Approved on September 22, 2006

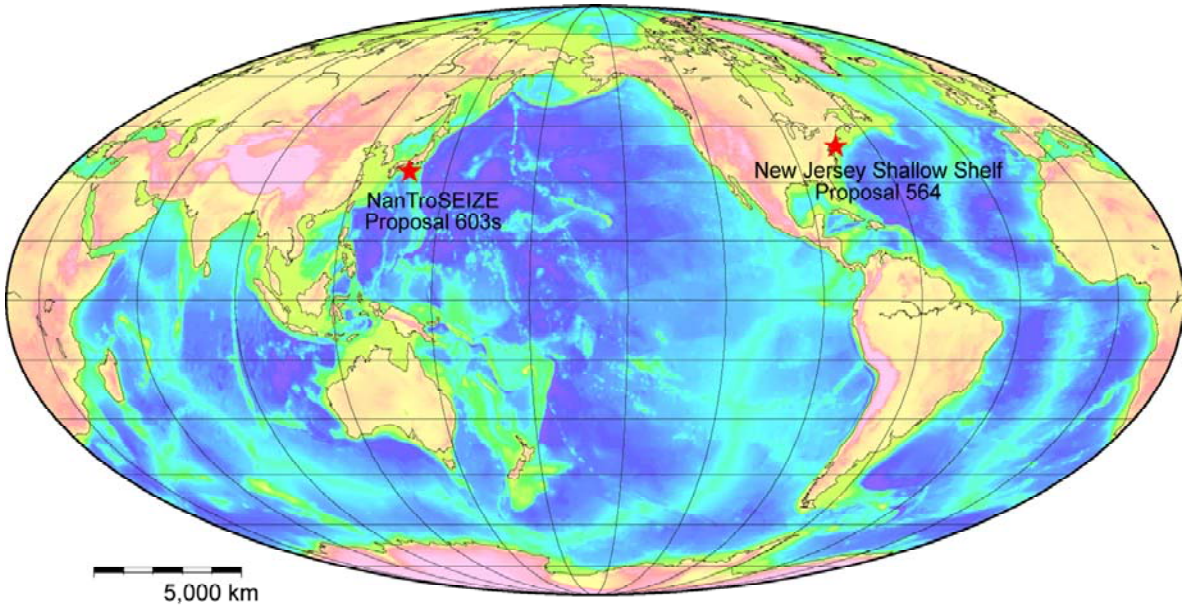
IODP

INTEGRATED OCEAN DRILLING PROGRAM

Integrated Ocean Drilling Program

Annual Program Plan

for the Fiscal Year 2007



Executive Summary

IODP Annual Program Plan FY2007

EXECUTIVE SUMMARY

INTRODUCTION

Fiscal Year 2007 marks an important transition in Integrated Ocean Drilling Program (IODP), from Phase 1 to Phase 2.

Phase 2 marks the substantive integration and internationalization of IODP. There are a number of major changes:

- The introduction of the enhanced U.S. drillship and the Japanese riser drillship, the *Chikyu*
- The initiation of drilling in the Nankai Trough by the two coordinated drillships
- The implementation of the "Mission" concept and the realization of Project Management teams
- Program Planning with longer lead times enabling the timely acquisition of equipment and planning related to operations, engineering development and borehole observatories
- Major steps in establishing a Data Management Portal
- Major change in the Science Advisory Structure (SAS): replacement of Science Planning and Policy Oversight Committee (SPPOC) by the Science Advisory Structure Executive Committee (SASEC) and consequent advancement in the role of the Science Planning Committee (SPC)
- Emphasis on Long Term Planning Workshops, IODP Distinguished Scientist Lecture Program, and Topical Symposia
- Steps to increase IODP membership
- Approaches to Industry Management

FY2007 Expedition Operations

SODV

There are no Scientific Ocean Drilling Vessel (SODV) operations scheduled for FY2007.

CHIKYU

Drilling activities for Nankai Trough Seismogenic Zone Experiment (NanTroSEIZE) are organized into four stages. Stage 1, conducted in FY2007 and part of FY2008, calls for drilling and sampling at six of the sites: (a) the incoming sediment of the Shikoku Basin and underlying oceanic crust (two sites), (b) the frontal thrust system at the toe of the accretionary wedge, (c) the mid-wedge mega-splay fault system, and (d) approximately 1000-m deep pilot hole at the two sites planned for later deep penetration at the Seismogenic zone faults.

For FY2007 the Drill Vessel *Chikyu* expedition will conduct Logging while Drilling (LWD) specific operations at all six Stage 1 sites.

MSP

The MSP FY2007 operation will consist of the New Jersey Shallow Shelf Expedition. The objective of this 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 locations for deciphering amplitudes and testing facies models.

WORK BREAKDOWN ELEMENTS

In this Program Plan we have, for each work breakdown element, combined the submission by each Implementing Organization (IO) or other subcontractor. The submissions are not uniform in scope and content, which has to be taken into consideration while examining the respective narratives in the appendices.

Management and Administration

The entire budget of IODP Management International, Inc. (IODP-MI) is - with the exception of Education and Outreach (E & O) - in this work breakdown element (WBE). The management tasks of the subcontractors are in this WBE, but are also contained within other WBEs.

In IODP-MI, Management and Administration consists of supervising, monitoring and coordinating tasks encompassed in the various WBEs: Engineering Development, Technical, Engineering, and Science Support and Engineering and Development, Publications, Data Management, etc. Some new elements: Workshops, IODP Distinguished Visiting Scientist Lecture Program, Symposia, etc. are introduced. They will be carried out in conjunction with SASEC. Phase 2 of IODP requires much stronger coordination among IOs and between IODP-MI and IOs. This coordination of the various WBEs is a principal task of Management and Administration.

Technical, Engineering, and Science Support

This WBE represents a major budgetary item for all IOs. Basically, it represents the various ongoing support necessary for pre cruise and syn cruise activities.

Pre cruise activities include prospectus development, science staffing, formulation of specific operational programs, long range science support and operational planning for out years. Syn cruise activities include (a) procurement, shipping and inventory of equipment and supplies; (b) maintaining, developing and improving shipboard and shore-based (analytical and drilling) facilities; (c) providing, operating, and maintaining computing and internet facilities and (d) developing and maintaining state of the art drilling and logging equipment and instrumentation.

Engineering Development

Both USIO and Center for Deep Earth Exploration (CDEX) have requested funds for engineering development. In both cases the developments could lead to multi-platform use.

USIO has requested funds for a Logging-While-Coring Project and a Pulse Telemetry Module Feasibility and Design Study which would provide real-time, at-the-bit drilling dynamics data to the driller.

CDEX efforts are focused on the initial development and engineering of an enhanced long-term borehole observation system. The major goal is to develop a standard monitoring system that will be used in deep and/or shallow boreholes drilled by IODP. In FY2006 CDEX is conducting a feasibility study for the development of a standard long-term monitoring system infrastructure. The results of this feasibility study will be peer reviewed, and depending on the outcome of this peer review, the construction of an engineering prototype and its field text will be funded either through sole sourcing or a Request for Proposal (RFP). IODP-MI is requesting funds for this effort.

Core Curation

IODP repositories will maintain facilities for storage and distribution of cores and samples, respond to sample requests from the scientific community and provide maintenance of existing cores and curation of new cores. The staffs at the Gulf Coast Repository (GCR), Bremen Core Repository (BCR) and Kochi Core Center Repository (KCC) will work closely with each other to coordinate, standardize and document curatorial procedures for IODP cores and samples.

A Core Redistribution Plan has been drawn up to consolidate DSDP/ODP cores at the Gulf Coast, Bremen and Kochi Core Repositories from the west coast, east coast and premier core repositories. The core redistribution plan was initiated in FY2006, and the redistribution plan and timeline for FY2007 is being finalized.

Data Management

Data management for FY2007 has three main components: Site Survey Data Bank (SSDB), development of the Scientific Earth Drilling Information System (SEDIS), and the Sample Materials Curation Management System (SMCS).

Further development of SSDB is aimed at fulfilling original system requirements and high priority user needs.

The goal of SEDIS is to integrate all drilling related data generated during shipboard operations and to make it available through a single portal. The IOs are responsible for capturing shipboard data. USIO uses JANUS, CDEX uses J-CORES and ECORD Science Operator (ESO) uses DIS. In FY2007 these protocols will be further developed, and very importantly, meta data representing the captured data will be provided for implementation of SEDIS Phase 1. IOs will be responsible for providing the meta data. The development and the initial implementation of SEDIS will be outsourced.

Data required for implementation of SMCS will be provided by the IOs.

Two additional software implementations will be completed. One is the construction of a new proposal database and the other is an IODP user register.

Publications

The following publications will be delivered during FY2007:

- Approximately seven scientific prospectuses to support FY2008 drilling operations.
- One Preliminary Report
- One Technical Note
- Three sets of Proceedings of the IODP
- Two issues of *Scientific Drilling*

Logging

The major deliverables for each IO are (a) to plan and provide for the delivery of logging services aboard their respective platforms and (b) to provide data processing and information assistance, including requisite training for shipboard scientists.

Education and Outreach

IODP-MI and E & O staff at IOs will coordinate outreach efforts to:

a. engage more scientists in the program;
b. heighten visibility of drilling operations and IODP by practicing an integrated approach to promotional activities, particularly in relation to media outreach, and;
c. enhance IODP's online web presence.

A major objective of these integrated and stepped up efforts will be to prepare for launches of the SODV and *Chikyu* drilling vessels, and IODP's first integrated (i.e. two drilling vessels) scientific expedition, NanTroSEIZE.

IODP Annual Program Plan FY2007

1. 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 sub seafloor 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), the People's Republic of China, and the Interim Asian Consortium.

FY2007 marks the transition in IODP from Phase 1 to Phase 2. Phase 1 was in many ways a continuation of ODP in that drilling was mainly carried out by the *JOIDES Resolution*, although it was also supplemented by two important expeditions by ECORD Science Operator (ESO) on Mission Specific Platforms (MSPs). Phase 2 will see the introduction of the Japanese drillship *Chikyu* with its riser capability and the vastly enhanced United States Implementing Organization (USIO)'s riserless drillship. This advanced drilling capability will enable IODP to begin to fulfill many of the objectives stated in the Initial Science Plan (ISP).

The transition to Phase 2 is also accompanied by important changes in the Science Advisory Structure (SAS). The Science Planning and Policy Oversight Committee (SPPOC), which functioned as the Executive Authority of SAS, is being replaced by a smaller committee, Science Advisory Structure Executive Committee (SASEC) which, in addition to representation from the member countries/consortia and the IODP Management International, Inc. (IODP-MI) Board of Governors (BoG), will also have (non-voting) representation from the Science Planning Committee (SPC) and IODP-MI. This interaction will facilitate direct communication between SASEC, which is the executive authority of the SAS and a committee of the IODP-MI Board of Governors, with SPC and IODP-MI.

In order to more efficiently fulfill some of the important objectives of the ISP, the "Mission" concept of proposing and implementing complex drilling expeditions is being introduced. This new concept will provide a longer lead time as well as program support at an earlier time for these expeditions. The "Mission" concept has support from SAS, the Management Forum, and the IODP-MI Board of Governors.

The additional complexity of Phase 2 will require planning for engineering development (for instance with respect to borehole observatories) and developing integrated Data Management systems. These tasks will require the coordinated efforts of the IOs, the relevant SAS panels, and IODP-MI task forces specially formed for this purpose. Another

activity which may start in 2006, but will have a major role in FY2007, will be the consolidation of the core repositories to three: the Gulf Coast Repository (GCR), the Kochi Core Center (KCC) and the Bremen Core Repository (BCR).

In FY2007 we plan to emphasize Outreach to scientists by holding workshops, initiating an IODP Distinguished Scientist Lecture Program, and holding topical scientific symposia. These will be carried out with guidance and advice from SASEC. A strong effort will also be made to invite other countries to participate in IODP.

1.1. Organizational Framework

IODP operation is based on three components:

The Central Management Office (CMO):

IODP Management International, Inc. (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 (USIO) is responsible for riserless ship operations. In FY2007 the *JOIDES Resolution* will be significantly modified and refurbished.
- Center for Deep Earth Exploration (CDEX), which is responsible for the riser-equipped ship, *Chikyu*, and which will be operational for IODP operations in FY2007.
- 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.

According to the principles upon which the program 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 APP-1**). In turn, IODP-MI will distribute SOCs to IOs (drilling operators) and to other subcontractors according to the budgets outlined in this and subsequent IODP Annual Program Plans (APPs). SOC funds will be collected from IODP members, commingled by the U.S. NSF, and provided through contract to IODP-MI (see **Figure APP-1**). Currently, IODP members are: the U.S.A. represented by NSF; Japan, as represented by MEXT; ECORD as represented by the ECORD Management Agency (EMA); the People's Republic of China as represented by the Ministry of Science and Technology (MOST); and the Interim Asian Consortium represented by the Korea Institute of Geoscience and Mineral Resources (KIGAM). The U.S.'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 and the Interim Asian Consortium are associate members.

