

iSAS interim Planning Committee

2nd Meeting, 20-22 March 2002

**Yokohama Institute for Earth Sciences
Japan Marine Science and Technology Center
Yokohama, Japan**

interim Planning Committee - iPC

Jamie Austin	Institute for Geophysics, University of Texas at Austin, USA
Andrew Fisher	Department of Earth Sciences, University of California, Santa Cruz, USA
Peter Herzig	Institut für Mineralogie, Technische Universität Bergakademie, Freiberg, Germany
Hisao Ito*	Geological Survey of Japan
Kenji Kato	Institute of Geosciences, Shizuoka University, Japan
Jock Keene*	School of Geosciences, University of Sydney, Australia
Jeroen Kenter	Faculty of Earth Sciences, Vrije Universiteit, The Netherlands
Hajimu Kinoshita (Co-chair)	Japan Marine Science and Technology Center (JAMSTEC), Japan
Chris MacLeod	Department of Earth Sciences, University of Wales, United Kingdom
Larry Mayer	Center for Coastal and Ocean Mapping, University of New Hampshire, USA
Ted Moore (Co-chair)	Department of Geological Sciences, University of Michigan, USA
Delia Oppo	Woods Hole Oceanographic Institution, USA
Philippe Pezard	Laboratoire de Tectonophysique, ISTEEM, Université Montpellier II, France
Matt Salisbury	Geological Survey of Canada Atlantic, Bedford Institute of Oceanography, Canada
Kiyoshi Suyehiro**	Japan Marine Science and Technology Center (JAMSTEC), Japan
Ryuji Tada	Department of Earth and Planetary Science, University of Tokyo, Japan
Yoshiyuki Tatsumi	Japan Marine Science and Technology Center (JAMSTEC), Japan
Zuyi Zhou	Department of Marine Geology and Geophysics, Tongji University, China

*Unable to attend.

**Alternate for Ito.

Liaisons

Jamie Allan (iSciMP)	Department of Geology, Appalachian State University, USA
Tim Byrne (iSSEP)	Department of Geology and Geophysics, University of Connecticut, USA
Gilbert Camoin (iSSEP)	Institute de Recherche pour le Développement, Centre de Noumea, New Caledonia
Paul Dauphin	National Science Foundation (NSF), USA

Shinichi Kuramoto (iSSP)	Geological Survey of Japan
Hitoshi Mikada (iSSEP)	Japan Marine Science and Technology Center (JAMSTEC), Japan
Narumi Takahashi	Ministry of Education, Culture, Sports, Science, and Technology (MEXT), Japan

Guests

Jack Baldauf	Ocean Drilling Program, Texas A&M University, USA
Keir Becker (SCICOM)	Rosenstiel School of Marine & Atmospheric Science, University of Miami, USA
Sherm Bloomer (SCICOM)	Department of Geosciences, Oregon State University, USA
Steve Bohlen	Joint Oceanographic Institutions, Inc. (JOI), USA
George Claypool (PPSP)	Private consultant, Lakewood, Colorado, USA
John Farrell	Joint Oceanographic Institutions, Inc. (JOI), USA
Jeff Fox	Ocean Drilling Program, Texas A&M University, USA
Kathryn Gillis	School of Earth and Ocean Sciences, University of Victoria, Canada
David Goldberg	Lamont-Doherty Earth Observatory, Columbia University, USA
Teruaki Ishii (SCICOM)	Ocean Research Institute, University of Tokyo, Japan
Aleksandra Janik (JOIDES)	Rosenstiel School of Marine & Atmospheric Science, University of Miami, USA
Garry Karner (SCICOM)	Lamont-Doherty Earth Observatory, Columbia University, USA
Yoshi Kawamura (OD21)	Japan Marine Science and Technology Center (JAMSTEC), Japan
John Ludden (JEODI)	Centre de Recherches Pétrographiques et Géochimiques, CNRS-Nancy, France
Bruce Malfait	National Science Foundation (NSF), USA
Tadao Matsuzaki (OD21)	Japan Marine Science and Technology Center (JAMSTEC), Japan
Yoshiro Miki	Japan Marine Science and Technology Center (JAMSTEC), Japan
Osamu Miyaki (OD21)	Japan Marine Science and Technology Center (JAMSTEC), Japan
David Rea (SCICOM)	Department of Geological Sciences, University of Michigan, USA
JoAnne Reuss	Department of Geological Sciences, University of Michigan, USA
William Sager (SCICOM)	Department of Oceanography, Texas A&M University, USA
Izumi Sakamoto	International Working Group (IWG) Support Office, USA
Thomas Shipley (OPCOM)	Institute for Geophysics, University of Texas at Austin, USA
Elspeht Urquhart (JOIDES)	Rosenstiel School of Marine & Atmospheric Science, University of Miami, USA
Yasuo Yamada (OD21)	Japan Marine Science and Technology Center (JAMSTEC), Japan

