JOIDES Executive Committee

25 - 26 June 2002

Granada Spain

MINUTES

Prepared by the *JOIDES* Office at http://joides.rsmas.miami.edu
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***JOIDES* EXCOM – GRANADA, SPAIN**
25 – 26 JUNE 2002
PARTICIPANTS

Executive Committee – EXCOM

Chris Harrison (Chair)	Rosenstiel School of Marine and Atmospheric Science, University of Miami, USA
Helmut Beiersdorf	Bundesanstalt fur Geowissenschaften Und Rohstoffe, Germany
Robert S. Detrick	Woods Hole Oceanographic Institution, USA
David Falvey	British Geological Survey, United Kingdom
Dennis V. Kent	Department of Geological Sciences, Rutgers University, USA
Mary von Knorring*	Swedish Research Council
John Mutter	Lamont-Doherty Earth Observatory (LDEO), Columbia University, USA
Neil Opdyke	Department of Geological Sciences, University of Florida, USA
Lisa Tauxe**	Scripps Institution of Oceanography, University of California, San Diego, USA
Robert M. Owen	Dept of Geological Sciences, University of Michigan, USA
Trevor Powell	Australian Geological Survey Organization, Australia.
David Prior	College of Geosciences, Texas A&M University, USA
Eli Silver	Earth Sciences Department, University of California, USA
Paul Stoffa	Institute for Geophysics, University of Texas at Austin, USA
Hidekazu Tokuyama	Ocean Research Institute, University of Tokyo, Japan
MenchuComas*	University of Granada, Spain

(* Comas substituting for von Knorring on morning of June 25th)
(**Tauxe substituting for Orcutt on a one-time basis)

Associate Member Observers

Mathilde Cannat	Laboratoire de Géosciences Marines, Universite Pierre at Marie Curie, Paris, France
Jianzhong Shen	Ministry of Science and Technology, Beijing, China

Liaisons

Keir Becker	RSMAS, University of Miami, (SCICOM Chair), USA
Steven Bohlen	Joint Oceanographic Institutions (JOI), Inc., USA
Jeff Fox	Ocean Drilling Program (ODP), Texas A&M University, USA
Dave Goldberg	Lamont-Doherty Earth Observatory (LDEO), Columbia University, USA
Bruce Malfait	National Science Foundation (NSF), USA

Guests

Manuel Alpiste	University of Granada, Spain
J. Paul Dauphin	National Science Foundation (NSF), USA
Martina Hildebrandt	European Science Foundation
Herman Kudrass	Bundesanstalt fur Geowissenschaften Und Rohstoffe, Germany
Kate Moran	University of Rhode Island, USA
Ted Moore	University of Michigan, (iPC liaison), USA
JoAnne Reuss	University of Michigan, USA
Kasey White	Joint Oceanographic Institutions (JOI), Inc., USA
Minoru Yamakawa	Japan Marine and Technology Center (JAMSTEC), iSAS, Japan

Guests from JOI BOG

Raymond Bye	Florida State University, Tallahassee, USA
David Farmer	Graduate School of Oceanography, University of Rhode Island, USA
Arthur Nowell	University of Washington, Seattle, USA
Brian Taylor*	SOEST, University of Hawaii at Manoa, Honolulu, USA

(* Taylor substituting for Raleigh on a one-time basis)

JOIDES Office

Henny Gröschel-Becker	Editor JOIDES Journal, RSMAS, University of Miami, USA
Elspeth Urquhart	International Liaison, RSMAS, University of Miami, USA

JOIDES EXECUTIVE COMMITTEE MEETING
Granada Spain 25 - 26 June 2002

EXCOM Consensus 02-2-1: EXCOM approves the meeting agenda.

EXCOM Motion 02-2-2: EXCOM approves the minutes of its January meeting in Santa Cruz.
Cannat moved, Silver seconded. 15 in favor, unanimous.

EXCOM Motion 02-2-3: EXCOM agrees that ECOD should retain full member status based on their 99.5% contribution together with their attempts to have other countries join their consortium.
Beiersdorf moved, Falvey seconded, 14 in favor, 1 abstention (Comas).

EXCOM Motion 02-2-4: EXCOM accepts the revised version (6/25/02) of the PEC VI Charge and Terms of Reference.
Falvey moved, Stoffa seconded, 15 in favor, unanimous.

EXCOM Motion 02-2-5: The JOIDES Executive Committee would like all ODP member countries to be full members of ODP. However, in view of the reduced contribution from Canada to the PACRIM consortium and along the lines suggested by EXCOM Motion 98-2-8 the EXCOM recommends that the consortium be given associate member status in FY 2003, with appropriate privileges as laid down by EXCOM in a previous motion, unless contribution is raised to the level contributed in FY2001.
Tauxe moved, Detrick seconded, 14 in favor, 1 abstention (Powell).

EXCOM Consensus 02-2-6: EXCOM congratulates TAMU, SCICOM and the shipboard scientists for the interesting discoveries and the excellent science and installation done on Legs 199 – 201 including the first dedicated drilling exploration of the deep ocean biosphere.

Consensus by the non – U.S. EXCOM Members: The non - U.S. members of EXCOM wish to express their sincere thanks to NSF for making provisions to maintain core repositories and data bases of ODP, and for their willingness to give the non - U.S. ODP communities full access to the cores and data after the termination of ODP.

EXCOM Consensus 02-2-7: EXCOM wishes to recognize and acknowledge with deep gratitude the very substantial and sustained contributions of Dr Helmut Beiersdorf to the Ocean Drilling Program. For almost 10 years since his first meeting in 1993, Helmut has generously offered his extensive scientific knowledge and keen insights to all EXCOM deliberations. His dignified leadership in ODP, and in the preparations for IODP, have added greatly to the progress of ocean drilling science. Friends and colleagues on EXCOM, and across the ocean sciences community will miss Helmut's commitment, energy and enthusiasm, but join together in offering sincere best wishes for the future.

EXCOM Consensus 02-2-8: The ambience of the JOIDES EXCOM meeting in Granada could not have been better. To have a meeting within a stone's throw of Alhambra and to have dinner with such a wonderful view will be hard to beat. Thank you Manuel, Menchu and Mary.

JOIDES EXECUTIVE COMMITTEE MEETING

GRANADA SPAIN

25 – 26 JUNE, 2002

MINUTES

TUESDAY	25 JUNE	09.00 hrs

1. Welcome and Introduction

Harrison called the meeting to order at 09.00 hrs and welcomed the participants who then introduced themselves. Menchu Comas, as local host and ECOD representative, welcomed the meeting participants and outlined the business and social logistics of the meeting.

2. Approval of Agenda

Harrison assumed that all present had access to a copy of the agenda.

EXCOM Consensus 02-2-1: EXCOM approves the meeting agenda.

3. Minutes and matters Arising

EXCOM Motion 02-2-2: EXCOM approves the minutes of its January meeting in Santa Cruz.

Cannat moved, Silver seconded. 15 in favor, unanimous.

4. Country and Consortium Reports

4.1 ECOD

Comas had nothing to add to the report in the agenda book.

4.2 France

Cannat had nothing to add to the report in the agenda book.

4.3 Germany

Beiersdorf announced that this would be his last meeting and that Kudrass would replace him.

4.4 Japan

Tokuyama had nothing to add to the report in the agenda book.

4.5 Pacific Rim Consortium

Powell commented that it was estimated that the shortfall from Canadian membership this year will be $181k and the material relevant to the IODP bids has been superseded by events.

4.6. The People's Republic of China

Shen had nothing to add.

4.7 United Kingdom

Falvey had nothing to add to the report in the agenda book.

4.8 U.S.A.

Malfait had nothing to add to the report in the agenda book but requested a correction to the NSF Country Report on page 22. The last sentence of the first paragraph should read "The Geosciences Directorate increases from $563.6 M to $609.47 M (or 8.4%)".

5. Review of Membership Status

Harrison referred to the EXCOM Motion 98-2-8 outlining how countries could attain full membership, basically requiring them to do three things: i) contribution must be equal or greater than 5/6 of the full membership, ii) they must make a commitment to work towards full membership, and iii) they must have made significant progress each year. EXCOM are required to review the situation annually. Harrison then asked for a statement from each of the 2 members in this situation.
Comas responded on behalf of ECOD and referred to the letter to EXCOM from von Knorring. This letter provides a summary of activities directed towards invitations to other countries to join the consortium, e.g. Greece, Turkey. ECOD currently provides 99.5% of the full membership and can maintain this level. Harrison asked for comments or questions and suggested acceptance of ECOD as full members.

EXCOM Motion 02-2-3: EXCOM agrees that ECOD should retain full member status based on their 99.5% contribution together with their attempts to have other countries join their consortium.

Beiersdorf moved, Falvey seconded, 14 in favor, 1 abstention (Comas).

Powell responded on behalf of PacRim and explained that the decline in the exchange rate has meant that member countries had to increase their contributions in terms of

global currency. Canada cannot maintain a one third share in the consortium for the fiscal year 2002 and the shortfall therefore is $181,000. This means that PacRim will fall below the 5/6th contribution required. Despite attempts to gain support from other countries such as India no support has been forthcoming from any other countries.
Harrison commented that it would only be fair to other countries if the status of the PacRim consortium was changed to that of Associate Membership although he acknowledged that this would be a hardship for the other two countries in the consortium. Harrison invited discussion. Malfait asked for details of the Canadians decision but Powell felt he was not well enough informed to be able to answer questions about Canadian internal politics. Falvey stated that he felt uncomfortable with the situation, especially as he had experienced a similar situation in 1992 when all members of a consortium suffered because of a lack of resolve by one member. Falvey requested that a vote on this issue be postponed until the afternoon. Harrison consulted the panel and agreed to postpone the vote. The vote was subsequently postponed again until the next day.

Wednesday June 26th - continuation of discussion from June 25th
Falvey suggested that the motion to reduce the PacRim status to associate membership, in fairness to the other members of the PacRim consortium, should identify Canada as the country that has not met the required funding contribution level. Moran stated that the Canadians were aware of the implications of their lack of success in funding provision. Malfait commented that this was a problem also faced by other consortia, i.e. some countries failed to perform in providing an equal contribution to the other members of the consortium.

EXCOM Motion 02-2-5: The JOIDES Executive Committee would like all ODP member countries to be full members of ODP. However, in view of the reduced contribution from Canada to the PACRIM consortium and along the lines suggested by EXCOM Motion 98-2-8 the EXCOM recommends that the consortium be given associate member status in FY 2003, with appropriate privileges as laid down by EXCOM in a previous motion, unless contribution is raised to the level contributed in FY2001.

Tauxe moved, Detrick seconded, 14 in favor, 1 abstention (Powell).

6. Management and Operations Reports.

6.1 NSF Management Report.

Malfait stated that most of the important information was in the agenda book. In terms of 2002 activity, financing has already been discussed and the only remaining problem is the PacRim contribution level, which will drop below 5/6th. The JOIDES will decide later on how it chooses to handle the JOIDES participation. NSF provided guidance to the subcontractors early in the year in terms of vessel staffing for PacRim consortium members and this is not expected to change based on the final contribution level. Staffing is pro-rated based on the contribution level as is representation for JOIDES activities. The budget for 2002 has been increased to $47,985,259 based essentially on three factors:

1. Costa Rica rescheduling and carrying forward of related resources into 2002.
2. Remaining fuel funds due to price decrease.
3. Allocation of part of the fuel funds to accommodate additional costs in the wake of 9/11 for such things as increased insurance costs.

The program is funded through September 3rd 2002 and remaining international contributions will be used for funding for the remainder of the year through September 30th 2002.

With respect to the last year of operations, 2003, NSF have provided JOI with a target budget of $45.3M, a slight decrease, and this is basically to bring the ship out of service at the end of the year. There is funding approval from NSF only through this fiscal year. The 5 year plan was requested from JOI, EXCOM reviewed that plan at the January meeting in Santa Cruz. NSF established a review panel to review that plan and it will be finalized in August. It is designed to fund all the phase out activity of the program. The existing contract terminates at the end of 2003 and the plan is to extend the contract through 2007 for the necessary phase out activities. It is NSF's intention to fund the phase out activities with NSF money but during that period they will be maintaining full international access to data and samples. The overall review can be summarized under four main headings:

1. FY 2003 Drilling Program – this was commended by the panel as an excellent plan.
2. Vessel demobilization including equipment refurbishment and maintenance – the panel strongly supported this aspect of the plan.
3. Continuation of scientific services – The panel found the plans acceptable but expressed concern if initiation of IODP is delayed. They recommended contingency planning.
4. Archive of ODP data – the panel were concerned about the plans and schedule for ultimate archiving of ODP data and technical material.

Malfait stated that possibly the biggest concern of the review panel was the archiving of data. The panel considered that possibly more planning should have been undertaken and that a distinct document covering all phases of archiving should have been presented. NSF has communicated the panel's concerns about this topic to JOI and Malfait thought that Bohlen would be discussing this issue later. Malfait added that NSF does not see this as a big problem but some additional resources will be needed

Harrison asked if the problem of data archiving was a general problem or if it was specifically related to the transition to the new program. Malfait replied that it was the responsibility of any program such as this to organize data so that it could be accessed, for example, 20 years hence, in a safe reproducible archive. Tauxe stated that it is now difficult, and in some cases impossible, to obtain DSDP data. Malfait thought that it was important to ensure there was no possibility of a similar situation occurring with ODP material and that Bohlen would be addressing this issue later during his presentation. Beiersdorf commented that Germany was grateful to NSF for allowing continued full access to data and samples in the period after the end of the drilling phase.

6.2 JOI Management Report

Bohlen outlined his presentation which would cover: Planning for fiscal years 2003 - 2007; Planning for Arctic Drilling; PEC VI; Port Calls; Progress with the Department of Energy (DOE).