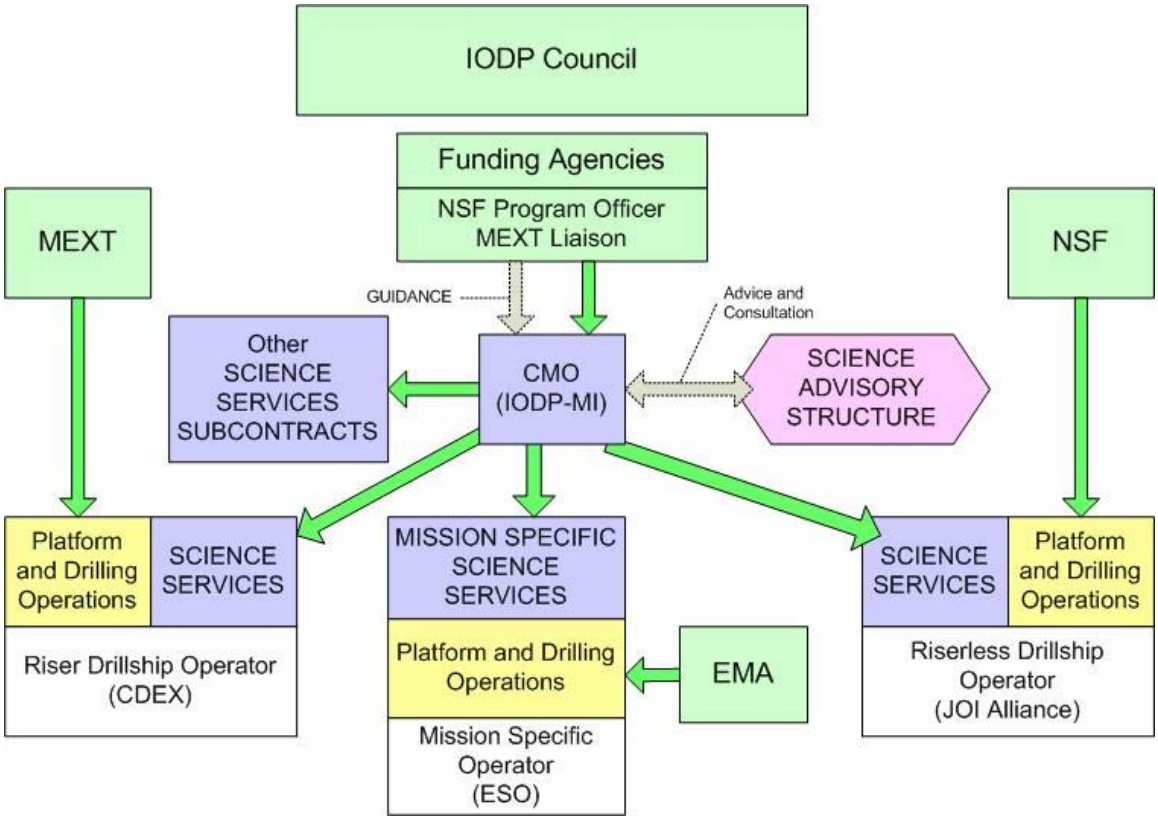


Figure APP- 1: IODP Program Management Structure.

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

As detailed in **Figure APP-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 Joint Oceanographic Institutions (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* to be replaced by U.S. DRILLSHIP SODV in the second phase of IODP), from MEXT to CDEX for the riser-equipped ship *Chikyu* whose activities in support of international operations will start in FY 2007, and from ECORD to ESO for MSP operations.

The technical management relationship consists of the following components:

a. Overall central management tasks and responsibilities for science operations by IODP-MI
b. Science advice provided by the SAS, supported by a planning office at IODP-MI
c. Multiple IOs, as listed above – JOI Alliance, ESO, and CDEX

1.1.1. 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-MI through a 10-year contract with NSF (**Appendix A**). 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 (APP) (**Figure APP-2**).

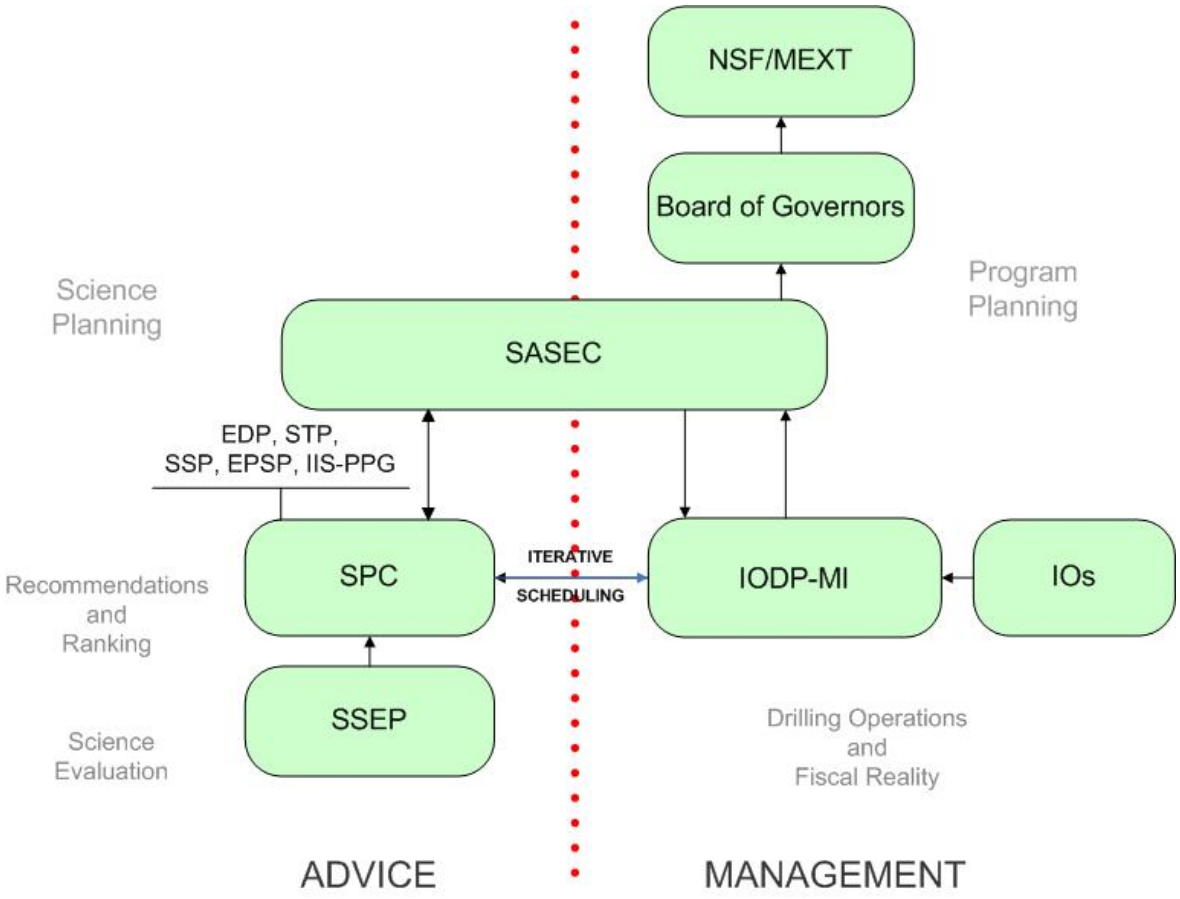


Figure APP- 2: The flow of scientific advice towards expedition scheduling.

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 (SAS) led by the Science Planning Committee (SPC). IODP-Management International, Inc. (IODP-MI) 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 or IOs.

IODP-MI submits the program's Annual Program Plan to SASEC, which is the executive authority of the SAS and a committee of IODP-MI Board of Governors (BoG), for review and approval prior to consideration by the IODP-MI 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, any 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 SASEC 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 APP-1**).

1.1.2. Implementing Organizations

Riserless drilling capability is supplied by the NSF through a contract to the JOI Alliance, consisting of JOI, Inc. (Prime contractor and overall management); Texas A&M University TAMU), (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 (LDEO) 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 FY2007 are presented in the **Appendix B**.

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

MSP drilling, sampling, and logging capability is supplied by the ESO, a consortium led by the British Geological Survey (BGS), (which conducts MSP operations and program-specific engineering development); the European Petrophysics Consortium (EPC) (which provides logging services) and the University of Bremen (which provides repository services for MSP samples and cores). The ESO has a contractual arrangement with the EMA, affiliated with the Centre Nationale de la Research Scientific (CNRS), based in Paris. Details of ESO and its operational plans for FY2007 are presented in **Appendix D**. 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 E**).

1.1.3. Science Advisory Structure (SAS)

The SAS 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 Advisory Structure Executive Committee (SASEC), the Science Planning Committee (SPC), as well as several advisory panels (see **Figure APP-3**; next page), which contain hundreds of scientists from the international geoscience community in IODP member countries and consortia.

The SASEC (Susan Humphris, chair; Yoshiyuki Tatsumi, vice chair) is considered the Executive Authority of the SAS and is composed of representatives from scientific organizations in IODP member countries. SASEC is also a committee of IODP-MI BoG. The SASEC provides scientific oversight and long term planning. An important responsibility of the SPC (Keir Becker, chair; Jim Mori, 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.

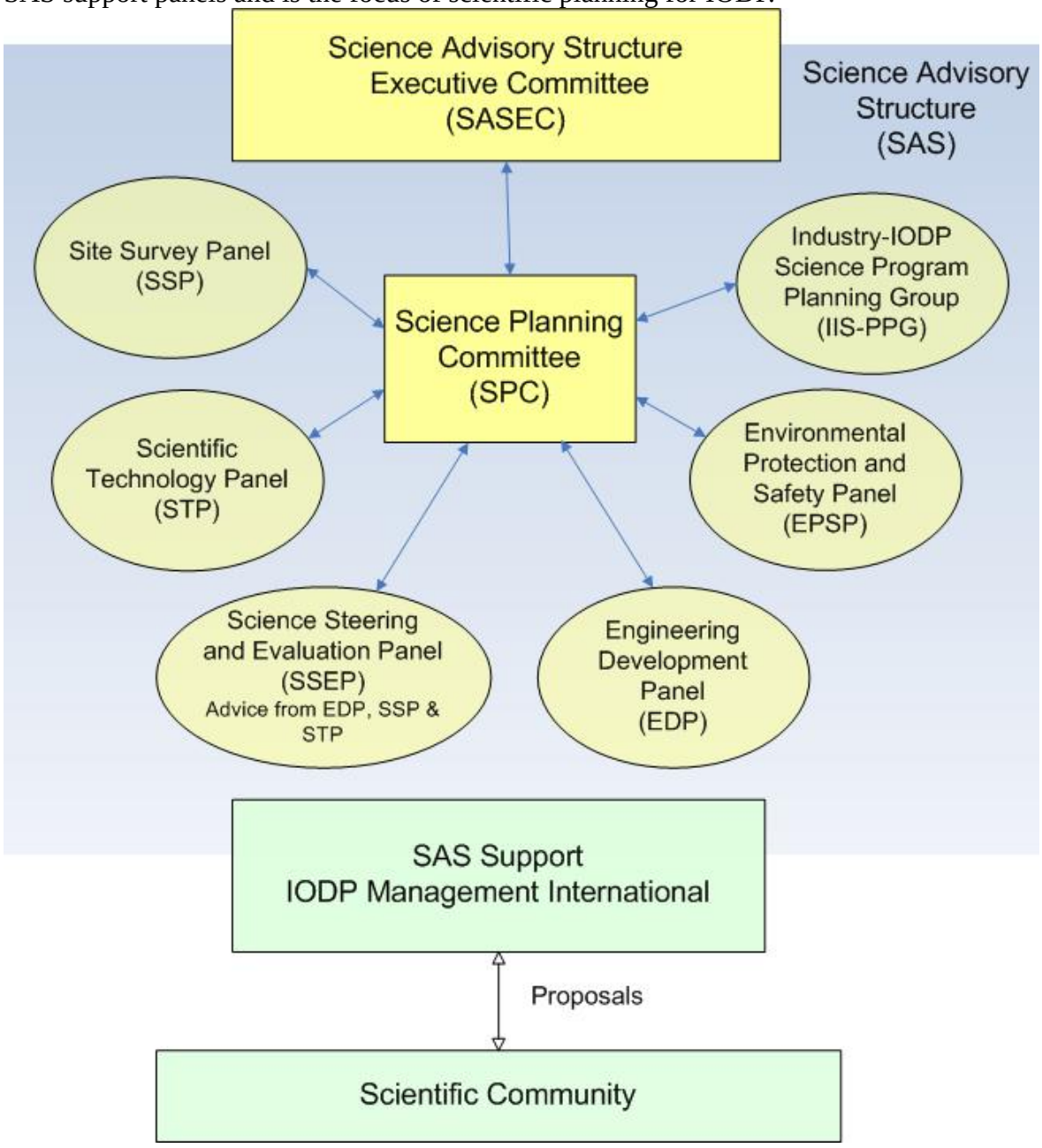


Figure APP- 3: IODP Science Advisory Structure (SAS).