iSAS Office

Nobuhisa Eguchi	Japan Marine Science and Technology Center (JAMSTEC), Japan
Yayoi Komamura	Japan Marine Science and Technology Center (JAMSTEC), Japan
Jeffrey Schuffert	Japan Marine Science and Technology Center (JAMSTEC), Japan
Noriko Tsuji	Japan Marine Science and Technology Center (JAMSTEC), Japan
Minoru Yamakawa	Japan Marine Science and Technology Center (JAMSTEC), Japan

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DRAFT EXECUTIVE SUMMARY

iPC Consensus 2-1: The iPC approves the agenda for its second meeting on 20-22 March 2002 in Yokohama, Japan.

iPC Motion 2-2: The iPC approves the minutes from its first meeting on 29-30 August 2001 in Portland, Oregon.

Mayer moved, MacLeod seconded; 15 in favor, 1 abstained (Austin).

iPC Consensus 2-3: The iPC accepts SciMP Recommendation 01-2-02 on using digital core images for archiving purposes in IODP, SciMP Recommendation 01-2-10 on maintenance of micropaleontology reference centers in IODP, and iSciMP Recommendation 01-1-1 on development of an IODP sample and data distribution policy. The iPC further encourages the iSciMP to address these topics at its next meeting.

iPC Consensus 2-4: The iPC has received and discussed iSSP Recommendation 02-1-1 on the need for a two-tiered approach to site surveys in support of riser-based drilling. We note that the IWG has agreed that appropriate science operations costs include “engineering or geophysical surveys required for hole design or evaluation of drilling safety during final site selection.” We also note, however, that the need for complex, high-resolution, 3-D imaging in support of IODP activities may extend beyond riser-based drilling. Therefore, the iPC urges the iSSP to continue examining this issue.

iPC Consensus 2-5: The iPC recognizes the need identified in iSSP Recommendation 02-1-2 for a thorough evaluation of the requirements and procedures of an IODP data bank. We request that the iSSP complete such an evaluation and report the results at our next meeting in August 2002. The iSSP report should include recommendations concerning (1) the requirements for digital versus analog data, (2) allowable data formats, specified by type (i.e., seismic, bathymetric, hydrographic, etc.) and form (both analog and digital), (3) the mechanisms and timing of communications with IODP panels and proponents, and (4) facilities, hardware, software, and personnel required for creating and operating an IODP data bank that meets the needs of a diverse, international community.

iPC Motion 2-6: The iPC approves iSSP Recommendation 02-1-3 and appoints Andre Droxler as a co-chair of the iSSP.

Austin moved, Tada seconded; 16 in favor, none opposed.

iPC Motion 2-7: The iPC adopts the JOIDES conflict-of-interest rules pertaining to the procedure for ranking mission-specific-platform proposals.

Mayer moved, Austin seconded; 16 in favor, none opposed.

iPC Motion 2-8: The iPC approves the membership of the interim Pollution Prevention and Safety Panel (iPPSP) as nominated at this meeting. We note that the membership may still change slightly to ensure that the panel maintains an appropriate balance of expertise to fulfill its mandate.

Fisher moved, Austin seconded; 16 in favor, none opposed.

iPC Motion 2-9: The iPC approves the terms of reference and mandate for the interim Technology Advice Panel (iTAP) as revised at this meeting and presented with the minutes.

Mayer moved, Austin seconded; 16 in favor, none opposed.

iPC Motion 2-10: The iPC appoints Kathryn Moran as chair of the iTAP.

Austin moved, Mayer seconded; 11 in favor, none opposed, 5 abstained (Kato, Kenter, MacLeod, Pezard, Suyehiro).

iPC Motion 2-11: The iPC approves the terms of reference and mandate for the interim Industry Liaison Panel (iILP) as revised at this meeting and presented with the minutes.

Suyehiro moved, Fisher seconded; 16 in favor, none opposed.

iPC Motion 2-12: The iPC accepts the latest revised version of the informational brochure, “Opportunities for Scientific and Industry Cooperation,” produced by the Industry Liaison Working Group (ILWG) and intended for use by the international community as a companion document for the IODP Initial Science Plan.