Bohlen reported that at the end of April 2002 a review panel convened by NSF met to review the JOI 5 year plan covering the last year of science operations and the 4 years of phase-out activities. The panel made eleven primary recommendations that JOI was asked to comment on. After extensive consultation JOI has since responded to these recommendations in a letter to the Program Director. This letter is part of a package, which will be reviewed by the National Science Board at its August meeting, and JOI then expects approval by the Board of the next five years. Basically the panel focused most of its comments on legacy and data preservation issues, including both ODP and DSDP data. They asked specifically about which DSDP data, especially analogue data, could be archived in digital form. The Board also required information regarding existing data holdings and their utility. JOI is currently addressing these requests. The panel was concerned that if transition to IODP did not occur in an expeditious manner, resources should be made available for continued availability of ODP data, web site maintenance, core repositories and the like. They recommended that the publications database be available, that technical data and summaries of technical information such as drawings, blueprints etc. be transferred to digital form and preserved. Bohlen said that these are all issues that JOI is dealing with. Transferal of blueprints to Computer Assisted Design (CAD), programming and so on are ongoing projects that JOI is working on at the moment. JOI has made requests to NSF for contingency funds if IODP does not come on line as anticipated. In JOI's review of the program in January one of the assumptions with which JOI, TAMU and Lamont moved forward was that IODP would evolve in the manner expected and that things such as databases would be transferred to the new program. In the event that things do not happen in the way anticipated additional funds have been requested from NSF of about $1M to run the core repositories, make sure that samples are maintained, that sample requests are processed, that a sample catalogue is maintained and so forth. $300,000 of the funds requested are for the continuation of the *JANUS* database, scanning DSDP core photos into the database and making sure that all the micropaleontology data migration takes place. There is already a catalogue of data that has been migrated including physical properties and geochemistry. Bohlen stated that in accord with EXCOM's wishes JOI and its partners continue to address issues, look at possible resource requirements, look at potential for ensuring the data are properly archived and easily accessible and collated in a proper way. These activities are continuing and it is an issue JOI is keenly focused on. The interim director (Pisias) spent last week at TAMU talking to the directors and working with SciMP in addressing data issues. JOI plans for all data to be transferred to National Geophysical Data Center (NGDC) as flat ASCII files so that, as a minimum, all data that are digital will be transferred to NGDC. There is discussion about how many image data are still needed to be input to the database. Bohlen added that there is still a lot of work to be done because preserving every single piece of data would require an enormous amount of resources. He pointed out that a balance between archiving critical and important data as opposed to resource availability must be maintained. The NGDC will be the permanent repository of

flat ASCII files so that the data can be obtained without dependence on proprietary data systems. SciMP have been engaged in a whole variety of data issues and the interim director is focused on this and will have a meeting of JOI managers in the fall to assess the situation and what remains to be done. A working group of community members will be formed to provide guidance for JOI as the formal JOIDES structure comes to a close in September 2003. Then, as discussed in January 2002, it is the intention of both EXCOM and JOI to have the PEC VI look at all of the phase out plan, data archival plans, and to comment on them. There will be substantial community involvement and abundant review of these plans.

Harrison asked how much extra money will be forthcoming from NSF. Bohlen answered that it depended on how IODP develops. JOI had contingency plans and have asked for c. $3M of additional resources on a contingency basis. Malfait produced an overhead of the funds for 2003 through 2007 showing the budget and Bohlen said the budget would be reviewed as always on an annual basis and the additional resources may or may not come into play. Harrison clarified that it depended on how the new program developed. Bohlen stated that it was JOI's intention to transfer databases in their active form to the new program so that there is a seamless transition in which case the resources needed to maintain these databases would then be the responsibility of the new program. He added that, after the final drilling leg (Leg 210) there would still be a period of time needed to migrate the data and there is work that needs to be done by Lamont and TAMU following the ending of the final leg. Once that work is complete assuming that there are entities in the new program that are identified and ready then these databases will be transferred. Harrison asked if the working group was going to be set up after the end of 2003 and therefore would not be international. Bohlen answered that at the January meeting EXCOM had talked about JOI convening groups to help with specific projects and also that JOI had never operated on a national basis in terms of managing ODP. Harrison asked how the membership of the working group would be constrained. Bohlen answered that what would be desirable in consultation with iSciMP would be to make sure that they had expertise in groups that advise JOI and that the expertise was tailored to the needs that they have. Ideally they would like to work with the IODP advisory structure in all of these activities. Harrison asked if there were any other questions. He then asked if this represented a sufficient change to the 2004-2007 Program Plan as EXCOM reviewed it. Bohlen said that JOI was asking for contingency resources from NSF based on the review of the 5-year plan.

Bohlen then continued by discussing the plans for Arctic Drilling. He said that, as reported in the January meeting, JOI had let a subcontract to the Swedish Polar Research Secretariat (SPRS) to engage in more detailed planning for a potential program to drill the Lomonosov Ridge. JOI continued to be involved with the Joint European Ocean Drilling Initiative (JEODI). A number of meetings have been held, vessels have been identified and plans are developing. The objective is to develop plans so that if the project is highly ranked by iPC at its August meeting and, if resources are identified, this project can move forward. The reason that JOI is pursuing this course is that this project was ranked number 1 by SCICOM for two years running, and at the latter meeting it was ranked number 1 by a statistically significant margin. JOI therefore thought it was

necessary to invest $200k of resources to do the necessary planning so that the proposal can go forward. All indications at this stage are that this project is technically feasible. Malfait queried the report on pages 41 and 42 of the agenda book, asking for clarification as to the timing of the responsibility for the handover of the project management, i.e. when does the planning stop and ODP and JOI's responsibility end? Bohlen answered by saying that there are not at this stage any firm contractual commitments. There will be a point at which JOI will have to step back and whoever is actually going to manage the project will have to step forward to write contracts and to make the contractual obligations. Bohlen anticipates that that would happen after the time that there is a decision on the part of iPC, i.e. that this proposal is of such high importance that they are willing to say that the planning should definitely go forward. This decision will not be made before August 2002 at the earliest and a time, probably this winter at the latest, where commitments have to be made for vessels contractually to work in the high Arctic in the summer of 2004. This fall will therefore be some sort of transition period and an operator will need to be identified within IODP. There were no other questions on this issue.

PEC VI. Bohlen referred to JOI's comments in the agenda book report on pages 42 - 43 in response to the draft charge for PEC VI and the plans to approve the Terms of Reference during this meeting. He went on to report that JOI has responded to this draft charge and intends to conduct the PEC beginning in the latter part of 2003, towards the end of the active phase of drilling of the program, so that the report can be issued very early in FY04, in time to effect or modify any phase out activities. He stated that the PEC will focus substantially on phase out activities. Harrison requested Bohlen to comment further on this matter during item 6.5.2 of the current agenda.

Bohlen moved on to the fourth point of his presentation which was port calls and said that the San Francisco July port call was reluctantly cancelled only after a very careful review of the situation, i.e. that of the possible longshoremen's action. EXCOM should be assured that no options were overlooked in the assessment of the situation. The relocation of the port call had been an enormous disappointment to JOI as they had prepared to make it a very significant event. JOI had had a great deal of help from U.C. Santa Cruz, and people involved in education in the State of California. Planning continues for the final port call in the U.S. at San Diego scheduled for September 6th - 9th 2002. The port call will focus on a retrospective of 30 years of Ocean Drilling in conjunction with the Scripps centennial celebrations. Tentative plans include invitations to some of the co-chiefs from early DSDP and ODP legs and representatives from Global Marine and to have a significant celebration of ocean drilling. JOI are also helping Canada with the rescheduled port call in Victoria. Mutter asked if some of the planned San Francisco events would be transported to Victoria. Bohlen replied that events such as school tours and receptions could not be transported but JOI was trying to reschedule a number of tours of the ship by groups such as representatives of the DOE and the Japanese National Oil Company (JANOC). White would discuss these plans later (item 6.5.1.). Bohlen added that it was also planned to have NSF personnel visit the ship during Leg 204.

The final point in Bohlen's presentation was a report on progress with the co-operative project with the DOE. He recalled that during the January 2002 EXCOM meeting JOI had reported that it was concluding what is now a $1.2M co-operative agreement with the DOE for the development of sampling tools for gas hydrates. These tools have been tested on previous legs and are ready for deployment on Leg 204. There will be representatives from the DOE onboard during Leg 204. Successful deployment of these tools will be a high visibility issue and will make a significant contribution to the ODP profile.

In conclusion Bohlen invited questions either from this presentation or the written report.

6.3 ODP Operations TAMU Report

Fox assumed that everyone had had a chance to review the TAMU report in the agenda book and therefore presented only a few additional points and highlights. He reported that the co-chiefs for the remaining ODP Legs, through Leg 210 had now all been confirmed. Staffing of the scientists is not yet complete. A statistical survey of the breakdown of the total number available ODP berths for co-chiefs from Leg 101 to Leg 210 (109 Legs, 222 berths) showed that 111 were occupied by U.S. participants, 19 from ESF, 19 from U.K., 19 from Japan, 18 from Germany, 18 from PacRim, 16 from France, 1 from China, and 1 from Russia.

Fox then went on to review events since the Santa Cruz EXCOM meeting. He began with summaries of operational leg highlights from past/current legs:

Leg 200 This leg has been successfully completed and the hole awaits the ROV installation of the geophysical tool. APL 20, the Nu'uana landslide project (approximately one day of drilling), was successful. Dauphin added that a proposal to install a permanent observatory at the site has been submitted and that NSF has decided to fund it. Ralph Stephen and John Orcutt will lead the project. Fox commented that the science committee were concerned that holes invested in were used. This fulfills this commitment.

Leg 201 - Fox stressed success of dedicated microbiology leg and the newly installed radioisotope van. He thanked Scripps Institution of Oceanography for help with the design of protocols and for the advice on the outfitting of this van. He noted that the core handling procedures had been modified to meet the special requirements of this mission. Fox then gave summary of the ODP tools that had been tested during this leg in preparation for Leg 204, the gas hydrates leg. The PCS had 17 runs, 14 of which were successful; the DVTP had 26 runs, 21 of which were successful; the DVTP-P had 12 runs of which 9 were successful; and the APC-Methane had 8 runs, the first 3 being successful. The HYACE/Fugro Pressure Core had 7 runs, 6 of which recovered core. The shipboard party were extremely happy with the leg and all the samples, which had been shipped to the onshore laboratories in dry ice, had arrived safely.

Leg 202 – The recently completed SE Pacific Paleoceanography leg was very successful and recovered 7000m of core. The core recovery was slightly better than 100%.

Leg 203 – This was a leg designed to prepare a hole for installation of ION equipment and the installation was successfully cased 211m into basement. The hole has been

cemented and is now ready for the remotely operated vehicle (ROV) installation of the seismometer.

Fox then gave a summary of the planned and expected operational highlights of future ODP legs:
Leg 204 (Gas Hydrates) LWD will be conducted at 6 sites. The use of a full array of downhole tools is planned including the APCM. DVTP-P, PCS, HYACINTH FPC and HRC. The cores will be scanned with an infrared device.
Leg 205 (Costa Rica) – It is planned to install 4 long-term CORK observatories/osmo-samplers. Re-entry cones and casing strings (279-620m in length) will be deployed.
Leg 206 (Fast Spread Crust) – This is designed as part of a multiple leg. Deep crustal penetration of more than 1000m is anticipated. A re-entry cone will be deployed followed by setting of casing at 20" (80m); 16" (360m); followed with 13 3/8" and then 10 3/4".

The mandate from EXCOM in 1996 was for ODP to remain innovative, and Fox commented that the last 5 legs have represented operational challenges and Legs 204, 205, 206, 209, 210 will also be operationally innovative. Legs 207 and 208 although scientifically challenging are not expected to be significantly operationally challenging. In previous years only one or two of the legs could be categorized as operationally innovative.

Fox summarized the web site statistics (included in the agenda book) pointing out the continual growth in users of both the publications pages and the database. In the calendar year 2001 there were over 20,000 visitors for publications and over 15,000 visitors to the database. Not including the members of the program 65 countries are represented in these statistics, showing that there is a much larger audience than just the participating members. Falvey clarified that these were annual figures. Harrison asked if it could be determined which part of the web site was visited. Fox confirmed that the visits were concentrated on publications and on the database.

Fox then recounted the rescheduling of the San Francisco port call and associated public relations and outreach activities. The decision to transfer port call to Victoria Canada was reluctantly made on June 14th after much deliberation and consultation. It was considered unlikely that sympathy strikes would take place in Canada and the port in Victoria was calculated as being logistically better than a Mexican port in terms of time. One of the main reasons affecting the decision was the incoming HYACINTH freight from Europe. TAMU was more flexible as most of its freight was being delivered by road.

With respect to fuel costs Fox reported that costs were slightly greater in San Diego (September port call) so TAMU have, with JOI's assistance, approached NSF and asked for use of $181k of the contingency fuel money (totaling $487k) to offset the above budgeted cost of fuel. Harrison asked about projected fuel prices for next year, i.e. what level do prices have to reach before there are significant budgetary problems?. Fox replied that NSF had said that a reserve fund must be set aside for fuel price increases. Fox anticipated carrying forward approximately $300k into the next fiscal year. In the 2003 budget he has budgeted fuel at $250 per metric tonne. Fuel is currently slightly

above that but with the $300k contingency fund ODP can withstand a year of operations with fuel running at $20 - 30 more per metric ton without having to find other solutions. He reported a lot of volatility in the current markets with costs reaching a low of $210 earlier this year. Fox added that a plan had been discussed with NSF and NSF had given them guidance that the contingency fund has to be set aside for fuel related costs or to unexpected increases in insurances.

Tokuyama asked for the results of the APC methane tool during Leg 201. Fox replied that it was tested on Leg 201 as well as on preceding legs and will be fielded on Leg 204. Tokuyama asked about the increase in pressure due to the association with gas hydrates. Fox replied that the first 3 deployments recorded, on all 4 channels, conductivity, temperature and pressure and showed that the data were robust and consistent with previous test data. After the third deployment the accelerations associated with the APC hitting hard substrate showed that the battery pack and the electronics were not robust enough to withstand these accelerations. During the leg, changes were made to the battery pack, it was more securely fixed and the electronics were better cushioned. The data improved but were still sending spurious signals. Since returning from Leg 201 the electronics and the battery pack have been upgraded again, making them more robust to cope with large accelerations. On Leg 201 some very hard substrate was probed, pushing the APC to its limits. Those conditions are not expected on Leg 204 but the experiences on Leg 201 were a good test of the system and allowed the engineers to make the tools more robust.