At least one Detailed Planning Group (DPG) meeting will be held in FY2007

2. BUDGET SUMMARY

This Program Plan budget identifies a total program cost of $53,125,333 for FY2007 (see **Table APP-1** and **APP-2**) to meet the high-priority needs identified by the SAS. Of this cost, 50% is considered to be Science Operation Costs (SOCs) and the remaining 50% is Platform Operation Costs (POCs). The SOCs and POCs are defined in Annex I of NSF/MEXT Memorandum on the IODP, and the latest POC-SOC guidance from Lead Agencies is attached as **Appendix H.**

	IODP-MI		IODP-MI Operators & Subcontractors					Total
	IODP-MI	IODP-MI Outsourced	USIO	CDEX	ESO*	Bremen	SIO	
SOCs	$6,129,926	$2,340,000	$9,856,438	$4,637,000	$3,118,200	$301,902	$414,808	$26,798,274
POCs	$0	$0	$5,387,659	$12,909,000	$8,030,400	$0	$0	$26,327,059
Total	**$6,129,926**	**$2,340,000**	**$15,244,097**	**$17,546,000**	**$11,148,600**	**$301,902**	**$414,808**	**$ 53,125,333**

* ESO FY2007 SOC $3,118,200 includes $1,484,300 deferred from FY2006 to FY2007.

Table APP- 1: Summary SOC and POC Budget

Work Breakdown Element	IODP-MI	IODP-MI Outsourced	USIO	CDEX	ESO*	Bremen	SIO	Total
Management & Administration	$5,736,166		$ 1,781,402	$ 245,000	$ 440,400			$8,202,968
Technical, Engineering & Science Support & Engineering Development	$ -	$ 1,650,000	$ 4,337,650	$ 724,000	$ 1,368,100			$8,079,750
Technical, Engineering & Science Support			$ 4,232,625	$ 724,000	$ 1,323,800			$6,280,425
Engineering Development		$1,650,000	$ 105,025		$ 44,300			$1,799,325
Core Curation	$ -		$ 1,899,480	$ 418,000	$ -	$ 301,902	$ -	$2,619,382
IODP Core Curation			$ 866,482	$ 320,000		$ 255,999		$1,442,481
DSDP/ODP Core Redistribution			$ 1,032,998	$ 98,000		$ 45,903		$1,176,901
Data Management		$690,000	$ 680,829	$ 713,000	$ 246,100		$ 414,808	$2,744,737
Publications	$47,000		$ 766,049	$ 173,000	$ 28,200			$1,014,249
Logging			$ -	$ 1,838,000	$ 917,100			$2,755,100
Education & Outreach	$346,760		$ 391,028	$ 526,000	$ 118,300			$1,382,088
Total	**$6,129,926**	**$2,340,000**	**$9,856,438**	**$4,637,000**	**$3,118,200**	**$301,902**	**$414,808**	**$26,798,274**

* ESO/SOC includes $1,484,300 deferred from FY06 to FY07.

Table APP- 2: Requested SOC funds for FY2007

The New Jersey Shallow Shelf Expedition is presently planned to take place during the early summer of 2007, using POC and SOC funds deferred from FY2006. The ESO SOC request includes $1,484,300 deferred from FY2006 to FY2007. The budget guidance from Lead Agency, $25,500,000, becomes $26,984,300 with the ESO/SOC deferred to FY2007.

The budget request for Engineering Development, $1,809,000 in Appendix C (CDEX) is not included in the CDEX column, and instead $1,650,000 is allocated in Engineering Development in IODP-MI Outsourced column. As is described in 5.2.2.2, Allocation of all, some or none of these funds in FY2007 will depend on peer-review of the feasibility study, review by EDP and recommendations and advice from the IODP-MI Engineering Development Task Force.

IODP-MI's budget is $8,469,926**.** The base Management and Administrative budget is $5,736,166. This includes salaries and fringe of IODP-MI personnel, travel, SAS support such as workshops and the subcontract with AESTO, which provides the infrastructures of IODP-MI Sapporo office. The details of these costs are described in Appendix A. The cost of several activities and services, such as the Engineering Development ($1,650,000) and Data Management activities ($690,000) will be supported under subcontracts to IOs or other entities.

The USIO budget of $15,244,097 for FY2007 includes costs for science support activities for the SODV operations scheduled from November 2007 and non-expedition related costs for such things as management and administration, data management, publications, curation, and education and outreach. Of the USIO's total budget, 65% are SOCs, 35% are POCs.

The CDEX budget is $17,546,000 (26% SOC, 74% POC). The CDEX budget includes support for the first *Chikyu* operation for a part of an expedition of Stage1 for the Nankai Trough Seismogenic Zone Experiment (NanTroSEIZE) project, as well as costs for administration and operations personnel, education and outreach, publications, project scoping, and data management. The CDEX SOC budget of $4,637,000 reflects the reduction of $1,809,000 for the proposed Engineering Development for the Long-Term Borehole Monitoring System from the proposed amount in **Appendix C**. The details of the CDEX activities are described in **Appendix C**.

The ESO budget for FY2007 is $11,148,600 (28% SOC, 72% POC). The New Jersey expedition, which was originally planned in FY2006, was deferred to FY2007. This ESO SOC includes $1,484,300 of SOC and $5,995,600 (after $600,000 for mobilization and demobilization cost is removed) of POC deferred from FY2006 to FY2007. The ESO SOC for FY2007 includes the support of the offshore operations associated with the New Jersey Shallow Shelf Expedition, as well as associated costs for management administration, data management, publication and education and outreach. The details of the ESO activities are described in **Appendix D**.

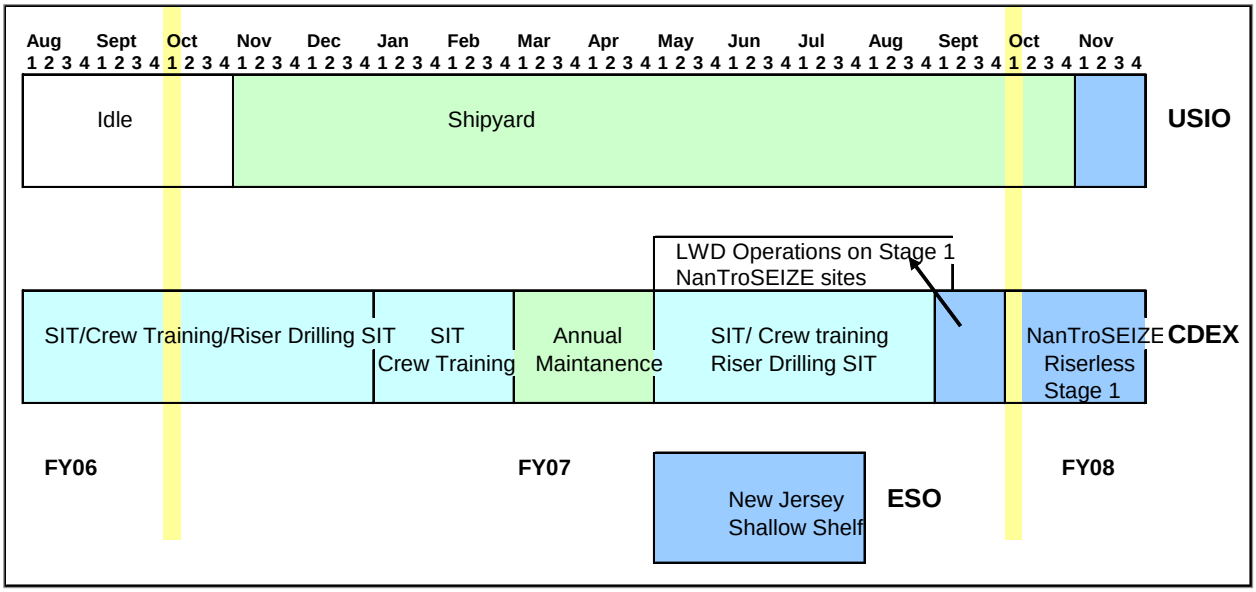
The University of Bremen Core Repository budget is $301,902 (100% SOC). These funds are primarily for personnel and operating costs (consumables, supplies, telecommunications, etc) associated with normal IODP/ODP core sampling and core archiving operations. Funds for curatorial support for MSP operations are identified in the ESO budget. The details of the ESO activities are described in **Appendix E**.

The Scripps Oceanographic Institution (SIO) budget of $414,808 (100% SOC) is for operation and continued development of the Site Survey Data Bank (SSDB). The details of the SIO activities are described in **Appendix F**.

3. FY2007 Expedition Operations

3.1. FY2007 Schedule

The *Chikyu* will begin IODP operations towards the end of FY2007, starting with Logging while Drilling (LWD) operations at six NanTroSEIZE sites. ESO will conduct the offshore portion of New Jersey Shallow Shelf program most likely during the late spring/early summer of 2007. No operations of the riserless Scientific Ocean Drilling Vessel (SODV) are scheduled in FY2007. Details of the individual programs are described below.



Dark blue indicates SOC funded operations.

SIT = Systems Integration Training

Figure APP- 4: Platform operations for the USIO, CDEX and ESO in FY2007.

3.2. FY2007 USIO Operations

There are no SODV riserless drilling operations scheduled for FY2007.

3.2.1. FY2008 Expeditions

In FY2008 USIO will conduct expeditions recommended by IODP-MI Operations Task Force, including Equatorial Pacific 1, NanTroSEIZE 1 and 2, and Juan de Fuca.

3.2.2. Logistics

For planning purposes, Singapore (the assumed location of the shipyard for the SODV conversion) is the initial port of call for the first FY2008 expedition that begins November 1, 2007. A decision on the yard is expected by late summer of 2006. A single-day port call in Honolulu, Hawaii, is assumed as the location for scientists to board the vessel prior to

on-site operations. This strategy eliminates the need for the scientists to spend time on the vessel as it transits from Singapore to Honolulu, Hawaii.

3.3. FY2007 CDEX Operations

NanTroSEIZE

3.3.1. Science Objectives

The Nankai Trough Seismogenic Zone Experiment (NanTroSEIZE) is a highly-ranked complex drilling project (CDP) with the objective to drill into, sample, and instrument the seismogenic portion of a plate-boundary fault or megathrust within a subduction zone thus permitting the observation of the hydrogeologic behavior of subduction megathrusts and the aseismic to seismic transition of the megathrust system. This will involve drilling of key elements of the active plate boundary system at several locations off the Kii Peninsula of Japan, from the shallow onset of the plate interface to depths where earthquakes occur.

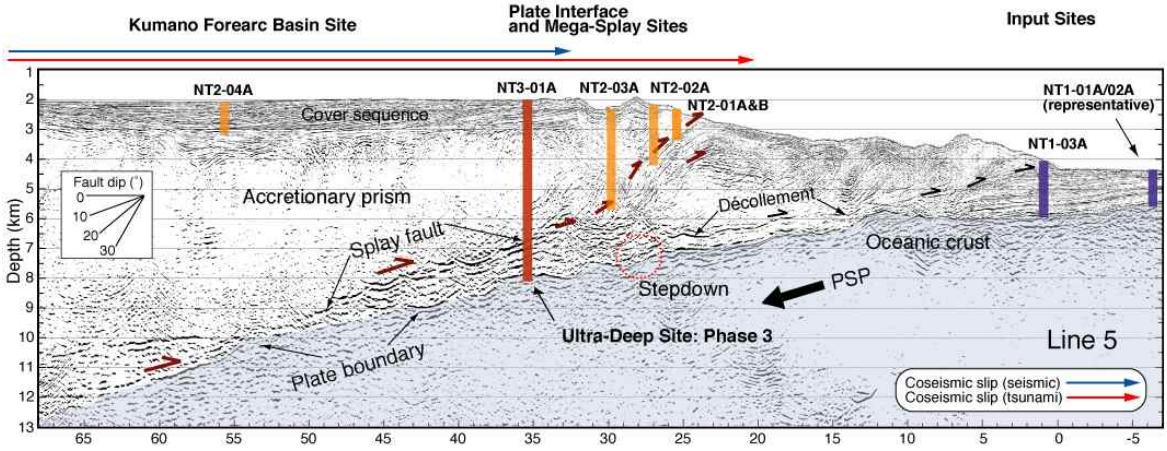


Figure APP- 5: NanTroSEIZE Seismic Cross Section

Overall, eight sites will be drilled (**Figure APP-5**): three target the incoming plate section and frontal thrust of the accretionary wedge, three target the mega-splay fault system at different depths, one will sample the mega-splay uplift history recorded in the forearc basin sediments, and one ultra-deep site targets the plate interface in the seismogenic zone.

Two sites (NT1-01 and NT1-07) are planned to sample the entire sedimentary section and up to 100 m of the basement, respectively on and off of a pre-existing basement high that controlled deposition of thick turbidites in the lower part of the section. Long-term monitoring of pore pressure, seismicity, and other observations in these boreholes will define the hydrological and stress conditions and microseismic activity at the point where sediments enter the subduction zone. Three drill sites targeting the mega-splay fault zone (NT2-01, NT2-02, and NT2-03) and one site targeting the frontal thrust (NT1-03) are designed to document the evolution of fault rock properties and the state of stress, fluid pressure, and strain at different P-T conditions. These sites will access faults from ~500 m to 3500 m depth below the seafloor. Sealed borehole observatories at some of these sites will monitor pore-fluid pressure, strain, seismicity, and other properties

to document the physical state of the fault zone and its wall rock environment. Site NT2-03 will cross the seismically reflective mega-splay at a depth of 3000–3500 m, in a location where slip may have propagated in 1944.

