations are identified in the ESO budget.

Table PP-12: Detailed FY2006 SOC budgets

	IODP-MI			IODP Operators & Subcontracts						Total SOC
	D.C.	Sapporo	Total	JOI-Alliance[1]	CDEX[2]	ESO[3, 4]	Bremen	SIO	Total	Total
Management & Administration[1]	$ 3,562,347	$ 1,653,222	**$ 5,215,569**	$ 2,269,358	$ -	$ 443,900	$ -	$ -	**$ 2,713,258**	**$ 7,928,827**
Technical, Engineering & Science Support[2]			**$ 600,000**						**$ 6,341,175**	**$ 6,941,175**
Technical, Engineering & Science Support	$ -	$ -		$ 4,314,685	$ 378,390	$ 1,648,100	$ -	$ -		
Engineering Development	$ 600,000	$ -		$ -	$ -	$ -	$ -	$ -		
Core Curation	$ -	$ -	**$ -**	$ 1,251,655		$ -	$ 250,877	$ -	**$ 1,502,532**	**$ 1,502,532**
Data Management[3]	$ -	$ 180,000	**$ 180,000**	$ 942,481	$ 99,000	$ 256,500	$ -	$ 380,000	**$ 1,677,981**	**$ 1,857,981**
Publications[4]	$ -	$ 40,000	**$ 40,000**	$ 882,468	$ -	$ 34,200	$ -	$ -	**$ 916,668**	**$ 956,668**
Logging	$ -	$ -	**$ -**	$ 659,652	$ -	$ 1,413,300	$ -	$ -	**$ 2,072,952**	**$ 2,072,952**
Education & Outreach[5]	$ 282,000	$ -	**$ 282,000**	$ 221,028	$ 200,047	$ 98,800	$ -	$ -	**$ 519,875**	**$ 801,875**
Total	**$ 4,444,347**	**$ 1,873,222**	**$ 6,317,569**	**$ 10,541,327**	**$ 677,437**	**$ 3,894,800**	**$ 250,877**	**$ 380,000**	**$ 15,744,441**	**$ 22,062,010**

1- See Table PP-6 for details
2- See Table PP-7 for details
3- See Table PP-8 for details
4- See Table PP-9 for details
5- See Table PP-10 for details

1- SubContract to JOI
2- CDEX SOC budget directly funded by MEXT in FY06
3- Subcontract to BGS
4- EMA directly funds $160,000 of SOC (Travel) to BGS

Note: The JOI Alliance SOC budget differs from that shown in Appendix A by $425,000. This amount was moved from the JOI Alliance Eng Development line to IODP-MI Engineering Development line

ORIGINAL FY06	BGS Subcontracts			
	BGS	EPC	Bremen	Total
Management & Administration	$ 153,800	$ 161,900	$ 128,200	**$ 443,900**
Technical, Engineering & Science Support				**$ 1,406,300**
Technical, Engineering & Science Support	$ 436,100	$ 253,600	$ 716,600	
Engineering Development	$ -	$ -	$ -	
Core Curation	$ -	$ -	$ -	**$ -**
Data Management	$ 125,400	$ 19,100	$ 60,000	**$ 204,500**
Publications	$ 34,200	$ -	$ -	**$ 34,200**
Logging	$ -	$ 969,300	$ -	**$ 969,300**
Education & Outreach	$ 63,600	$ -	$ 22,500	**$ 86,100**
Total	**$ 813,100**	**$ 1,403,900**	**$ 927,300**	**$ 3,144,300**

		JOI Subcontracts		
	JOI	TAMU	LDEO	Total
Management & Administration	$ 590,715	$ 1,400,924	$ 277,719	**$ 2,269,358**
Technical, Engineering & Science	$ -			**$ 4,314,685**
Technical, Engineering & Science Support	$ -	$ 3,120,249	$ 1,194,436	
Engineering Development[1]	$ -	$ -	$ -	
Core Curation[2]	$ -	$ 1,251,655	$ -	**$ 1,251,655**
Data Management	$ -	$ 784,897	$ 157,584	**$ 942,481**
Publications	$ -	$ 882,468	$ -	**$ 882,468**
Logging	$ -	$ -	$ 659,652	**$ 659,652**
Education & Outreach	$ 221,028	$ -	$ -	**$ 221,028**
Total	**$ 811,743**	**$ 7,440,193**	**$ 2,289,391**	**$ 10,541,327**

FY05 Tasks Transferred to FY06	BGS Subcontracts			
	BGS	EPC	Bremen	Total
Management & Administration	$ -	$ -	$ -	**$ -**
Technical, Engineering & Science Support				**$ 241,800**
Technical, Engineering & Science Support	$ 164,800	$ -	$ 77,000	
Engineering Development	$ -	$ -	$ -	
Core Curation	$ -	$ -	$ -	**$ -**
Data Management	$ 52,000	$ -	$ -	**$ 52,000**
Publications	$ -	$ -	$ -	**$ -**
Logging	$ -	$ 444,000	$ -	**$ 444,000**
Education & Outreach	$ 12,700	$ -	$ -	**$ 12,700**
Total	**$ 229,500**	**$ 444,000**	**$ 77,000**	**$ 750,500**

New Total FY06	BGS Subcontracts			
	BGS	EPC	Bremen	Total
Management & Administration	$ 153,800	$ 161,900	$ 128,200	**$ 443,900**
Technical, Engineering & Science Support				**$ 1,648,100**
Technical, Engineering & Science Support	$ 600,900	$ 253,600	$ 793,600	
Engineering Development	$ -	$ -	$ -	
Core Curation	$ -	$ -	$ -	**$ -**
Data Management	$ 177,400	$ 19,100	$ 60,000	**$ 256,500**
Publications	$ 34,200	$ -	$ -	**$ 34,200**
Logging	$ -	$ 1,413,300	$ -	**$ 1,413,300**
Education & Outreach	$ 76,300	$ -	$ 22,500	**$ 98,800**
Total	**$ 1,042,600**	**$ 1,847,900**	**$ 1,004,300**	**$ 3,894,800**

1- $425,000 was moved to the Engineering Development line in the IODP-MI Engineering Development Budget
2- $1,251,655 is a total of IODP core curation ($745,260) and DSDP/ODP core redistribution ($506,395)
See text for details

NOTE: Actual amount of NSF Contract to IODP-MI is: $21,224, 573
NSF Contract = Total SOC - MEXT direct fund to CDEX - EMA direct fund to BGS
$21, 224, 573 = $22,062,010 - $677,437 -$160,000

D) APPENDICES

APPENDIX A: USIO PROPOSAL
APPENDIX B: JPIO PROPOSAL
APPENDIX C: ESO PROPOSAL
APPENDIX D: BREMEN PROPOSAL
APPENDIX E: AESTO PROPOSAL
APPENDIX F: GLOSSARY