Fox invited questions. Stoffa added that concerning the H2O site at the last full round of submissions to NSF there was a proposal for funding to install the first permanent seismological observatory at that site. That proposal had been successful and the project will be led by Alan Chave and Ralph Stephen of Woods Hole and John Orcutt and Frank Vernon of Scripps Institution of Oceanography. Fox, on behalf of Becker, said that one of the concerns of SCICOM has been that these holes that the program has invested a lot of time, effort and money in, actually get used and that this announcement fulfills a commitment that the ION community has made.

Opdyke queried the objectives of Leg 206 and wondered if there has there been any thought about locating this hole at a reversal transition. He added that little is known about the structure of the reversal in oceanic crust and it is very important to understand this in the interpretation of anomalies. Fox replied that the main objective is to reach the plutonic foundation of the oceanic crust. Detrick commented that the site was at a low magnetic latitude which was why the magnetics had not been given a high priority in the siting. Harrison proposed to ask SCICOM for advice but Becker pointed out that the sites had passed the safety review and the positions had been finely tuned. The sites could be moved one or two kilometers but not more. Opdyke offered the opinion that operations should be maximized wherever possible.

6.4 LDEO Borehole Research Group Report

Goldberg gave a short summary of operations from recent legs, through Leg 202, and a preview of the upcoming legs to Leg 205. For all the remaining legs, Legs 206 to 210, there are currently no significant changes envisaged in operational cost or technology which have not already been discussed.

Leg 200, Hole 1224F – The core recovery in basalts was around 15%; continuous log records and core descriptions were combined to define the lithologic units; and log data were used to identify a hydrothermal fluid zone.

Leg 201, Site 1228/9 – Goldberg showed three of seven DSA (Drillstring acceleration tool) records from the FPC (Fugro Pressure Core sampler), HYACINTH (Hydrate Autoclave Coring Equipment). He explained the results from three different depths where the tool operated by shearing the pin and forcing the piston into the formation. The different examples he illustrated showed variations in pressure reflecting attempts to control coring rate during penetration. Goldberg discussed the download of the data and said they had been given to Fugro for analysis. Goldberg reported that tools had been improved and data recovery rates are expected to be increased on Leg 204.

Leg 202: Site 1238 – Goldberg illustrated how GRAPE (gamma ray attenuation porosity evaluator) and downhole HLDS (Hostile Environment Litho-Density Sonde) density records allow meter-scale mapping of cores back to their original depth. He also illustrated that core gaps, similar in length (1 – 3m) to the density fluctuations are common – the logs extend the data continuity across missed cycles.
Leg 202, Site 1241 – FMS (Formation Microscanner) button average and GRAPE density records indicate a simple opal-carbonate system - density and resistivity vary linearly. The curve produced provided a continuous cm-scale proxy for lithology, precisely matching the 5-cm GRAPE density record. The MGT (Multisensor Gamma Ray Tool) high-resolution, gamma ray, 3rd party tool had been deployed on Leg 202.

Leg 204: Goldberg continued by discussing the extensive logging plans for Leg 204. These include standard logging, VSP (Schlumberger 3-comp. Geophone), offset VSP, density and imaging LWD (Logging While Drilling), MWD (Measurement While Drilling), MRWD (Magnetic Resonance LWD tool), RAB (Resistivity at Bit) coring tool, HYACINTH (3rd party tool) plus the DSA (Drillstring Acceleration tool). Legs 203 and 205 will use standard logging techniques.

Goldberg then reported on the testing of the RAB-C (Resistivity at Bit while coring) tool at the Houston test pit. These tests represent the end of a long process of engineering development. The tests were very successful and are a great development for the new program (IODP). Malfait asked what limited the coring ability of the RAB-C. Goldberg replied that it was the MDCB (Motor Driven Core barrel) core barrel limitation and it is only the center liner of that core barrel so there are limitations there in that it cannot extend out in front of the bit, it has to be locked in and then only continuous coring is possible, i.e. it is not possible to stop for a wiper trip etc., In all other respects it works within the usual coring limitations.

Goldberg went on to summarize other activities of the BRG (Borehole Research Group). There are now 16 summaries of tool technologies available on the web site with approximately four more due to be completed within the next few months. BRG are in the process of developing the rest of the legacy documentation ready for the phase out period in 2004. Goldberg updated the text in the agenda book report by adding that the logs are now online through Leg 202. With regard to access of the BRG web site Goldberg showed a slide documenting the activity of the site and pointed out that there had been an increase of 60 – 70% in access between 2000 and 2001 and another 78% increase from 2001 to 2002. Of those hits (c. 4000 per month) the trend in 2002 is to access the database more. Goldberg continued with a discussion of the country of origin of the web site visitors. The largest proportion was from the US followed by Germany, Japan, UK and France. Harrison asked if the US hits had increased or decreased over time. Goldberg explained that this was just proportionately a lower number.

Beiersdorf asked a technical question referring to high-resolution data from Leg 202, i.e. how was the resistivity log record achieved on a 5cm scale? Goldberg answered that an imaging tool was used which has the potential resolution of a small button providing there were no large heave problems.

6.5 *JOIDES*

6.5.1 JOIDES EXCOM Public Affairs Subcommittee.

White summarized the main highlights of the report given in the agenda book concerning events, port calls, press activities, public affairs activities and Greatest Hits Volume 2. Recent events included the AGU Spring meeting and the Ocean Technology Fair in Washington D.C.. Upcoming events include GSA (October), AGU (December). At the upcoming port calls in the Victoria (July) and San Diego (September) plans include press tours, student teacher tours, and at San Diego a reception celebrating Ocean Drilling. She briefly discussed how JOI was making its best efforts to salvage and reform their public relations activities from the cancelled San Francisco port call and refocusing on the revised port call in Victoria. Plans are now underway for the port call in Bermuda in July 2003.

6.5.2 Approval of the Charge for PEC VI and membership suggestions

Harrison introduced this item, referring to pages 90 - 92 of the agenda book where a modified version of the previous Performance Evaluation Committee (PEC V) charge is included. The modification pertains to paragraph 2 at the top of page 91.

Harrison commented that it was important for EXCOM to approve the terms of PEC VI and asked for comments. Bohlen commented that JOI's views were included in their report on page 42 of the agenda book and that he had few further comments to make except that the language used was confusing and that the jurisdiction was confusing. Bohlen said that it made him uncomfortable as the leader of JOI to have a committee doing things that JOI is not involved in. He thought that it was not good management. Falvey considered it critical that however the interface between the PEC and the

subcontractors is handled that it is appropriate that JOI management has the full opportunity to respond to whatever subcontractors may say. He continued by stating that it is important that some interaction is involved but his preference would be primarily through written, rather than verbal, submissions. This would give JOI the appropriate opportunity it needs to respond. Harrison said that he was prepared to make changes to the terms of reference but would appreciate opinions from the panel. Detrick agreed with Falvey and in there was general agreement from the panel that JOI should have an opportunity to revise the PEC VI report before it was finalized.

Harrison continued with assessment of page 91, paragraph 2, which essentially concerns phase out and legacy plans. Bohlen commented on the first bullet point concerning the Long Range Plan (LRP) that says that the committee will meet at the very beginning of a four-year phase out period. He added that this timing would make it difficult for the committee to assess this as most of the goals will not have been achieved by then. Beiersdorf commented that the science plan was accompanied by a strategic plan and that should also go into this evaluation. Beiersdorf considered it important that the implementation of the program was compared with the initial plans to making it clear why certain goals could not be achieved, i.e. the implementation plans contain various options for implementation related to the funding level which was originally anticipated. Falvey stated that PECs usually look at the effectiveness of science management and Harrison agreed to accommodate this in the Terms of Reference (TOR). Mutter asked when the PEC VI is due to begin and Harrison answered that it was due at the end of the calendar year 2003. Bohlen pointed out that formulation of the committee would obviously have to take place ahead of this. Mutter then asked which period of performance would be assessed, i.e. until the end of the drilling program? Harrison answered that the PEC would be looking at the plans for the legacy and phase out together with the transition to IODP.

6/25/2002 Revisions
Sections of the 5/7/2002 version of PEC VI Charge (updated and modified from the PEC V charge) is included in the EXCOM agenda book for this Granada meeting. Some parts have again been modified during this meeting. These modifications are indicated in the text below by ***bold italics***. Changes were made to Item 2, bullet points 1 and 5, and to Items 5, 6 and 8.

SIXTH ODP PERFORMANCE EVALUATION COMMITTEE TERMS OF REFERENCE (Revised, 6/25/2002)

Terms of Reference for the evaluation will embody the following general procedures and criteria.
(1) The committee will consist of international experts in the fields of science, engineering and management to be appointed by the President of JOI in consultation with NSF, the JOI Board of Governors, and JOIDES. An eminent scientist who should be knowledgeable about ODP, but not currently active in the program should chair the committee.

(2) The committee is charged with addressing the following specific issues, as well as other items considered important by the committee.

- The committee should assess to what extent the goals set up in the Long Range Plan have been achieved, ***and to what extent the program was implemented in comparison to the Strategic Implementation Plan 1998 to 2003 presented by JOI (1997).***
- The committee should examine all aspects of the phase out program.
- The committee should look at all aspects of the phase out as it impacts the commencement of the new IODP drilling program.
- The committee should assess provisions to present and preserve the legacy of ODP. This should include the legacy of cores and core repositories, the legacy of tools and techniques, the legacy of databases and the scientific legacy. Since the science will not be completed for several years after the formal end of ODP, it is necessary to ensure that adequate plans are in place for carrying out this task until the end of the program in the absence of an international oversight group.
- The committee should assess the effectiveness of the JOI program management and the JOIDES scientific advice structure, which was changed in the middle of ODP on the advice of a previous PEC, ***to determine whether these are the most appropriate models*** for the IODP, and if not, suggest changes.

These individual tasks are not separate. For instance, there is a great deal of connection between the second and third tasks.

(3) The President of JOI Inc. will brief the committee in advance of any scheduled performance evaluation.

(4) The committee will decide its own interview process. It is expected that the committee will visit JOI Headquarters in Washington DC, and the main subcontractors at TAMU and LDEO. The committee should also visit and interview some members of the past JOIDES advisory structure and the ODP community, taking special care to include non-US personnel in their formal interview sessions. In connection with interviews, the evaluation committee should explore the views of persons interviewed regarding ODP legacy issues and how the transition into the new program will affect their activity.

(5) The committee will transmit in writing to the ***President of JOI*** the scope and procedures of evaluation, together with any questions to be answered.

(6) After completion of each evaluation, the Chairman of the PEC will provide a preliminary written summary of the committee's findings ***for discussion with JOI and its subcontractors, as mutually agreed.***

(7) Within two months of completion of site visits, the Chairman of the PEC shall submit the Performance Evaluation Report to the President of JOI. The report shall consist of a

descriptive section outlining activities, a section dealing with observations and impressions, and a section on conclusions and recommendations. The report shall be accompanied by an executive summary.

(8) Within two months of receipt of the final report of the PEC, JOI is responsible for transmitting a copy of the report and JOI's response to NSF. The recommendations regarding consultations between JOI and NSF will be reviewed by those organizations prior to implementing any recommended changes.

(9) Since there will be no international oversight group in existence during the operation of PEC VI it is especially important that the committee seek input from the non-US drilling community, which should include visiting some of the supporting countries to conduct interviews.

(10) The foregoing procedures for performance evaluation will be refined and/or modified as experience is gained. The ultimate objective is to achieve a reliable and effective evaluation system that will best serve the international scientific community, JOI, NSF, and the other non-US agencies that have helped to fund the ODP over the past two decades.

EXCOM Motion 02-2-4: EXCOM accepts the revised version (6/25/02) of the PEC VI Charge and Terms of Reference.

Falvey moved, Stoffa seconded, 15 in favor, unanimous.

7. Relationships with other organizations

7.1 Post ODP prospects for the *JOIDES Resolution*.

Harrison invited Bohlen and Fox to open the discussion. Bohlen stated that JOI had not received any proposals for the use of the *JOIDES Resolution* (*JR*) during the time after the ODP Program terminates its drilling operations in September 2003 although he was aware that various groups were discussing the possibility. He added that there was an interest on the part of JOI to develop activities with others. The ship may also be a potential IODP platform and NSF is considering whether or not equipment could be left on the ship. Any such future activities would probably be joint Industry/Academic activities. Cannat asked how likely it was that the *JR* would be the U.S. operated platform in IODP. Bohlen answered that the *JR* would not necessarily meet the requirements of IODP but it may be accepted as a minimal option. He also added that if the *JR* was not to be used after September 2003 then the owners (ODL) would have other plans for the ship. Cannat thought it would be useful to use the *JR* for science purposes during the transition period to IODP. Fox added that this may be the optimal solution from ODL's viewpoint because NSF owned much of the ship's equipment. Fox continued by saying that ODL have not issued a firm deadline but have said that they would like a decision soon, and that he thought a decision by the end of 2002 would be optimal. Powell asked

for definition of the possible operation window and Bohlen replied that it would be October 2003 – spring 2004.

Becker asked how the SCICOM FY03 science plan would be affected if some post-contract opportunities arose, i.e. will SCICOM need to reschedule another two weeks of science plans at the end of the Program in the event of the last two weeks of September not being used for demobilization. Bohlen replied that he could not give a definite answer at this stage. He thought that maybe Canada would be interested in a joint industrial/academic program but it would depend on the weather window available. No resources had been identified at this time and the Canadians may lose interest if the weather window is not optimal. Harrison asked if resources were expected to become available and Bohlen answered that it was very possible. Beiersdorf pointed out that any additional scientific proposals that could be scheduled would have to have a review process. Harrison asked if there was any already-reviewed science available and Becker replied that, yes, there are highly ranked science proposals to drill in the North Atlantic. Fox stated that money may become available after the decision on whether or not to continue a contract with ODL for the *JR* is made. Bohlen added that the issue was purely speculative at the moment.