After initial instrumentation at Site NT2-03 site, attention will turn to the 5500–6000 m deep Site NT3-01. Drilling there will pass through both the mega-splay fault system and the basal detachment, bottoming in the oceanic crustal rocks of the subducting plate. In addition to the primary fault zone targets, Site NT3-01 will pass through about 1000 m of the Kumano forearc basin section, including an apparent gas hydrate reflector, several thousand meters of the active accretionary wedge, and a zone of potential underplated rocks below the splay fault. Sites NT3-01 and NT2-04 together will document the history and growth of the Kumano forearc basin, which has formed as a response to slip on the mega-splay fault system, as well as processes of accretionary wedge growth.

Drilling will yield both geophysical logs and physical samples of the rocks, sediments, and fluids. Logging and borehole imaging will determine in situ physical properties and help define stress state (e.g., through borehole breakout and tensile fracture studies). Sampling the inputs and splay faults at several depths, and the plate interface at great depth, will provide key data on the evolution of fault zone composition, fabric development, and lithification state as a function of pressure, temperature, and cumulative slip. Finally, long-term monitoring through downhole instrumentation will yield time-series datasets after the drilling disturbance signals have subsided, possibly including the pre-seismic near term for a future great earthquake. Ideally, thermal signals, fluid pressure, geochemical tracers, tilt and volumetric strain, microseismicity, and time-varying seismic structure will be monitored.

3.3.2. Proposed FY2007 Operations

Drilling activities for NanTroSEIZE are organized into four stages, each of which will include multiple individual expeditions. Stage 1 calls for drilling and sampling at six of the sites: (a) the incoming sediment of the Shikoku Basin and underlying oceanic crust (two sites), (b) the frontal thrust system at the toe of the accretionary wedge, (c) the mid-wedge mega-splay fault system, and (d) approximately 1000-m-deep pilot holes at the two sites planned for later deep penetrations of the seismogenic zone faults (two sites). Comprehensive coring and logging of the boreholes is planned, including extensive use of logging-while-drilling (LWD) technology to obtain high quality logs. One borehole observatory installation is planned for a pilot hole at Site NT3-01 to monitor pore-fluid pressure, strain, temperature, and seismicity above the plate boundary.

Stage 1 includes five expeditions for two platforms, *D/V CHIKYU* and SODV. This stage comprises six drilling sites: NT1-01A, NT1-07A, NT1-03A, NT2-01A, NT2-03A and NT3-01A.

During these Stage 1 operations *D/V CHIKYU* will undertake:

1. LWD for all stage-1 sites.
2. Coring and wireline logging at NT2-03A (upper 1000 m penetration by riser-less drilling for shallow splay fault drilling).
3. Coring and wireline logging at NT1-03A and NT2-01A for drilling into the shallow thrust system.

For FY2007, the *D/V CHIKYU* expedition will conduct an LWD specific operations at all stage 1 sites.

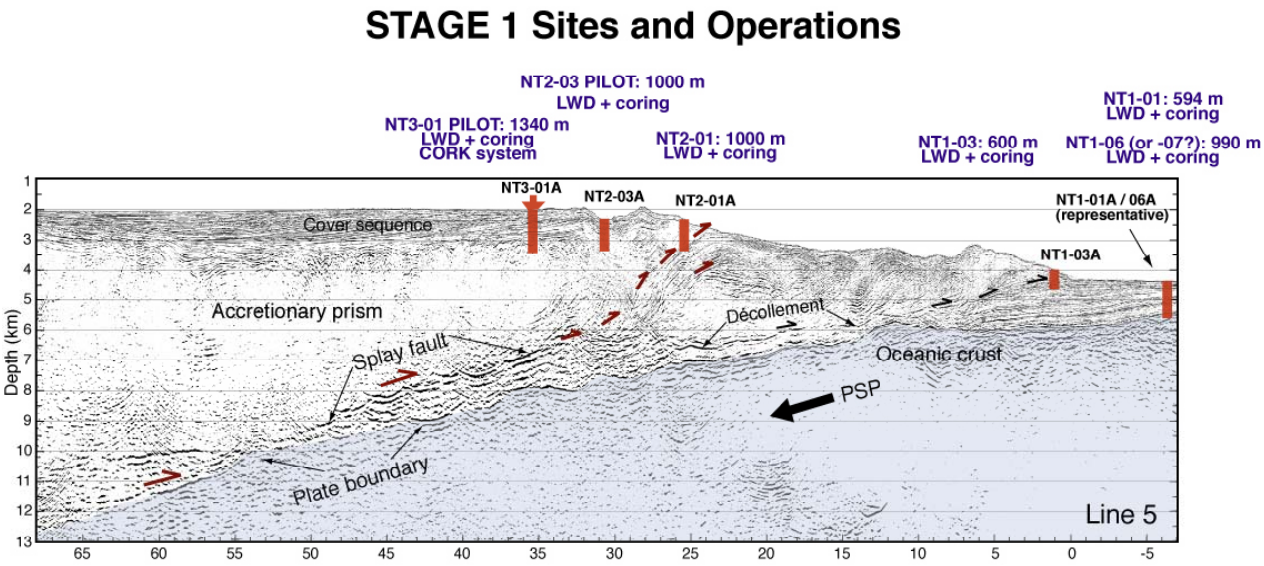


Figure APP- 6: Pre-stack depth migrated seismic line with locations of planned Stage 1 sites.

3.3.3. Logging

LWD is planned for all the Stage-1 sites.

3.3.4. Environment and Safety

Potential problems include hole stability and gas or fluid flow in general. Hazard potential will be addressed by the Environmental Protection and Safety Panel (EPSP) using site survey data (2-D and 3-D reflection seismic profiles). In addition, the CDEX/JAMSTEC Health Safety and Environment system (HSE) will be applied strictly to all operations.

3.3.5. Logistics

The logistical operations required for the NanTroSEIZE CDEX Expedition 1 require an estimated 45 days (five in port, four in transit, and 36 on site).

3.4. ESO FY2007 Operations

New Jersey Shallow Shelf

3.4.1. Introduction

The New Jersey Shallow Shelf Expedition is presently planned to take place during the early summer of 2007, using POC and SOC funds deferred from FY2006. Final timing is subject to contract and platform availability. The associated Onshore Science Party at the

Bremen Core Repository is scheduled to take place after October 1 2007, thus falling into FY2008.

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 (**Figure APP-7**). The coring has the following goals:

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 δ18O glacioeustatic proxy.

To estimate the amplitudes, rates, and mechanisms of sea-level change.

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.

To provide a baseline for future IODP drilling that will address the effects and timing of sea-level changes on other passive margins.

3.4.2. Proposed Operations

A draft prospectus, including a measurements plan agreed to by the Scientific Technology Panel (STP), has been produced with the nominated co-chiefs. It is planned to core three holes each to depths of approximately 750 meters while attempting to maximize core recovery. The platform will be dependent upon ongoing contract discussions, as is the methodology for downhole logging. The cores for this expedition will go to the University of Bremen.

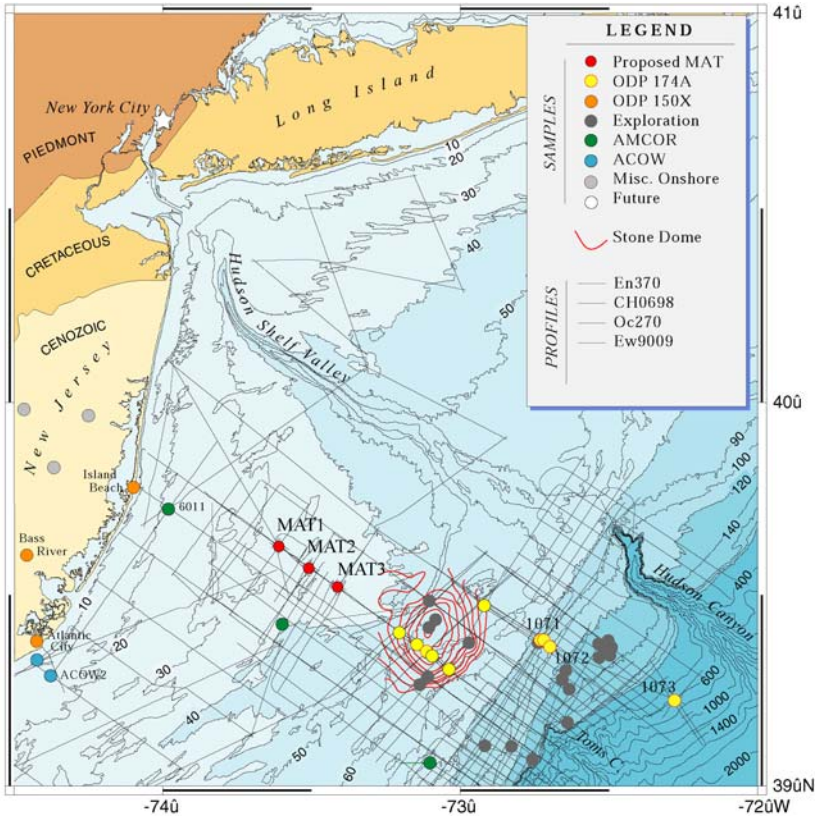


Figure APP- 7: Location map of the NJ/Mid-Atlantic Transect (MAT) and the general location of sites to be drilled for sea-level history. Reconnaissance seismic lines and commercial oil exploration wells are also shown.

3.4.3. Experiments

No downhole experiments other than a (Vertical Seismic Profile) VSP are planned during Expedition 313. Incorporation of this VSP experiment is dependent on environmental constraints and drilling/logging methods.

3.4.4. Environment and Safety

An independent gas-hazard survey has concluded that there is no gas risk. A geotechnical site investigation survey may have to be conducted prior to drilling if a jack-up platform is used.

3.4.5. Logistics

It is estimated that coring and downhole logging will have between 60 and 90 days duration depending on the requirement for casing.

4. Management and Administration

4.1. Goals

The goals of Management and Administration, although generally common to IODP-MI and the IOs, are stated differently in the Program Plan. Almost the entire scope of IODP-MI activities resides in the Management and Administration WBE, while the scope of activities of the IOs span a number of WBEs with Management and Administration being carried out also in each of these WBEs.

The ultimate goals of Management and Administration of IODP related entities, including IODP-MI, IOs, SAS, Program Offices and other subcontractors, are to plan, review and implement the entire IODP activities with maximum efficiency and with minimum resources.

The Management and Administration goal of IODP-MI is to construct and implement the Annual Program Plan and generally, through coordination with IOs and SAS and with the help of Task Forces, manage various aspects of IODP including monitoring operations, overseeing Data Management and Publications and providing support to SAS. These goals also reflect the deliverables in each case.

The Management and Administration goals and deliverables of the IOs reside in managing the tasks in their respective WBEs.

4.2. Major Deliverables

- Annual Program Plan is developed in coordination with Lead Agencies, IODP-MI, IOs, SAS and IODP-MI Board of Governors.
- Quarterly Reports on IODP activities are developed in coordination with SAS, IODP-MI and IOs, and disseminated to Lead Agencies and other IODP related organizations.
- SOC activities are subcontracted between IODP-MI and IOs and other entities, as are stipulated in the Annual Program Plan. The subcontracts are appropriately monitored.
- In accordance with SAS science prioritization, the operation plans of drilling platforms for their expeditions are managed in coordination with IODP-MI and IOs.
- SAS activities are supported by IODP-MI. This includes handling of drilling proposals and implementation of science planning workshops.
- Engineering Development projects are managed in coordination with SAS, IODP-MI, IOs and other subcontractors.
- Development and maintenance of IODP Data Management systems, including Scientific Earth Drilling Information System (SEDIS), Sample Materials Curation Management System (SMCS) and Site Survey Data Base (SSDB), are managed in coordination with SAS, IODP-MI, IOs and other subcontractors.
- Management of IODP publications, including Reports, Proceedings of IODP, *Scientific Drilling* and open literature.

- IODP education and outreach activities are managed in coordination with IODP-MI, IOs, SAS and other subcontractors.
- Management of IODP core repositories.

4.3. Budget

Management and Administration Expense Category	IODP-MI Total	JOI Alliance	CDEX	ESO	TOTAL
Salary and Fringes	1,965,860	1,190,822	124,000	369,400	3,650,082
Travel	905,600	114,292		48,000	1,067,892
Supplies	30,000	28,606	20,000	11,000	89,606
Shipping	17,500	12,361			29,861
Communication	27,000	25,763		2,000	54,763
Contractual Services	196,000	7,500	50,000		253,500
Equipment	7,500	22,435		10,000	39,935
Other Direct Costs	2,586,706	52,621			2,639,327
Total Direct Costs	5,736,166	1,454,400	194,000	440,400	7,824,966
Modified Direct Costs (If applicable)		183,486	169,000		352,486
Indirect Costs/Administrative Fee		327,002	51,000		378,002
Total	**5,736,166**	**1,781,402**	**245,000**	**440,400**	**8,202,968**

Table APP- 3: Management and Administration budgets for IODP-MI and its subcontractors

All the salary and fringes required for 23.3 FTE of IODP-MI staff, as well as travel and other necessary costs, are included in $5,736,166 of Management and Administration of IODP-MI. This also includes AESTO subcontract, which provides the infrastructure of the IODP-MI Sapporo office. The details of these activities are described in Section 4 in **Appendix A**.

The total of 15.4 FTE and $1,781,402 is allocated for SOC activities of USIO Management and Administration. The details of the activities are described in Section 5 of **Appendix B**.

The total of 1.5 FTE and $245,000 is allocated for SOC activities of CDEX Management and Administration. The details of the activities are described in Section 5 of **Appendix C**.

The total of 3.09 FTE and $440,400 is allocated for SOC activities of ESO Management and Administration. The details of the activities are described in Section 5 of **Appendix D**.

5. Technical, Engineering & Science Support and Engineering & Development

5.1. Technical, Engineering, and Science Support (TESS)

5.1.1. Goals

In this sub-work breakdown element, the goal of the IO is to manage, coordinate, and perform the activities and provide the services, materials, and facilities necessary to support the scientific research, marine operations, and shore-based requirements associated with IODP.

5.1.2. Major Deliverables

Each IO in IODP is responsible for (1) providing scientific operational planning for their particular platform in response to the SAS science prioritization, and (2) maintaining the facilities necessary to support this scientific research.

Specific fiscal year IO activities in the area of operational planning include coordinating pre-cruise activities e.g., prospectus development, science staffing, co-chief selection and formulating specific operational programs (e.g., the identification of drill sites, drilling objectives, science experiments, etc) for each scheduled expedition. In addition, each IO also conducts long-range science support and operational planning for out years to provide for more efficient logistics and fiscal planning.

The second major TESS activity for each IO is the establishment and maintenance of facilities and planning for operations of their respective platform. This activity includes logistical support for such things as (a) procurement, shipping and inventory of equipment and supplies; (b) engineering support for maintaining, developing and improving shipboard and shore-based (analytical and drilling) facilities; (c) providing, operating, and maintaining computer and internet facilities and applications development support; and (d) developing and maintaining state of the art drilling and logging equipment and instrumentation.

5.1.3. Strategic Implementation

5.1.3.1 FY2007 Activities

Each of the IOs will plan and implement FY2007 operations, all with a new or improved vessel or platform. ESO will tender a vessel/drill rig to conduct the New Jersey Shallow Shelf program during mid FY2007, while CDEX will start operations on the multi-year, multi-platform NanTroSEIZE CDP in September 2007. To successfully implement these operations (described in Section 3 – Expedition Operations), each IO has developed a logistical, scientific, and engineering ship and shore-based infrastructure. In addition, the IOs will work closely with IODP-MI, Program Member Offices (PMOs), and the other IOs to coordinate planning (via the Operations Task Force (OTF)), implement training of technical staff, and identify common technology needs and solutions.

5.1.3.2 Long-lead time activities

NanTroSEIZE operations will form the bulk of FY2008 CDEX operations and a significant portion of USIO operations. CDEX and the USIO have identified numerous areas where they will work to integrate activities to provide for efficiency of operations and prudent use of fiscal resources. These areas include exchange of technical, operations, and engineering staff and information, potential common procurement activities, common technology proposals, coordination of expedition planning (staffing, operations, etc), and developing effective ship-to-ship communication.

The USIO will also be involved in long-term planning (scoping) for expeditions such as Equatorial Pacific 1, Nan TroSeize1 and 2 and Juan de Fuca.

Three potential programs are the most likely candidates for FY2008 MSP operations, Great Barrier Reef (proposal # 519), Canterbury Basin, (# 600), New England Shelf Hydrogeology (# 637). If selected by the OTF for FY2008 operations, each will require significant planning and scoping operations by ESO to ascertain optimum methodologies and contract specifications. Thus planning for one of these operations would form a significant part of ESO TESS activity in FY2007.

5.2. Engineering Development

5.2.1. Goals

Utilize IO resources to oversee and/or provide engineering development projects in accordance with the long-term engineering needs of IODP as prioritized by SAS.

5.2.2. Deliverables

Three engineering projects are requested FY2007, two by the USIO and one by CDEX. In addition, ESO will be investigating options for a through-the-pipe camera system.

5.2.2.1 USIO proposals

Logging-while-Coring Project ($75,025)

The purpose of this project is to build core tubes and ancillary hardware for use with logging-while-coring (LWC) equipment that was previously deployed as a “proof of concept” during ODP Legs 204 and 209. This project is part of an overall program by the USIO to make this state-of-the-art technology ready for more routine use by all IODP platforms. The project will address the primary shortcomings of the prototype LWC system by building a core tube specifically designed toward improving core quality and quantity.

The Engineering Development Panel (EDP) determined this proposal fit with the ISP objectives, had a reasonable budget, and that it could have a major impact if deployed upon multiple platforms. EDP recommended that IODP-MI support this proposal.

Pulse Telemetry Module Feasibility and Design Study ($30,000)

The purpose of this development is to provide real-time, at-the-bit drilling dynamics data to the driller. The FY2007 budget includes a request to outsource a feasibility and design study for development of a mud pulse telemetry system for the USIO to use on the riserless drilling vessel. A specific deliverable of this study will include an assessment of available off-the shelf technology vs. in-house development of part or all of the system. Our overall strategy is a three-year plan to design, fabricate, test, and implement a mud pulse telemetry system to interface with the Drilling Sensor Sub (DSS) and the Retrievable Memory Module (RMM). The plan will include design and fabrication or purchase of available system components and testing and implementation based on the results of the engineering study.

EDP determined this proposal fit well with the ISP objectives as this development has great potential for improving core recovery and quality and avoiding serious operational difficulties. It would (i) permit a more rapid adjustment of drilling parameters in response to changing hole conditions; (ii) enhance drill string stability; (iii) help to identify unstable well (pressure) conditions; and (iv) guide well stabilization procedures. EDP recommended that IODP-MI support this proposal.

5.2.2.2 CDEX Proposal

CDEX efforts are focused on the initial development and engineering of an enhanced long-term borehole observation system. The major goal is to develop a standard monitoring system that will be used in deep and/or shallow boreholes drilled by IODP (see details of the long-term monitoring system (LTMS) proposal in **Appendix C**). The LTMS consists of five subsystems; Sensor/Control, Telemetry/Cable, Data Recording, Communication/Data transmission and Power Supply. CDEX's proposal addresses Telemetry, Data Recording, Communication, and Power Supply subsystems. The sensor sub-systems will be provided by third-party vendors. If funded, CDEX plans to install and field test the proposed system in the Shimokita-II and NanTroSEIZE stage-2 (NT2-03A) boreholes, tentatively scheduled for completion in early 2007 and early 2009, respectively. SPC recommended support of this LTMS proposal, stating in **SPC Consensus 0505-1**: *"……The committee regards the long-term monitoring system as critical to the strategic success of NanTroSEIZE and other proposals requiring such installations……..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 comprise centerpieces of the first decade of the IODP, the SPC recommends commencing the engineering of this system as soon as possible."*

In FY2006 CDEX proposed to conduct a feasibility study for the development of a standard LTMS infrastructure that would be used in deep and/or shallow boreholes drilled by IODP. EDP (**EDP Consensus 05-09-05: CDEX FY2006 Long-Term Monitoring Plan**) recommended that this feasibility study be supported by IODP-MI. The study (funded at a level of $175,000) focused on initial development and engineering feasibility, with the goal in FY2006 to (1) complete the system architecture and high-level design; and (2) conduct a system architecture and design peer review. The results of this study are near completion and will be subject to a peer review in early June 2006. The peer review

summary will be sent to EDP, from whom IODP-MI will solicit further guidance and advice on whether to continue this project.

The next objective of this project is to produce one engineering prototype and field test the prototype. Detailed plans will depend on the FY2006 feasibility study but tentative deliverables in FY2007 are:

- Component procurement
- Fabrications
- Software development
- Testing and Debugging
- Field test results

Future development (if any) would proceed according to the engineering development implementation strategy outlined in this Annual Program Plan (see next section – Strategic Implementation). Following the further EDP guidance/advice, this project will reside at Step 6 in the Strategic Implementation outline in Section 5.2.3.3 below.

IODP-MI has allocated $1,650,000 for continuation on this project in FY2007. Allocation of all, some, or none of these funds in FY2007 will depend on: (1) a positive peer-review of the feasibility study in June 2006, (2) a positive review by EDP for continuation of this project, and (3) recommendations and advice from the IODP-MI Engineering Development Task Force on how to proceed in Step 6 of the Strategic Implementation outline in Section 5.2.3.3 below.

5.2.2.3 ESO Proposal

ESO Engineering Development efforts will be focused on determining options for a through-pipe camera. Once these options are researched, ESO will present a design plan to EDP for possible incorporation into a future annual program plan (most likely FY 2008). It is envisaged by ESO that this system would incorporate an articulating head to allow the camera to look in the horizontal plane and thus allow a better image of the seabed for improved scientific, environmental and operational effectiveness for MSPs and other platforms.

IODP-MI has allocated $44,300 for engineering salaries to be utilized in this research.

5.2.3. Strategic Implementation

5.2.3.1 Introduction

Engineering and Technology developments for the different platforms will be needed at various stages of IODP. The Lead Agencies have agreed upon a definition for Engineering Development Projects and IODP-MI and EDP have nearly finalized an implementation plan to solicit, receive, review and fund Engineering Development Proposals with IODP.

Below are the details of:

Technical Engineering and Science Support Definitions as agreed upon by the Lead Agencies

General procedures for implementing Engineering Developments projects.

5.2.3.2 Definitions of Technical, Engineering, and Science Support

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. These projects will be budgeted under the Technical, Engineering and Science Support sub-Work Breakdown Element of the Technical, Engineering, and Science Support Work Breakdown Element.

Class B: Engineering Development Projects:

Projects with total development costs over $500,000 in total expenditures are defined as Engineering Development Projects. However, if IODP-MI considers projects less than $500,000 as new projects (i.e., not maintenance or upgrades) it can classify them as Engineering Development and subject to implementation under the protocols defined for this category. 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. These projects will be budgeted under the Engineering Development sub-WBE of the Technical, Engineering, and Science Support WBE.

5.2.3.3 Implementation of Engineering Development

IODP-MI has limited resources in the area of Engineering Development and; therefore, outsources the actual development of all projects. The implementation procedure outlined below has been modified from those described in the FY2006 Annual Program Plan. Over the past year, the Engineering Development Panel (in its first year of existence) has worked with IODP-MI to improve the previous implementation and review process. The proposals identified in this FY2007 Annual Program Plan were developed and submitted prior to the formal implementation of the process outlined below. However, the projects have generally followed the major elements of this implementation strategy and now reside at Steps 5 (USIO) and 6 (CDEX). Engineering Development proposals for FY2008 will be the first projects to follow this new strategy from start to finish.

Engineering Development Project Implementation Strategy:

1) An annual proposal submission process is being developed for IODP-MI to receive proposals from IOs, and unsolicited and solicited proposals from either third parties or IOs. These initial proposals will be conceptual in nature and contain (at a minimum) the following elements:

a. Functional requirements/specifications
b. What problem will be addressed/benefits
c. Fit with the ISP objectives
d. Rough schedule
e. Rough cost
f. Probability of success (Risk Analysis)

2) These conceptual plans/proposals are compiled by IODP-MI and forwarded to EDP (annual summer meeting) for initial review, comment, and prioritization for funding in FY+2. For example, conceptual proposals for FY2008 are presented at the annual summer 2006 EDP meeting. These proposals are evaluated and prioritized by EDP against the IODP Technology Roadmap.

3) EDP's review and prioritization of these conceptual engineering proposals are forwarded to the annual late-summer SPC meeting where SPC approves an engineering plan for FY+2 (in a similar fashion as it approves the platform operational schedules for FY+2). For example, at its late summer 2006 meeting, SPC will approve a technology plan for FY2008.

4) Following the approval of a technology plan, IODP-MI and the IOs (at their annual late summer Annual Program Plan coordination meeting) will discuss possible integration and collaboration with respect to this FY+2 technology plan and refine budgets, timelines, etc.

[NOTE: *This meeting is a new aspect of IODP, where IOs and IODP-MI will hold a three-day meeting approximately 12-15 months before the start of the next fiscal year to determine a vision and coordination for all WBEs in the Annual Program Plan*.]

5) At its annual winter meeting, EDP will provide a final review of the engineering plan that was developed and refined over the previous 6-8 months. This review and prioritization will be not only for new projects in the coming fiscal year but for all Engineering Development projects in the following fiscal year's Annual Program Plan, including proposals/projects in all four stages of development (Concept, Design, Fabrication and Implementation). For the latter three categories, EDP advice will primarily focus on projects deviating from the proposed plan or no longer having a strategic fit for IODP. For example, at its January 2007 meeting, EDP will provide a final review/prioritization of new projects in the FY2008 Annual Program Plan and advice (e.g., termination, funding priority, etc.) for other projects in the FY2008 plan that are in the Design, Fabrication, or Implementation stage.

[NOTE: *The USIO proposals identified in this Annual Program plan reside at this level. EDP has suggested support of these projects for FY2007.*]

6) For engineering projects in the program plan requiring an RFP due to cost and/or where EDP recommends a solicitation for IODP to develop a tool to fill a strategic IODP need, the IODP-MI Engineering Task Force will meet in the spring/summer to assist IODP-MI in assessing appropriate timelines, cost estimates, scope of work, planning requirements, etc. for inclusion into an RFP. If RFPs for projects are not deemed necessary by IODP-MI, then funds for proposed work will be released directly to IOs or third parties at the start of the fiscal year.