Tauxe asked if the default position was that the NSF owned equipment currently installed on the *JR* would be removed and put into storage if/when the *JR* contract was terminated. Fox replied that part of the demobilization plans included making an inventory of the equipment, establishing the lifetime expectancy, refurbishing and stabilizing where necessary and interim storage at TAMU. Ultimately it was planned that the equipment would be used by the U.S. platform in IODP

8. IODP Planning

8.1 IWG (International Working Group) (For slide # refer to Appendix A) Harrison introduced this item and made a few points concerning the events of the recent IWG meeting in Stockholm in early June (slide #1). The draft mandates for the iTAP and for the iILP have been approved by IWG as have the tasks and responsibilities of the executive authority and of the IODP Council. iPC have been asked to draft principles for the science advisory structure for IODP.

Harrison showed a list of the tasks and responsibilities of the IODP Council (slide #2) and asked for comments on the differences between these tasks and those of the ODP Council. Malfait thought that there were no significant changes to policies or procedures but that this IODP list more clearly identifies a role for the council in modifying IODP principles if it chooses. Harrison commented that currently the chair is always an NSF manager but in IODP this position would rotate between the lead agencies. He added that each country has one representative apart from any consortia, i.e. if you are a member of a consortium your country has a representative.

It is currently planned that the Central Management Office/Organization (CMO) will be located in the United States and that the science planning support function will be in Japan. This Science Advisory Structure (SAS) would be a similar organization to the present JOIDES Office. Mutter asked if there would be a permanent equivalent to the JOIDES Office in Japan. Malfait replied that the SAS would not be an office which rotated every two years in the past manner of the JOIDES Office. Falvey clarified that staff functions would be permanently in Japan and independently of that there would be the equivalents of EXCOM and SCICOM chairs, not necessarily in the same organization or in the same country. These Chairs will be responsible for providing leadership at the scientific advisory level and not the staff function level. Malfait pointed out that there would necessarily be some oversight of staff function and Falvey agreed. Taylor asked if the intention was that this office would be the only science planning support, i.e. would the *total* science planning core function be in Japan? Harrison pointed out that all the international advisory panels would also play an important role. Taylor asked specifically about staff support, i.e. will the only office for staff support be in Japan? Malfait said that if he meant staff support to the planning structure, in a similar way that Moore (or Kinoshita if he relocated from JAMSTEC) is supported now then he thought that support would be available. Harrison clarified that it would be analogous to taking part of JOI's current tasks and part of the JOIDES Office current tasks and putting them together. The remainder of the JOIDES Office tasks would then be distributed elsewhere. The SAS office would have slightly less to do than the current JOIDES Office. Malfait agreed the variety would be less, but the volume would be as much.

Harrison then presented the proposed organizational breakdown for the CMO, (EXCOM Consensus (02-1-5). He emphasized that this was only a proposed structure for the CMO because approval will be sought at the January 2003 IWG meeting He showed the current proposal on the structure and operation of the Central Management Office/Organization, the CMO membership, the Board of Directors, the President and the Contract with the CMO (slide #3).

Kudrass asked for clarification of the financial contribution required for membership. Harrison answered that it is currently a minimum $5M per year but these contributions will increase on an annual basis at least until 2008.

Detrick asked who had put forward the proposals just presented by Harrison, had they been approved by anyone and if so, who? Malfait answered that these were proposals from NSF in collaboration with MEXT and which had been discussed and agreed on as a suitable starting point. The proposals were then passed to IWG to discuss and to solicit comments from the wider community. IWG will then present the results of any discussions at their next meeting in January 2003. Currently the proposal is open for discussion.

Mutter asked for a definition of membership as opposed to directorship. Malfait answered that it was possible to have as many members as wished and that the Board of Directors would be elected from that membership. Comas asked for clarification on the differences between the CMO membership and the IODP Council. Falvey commented that, for

example only, if the CMO were a for-profit corporation rather than a not-for-profit corporation then the title "shareholder" could be described as synonymous with the title "member". Powell clarified that to be a member you actually have to have equity in the enterprise.

Mutter asked if it were imagined that financial contributors would be countries and consortia or whether the membership would also be open to others, e.g. states or industry. Mutter said that it may be that there are countries whose national government do not want to be members but within that country there may be a group of private universities that could come up with the funding to join, but not join as a country. Therefore there would not be a country representative but a representative of the financial contributor. Mutter commented that the wording should allow for this contingency, i.e. the language should not be written to exclude that possibility

Malfait answered that the question had so far not arisen but that NSF would be concerned about applications from private industry. Malfait was asked if NSF would consider applications from other non-profit organizations such as universities or AAPG and Malfait replied that all applications would be considered on an individual basis. Opdyke asked if it was possible to enumerate organizations or kinds of people who would be eligible.

Harrison said that as he understood it the organizations would be universities, i.e. they might include, amongst others, the 16 current members of the Joint Oceanographic Institutions. Malfait agreed that this was the US perspective but that it was still necessary to look at the question of an international, non-for-profit body in terms of organizational charter. Malfait did not think the members were viewed as being other agencies at all and from the US perspective they were expecting universities or research institutions. Harrison defined them as scientific stakeholders.

Powell said that his understanding was that to be a member of this organization equity in this enterprise was necessary and that as a result the members, like any shareholders, would become responsible in law for the operations of the organization. Powell continued by saying that normally membership in effect means ownership and it is the ownership that dictates the actual activities of the company. The CMO would be actually a company even though it is not-for-profit. Typically most of the members would have to be legal institutions that are able to enter into that arrangement. Powell thought that that negated many governments. Falvey referred to the UK specifically and asked who the member would be if NERC as the funding institution was precluded. In the case of the UK there are two other alternatives either the BGS or a university/universities consortium. Malfait said that presumably this was not going to be open to only one country but to as many as choose to join in the interests of making the program viable. Falvey clarified that it could be any number but the number of votes in electing a board member, irrespective of how many members there are from the UK is purely proportional to its financial contribution as it would be for a shareholder getting votes proportional to the number of shares they held.

Harrison commented that it was not clear about whom the Japanese or European members would be and if anyone could elucidate this it would be a useful discussion to have. Tokuyama replied that this was a question he could not answer at this time. Harrison asked Beiersdorf if he had any comments about likely members of the CMO from Europe. Beiersdorf replied that first Europe had to establish how many institutional candidates there will be among the 15 countries they are anticipating that will be members of the European consortium. He could imagine that 5 institutions could become CMO members with the option that the membership will rotate among the European contingent. Harrison asked what sort of institutions these people would represent. Beiersdorf replied that they could be governmental or academic institutions but it would depend on contributions, which, hopefully would be at the same level as the other lead agencies but that currently the matter awaited developments in Europe.

Powell thought it was important to distinguish between membership and ownership. His understanding is that this is an incorporated body and membership means shareholder so membership could not be rotated unless ownership was transferred to the other party. The concept of rotating membership is not possible in a body like this without formal transfer of ownership of the share.

Falvey said that at the moment JOI was owned equally by the 16 members and they were also the collectively the JOI board of governors. They could vote for a smaller board of directors if they so chose. Bohlen said the current by-laws did not allow that but they could be changed to allow that if it was considered necessary.

Harrison then continued with his presentation (slide #4). He had suggested that the Board should be approximately 15 people, that one full IODP membership has the right to one directorship, that membership for each country/consortium should be non-linearly related to the amount of money contributed, i.e. proportional to contribution raised to some power P (<1). Harrison said that the examples were only suggestions for consideration.

Harrison presented a list of CMO functions (slide #5), both Primary (Science operations/services management, science planning support, business administrative) and Programmatic (education and outreach, engineering development, data management). He said the CMO did not deal with the money that was going to the platforms for POCs. That money would go directly from the funding agency, i.e. from MEXT to the operators of *Chikyu,* from NSF to the non-riser drilling vessel or from the Europeans to the MSPs.

Harrison then showed the tasks approved for the SAS executive authority (slide #6) that in some ways is analogous to EXCOM. The next slide (slide #7) showed estimated budgets for participation units and total expenditure as the drilling platform participation increased from 2004 ($31M) to full operation in 2008 ($161M). He was asked if the MSP costs were included in 2004. In answer Harrison showed a diagram of the US FY-2004 budget (slide #8) that includes MSP costs of $10M. There are no platform operating costs (POCs) for the riser or the non-riser vessels in 2003. Harrison moved on to the estimated budget for the next 3 years (slide#9), which shows POCs of $30M for the non-riser vessel and science operation costs (SOCs) of $16M. The riser-drilling vessel has no POCs but

only SOCs in preparation for the start of the actual drilling program in 2008. Referring back to slide #7 it can be seen that the minimum participation unit will be $3.5M in 2005 – 2007 and in 2008 it will rise again to $5.6M.

Cannat asked Harrison for copies of this presentation and Harrison said that they would be distributed with the minutes (Appendix A).

Tokuyama referred to the location of the CMO and said he would like to have a discussion about the possibility of locating the CMO in Japan in say 5 years time, i.e. first in United Sates and then in Japan and then in Europe. As far as Tokuyama understood half of the office would rotate within member countries of IODP so he would like to know if the location of the CMO had been discussed. Harrison said he was unsure of the physical concept of the CMO and asked if there would be a physical presence, i.e. an office, envisaged. Malfait said that yes there would be an office building with a physical presence. It was deemed necessary that this would have to be located in the US because of the legal ramifications associated with the handling of funds. He added that there would probably also be functions in Japan, probably under subcontract.

Falvey questioned the figure of $21M of $31M in the first year that was budgeted as administrative overheads and Comas wanted to know why there were science costs in the year before drilling. Harrison said that preparations had to be made in advance. In answer, to both Falvey and Comas, Malfait produced a slide itemizing examples of POCs and SOCs (Appendix B) and explained that items such as site surveys and engineering developments were also included in this category.

Harrison asked if there were any more questions and stated that he would like to have endorsement from the EXCOM for his non-linear plan of how to formulate the board of directors which he considered as an important matter. Taylor thought the formula should be revised as it was impractical if applied to greater numbers. Detrick commented that there were many different schemes which could be used and he would be reluctant at this point to settle on one exclusively. Harrison said he did not necessarily want to settle on a specific formula at this time but would like ultimately to have a formula whereby even the smallest sized member could have some sort of representation, i.e. representation which is not strictly proportional. It was decided that no specific restrictions should be imposed by EXCOM at this time.

8.1.1 iSAS Staffing

Harrison reported that IWG had agreed with EXCOM Motion 02-1-4 (see agenda book) that the Asian IODP Consortium be given an observer status in the iSAS Committees. Moore confirmed that this had now taken place.

8.2 iPC Activities

Moore presented a summary of the recent activities of iPC updating the report in the agenda book with progress made at the recent IWG meeting in Stockholm (June 4th and

5th 2002) together with updates from recent panel meetings. The updates from the panel meetings were unofficial reports as the minutes were not yet available. Moore discussed the new advisory panels; the industry brochure; the "*Guide to IODP*" the iSAS panel recommendations; and IODP proposals.

New advisory panels – the iPPSP mandate has now been approved by iPC and by IWG. The membership has been approved with the advice and consent of the present Chair (Katz). Katz (in consultation with PPSP members) has just written a White Paper that discusses in detail the safety issues for riser drilling perceived by PPSP. The document is available from Moore for those interested.

The Guide to IODP – drafting of this guide continues by a working group chaired by Kiyoshi Suyehiro and Jamie Austin. The guide aims to reflect valuable lessons from ODP experience; to address new technology and procedures required by the riser drillship; and, to consider the needs of Complex Drilling Programs, with multiple platforms and multiple drilling expeditions.

Moore then summarized iPC accomplishments to date as:

- Six of the seven iSAS Panels have been fully established, with mandates, membership and chairs.
- Procedures for reviewing and categorizing IODP proposals have been reviewed and tested
- The first set of proposals from iSSEPs have been reviewed and categorized.
- The Industry Brochure, which is to serve as an introduction to the IODP Initial Science Plan, has been approved.

Moore concluded with discussions about the "Next Steps for iPC". These include:

- To continue evaluation of IODP proposals
- To provide IODP guidance for proponents
- To continue to make recommendations for IODP policies and procedures

8.3 MEXT Report

Tokuyama reported on activities at MEXT, JAMSTEC and OD21. Miki San is at present involved in discussions as to how to manage OD21. Miki San sends his apologies.

3 items:

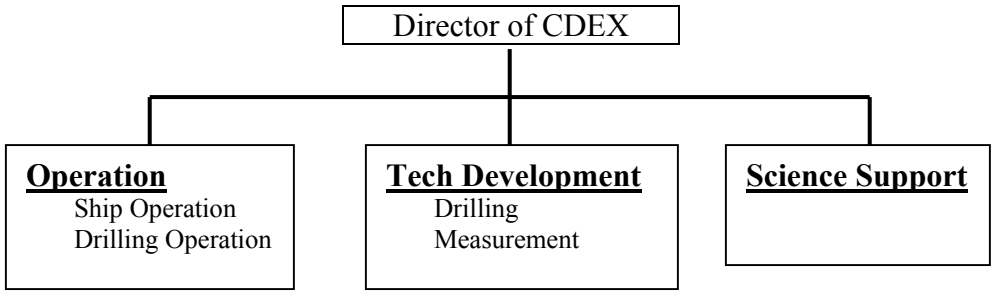
1. **Update on construction of *Chikyu***

   Launched on 18th January 2002, it is now in the outfitting process at Tamano, Okayama. The testing of the dynamic positioning system (DPS) is scheduled for the end of 2002 off the coast of Shikoku. After this *Chikyu* will move to Nagasaki in March 2003 to install the riser drilling system. A database system that is compatible with *JANUS* has been developed for use on board the *Chikyu.* Development of this new database has been found to be needed as the riser drilling operations require a different system. The prototype of this system will be open to testing by SciMP and iSciMP. Moore commented that the database had been demonstrated at the recent SciMP/iSciMP meeting and that the panels had been very impressed. Plans are in progress for the operational training cruises and five seismic survey cruises are

planned. Cannat enquired as to the schedule of these cruises and Tokuyama replied that the cruises for the safety requirements for riser drilling had already been completed. Additional surveys to be conducted in this fiscal year must include 3D surveys using an industrial based seismic fleet. Candidate sites identified include sites in the Sanriku-oki and Tokai-oki areas.