[NOTE: *The CDEX proposal resides at this Step. Depending on the outcome (review) of the Feasibility study, IODP-MI will address the funding path for continuation of this project (RFP or sole source) based upon advice from EDP and the IODP-MI Engineering Development Task Force.*]

If required, RFPs are issued in October (at the start of fiscal year) and responses (by IOs and/or other interested third parties) are received and evaluated by IODP-MI in a

December/January/February time frame. Awards for projects are made in early spring (~March).

5.3. Budget

Technical, Engineering & Science Support and Engineering Development Expense Category	IODP-MI	JOI Alliance	CDEX	ESO	ESO Deferred	TOTAL
Technical, Engineering and Science Support						
Salary and Fringes		1,798,546	307,000	814,800	417,400	2,920,346
Travel		360,481		102,000	24,000	462,481
Supplies		195,988	30,000	244,000	60,000	469,988
Shipping		62,645	-	40,000	20,000	102,645
Communication		25,198	-	3,000	3,000	28,198
Contractual Services		297,443	278,000	75,000	75,000	650,443
Equipment		328,050		25,000	15,000	353,050
Other Direct Costs		845,677		20,000		865,677
Total Direct Costs		**3,914,028**	**615,000**	**1,323,800**	**614,400**	**5,852,828**
Modified Direct Costs (If applicable)		601,126	362,000			963,126
Indirect Costs/Administrative Fee		318,597	109,000			427,597
Subtotal		**4,232,625**	**724,000**	**1,323,800**	**614,400**	**6,280,425**
Engineering Development						
Salary and Fringes		-		44,300		44,300
Travel		5,000				5,000
Supplies		5,000				5,000
Shipping						-
Communication		-				-
Contractual Services	1,650,000	35,000				1,685,000
Equipment		-				-
Other Direct Costs		37,500				37,500
Total Direct Costs	**1,650,000**	**82,500**		**44,300**		**1,776,800**
Modified Direct Costs (If applicable)		42,500				42,500
Indirect Costs/Administrative Fee		22,525				22,525
Subtotal	**1,650,000**	**105,025**		**44,300**		1,799,325
Total	**1,650,000**	**4,337,650**	**724,000**	**1,368,100**	**614,400**	**8,079,750**

Table APP- 4: FY2007 SOC Technical, Engineering and Science Support

6. Core Curation

6.1. IODP Core Curation

6.1.1. Goals

The major goals are to operate core repositories in accordance with IODP repository and curatorial policies and procedures and provide services in support of drilling program core sampling, analysis, and education.

6.1.2. Major Deliverables

The major core curation deliverables by the IODP repositories include maintaining facilities for storage and distribution of cores and samples, responding to sample requests from the scientific community and providing maintenance of existing cores and curation of new cores.

6.1.3. Strategic Implementation

The SAS recommended distributing IODP cores on a geographical basis. IODP-MI and the IOs defined the basic guidelines for this distribution (**Table APP-5**).

Final distribution is to be determined by the OTF 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)
KCC	Kochi University	Western Pacific Ocean (west of trench boundaries); Indian Ocean, Kerguelan Plateau

Table APP- 5: IODP Core Redistribution guidelines as recommended by SAS

The staff at the Gulf Coast Repository (GCR), Bremen Core Repository (BCR), and Kochi Core Center repository (KCC) will work closely with each other to coordinate/standardize/document curatorial procedures for IODP cores and samples. Repository staff will interact via Annual Curator meetings, training sessions, through liaison work with SAS panels, and through participation at IODP/IO booths at national/international meetings.

6.2. DSDP/ODP Core Redistribution

6.2.1. Goals

The DSDP/ODP Core Redistribution Project provides for a continuation (and completion) of the geographic redistribution of cores from the West Coast Repository (WCR) at Scripps Institute of Oceanography, East Coast Repository (ECR) at LDEO, Columbia University, BCR to the BCR, GCR and KCC. This geographic distribution is the same as that prescribed for the IODP cores (see section 6.1.3) and thus, when this project is completed, all IODP, ODP and DSDP cores will be archived according to the same geographic distribution.

6.2.2. Deliverables

During FY2007:

- All repositories will take part in the core redistribution.
- The USIO and BCR will continue to provide curatorial training to CDEX personnel.
- The ECR will distribute all ODP/DSDP cores to the BCR and GCR and close.
- The WCR will distribute all ODP/DSDP cores to KCC and GCR and close.
- The GCR will receive cores from the ECR, WCR, and BCR and ship cores to KCC.
- The KCC will purchase remaining core racks and receive cores from GCR, WCR and ECR.

6.2.3. Strategic Implementation

IODP-MI and the IOs have prepared a core consolidation model, which redistributes the DSDP and ODP core collections located at GCR, ECR, and WCR to GCR; BCR and KCC along the same geographic distribution framework as the proposed plan for IODP core collections. **Tables APP-6** and **APP-7** show the current and proposed core redistribution patterns.

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
KCC	Kochi University	0 km	None

Table APP- 6: Current distribution 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)
KCC	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)

Table APP- 7: Proposed redistribution of DSDP and ODP cores

6.2.3.1 Proposed vs. actual FY2007 Core Redistribution:

Table APP-8 shows the proposed timelines associated with this project. These timelines will be finalized by the end of September 2006.

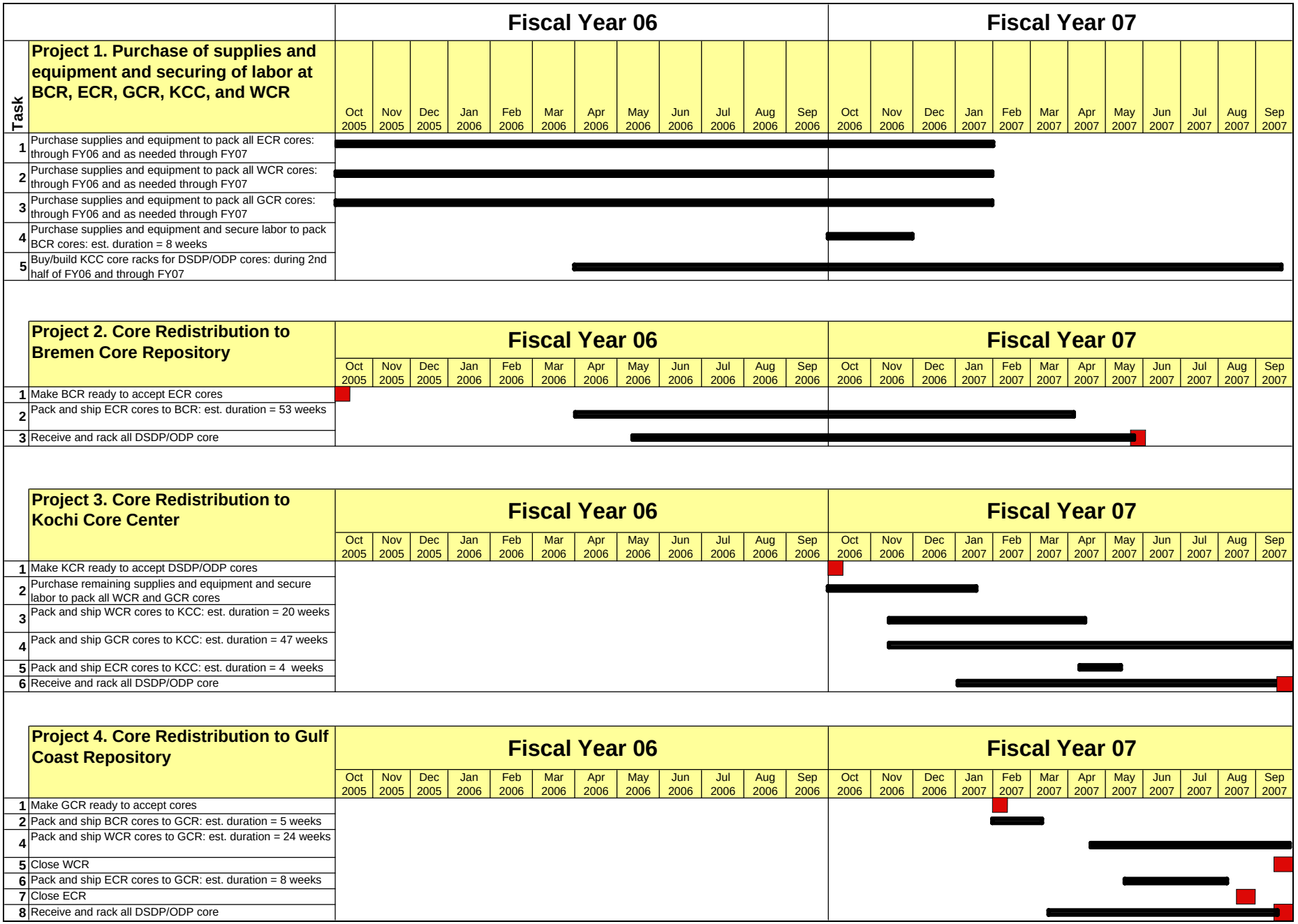


Table APP- 8: Proposed Projects and Timeline for the redistribution of DSDP and ODP cores to the BCR, GCR and KCC.

6.3. Budget

Core Curation Expense Category	IODP-MI Total	JOI Alliance	CDEX	ESO	Bremen	TOTAL
IODP Core Curation						
Salary and Fringes		537,199	128,000		148,778	813,977
Travel		35,701			12,050	47,751
Supplies		24,700	40,000		11,200	75,900
Shipping		22,600	5,000		10,828	38,428
Communication		4,660				4,660
Contractual Services		-	87,000			87,000
Equipment		-				-
Other Direct Costs		241,622				241,622
Total Direct Costs		**866,482**	**260,000**		**182,856**	1,309,338
Modified Direct Costs (If applicable)			198,000			198,000
Indirect Costs/Administrative Fee			**60,000**		**73,143**	133,143
Subtotal		**866,482**	**320,000**		**255,999**	1,442,481
DSDP/ODP Core Redistribution						
Salary and Fringes		262,864			12,735	275,599
Travel		22,500				22,500
Supplies		93,263			4,248	97,511
Shipping		531,171			21,268	552,439
Communication						-
Contractual Services			90,000			90,000
Equipment						-
Other Direct Costs		123,200				123,200
Total Direct Costs		**1,032,998**	**90,000**		**38,251**	1,161,249
Modified Direct Costs (If applicable)			25,000			25,000
Indirect Costs/Administrative Fee			**8,000**		**7,652**	15,652
Subtotal		**1,032,998**	**98,000**		**45,903**	1,176,901
Total	**-**	**1,899,480**	**418,000**		**301,902**	2,619,382

Table APP- 9: Core Curation

7. Data Management

7.1. Goals

FY2007 comprises a number of new challenges and tasks in the area of program data management. Three platform operations and population of the three IODP core repositories with legacy core from DSDP and ODP is planned to start. This major expansion of program activities requires development of major new software packages to integrate IO and core repository specific data and make them available through a single data portal. In addition, development of the SSDB to fully meet contract goals and user needs continues into FY2007, and a new proposal database and an IODP user register are being implemented.

The IOs are responsible for capturing and storing all drilling related data generated during shipboard operations. They use their own specific protocols data bases for this. The system currently used by the USIO is the JANUS system generated during ODP. The system to be used by CDEX is the J-CORES system being developed specifically for *Chikyu* operations. For expedition use (shipboard and shorebased core description) ESO is using DIS in a modified version of the DIS developed for the International Continental Drilling Program (ICDP). ESO generated expedition data are subsequently legacy stored in the World Data Center (WDC) PANGAEA system. The integration of the IO specific expedition data through Scientific Earth Drilling Information System (SEDIS) is depicted in **Figure APP-8**. Sample requests and related core repository data will be handled by the Sample Materials Curation Management System (SMCS). The SMCS and the first phase of SEDIS are to be completed in FY2007.

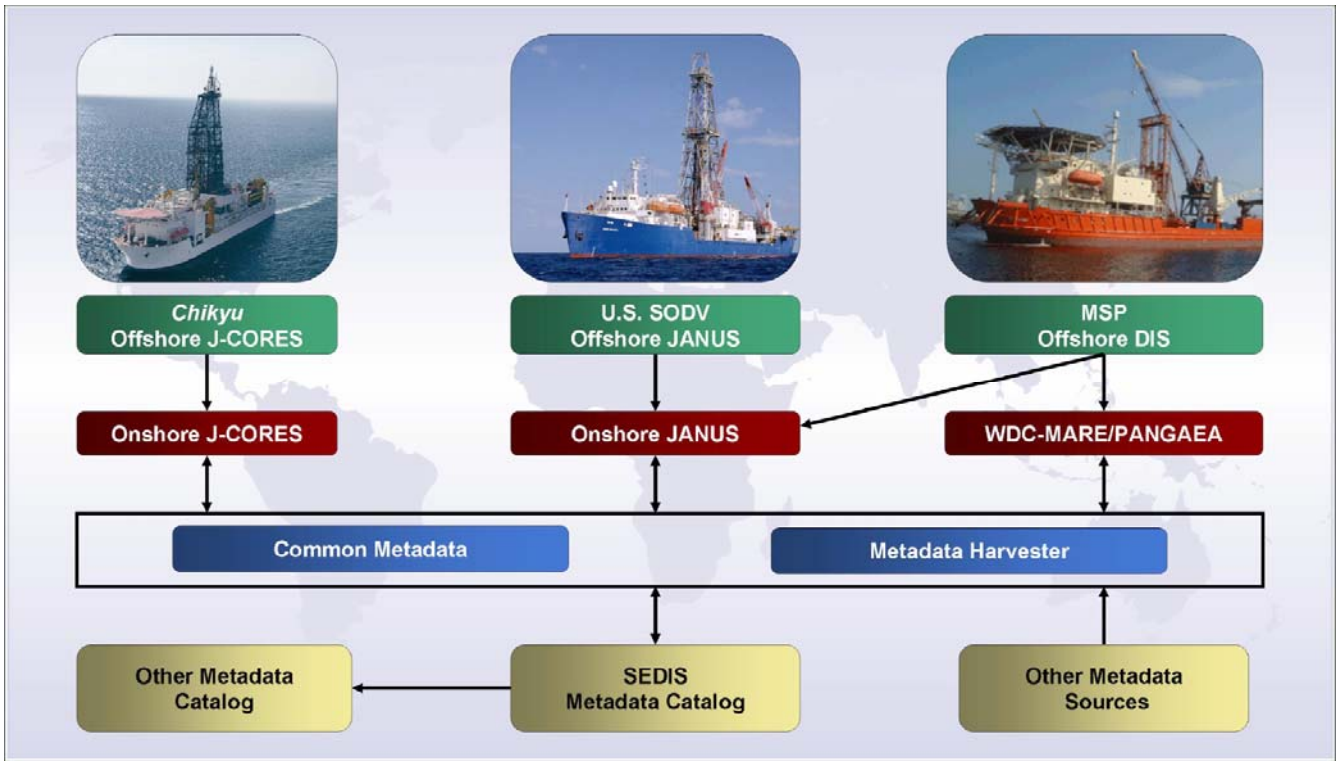


Figure APP- 8: Major Aspects of IODP Data Management

7.2. Major Deliverables

The FY2007 APP comprises the following major deliverables:

- Completion and implementation of J-CORES
- Legacy storing of expedition related data
- Continued development of the SSDB software to fully meet program requirements
- Data reception, curation and data reporting by the SSDB
- Complete implementation of new proposal database
- Complete implementation of new IODP user registry
- Completion of the SMCS for implementation at IODP core repositories
- Development and implementation of SEDIS Phase 1
- Work with the broader community to define long-term program goals

In addition to these program supported goals, the USIO will be working on a major revision of its prime database (JANUS). This will be funded from non-IODP program funds and is not further described in the FY2007 APP. The actual capturing of drilling data during sea operations is not included as data management activity, but included under the TESS WBE.

7.3. Strategic Implementation

The IODP-MI has limited staff resources in the area of data management (**Appendix A**) and therefore outsources the actual development of all data management systems. Advice to define data management strategies and technical specifications for RFPs is obtained primarily from the IOs with additional input from SAS and the program's external community members and experts. Outsourcing takes place through funding of IO activities, through open and competitive RFPs and through sole source contracts as deemed appropriate.

Since the beginning of calendar year 2005, IODP-MI has worked closely together with the IOs in order to establish a strategy for a future data portal for IODP providing a single user entrance point for locating and extracting drilling related data. This work has been pursued through the Data Management Coordination Group (DMCG) chaired by IODP-MI and populated with IO data management specialists and data managers. In March 2006, a Data Management Task Force (DMTF) populated with data management experts in various fields, and for the main part external to IODP, was established. The IOs provide liaisons to the DMTF. The two groups provide complementary advice to the IODP-MI on how to meet the general program requirements and priorities as defined by SAS and the operational realities experienced by the IOs and will continue in FY2007 to provide advice to IODP-MI.

There are significant differences between the three IOs in how they staff their data management activities. CDEX has a limited internal staff of 1.5 Full Time Employees (FTEs), **Appendix C**) and is outsourcing all development. ESO for its more limited operations (**Appendix D**) is supported by a total of 0.92 FTE at BGS, University of Bremen and EPC. The USIO (**Appendix B**) has an internal staff of 17.4 FTEs supporting development of new systems and applications and legacy storing of data. However, in the USIO program plan (**Appendix B**) only storing of data is included in the WBE data management (8.56 FTEs). Development and other data management activities (excluding seagoing data capturing) is included under the WBE TESS with a total of 8.84 FTEs plus 1.6 FTEs (FY2007) that can be directly related to seagoing data capturing.

In the following, each of the deliverables 1 through 9 is briefly described:

1. *Completion and implementation of J-CORES:* CDEX will provide a fully tested and implemented J-CORES system. Seagoing DMCG tests onboard *JOIDES Resolution* and a DMCG review in early 2006 form the basis of final J-CORES revisions. It will be further tested during *Chikyu* shake down cruises in FY2007. These activities are considered a mobilization cost. Included in the FY2007 budget is SOC funding of deploying J-CORES during FY2007 operations. Expenses related to seagoing data management staff is included under TESS WBE.

2. *Legacy storing of expedition related data:* This will be undertaken by the three IOs as described in **Appendices B** through **D.**

3. *Continued development of the SSDB software:* This is delivered by IODP-MI through subcontract with Scripps Institution of Oceanography at Super Computer Center (SIO/SDSC) as described in **Appendix A** and **Appendix F**.
   [The SSDB has been operational from August 2005, and major developments work will continue through FY2007. Further refinements and improvements at smaller scale will continue through FY2010.]

4. *Data reception, curation and data reporting by the SSDB:* Same as (3); one IODP-MI Science Coordinator (part-time) will contribute to this activity.

5. *Complete implementation of new proposal database:* This will be delivered by IODP-MI under subcontract with company KK+W.

6. *Complete implementation of new IODP user registry:* Same as for (5).

7. *Completion of the SMCS for implementation at IODP core repositories:* IODP-MI is funding the USIO in FY2006 to complete the fundamental basis. USIO U.S. DRILLSHIP (SODV) funds will cover completion of the system in FY2007. Limited funds are reserved in the data management budget in IODP-MI for possible development of visualization tools, if required by the users.

8. *Development and implementation of SEDIS Phase 1*: Based on work specifications and an RFP developed in FY2006, SEDIS Phase 1 will be delivered by IODP-MI through a subcontractor. SEDIS Phase 1 is based on metadata to be provided by the IOs. The data management budget includes funds for the subcontractor to develop SEDIS Phase 1 implement the system at the IO servers and the SEDIS server, and for support of the IOs to deliver metadata. Funds are also budgeted for development and implementation of SEDIS Phase 2 through an RFP process. **Table APP-10** is the proposed timeline associated with SEDIS development. More details about SEDIS is given in **Appendix A** and at sedis.iodp.org

9. *Work with the broader community to define long-term program goals:* This deliverable covers a number of activities supported by the IOs and the IODP-MI: Continued DMCG activity, one to two meetings of the DMTF, IO and IODP-MI attendance to relevant community meetings/sessions addressing cyber-infrastructure and sharing of data in distributed databases.

Further details of IO data management activities are included in **Appendices B to D**. The IODP-MI data management budget includes SEDIS funding (subcontractor(s) and IO metadata support) and server support (SEDIS and proposal database hosting). Pending actual work and cost proposals from vendors and IOs, some re-programming of funding between these different activities can be expected.

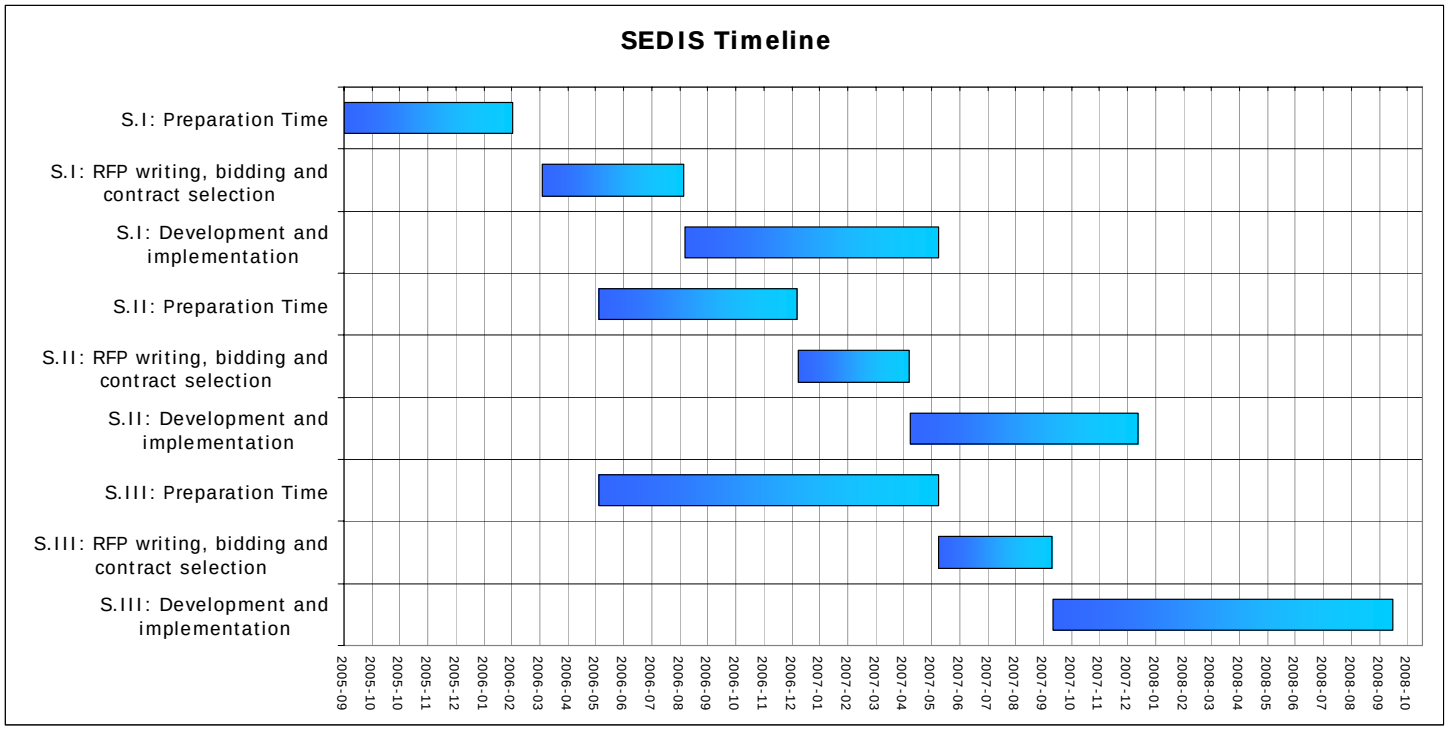


Table APP-10: Timeline for Scientific Earth Drilling Information System (SEDIS)

7.4. Budget

Data Management Expense Category	IODP-MI	JOI Alliance	CDEX	ESO	Scripps	TOTAL
Salary and Fringes		514,468	215,000	125,100	229,983	1,084,551
Travel		33,561		26,000	2,915	62,476
Supplies		6,000	50,000	5,000	22,335	83,335
Shipping		1,500	-	-	-	1,500
Communication		500	-	-	5,340	5,840
Contractual Services	690,000	-	360,000	40,000	-	1,090,000
Equipment		3,000	-	50,000		53,000
Other Direct Costs		74,483	-	-	8,939	83,422
Total Direct Costs	690,000	633,512	625,000	246,100	269,512	2,464,124
Modified Direct Costs (If applicable)		89,278	290,000			379,278
Indirect Costs/Administrative Fee		47,317	88,000		145,296	280,613
Total	**690,000**	**680,829**	**713,000**	**246,100**	**414,808**	**2,744,737**

Table APP-11: IODP SOC Budget for Data Management for FY2007

8. Publication

8.1. Goals

IODP Publications fall into four categories: Reports, IODP Proceedings, publications in open literature, and the *Scientific Drilling* journal published jointly with ICDP (**Figure APP-9**).