2. Science Operations Body of *Chikyu*

The Center for Deep Exploration (CDEX) will be established in JAMSTEC in October 2002 but will be an independent organization and separate from JAMSTEC or ORI. The director of CDEX will be Professor Asahiko Taira and the center will be responsible for the scientific operation of *Chikyu*. Tokuyama showed a block diagram of the new structure.



3. Other business

The construction of the Marine Core Research Center in Kochi University will soon begin and is due to be completed in spring of 2003.

There will be support for the iSAS Office and IWGSO.

OD21 Science Advisory Council (SAC) will meet regularly to consider and promote IODP. Harrison asked who would be the head of SAC but Tokuyama said that no decision had yet been reached.

There will be opportunities during the training cruises/period including:

- Potential for IODP scientific participation
- Potential for cross training of technicians (on the first of the training cruises and also onshore). Duration of the training periods will be consistent with the recommended time requirements from iSSP and iPPSP.
- Scientific objectives included are, for the cruises in the Tokai-oki area (for geologists interested in sedimentology, microbiology and hydrates) and for the Sanriku-oki area (for geologists interested in seismology).
-

Tokuyama then summarized the schedule of ship construction as follows: Outfitting will continue through the fall of 2005 with the installation of the drilling equipment starting in the spring of 2003. in the fall of 2005 there will be the ship operation test followed by the drilling equipment test (which includes the riser handling test). The shakedown cruise

will start in the spring of 2006 with the crew-training cruise in July and August of that year. The potential for IODP participation in the shakedown cruise is expected to start in September 2006 with the potential for cross training of technicians being available in November to December of 2006. The full international science operation is expected to begin between July and October 2007.

Harrison invited questions and Detrick asked which ships CDEX would be operating. Tokuyama answered that their activities would be confined to the riser vessel.

8.4 JAMSTEC Report

See item 8.3 above.

8.5 iSAS Office Report

Yamakawa San gave a report dealing with scientific proposals received for IODP and the schedule of the iSAS committee and panel activities. He discussed the proposal statistics shown on page 101 of the agenda book. The iSAS office now has a total of 85 proposals submitted and which have entered the iSSEPs review process. Of these 85 proposals 12 have completed the review process and have been passed to iPC for ranking in August. About 10 of the 85 proposals in the system are Mission Specific Proposals (MSPs). Yamakawa San then discussed the breakdown of the lead proponents of proposals by country (shown on page 102 of the agenda book). The distribution of the three broad scientific themes of the proposals is shown on page 103 of the agenda book. Yamakawa then discussed the current activities of the iSAS Office showing the schedule of past and future panel meetings (see page 100 of the agenda book).

Harrison invited questions. Falvey asked to see the active proposal statistics again and clarified that 67 of the 85 proposals had been transferred from the JOIDES Office. Cannat asked how the proposal grouping would be carried out, i.e. how will the "complex proposals" be grouped. Moore answered that this was still under discussion. To date it had been agreed that an over-arching document would be needed for a complex drilling program. This over-arching document would be evaluated as a scientific project but the matter of whether that should include free proposals for various elements of the complex drilling program had not ben decided. A balance of a fair evaluation of a project without increasing the evaluator's workload was desirable but the committee had not formulated the exact procedure yet. For example in a riser drilling program there would be elements of site survey, pre-drilling to establish geotechnical engineering properties or to sample some upper part of the section before drilling deeply, and then the riser drilling itself which might incorporate more than one project. An overview of the general science would be needed, as would some idea of what the individual sub projects would be, in order to evaluate the feasibility. The committee is therefore trying to work towards an evaluation plan that would be fair and will allow the program to commit to a complex drilling program composed of several projects and to maintain that commitment over the time it would actually take to complete. Cannat wondered how many of the existing 85 proposals (mostly leg by leg proposals) could be gathered together to produce some complex projects and she felt that it was important to inform the scientific community that the procedure had changed and was not the same as that used for ODP. Moore

replied that they were trying to be flexible and there were for instance 3 or 4 suitable candidate proposals in the system now such as the Indus fan proposal, the Costa Rica margin proposal, the Bengal fan proposal. There were no other questions.

8.6 OD21 Report

See item 8.3 above.

8.7 European initiative

Harrison invited comments/reports on the European initiative. Beiersdorf felt that he was not qualified to give this report as he had been absent from the activities for a while. He did comment however, on a headline that had appeared recently in a popular Frankfurt newspaper, which roughly translated, was "*The Future is Underneath the Ocean*" followed by "*The International Deep Sea Drilling Program moves into a new phase - Germany considers to step out*". This article triggered a response from the Federal Ministry of Science and Education who have asked for more talks with DFG, scheduled for July 5th. Beiersdorf was hopeful that they will reconsider their future position on ocean drilling. Beiersdorf then deferred to Kudrass, who is the new EXCOM panel member for Germany, adding that Kudrass was instrumental in writing an excellent brochure that will be submitted to the DFG senate in the near future asking for their support. Kudrass commented that he had the brochure with him if anyone would like to see it and adding that unfortunately for EXCOM, but for obvious reasons, the text is in German. He also added that although the brochure had been reviewed, revised and improved by the two most influential science committees in Germany, a one-half page article in a newspaper (referred to above) had more impact on the ministry than the 100-page brochure of science. Kudrass stated that this was reality and the ocean drilling community should accept it and work really hard to promote the importance of their science, and the relevance to society of geoscience.

Harrison asked if there were other possibilities of funding from the European Commission. Kudrass replied that there were other possibilities but that the application procedure was more difficult as it was unfamiliar. The matter of possible funding from the Federal Ministry was not totally closed at this current time thanks to the newspaper article mentioned above.

Von Knorring commented that there were various important milestones in the European Consortium's provision of MSPs for the IODP. At the recent IWG meeting the committee recognized ECORD as the consortium responsible for providing IODP with mission specific platforms. Subsequently the European consortium, ECORD had prepared a letter to the co-chairs of the IWG stating that they wished to become a lead agency of IODP and that they wished to attend IWG meetings. Recently the European members have concentrated on writing definitions for all the entities that are needed for the European consortium. They have defined the management agency, they have defined the tasks of the science operator and the science operations committee and also defined the tasks of the council for the European Consortium. Most of the definitions are now published in a call that was released very recently so there is a call out for organizations to apply to be the management agency or the science operator. The call closes on September 10th after

which these two important entities will be selected. The JEODI network has been working on funding applications to the European Union and a proposal was submitted in June for becoming a network of excellence within the Sixth Framework Program. By September it should be known whether there is a chance of obtaining part of the required funding. She added that as Kudrass had already mentioned, there is still potential for funding from Article 169 but even if successful this would probably not be possible until 2004.

8.8 US Plans

Malfait stated that most of the activity of the recent IWG meeting in Stockholm has already been summarized. Members of IWG have essentially finalized at MEXT and NSF levels, the text of an agreement for implementing IODP and this is currently being reviewed. It is hoped to sign this agreement early next year. In Stockholm the membership agreement was drafted, based largely on existing Memoranda of Understanding (MOUs).

With respect to NSF activities there is continuing strong support in NSF's upper management for funding the new non-riser drillship. Over the last year the option that has become clear in terms of finding the resources needed for this is the account in NSF that supports major research equipment (MRE). NSF have given approval to move forward with the budget requests during the coming months.

A recent more urgent concern has been about US funding, i.e. US science support within the future program. As part of the MRE activity to actually acquire facilities we are also required to identify financial resources for the science to go with those. Our argument has been to essentially double the existing funding that we have to a level of about $30M for IODP science activities in general. We have received no negative comment on that number. There was a meeting in Washington D.C. in early June called CUSP (Conference on U.S. Participation) to provide NSF with recommendations on how to structure those resources with respect to community identified managed funding as now exists through JOI as well as NSF grant related activity. NSF are looking forward to receiving the final report from this meeting. Harrison asked about the timing of the delivery of the $30M and Malfait answered that in his opinion it would not all come at once. Tauxe asked if the increase in budget would be new money or whether it would be subtracted from existing budgets. Malfait said that NSF was intending to double its budget in 5 years and therefore it would not be detrimental to existing budgets. Harrison invited questions.

Harrison introduced the Canadian request for membership of IODP saying that he understood that a request for funding from the Canadian Fund for Innovation (CFI) had been turned down. Harrison assumed that other sources of funding were being actively pursued. Harrison invited Moran to comment on the Canadian situation. Moran replied that, as reported to IWG earlier this month there has been submission of a proposal to the International Access Fund (a new fund just established in Canada). The proposal was not successful but the intention is still to pursue full membership in the program. A report will be made to IWG in January 2003 of the direction Canada will take.

8.9 Central Management Office (CMO)

Harrison said that this had already been discussed in some detail (see items 8.1, above and Appendix A, below) but asked if there were any further points anyone would like to make, or any other suggestions as to how it should be run. He said that the proposal he had shown (see Appendix A, slide #3) was only a suggested mode of operation, it was not the only one, and he could make suggestions as to how it should be changed.

Powell commented that at some point he would like to comment on the position of the PacRim consortium with regard to IODP. Harrison invited him to continue.
Powell outlined the PacRim considerations. He reported that South Korea and Taiwan were trying to co-operate in the formation of an Asian consortium and that they have had extensive discussions with Japan on this issue. The Canadian situation has already been discussed. Australia is facing the issue that the structures that existed to fund ODP are no longer appropriate for funding IODP. There is to be reorganization within the Australian system whereby participating universities, rather that the geological survey, take a lead role. The Australian Research Council (ARC) has asked for a strategic plan for earth sciences from the academic community. This plan is currently being developed and the marine geoscience community will be contributing. The plan is due for completion later this year. There are also issues concerned with the refurbishment of the marine geoscience infrastructure in Australia that will be competing with any IODP proposal. Until those issues are resolved any plans for Australian participation in IODP will not be known. However there remains considerable interest in participating. The issue is in finding a larger source of money than currently exists for ODP and obtaining access to those funds on a competitive basis. Moore asked when further news might be forthcoming and Powell answered that this depended on the development of the strategic plan and on ARC's response. He thought that there might be some indication of what their attitude might be sometime early in 2003. The main issue is to identify a champion(s) from the academic community in Australia to actually develop the bid because the geological survey who have been involved in such activities in the past no longer have the resources to do this. There has been the assumption that because the survey have had to step back, that a decision has been made to not submit a bid whereas the real issue is who will champion the bid. Moore asked if in Powell's opinion the champion could be found within academia. Powell was doubtful as the academic community in Australia was shrinking.

Harrison invited further comments about the CMO. Kent asked if suggestions would be passed to IWG and Harrison confirmed that this was the case and they would be considered at the next (January 2003) meeting.

Harrison reminded the committee of the motion (EXCOM Motion 02-1-5) moved in January 2002 at the EXCOM Santa Cruz meeting. He reported that there had been a proposal to NSF and MEXT but it had not yet been approved. He further added that suggestions about the structure of the CMO would be welcome. Kent asked Malfait a question about disposition of tasks between lead agencies and the CMO. If a task is not identified in the RFP for the US lead agency is it correct to assume that this task will be carried out by the CMO? Malfait thought that a number of things had already been

defined that are going to be a prime responsibility within the CMO and he showed a list of items that had been identified as programmatic activities. Education and outreach was one of them although he was not sure how you structure that across multiple countries and it seemed that those activities would also be included within the various implementing organizations. Engineering development is another activity that could be called a programmatic activity, i.e. one that puts over the whole of the program in terms of engineering development, although those activities could be done in other implementing organizations as well. Data management and ensuring uniformity of data is another activity that is considered programmatic but also may be included in the various implementing organizations. Kent asked whether, if the science operation costs of the non-riser vessel were not to be included in the RFP, was it to be assumed that they would be part of the CMO? Harrison disagreed saying that the CMO is an international organization that would manage the science operation funding, among other things, but the platform operation costs would be managed only by the relevant countries/lead agencies. Harrison continued, in as far as he understood the situation that NSF will fund the non-riser platform. Kent said he was not talking about the POC but the SOC. Malfait said that the SOCs were going to be managed through the CMO. Kent clarified that this included the riser vessel, the non-riser vessel and the MSPs. Fox commented that the confusion was that the money would flow from the CMO to the implementing organization to the various countries that were operating the vessel and then the implementing organization would be responsible for the delivery of those tasks. The CMO would be responsible for forwarding the funds.

MEETING ADJOURNED FOR THE DAY

WEDNESDAY JUNE 26 09.00 hrs

9. LEGACY Plans

9.1 Achievements and Opportunities

Gröschel reported on the progress of the Achievements and Opportunities volume that has just been issued as the 2002 spring edition of the JOIDES Journal, vol. 28(1). Copies have been express mailed to members of EXCOM and there are also copies available at the meeting. The mailing to the general ODP community (JOIDES Journal mailing list) is currently taking place. The publication is also accessible electronically from the "What's New" section on the JOIDES Office web site http://joides.rsmas.miami.edu
Gröschel acknowledged the efforts of the authors and the section editors. She also acknowledged the direction from EXCOM and from other members of the ODP community. A CD of the galley proofs of the articles was distributed at the 4th European ODP meeting in Tromso in April, and an important impact of this was to focus the community members' thoughts on the issue of ODP legacy.
Gröschel stated that her position as journal editor would extend through September 2003 when the JOIDES Office officially comes to a close and her predictions about the contents of the next two issues of the journal included drilling leg reports up to and

including Leg 202. These two issues will be Vol. 28(2) and 29(1) and her questions to EXCOM were:

- Will a JOIDES Journal Vol. 29(2) be produced in Fall 2003 by the JOIDES Office or by JOI?
- What will happen to reports from ODP Legs 203 through 210 in late 2003 and beyond?
- Will the Achievements and Opportunities Special Issue be included on an ODP Legacy CD-ROM?

Harrison invited comment. Von Knorring felt that there was a responsibility to those who participate in Legs 203 through 210 and the reports have to be properly published. She acknowledged that funding was another consideration but she supported the idea that there should be an additional issue. Harrison asked if she wished to make a motion and von Knorring agreed. Bohlen questioned the need for a motion saying that another issue of the journal, maybe two issues would cost around $20-30k. In general JOI may be able to find those kind of resources but he viewed it as adjustments they would need to make as they moved forward and did not see this as an important topic for discussion. Bohlen continued by saying that because of the uncertainty of the transition period to IODP it is still not clear which parts of the new program will be in place and the timing of the transfer of responsibilities such as science publications was still undecided. Tauxe asked who the editor would be and Bohlen replied by saying that he would have to talk to the JOIDES Office. Harrison clarified that the journal issue in question was volume 29(2) and assumed that JOI would take responsibility for this issue, either by asking the JOIDES Office to prepare it slightly earlier than usual for final publication before the JOIDES Office closed at the end of September 2003 or by making alternative arrangements for JOI to be responsible for publication. Bohlen agreed.

Harrison then addressed the final question regarding the ODP Legacy CD-ROM. Discussion ensued about the value of a Legacy CD as opposed to a web site. Tauxe asked who was going to be responsible for maintenance of a web site after the end of the ODP part of the program and it was understood that JOI will assume this responsibility.

9.2 Technical Data Sheets

Becker discussed the technical data sheets and showed examples. Most of these summaries are now posted online as follows:
LDEO URL: http://www.ldeo.Columbia.edu/BRG/ODP/legacy.html
TAMU URL: http://www-odp.tamu.edu/publications/tnotes/tn31/INDEX.HTM

Kent asked if there was anything comparable needed or considered for any of the other laboratories or equipment on the ship, e.g. the magnetometer. Fox replied that for each instrument used on the drill ship there is an operation manual that explains the tool and its use. For each leg the Initial Reports volume has explanatory notes that go with each tool that explain for that given leg how the tool was used. Kent wondered if there was some utility in condensing these manuals/explanations to one page series of data sheets which would describe the various components of the scientific measurement schemes and which would also have the back up of the existing manuals etc.. Fox added that TAMU could

certainly do that if it was required. Harrison asked if the panel wanted to take this idea further. Kent and Fox agreed to discuss the matter further at a later time.

9.3 Publications Database

Bohlen described the progress of the preparation of a database that can be queried for all publications that are related to ODP. The goal of the database is to capture all of the ODP publications including those publications where ODP is not cited by the authors but where ODP material or data has been used. These latter publications are being identified by the use of key words such as “drill hole”, “drill site”, “Leg”, etc.. JOI has worked with TAMU and AGI to collate, and then to test, a database. At this point there are c. 18,000 entries and the database is nearly ready for testing by a group from the community. The web site URL is in the agenda book. Harrison asked how this database was going to be available. Bohlen replied that it would be available on the web site and that JOI is responsible for ensuring that all of the web-based materials are accessible during the transition period to IODP. Tauxe asked about the construction methods of the database and Bohlen replied that they had been using the AGI database. Tauxe asked if the AGI database included such publications as the drilling volumes themselves. Bohlen answered that although they were working with AGI and using the AGI database they were actually creating a separate database using AGI expertise with GEOREF. Tauxe clarified that JOI would maintain this new database. Fox added that AGI was building the database, 40% of the information was derived from DSDP or ODP publications and 60% is made up of ODP and DSDP material that appeared in the open literature. AGI finds that information through a long list of key words and this method is thought to capture about 90% of the information. TAMU and JOI are working to identify the remaining 10% of the existing material.

9.4 ODP’s Greatest Hits

Urquhart presented the current status of Greatest Hits Volume 2. She briefly recounted the history of this volume in that it was originally a result of EXCOM Motion 01-1-8, moved at the Kamakura meeting in January 2001. The JOIDES Office and JOI have worked together to solicit articles and to edit this volume, which is aimed at a target audience to include the public, Congressmen and Ministers. During the June 2001 EXCOM meeting in Oxford Bohlen announced that resources had been identified and the volume production could now proceed as a web based document. This document would be supplementary to Greatest Hits Volume 1 which, in addition to the hard copy edition also has 120 articles posted on the JOI web site. Since the EXCOM meeting in Oxford it had been decided to select c. 20 articles from Volume 2 to produce a similar hard copy as that of Volume 1. Urquhart continued by outlining the strategy used in soliciting contributions together with the further strategies employed later to increase the number of submissions. She reported that 45 articles were currently posted on the JOI web site in a pdf downloadable format. The SSEPs review process to select the articles for the hard copy edition had begun in May. Additional contributions would still be accepted for the dynamic web site pages only. Of the topics of the articles submitted 28% concern drilling advances, 25% are on climate change, 7% each on hazards, microbes and sea level change, 2% on resources and 24% are as yet unclassified. The contributions analyzed by country of first author were approximately proportional to ODP funding contributions: USA 20; UK 7; Japan 4; Germany 4; Australia 2; Switzerland 2; France 2; Russia 1;

Norway 1; Canada 1; Portugal 1. Urquhart asked EXCOM whether they perceived a necessity for a third volume of Greatest Hits to accommodate the science in a popular form from the remaining 13 ODP Legs (Legs 198- 210) drilled after the closing date for the submissions for the Greatest Hits Volume 2 hard copy edition.

Von Knorring asked what the purpose of the Greatest Hits volume was, i.e. was it to be used for marketing purposes to encourage countries to join the IODP. Urquhart answered that the purpose was two-fold, both to justify the ODP and to promote the importance and funding of the new program. Von Knorring felt that if the promotion of the new program was one of the important reasons then there was no point in producing a Greatest Hits Volume 3 after October 2003 because all the promotion work should have been completed by that time. Urquhart commented that promotion was never finished. Bohlen reminded EXCOM of their conversation in Kamakura where there was concern that documents written for the educated but lay public were not available on the web for use by ODP member partners for their modification for their own specific use with ministers, congressmen and various ranking individuals in funding agencies in governments. Greatest Hits is part of addressing the needs to provide those materials. JOI was asked to find resources for Greatest Hits, which could then be used and modified with some figures, and language that was edited at a certain level so it could be modified and used by everyone. That was objective that was targeted. These are materials which are designed to answer two questions, what did ODP produce of value and why is it essential to continue with ocean drilling in IODP. Harrison stated that the US community would say that funding is a continuing process and so public awareness of ocean drilling as a scientific program should also be a continuing process.

9.5 How well did we do?

Becker referred to the motion made in College Station in 2000 (EXCOM Motion 00-20-5) that stimulated the development of the legacy efforts. The responses to the first four requests, the Greatest Hits, the Achievements and Opportunities, the Technical tool sheets and the publications database have been discussed above. In response to the fifth request – *reply to the question "How Well did ODP do?" All phases of ODP should be considered extending back to COSOD I",* Becker said that SCICOM have not yet developed a concrete response to that question and would like to know what EXCOM specifically required from SCICOM.

Becker continued by saying that discussions with the SCICOM panel have shown that they all think ODP has generally done quite well although there are a few things which could have been done better. Becker said he could present his own personal view and Harrison asked him to proceed. Becker reported that he had taken a close look at the 12 equal top priority scientific objectives from COSOD I, (1981) the subsequent 5 working groups of COSOD II (1987), and finally the Long Range Plan (1996). Enduring themes, since refined, could be traced all the way back to COSOD I. A few new themes had been introduced, e.g. "Gas Hydrates" and "The Deep Biosphere", which were introduced in the Long Range Plan, and one or two themes have dropped out such as global stress mapping. A few indications of things ODP has done well are paleoceanography and paleoclimate studies, APC coring which is producing greater than 100% recovery, high resolution studies. Further examples include the recent Paleogene legs, concerted efforts

on subduction zone drilling, conjugate margin studies, and *in situ* monitoring. Legs 200 and 203 will complete the commitment made by ODP to set up the 6 ION global seismic stations. ODP has also done a great job in setting up hydrogeological monitoring.

Becker continued with some comments on goals that might have been done better. One of the working groups of COSOD II emphasized the need to complete the global stress map. Becker reported that there has not been a single organized proposal submitted to JOIDES to do that and this is probably the only major objective which cannot be included in ODP accomplishments, although ION sites will be instrumented with stress meters. Becker then noted that deep penetration of both oceanic crust and continental margins was highlighted in the Long-Range Plan, which essentially promised several holes 2-4 km deep during Phase III. However, the Program's main success in deep drilling was at Hole 504B, which was essentially a DSDP/Phase I/Phase II effort not originally designed as a deep hole. That the Phase III objective in deep drilling was not achieved was probably due to a lack of resolve within both JOIDES and the community to make the required multiple-leg commitments. He noted that the final year's ODP schedule (Legs 206 and 210) represents a start on multi-leg commitments toward deep penetrations, and he commented that he was pleased to see from Moore's presentation yesterday that iPC were tackling this culture change. Zero age drilling is an objective that goes back to COSOD I and essentially the realities of technological development held ODP back from achieving the desired goals. The scientific community is still interested in the program but although ODP has made a huge effort the goals have not been fully achieved. MSP drilling was promised in Phase 3 in the Long Range Plan if funding levels were increased. Funding levels did not increase and so MSP drilling did not take place.

Becker concluded by stating that for almost all of these themes where ODP could have done better the community is still interested and those themes are enduring themes which are showing up in proposals to IODP. ODP has not lost the interest of the community which is the most important factor.

Harrison invited questions and von Knorring asked for a copy of the slide. Becker said it would be included in the minutes (see below Appendix C). Becker added that he was prepared to go to SCICOM and ask each of the panel members to make their own one page transparency summarizing their own individual perception in answer to the question "How well did we do?" These opinions could then collected at the August SCICOM meeting and passed on to the PEC as they will be asked the same question. Mutter thought that this would be useful as it would give the PEC something to react to. Harrison also thought it would be a useful tool for the PEC. Silver thought that there were various reasons why some of the goals had not been met, e.g. global stress mapping was thought to be a relatively simple matter of obtaining measurements from each hole drilled whereas in practice it was found that the stress levels had to reach a certain threshold before they could be measured and that not all holes filled this requirement. Harrison invited other questions and asked if EXCOM wanted to take any action other than gathering the SCICOM comments as agreed above. Powell said that activities had been mapped against objectives but it does not say anything about the scientific achievements and funding agency orientation is needed. Becker referred to the IODP Initial Science plan that has summarized the achievements of both DSDP and ODP very well. This is

cross-referenced in the ODP Achievements and Opportunities volume discussed earlier today. This is another version of the response to the first bullet, the list of ODP's Greatest Hits. Mutter was concerned that there is a set of objectives, there is a group of legs that are the activities and then there is the progress that has been made. The connection between these three things is not in one place. Harrison said that when EXCOM made the motion they did not identify the precise form in which the results should be presented Becker offered to ask the SCICOM members to look at the list and the Initial Science Plan and see if they would add significant scientific accomplishments. Harrison thought that would be useful.

Mutter was concerned about giving sufficient guidance to PEC VI. Bohlen said the PEC would be formed in the fiscal year 2003 and would basically do the work in the fall of 2003 and the plan was to have the report around January 2004. Some of the charge for the PEC VI is information needed relatively soon in the phase out process so that any necessary adjustments can be made. Becker asked if the timing of SCICOM during their next two meetings allow for it to be then passed on to the PEC in July 2003. It was agreed that at the next two SCICOM meetings the panel members would prepare the SCICOM input for final approval by EXCOM in July 2003 for passing on to PEC VI.

9.8 Any missing legacy objectives?

Harrison wondered if anything needed to be done about writing up the major scientific results. They have all been presented in various journals but he asked if there was anything that EXCOM should specifically do to encourage this, to bring these things together in a volume etc.? He invited suggestions. Becker pointed out that in the agenda book in the SSEP's suggestions there is a suggestion for thematic volumes for integrating results. An example quoted was that on Ophiolites and Ocean Crust, edited by Dilek et al., which resulted from the proceedings of a Penrose Conference in 1998. Becker suggested that it may be possible to solicit contributions from groups who have been involved in studies based on ODP materials in order to produce other similar volumes.

There were no further comments.

10. Transition Plans

White gave the JOI response to EXCOM Motion 02-1-3
As noted by EXCOM, it is important during this time of transition (2002-2004) to ensure a positive perception of scientific ocean drilling having both:

1. Delivered important environmental and scientific outcomes through ODP, and
2. Prepared for a new and still more exciting phase of research through IODP

The JOI and JAMSTEC, and ECORD/JEODI offices can communicate these ideas to the scientific community, industry, the public, and funding agencies through the following transition plan:

- During the transition period, public affairs information on ODP and IODP will be distributed to parties participating in ODP and IODP planning, both at a national (e.g. OD21, USSSP, ECORD/JEODI) and international (e.g., iSAS, IWGSO, JOIDES) levels. This approach will ensure that all parties are aware of key advances occurring in ocean drilling and utilize the strengths of the different organizations to publicize ocean drilling to the maximum audience.
- Communications will take place primarily by email and by telephone.
- During the transition period, ODP public relations activities will continue at full speed, highlighting the important science being conducted during the last year of active drilling and how the science is related to the IODP Interim Science Plan. JOI staff will disseminate press releases and materials on recent ODP advances to the press and international ocean drilling community. JOI and TAMU will continue with ODP PR activities, such as port calls, responding to information requests, and publicizing legacy documents. If appropriate, these updates will contain information on the transition to IODP.
- During this transition period EXCOM encourages IODP entities to take the lead on developing press releases, announcements and events on important advances in IODP planning (signed agreements etc.) and distributing it to the parties listed above. This information can be distributed to the ODP media list, and JOI is willing to assist in other areas as requested.
- For exhibits occurring through September 2003, booth and other public affairs events on ocean drilling will aim to include information on both ODP and IODP.

As the management structure for IODP becomes fully developed, this plan will be reevaluated to ensure a smooth transition of public affairs activities to the CMO.