The goals are:

- Documentation of IO specific technology and data (Technical Notes)
- Proper scientific documentation of all drilling expeditions (Scientific Prospectus)
- Rapid documentation and publications of major findings (Preliminary Reports)
- Wide community distribution of IODP science achievements and program activities (Scientific Drilling) in a journal type fashion
- Extensive legacy documentation of all expedition results (Expedition Reports of the Proceedings)
- Peer-reviewed publication of post-expedition research results (open literature and data reports in Proceedings)

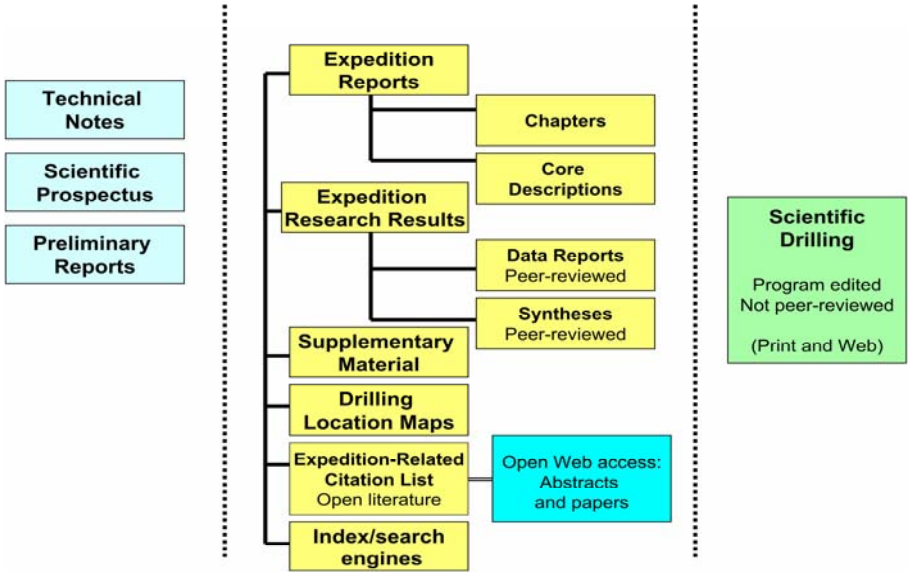


Figure APP- 9: IODP Main Publications

8.2. Major Deliverables

The following major deliverables are covered by the FY2007 APP:

- Approximately seven Scientific Prospectuses to support FY2008 drilling operations
- One Preliminary Report
- One Technical Note
- Three sets of Proceedings of the IODP as per production schedule
- Two issues of the journal *Scientific Drilling*

8.3. Strategic Implementation

IODP-MI oversees all publication activities and is the program publisher. However, except for the journal *Scientific Drilling*, actual editing, production and distribution is outsourced

to the IOs. *Scientific Drilling* is produced and published by IODP-MI in cooperation with ICDP.

Each of the IOs are contractually responsible for the production of the Technical Notes, Scientific Prospectus, Preliminary Reports and the Proceedings for each expedition; thematically related expeditions conducted within a short period of time may be considered one single project for which an integrated set of Proceedings are produced. Scientific Prospectus is due six months pre-expedition. Preliminary Reports are due two months post-expedition and Proceedings 12 month post-expedition.

In FY2007 (and FY2008), the final editing and production of all IODP Preliminary Reports and Proceedings is provided by the USIO in order to secure across program consistency in appearance. CDEX and ESO will deliver the draft material including all necessary content and scientific editing. Tracking of IODP scientific publications in the open literature for inclusion in the Proceedings volume is in FY2007 provided by the USIO.

The journal Scientific Drilling is delivered in both printed and electronic format on the Web. Printed copies (c. 6,000) are distributed by IODP-MI to funding agencies, member institutions, libraries, the PMOs, the IODP scientific community and to ICDP (for further distribution).

Technical Notes, Scientific Prospectus, Preliminary Reports and Proceedings are all published electronically on the Web in html and PDF formats. The volumes of electronic Proceedings are also available on DVD in PDF format. The latter is supplied to funding agencies, libraries, expedition members, and also used for scientific outreach.

8.4. Budget

Publications Expense Category	IODP-MI Total	JOI Alliance	CDEX	ESO	ESO Deferred	TOTAL
Salary and Fringes		619,147	123,000	18,200	6,900	760,347
Travel		55,538		5,000	-	60,538
Supplies		11,549	10,000	5,000		26,549
Shipping	12,000	8,622	-	-		20,622
Communication		8,240	-	-		8,240
Contractual Services	35,000	-	-	-		35,000
Equipment		-	-	-		-
Other Direct Costs		62,953		-		62,953
Total Direct Costs	47,000	766,049	133,000	28,200	6,900	974,249
Modified Direct Costs (If applicable)						-
Indirect Costs/Administrative Fee			40,000			40,000
Total	**47,000**	**766,049**	**173,000**	**28,200**	**6,900**	**1,014,249**

Table APP- 12: IODP SOC Publication Budget for FY2007

9. Logging

9.1. Goals

The goal for IODP IOs with respect to logging is to ensure the acquisition of the required downhole measurement as defined by SAS measurements.

9.2. Major Deliverables

The major deliverables for each IO are (1) to plan and provide for the delivery of logging services aboard their respective platforms, and (2) to provide data processing and interpretation assistance, including requisite training for shipboard scientists. Specific deliverables for FY2007 will be defined over the next four months as operation schedules are refined by the OTF.

9.3. Strategic Implementation

Each IO utilizes a commercial logging contractor to provide for the delivery of logging services to their respective platform. CDEX and the USIO both contract Schlumberger to provide a standard suite of tools, engineer services, software support, downhole tool insurance on wireline tools, and mobilization services; specialty tools for use on individual cruises as needed; a dedicated engineer on the ship for each cruise and support from the base of operations; as well as various Schlumberger home office technical personnel (staff engineer, electronics technician, special services engineer on an as-needed basis). ESO contracts (and vendors) vary with the specific platform but much of the same services are provided for each MSP operation.

The USIO and ESO each maintain a logging consortium to assist with data processing and analysis, data access, scientific staffing, maintenance of logging tools, staff training, etc. For the USIO, the Borehole Group at LDEO oversees subcontracts with Leicester University (LUBR), Laboratoire de Géophysique et Hydrodynamique en Forage (LGHF), University of Aachen, and Ocean Research Institute (ORI) to provide shipboard scientific personnel and special projects.

Similarly, for ESO, the European Petrophysics Consortia (EPC) is managed by the University of Leicester, which provides sub-contracts to the Universities of Montpellier and Aachen. These three EPC institutes are responsible for providing Petrophysics Staff Scientist(s) for each MSP expedition, which involves participation in both the offshore and onshore parts of an MSP expedition. In addition to providing offshore downhole logging service, the EPC also provides and manages core logging facilities for MSP operations.

The bulk of the expenditures for each IO in Logging WBE is for the logging contract (83% for USIO, 95% for CDEX, 94% for ESO), with the remaining funds distributed among salaries, travel, communications, etc. Some personnel costs are also distributed in Management and Administration and the Technical, Engineering and Science Support WBEs.

9.4. Budget

Logging Expense Category	IODP-MI	JOI Alliance	CDEX	ESO	ESO deferred	TOTAL
Salary and Fringes		-	200,000	54,100		254,100
Travel				-		-
Supplies			-	-		-
Shipping			-	-		-
Communication			-	-		-
Contractual Services			1,570,000	863,000	863,000	2,433,000
Equipment			-			-
Other Direct Costs			-			-
Total Direct Costs			1,770,000	917,100	863,000	2,687,100
Modified Direct Costs (If applicable)			225,000			225,000
Indirect Costs/Administrative Fee			68,000			68,000
Total	**-**	**-**	**1,838,000**	**917,100**	**863,000**	**2,755,100**

Table APP- 13: IODP SOC Logging Budget for FY2007

10. Education and Outreach

10.1. Goals

- To maximize E & O effectiveness by coordinating efforts, cross-marketing for smarter promotion, and increasing routine intra-program networking.
- To focus outreach to the scientific community, i.e. to attract and reach a broader segment of the science community with information about IODP.
- To expand the network of science writers, editors, producers, and editorial writers who produce positive, accurate stories/news/features/editorials about IODP science and scientific research, and the impact each has on society and the world.
- To heighten the frequency and critical news value of IODP messages conveyed to the science media.
- To create high-quality multimedia materials that provide strong, positive, visual information about IODP, its vital role in deepening knowledge of the Earth, its drilling operations, and its integrated community of scientists, engineers, and drilling technology experts.
- To reach teaching scientists, other educators in the informal sector, and students with learning materials about scientific ocean drilling, IODP operations, and the science that has emerged from IODP and its legacy programs.

10.2. Major Deliverables

- IODP visibility at four-plus exhibitions mounted at strategically selected scientific conferences, where large populations of Earth and Ocean scientists gather, in America, Europe, Asia, and Japan. In most cases, booths will be cosponsored with the respective IO, based on conference location. Several new exhibition opportunities will be identified and implemented at conferences that attract industry professionals, and where a critical mass of international media gather to cover major science developments.
- A series of news releases to the media in relation to drilling activities, new member nations, and other significant program developments, in coordination with IOs and funding agencies.
- News briefings and phone briefings to news media.
- Workshops that focus on media relations skills: one to be offered to USIO scientists by JOI Alliance E & O specialists, supported by IODP-MI.
- Information kits customized for media representatives and others who request IODP information, consisting of a variety of interchangeable elements, including fact sheets, a program booklet (to be printed in FY2006), platform brochures, DVDs, the program journal, news releases, and copies of impressive media coverage.
- A video supply “library” for IOs and IODP-MI to tap in fulfilling television requests for program footage. The supply will include videos in several formats on four program topics and be available to E & O specialists program-wide to meet the growing volume of media requests for “b-roll,” i.e. background footage of IODP activities.

- Film products, including at least one new DVD short to use at exhibitions, and
- A full-length video feature film to use in launching the NanTroSEIZE expedition(s) and for continuing use in outreach efforts.
- Print materials/brochures for each expedition conducted, i.e. New Jersey Shallow Shelf, Pacific Equatorial, and NanTroSEIZE, in coordination with ESO, CDEX, and USIO.
- Print newsletters for scientists about IO and national office activities.
- IODP flags for the drilling vessels.
- Updated booth exhibition elements for IO and IODP-MI usage.
- A strengthened web portal presence for IODP Education.

10.3. Strategic Implementation

E & O staff at the Implementing Organizations and IODP-MI will coordinate outreach efforts to (1) engage more scientists in the program; (2) heighten visibility of drilling operations and IODP by practicing an integrated approach to promotional activities, particularly in relation to media outreach; (3) enhance IODP's online web presence by continuing to coordinate linkages and increase easy accessibility of online material. A major objective of these integrated and stepped-up efforts will be to prepare for launches of the SODV and *Chikyu* drilling vessels, and IODP's first integrated (i.e. two drilling vessels) scientific expedition, NanTroSEIZE.

In support of drilling operations promotion and outreach, the E & O Task Force's highest priority recommendation from FY2006 will be implemented in the FY2007 program: extending the media reach of E & O specialists through contractual services selected to build the volume of consistent pitch calls to the media worldwide, increase frequency of IODP contact to the media, and faithfully communicate to the media, new and existing program messages that have not yet received sufficient attention. The planned outcome will be a steady and strong "drumbeat" to the media about the scientific ocean drilling program for the entire year prior to the NanTroSEIZE expedition launch. It will ready the media to receive news about NanTroSEIZE and IODP drilling vessels and ESO operations throughout the year and create enthusiasm for the eventual story of the two-drillship expedition off Japan.

The fiscal year will begin with the E & O Task Force meeting in Bremen, Germany. This Task Force has changed from an advisory group with IODP and non-IODP participants to a core working group of E & O specialists and scientists representing each IO and national office. The group develops strategies to improve program networking, coordination of outreach activities, and tactics that maximize, from region to region, the efforts of a small group of outreach professionals. In the coming year, the task force will begin working in subgroups doing cross-promotion and communications planning.

All E & O specialists are involved in advising on and contributing to plans for a video library, video archives, and a feature film production about IODP. A second video-making effort is underway simultaneously, in support of an upcoming Smithsonian exhibition, Oceans Hall. All IO specialists and IODP-MI are involved in bringing various components to the finished exhibition. Coordination of this project will continue throughout FY2007. In addition, the E & O specialists will focus attention and coordinate efforts to add IODP

elements to large international promotional campaigns, i.e. the International Year of the Planet and the International Polar Year.

E & O program specialists also will continue to expand outreach efforts to scientists. A variety of methods, formats, and tools will be employed to support that effort:

- More exhibitions at science conferences where scientists not traditionally involved with IODP meet, plus other more general science conferences that have grown to include a large following of international media.
- Focused efforts on reaching science media, particularly including engineering and technology beat reporters and media outlets.
- Materials will be developed specially for scientists about specific program operations and promoted using existing IODP communication outlets, (i.e. newsletters, the program journal, exhibitions).

One last area of focus will be on improving communication to IODP scientists about IODP, its structure as it concerns them, its E & O resources, and how to access those resources. Enhancement of existing materials to science party members and new pro-forma materials to distribute to co-chief scientists and science party members will be part of the E & O internal communications program plan. These will include materials on specific communications topics helpful to scientists doing research and sometimes interacting with the media.

10.4. Budget

Education & Outreach Expense Category	IODP-MI Total	JOI Alliance	CDEX	ESO	TOTAL
Salary and Fringes	-	133,091	96,000	86,300	315,391
Travel	-	53,500		12,000	65,500
Supplies	-	7,000	30,000	20,000	57,000
Shipping	-	4,200	28,000	-	32,200
Communication	-	-	-	-	-
Contractual Services	252,400	107,700	318,000	-	678,100
Equipment	-	-	-	-	-
Other Direct Costs	94,360	-	-	-	94,360
Total Direct Costs	346,760	305,491	472,000	118,300	1,242,551
Modified Direct Costs (If applicable)			179,000		179,000
Indirect Costs/Administrative Fee		85,537	54,000		139,537
Total	**346,760**	**391,028**	**526,000**	**118,300**	**1,382,088**

Table APP- 14: IODP Education and Outreach Budget for FY2007

11. Appendices

Appendix A: IODP-MI
Appendix B: USIO
Appendix C: CDEX
Appendix D: ESO
Appendix E: University of Bremen
Appendix F: SIO
Appendix G: AESTO
Appendix H: Lead Agency SOC and POC Guidance
Appendix I: Glossary