Harrison invited Bohlen to comment on the progress of the transition from ODP to IODP. Bohlen reported that JOI had been sending representatives to interim science advisory meetings at the hosts' invitation so there is plenty of opportunity for input from the people who are currently managing and directing the program into the interim science advisory meetings. Bohlen has not received any complaints that sufficient information was not forthcoming. Fox commented that TAMU responds to all requests from the interim science advisory structure, that they had spent a great deal of effort making sure that all plans are in place, and that the stewardship of the data and of the total legacy is properly handled. Fox pointed out that it is a balance between liberating services required for this program and at the same time handing over the control to the next program. Liaisons requested have been mostly regarding data issues, especially the digital seismic guidelines. Tauxe commented that the people who do the work are going to be leaving for new jobs and the last few legs may be very difficult to carry out with a decrease in experienced personnel. Fox replied that this was TAMU's responsibility to provide a service right up until the end of the program and that they take this issue very seriously and leg by leg. There has been an increase in the rate of turnover of personnel, the most

profound changes being within the engineering staff and the staff scientists. TAMU have coped with the changes so far although obviously there is concern.

There were no other comments regarding the transition.

11. SCICOM Report

11.1 Achievements on Legs 199-202

Moore, as a scientific participant, presented a report of the scientific activities of Leg 199.

Leg 199

The main objectives of this leg are to document the evolution of the equatorial Pacific wind and current systems during the Paleogene period of global warming and through into the Oligocene transition. The drilling strategy of the leg was designed as a latitudinal transect along an isochron within the ocean crust and across the paleoequator extending from a paleolatitude of ~4˚N to ~4˚S. It was predicted that this strategy will allow investigators to define sedimentation, paleoproductivity, circulation and wind patterns in the Eocene equatorial Pacific; to study the Paleocene-Eocene and Eocene-Oligocene transitions in the equatorial Pacific; and to obtain complete, continuous Oligocene and lower Miocene paleoceanographic records to study the effects of glaciation in Antarctica upon equatorial Pacific circulation.

Leg 199 extended the achievements of DSDP Leg 8. The sites drilled by Leg 199 were in general drilled on the magnetic anomaly associated with an age of 56 million years. One of the sites was offset to 40 million years in order to recover a younger carbonate section. The leg cored through the red clays in the upper part of the section to get down to the target horizons at 56 – 57M year old sediment. Core recovery was generally very good and the APC (Advanced Piston Corer) was used as all sections were below 300m in length and it was possible to APC to basement. If a shorter (4 m.) APC had been available possibly even better recovery could have been achieved.

A latitudinal transect of 8 Sites was accomplished and in general the leg succeeded in recovering the targeted carbonate sediment from the early Paleocene. Lower Eocene chert, clay and radiolarian ooze were encountered, as was a significant amount of late Eocene radiolarian ooze and clay and Oligocene chalks and surficial clays. The major CCD (carbonate compensation depth) changes were evident from the Eocene - Oligocene sediments and these were mapped out in great detail.

The Eocene/Oligocene boundary, showing a gradation through carbonate-rich to wholly siliceous ooze, was particularly well recovered in two different sites (5 sites recovered the boundary altogether). One of the interesting things noted was a huge change in the lithology and spanning this change over an interval of 4 or 5 million years. A significant bloom in siliceous productivity was recorded with abundant diatoms and radiolarians. The increase in siliceous productivity is evident before the lithological changes and continues after the changes in lithology. A comparison between all 5 sites drilled shows that this interval is compressed in the more northern sites and there is probably a hiatus in the sediment record.

A particularly interesting interval is that of sediments which record the late Paleocene Thermal Maximum (LPTM). This was an event which is generally considered to have been caused by a catastrophic release of methane from gas hydrates resulting in a 4˚C overall global warming. This interval was successfully recovered in more than one hole.

Good core recovery and good paleomagnetic data, particularly in the Eocene and Oligocene, meant that a reasonably good time scale could be assigned to these sediments on-site even although carbonate was absent. Bulk density measurements together with measurements of both calcium and silica allowed the shipboard geochemistry laboratory to plot the flux of sediments at various time slices as a function of paleolatitude. These paleolatitude estimates were calculated by using a very simple fixed hot spot rotation and it should be noted that there is a considerable amount of doubt that this fixed hot spot rotation is valid for intervals of time older than about 40 million years.

Tauxe commented that the paleolatitudes were based on fixed hot spots but that they had also had available some paleolatitude information based on stratigraphy. She asked how these two interpretational techniques compared. A lively discussion on paleomagnetism then ensued.

Becker presented summaries of the achievements of Legs 200 and 201.

Leg 200

There were two objectives of Leg 200, the main one being to case the re-entry hole for the H2O Observatory site for future installation of an ION broadband seismometer. The second objective added by SCICOM after scheduling was to complete about a day of APL coring to recover the distal record of the giant Nu'uana landslide on Oahu that occurred about 2 million years ago.

The re-entry hole established for the observatory site is approximately 60m deep. The casing has been emplaced 30m into basement and is cemented at the bottom. The RCD was deployed for coring into basement, and it should be noted that coring into east Pacific crust is alone quite a scientific accomplishment. Incidentally, essentially the same drilling strategy is currently being followed on Leg 203, i.e. to establish a cased hole into basement with cement at the bottom so there is no chance of water circulation. In terms of significance to the Long Range Plan this is one of the six sites to be prepared for the ION network which, when Leg 203 is complete, will fulfill ODP's commitment. Kudrass added that there were two German microbiologists on board during Leg 200 and they found fossilized microbes at the transition between the basalt and the overlying clay.

The secondary objective (APL 20) was to core the distal turbidite record of the landslide on the north shore of Oahu. There was about 41m of coring with reasonable recovery. Two tuff units were recovered with tholeiites indicative of a very deep eruptive source, and of a similar model to the Mt. St. Helens eruption, associated with the landslide. Tentative results from the leg have supported this model. There seems to have been multiple phases of the landslide lasting, in total, for at least 600,000 years. The two tuff units recovered were associated with two different eruptions. Identification of the source of the eruptions will depend on some very detailed geochemical post-cruise analyses.

Leg 201

This was the first dedicated biosphere leg to study controls on the marine microbial communities in the eastern equatorial Pacific on the Peru margin. The basic plan for this leg was to return to sites that had been previously cored (so the environments were very well known) and to focus on intensive microbiological studies in order to understand how the chemical hydrological environments control activity in the deep biosphere. The eastern Pacific was chosen because it provides a range of environments where the characters of chemical signatures vary but there are very similar *in situ* temperatures. This means that the effects of the chemistry and hydrogeology could be isolated, as opposed to temperature effects on the biosphere. The results need post-cruise confirmation, particularly for the microbiological analyses. The main result illustrated by cell counts on the ship generally follow an exponential decline with depth, as did the methane production, with a higher concentrations at the Peru margin sites where there is richer organic input over open ocean sites. Other chemical indicators tracked were sulfate and manganese which are also by-products of microbial activity. Pore fluid chemistry shows that net microbial activity is also higher than at ocean margin sites but at the same range of processes is occurring at all the sites, i.e. methane production. Fluid flow processes are clearly affecting the microbial activity. The depths of greatest microbial activity are related to sediment properties that in turn are controlled by oceanographical conditions at the time of deposition. The main results at the present time are for the chemistry that is controlling microbial activity. A large number of samples were successfully shipped in dry ice back to shore-based laboratories and culture experiments are continuing there in order to identify the species recovered by DNA sequencing.

With regard to the Long Range Plan, this is the first dedicated leg for microbiology and it shows that when the relevant resources are applied then evidence of microbial activity can be determined almost everywhere. Moran asked whether the microbes recovered were alive and Becker answered that at this stage in the analyses it was not known if they were alive, dead or dormant and determination is pending shore-based analyses. Moran asked about the possibility of contamination and Becker outlined the very intensive contamination studies together with the precautions established before the leg sailed. Tokuyama asked if the methane was completely biogenic. Becker answered that his understanding was that it was dominantly biogenic and the temperatures were all less than 25 degrees centigrade. The panel commented that this leg was a very impressive accomplishment considering that a few years ago ODP did not have the capability of mounting a leg like this at all. The combination of establishing a shipboard microbiological laboratory and mounting an expedition like this is therefore very impressive.

EXCOM Consensus 02-2-6: EXCOM congratulates TAMU, SCICOM and the shipboard scientists for the interesting discoveries and the excellent science and installation done on Legs 199 – 201 including the first dedicated drilling exploration of the deep ocean biosphere.

11.2 Proposal activity

Urquhart reported that for the JOIDES proposal deadline of March 15, 2002, no new preliminary or full proposals were expected as all submissions are now directed to the iSAS Office. However, one new Ancillary Program Letter (APL) was received: ***APL-21, Investigating seismically-induced pore pressure generation that spawn tsunamogenic landslides, proponents K. Moran, A. Silva, H. Brandes, J. Pestana, H.G. Greene, H. Lee, G. Fryer, S. Grilli, J. King, P. Schultheiss, P. Watts***

This proposal was discussed at the March 2002 SCICOM meeting as described above. The APL-21 was submitted only a few months before the only possible scheduling windows (Legs 203 or 204) so SCICOM approved an accelerated review process as follows: (1) email review by SSEPs within one month of the March SCICOM meeting, followed by (2) email discussion by SCICOM and scheduling decision by early May. It was concluded that any positive scheduling decision would have to be provisional, contingent on (a) time becoming available during either of the possible legs, and (b) successful safety review at the June PPSP meeting. Since then the SSEPs have reviewed the APL, it was provisionally scheduled by SCICOM after an email discussion and forwarded to PPSP for consideration during the meeting in Barcelona (June 10-11). The PPSP panel then turned down the proposal on safety grounds.

Malfait asked if there were a list of proposals or sites that had been turned down by PPSP during the history of the program. Becker was unsure of the existence of a specific list but said the information did exist in the PPSP minutes. Malfait requested a list of the proposals turned down on safety grounds both by PPSP and by the TAMU safety panel.

12. Future Meetings and Other Business

12.1 Bermuda 2003

The next EXCOM meeting will be held in Bermuda in July 10th (and 11th if needed) 2003. The dates will be set to coincide with the last port call of the ODP before the *JOIDES Resolution* departs on Leg 210 to the Newfoundland margin. The logistics for the meeting have not yet been finalized but will be circulated as soon as possible.

12.2 Other business

IDDP/ICDP-Workshop

Von Knorring announced a second workshop to be held by the Iceland Deep Drilling Project/International Scientific Continental Drilling Program (IDDP/ICDP) in Iceland from October 11 - 17 2002 to prepare a detailed science program for the ICELAND DEEP DRILLING PROJECT. Von Knorring encouraged EXCOM participants to advertise this workshop and full details could be found at http://www.os.is/iddp/news.shtml. The deadline for applications to participate is July 1st 2002. Von Knorring also had a copy available for inspection of the *Report of Workshop No. 1 of the Iceland Deep Drilling Project, Nesjavellir, Iceland, March 17 – 19, 2002.*

Non - US EXCOM Members Consensus
Beiersdorf proposed a consensus by the non – US members of EXCOM in response to the statement made by Malfait on the previous day in item 6.1 regarding access to cores and data. The consensus was enthusiastically supported.

Consensus by the non - U.S. EXCOM Members: The non - U.S. members of EXCOM wish to express their sincere thanks to NSF for making provisions to maintain core repositories and data bases of ODP, and for their willingness to give the non - U.S. ODP communities full access to the cores and data after the termination of ODP.

Beiersdorf then continued to make a farewell address as this was to be his last EXCOM meeting. He thought the success of the program was due to the fact that the scientific community and the funding agencies had all worked together towards common goals. He stated that no one country alone could have afforded such a program, with such a broad scope. Human and financial resources had been shared. He felt strongly that the programs (ODP and IODP) had to be made more visible to the outside world. In the past ODP had achieved great things but rarely had they been made known to the public. He congratulated JOI for their efforts to improve the situation with regard to public relations. He said it had been a privilege for him to work with ODP for such a long time and thanked everyone for accepting him as a colleague, for which he was grateful. He added that he had learned a lot and that he had nothing to regret.

Consensus by EXCOM
Harrison proposed the following two consensuses:

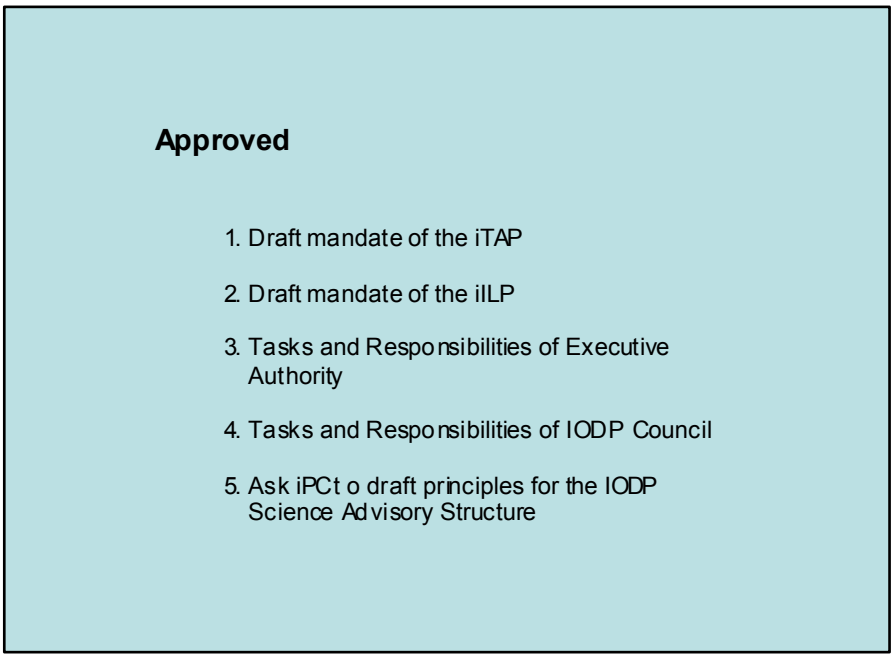
EXCOM Consensus 02-2-7: EXCOM wishes to recognize and acknowledge with deep gratitude the very substantial and sustained contributions of Dr Helmut Beiersdorf to the Ocean Drilling Program. For almost 10 years since his first meeting in 1993, Helmut has generously offered his extensive scientific knowledge and keen insights to all EXCOM deliberations. His dignified leadership in ODP, and in the preparations for IODP, have added greatly to the progress of ocean drilling science. Friends and colleagues on EXCOM, and across the ocean sciences community will miss Helmut's commitment, energy and enthusiasm, but join together in offering sincere best wishes for the future.

EXCOM Consensus 02-2-8: The ambience of the JOIDES EXCOM meeting in Granada could not have been better. To have a meeting within a stone's throw of Alhambra and to have dinner with such a wonderful view will be hard to beat. Thank you Manuel, Menchu and Mary.

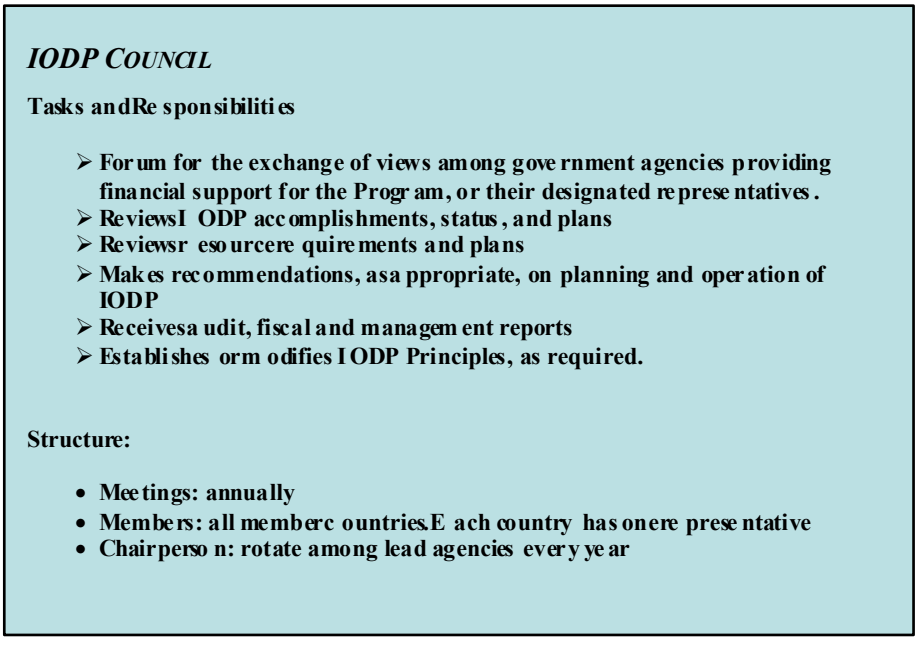
MEETING ADJOURNED

Appendix A

Slides from presentation by Harrison for Agenda Item 8.1



Slide #1



Slide #2

PROPOSED

Central Management Office
International, not-for-profit corporation.
Incorporated in the United States, with Science Planning support function in Japan.
Formed by parties committed to IODP from IODP member countries

CMO membership should be available to IODP interested institutions in IODP member countries.

Board of Directors
- Proportionately representative of Òcountry/consortiumÓ financial contribution
- Elected by members
- Chair will rotate

President
- Recruited and appointed by board of directors
- Approved through CMO contract

Contract with CMO
- Contains approval authority for CMO operating officers (to be determined by MEXT and NSF)
- Contains approval authority on identified CMO actions (program plan, budget, etc.)

Slide #3

ASSUMPTIONS (non-linear representation for directors)
Board of Directors should be roughly 15 people.
One full membership is given one director.
Membership for each country (consortium) should be proportional to contribution raised to some power P (<1).

Contribution, $M	Ratio to lowest contribution	Directors	Column 3/Column 2
Three Lead Agencies plus one Canadian membership. P=0.723			
5.6	1	1	1
51.8	9.25	5	0.5405
51.8	9.25	5	0.5405
51.8	9.25	5	0.5405
Two Lead Agencies plus one 50% Lead Agency contribution plus one Canadian membership. P=0.66			
5.6	1	1	1
31.88	5.55	3	0.558
62.16	11.1	5	0.441
62.16	11.1	5	0.441

In second case, if P=0.765, membership goes to 1, 4, 6, 6, totaling 17.

Slide #4

CMO Functions

Primary

Science Operations/ Services Management
Science Planning Support
Business/Administrative

Programmatic

Educational Outreach
Engineering Development
Data Management

Slide #5

SAS EXECUTIVE AUTHORITY

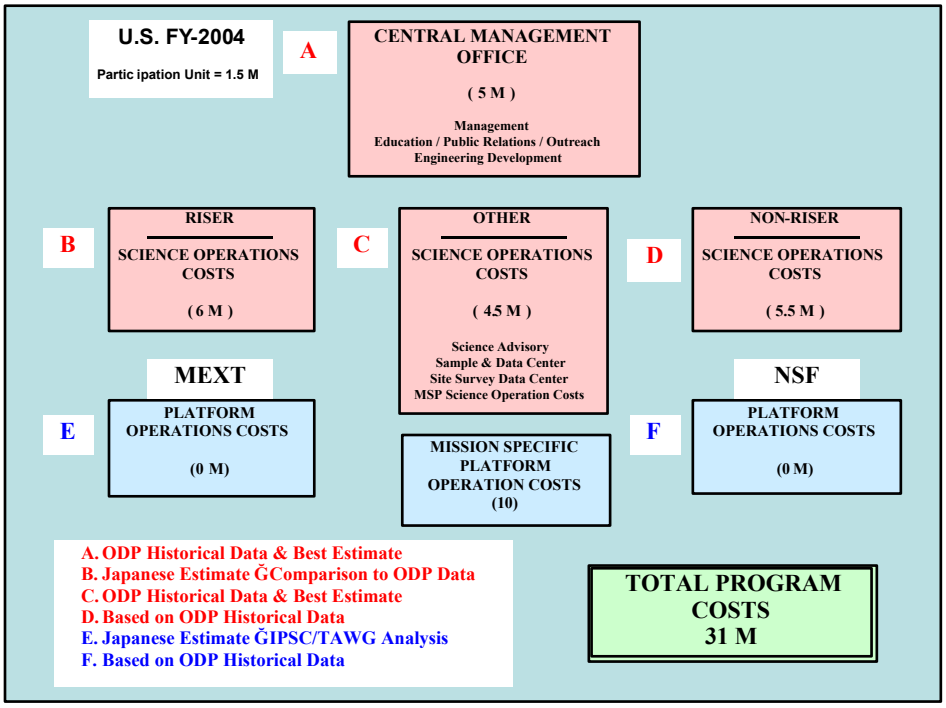
Tasks and Responsibilities

- **Formulate scientific and policy recommendations (e.g. IODP membership policy) to the Council.**
- **Conduct IODP planning**
- **Reviews and approves IODP Program plan and budget recommended by the Science (Planning) Committee and prepared by the CMO. Approves significant changes in the annual Program plan which affect science.**
- **Evaluate and assess Program accomplishments with regard to established goals and objectives**
- **Establish subcommittees as needed to accomplish objectives of the Program and approve terms of reference for each subcommittee**
  - **Establish a Science Committee (Planning Committee)**
- **Promote support for IODP in appropriate fora**
- **Report to the IODP Council as appropriate and requested**
- **Ensure liaison with other scientific programs.**
- **Scientific promotion of Program – Expansion of membership**

Slide #6

Year	Participation Units	Total
2004	~21@1.5M	= 31M
2005-2006-2007	~23@3.5M	= 79M
2008	~29@5.6M	=161M

Slide #7



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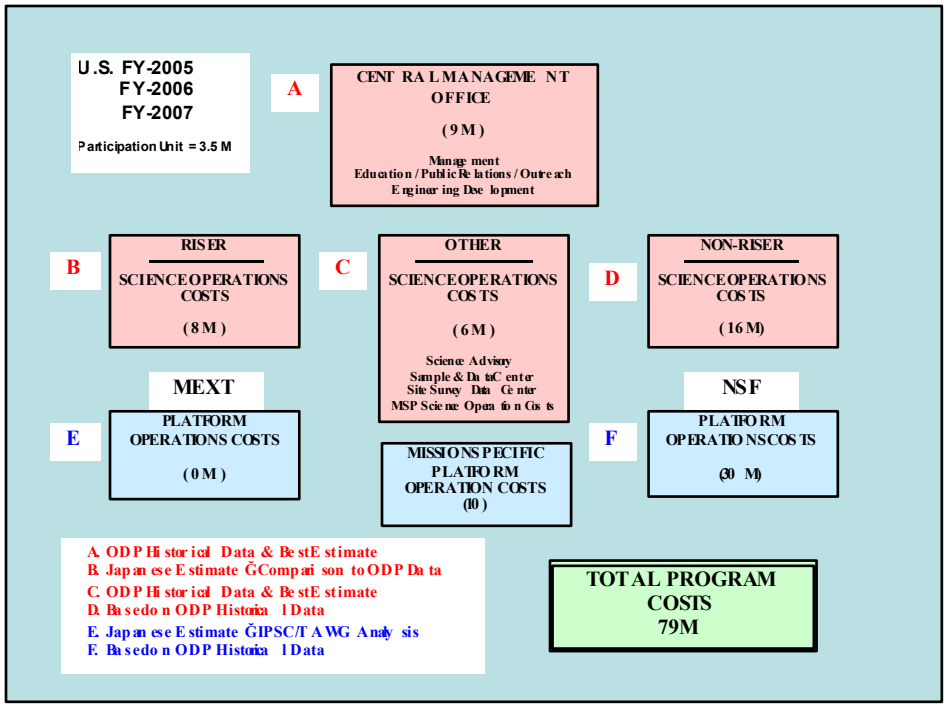

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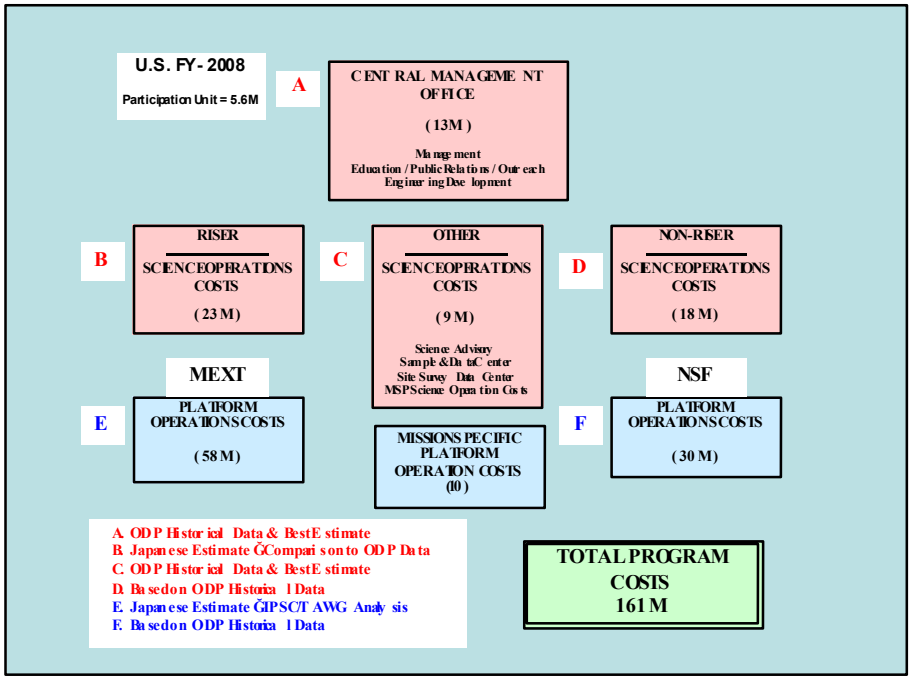

Slide #10

Appendix B

Platform Operations Costs

Platform Operation Costs will support the basic operation of the vessel as a drillship, and will include, for example:

(1) Costs of the drilling and ship's crew
(2) Catering services
(3) Fuel, vessel supplies and other related consumables,
(4) Berthage and port call costs
(5) Disposal of wastes
(6) Crew travel
(7) Inspection and insurance
(8) Drilling equipment, supplies and related consumables,
(9) Administration and management costs of the platform operators

Science Operation Costs

Science Operation Costs will provide for those activities onboard program platforms necessary to the proper conduct of the scientific research program and those shore-based activities required to properly maintain and distribute samples and data, support seagoing activities, and administer and manage the program. These costs will include, for example:

(1) Technical services
(2) Computer capability
(3) Data storage and distribution
(4) Description, archiving, and distribution of data and samples
(5) Deployment of a standard suite of logging tools
(6) Development of new drilling tools and techniques required by IODP research
(7) Program publications
(8) Costs of consumables (exclusive of those identified under platform operations costs)
(9) Costs required for administration and management, including the Central Management Office
(10) Engineering or geophysical surveys required for hole design or evaluation of drilling safety during final site selection

Appendix C
Slide from Item 9.5

How Well Have We Done?

For many goals of COSOD, COSOD II, and the Long-Range Plan, the program has done quite well, both in following the scientific plan and delivering results! A few good examples include:

- Paleoceanography and paleoclimate
    - High-resolution Neogene
    - Cretaceous/Paleogene "extreme climates"
- Subduction zone drilling in 5 example settings
- Atlantic conjugate margin studies
- In situ monitoring of geological processes
    - ION global seismic observatories – 7 sites
    - CORK hydrogeological observatories – 16(19) sites

For what goals might the program have done better and why?

Global stress mapping – lack of proposals independent of ION sites

Deep penetration - lack of JOIDES (and community?) resolve for multi-leg commitment??

Full crustal penetration a high priority since COSOD I
Phase III drilling to 2-4 km at several sites promised in LRP
(504B was a DSDP/Phase I/II fortuitous accomplishment)
Special call for proposals issued, but first concerted steps being taken only during final year of Phase III

Zero-age drilling – realities of technological development

Mission-specific platform drilling, primarily for climate and sea-level studies – budgetary realities

While ODP has not fulfilled these expectations, the entire ODP community has made an important contribution – laying the groundwork for addressing most of them in IODP!