Austin moved, Herzig seconded; 16 in favor, none opposed.

iPC Consensus 2-13: The iPC appreciates the extraordinary efforts of the ILWG and its co-chairs, Kathryn Moran and John Armentrout, in authoring the industry brochure. We also recognize the services of William Hay and the many other members of the international scientific drilling community who contributed to or reviewed the brochure, and we thank the staff of the IWG Support Office at JOI for their excellent work in designing and publishing the final document.

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DRAFT MINUTES (v. 2.0)

Wednesday

20 March 2002

1330–1700

1. Introduction

a. Welcome address

Hajimu Kinoshita called the meeting to order and welcomed everyone to the Yokohama Institute of Earth Sciences on behalf of the JAMSTEC administration. Yasuo Yamada of OD21 explained the meeting logistics, and the meeting participants introduced themselves.

b. Approve meeting agenda

Kinoshita asked for suggested changes to the meeting agenda and received none. The committee then approved the agenda by consensus.

iPC Consensus 2-1: The iPC approves the agenda for its second meeting on 20-22 March 2002 in Yokohama, Japan.
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c. Approve minutes from previous meeting

Kinoshita asked for suggested changes to the draft minutes from the previous iPC meeting and received none. The committee then voted to approve the minutes, with Austin abstaining because he did not attend the first meeting.

iPC Motion 2-2: The iPC approves the minutes from its first meeting on 29-30 August 2001 in Portland, Oregon.
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Mayer moved, MacLeod seconded; 15 in favor, 1 abstained (Austin).

2. International Working Group (IWG) Report

Ted Moore referred to the letter from the IWG co-chairs presented in the agenda book. He reported that the IWG has given the iPC special permission to rank mission-specific-platform (MSP) proposals in August 2002. Moore suggested that the iPC should discuss several issues in advance, such as the voting procedure and the conflict-of-interest statement approved by the IWG. The IWG also approved the establishment of the interim Technology Advice Panel (iTAP) and the interim Industrial Liaison Panel (iILP), despite the draft status of the existing mandates for these two new panels. Moore also reported that the IWG has given

the iPC one year to develop a sample and data policy. He added that the IWG would continue working to develop a better understanding of IODP principles concerning the central management office (CMO), the executive authority, and other management issues. Malfait noted that the IWG members had so far provided only initial input on these issues, but no major comments yet.

3. Reports on IODP Planning Efforts

a. Japan - OD21

Narumi Takahashi of the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) reported on recent IODP planning efforts in Japan. Takahashi noted that Daisuke Yoshida of MEXT took over as IWG co-chair in January 2002. He also described the launching of the riser drilling ship, *Chikyu*, in January 2002 and noted a possible delay in its delivery until early 2006. Takahashi announced that Kochi University has received a budget to build a new core research and repository center for use in marine geo- and biosciences. JAMSTEC will continue to host the iSAS Office until October 2003, as part of the memorandum between lead agencies for IODP. JAMSTEC will also establish a new science operating body for *Chikyu* in Oct 2002 and continue its efforts to recruit international staff at the Institute for Frontier Research on Earth Evolution (IFREE). Suyehiro clarified the separate status at JAMSTEC between the new science operating body for the riser drilling ship and the scientific research departments such as IFREE.

b. U.S.A.

Bruce Malfait reported on recent changes in personnel and the organizational structure at the National Science Foundation. He announced that NSF recently hired a marine engineer to work on the request for proposals for the non-riser ship, and they received approval to seek funds for converting a vessel for use in 2005. Malfait said that NSF asked USSAC to identify the costs of national scientific research and support facilities for IODP, noting that the U.S. will probably have to double its spending from \$15 to 30 million. NSF and USSAC have also talked about the lead-time needed for field research and site surveys, especially for riser drilling, and they have encouraged people to submit proposals for that type of research. Malfait reported that NSF and MEXT made significant progress this week on reaching a formal bilateral agreement for implementing IODP. They hope to conclude the agreement soon and should make progress by the next IWG meeting on a second type of agreement for other participating members of the program. The two lead agencies also made progress this week on defining the central management capabilities. Malfait said that the talks currently

focus more on the process of establishing a CMO rather than on its characteristics or location, but they hope to make further progress relatively soon. Malfait outlined the current cost structure for platform and science operations in IODP, showing a projected total annual budget of \$130-150 million. He noted that events in Europe could change the perspective for the start of operations with MSPs.

c. Europe - JEODI

John Ludden described the Joint European Ocean Drilling Initiative (JEODI) as a thematic network devoted to developing a plan for unified European participation in IODP, with a special focus on MSPs. JEODI consists of a series of work packages involving 60-100 people in the planning, and it welcomes the international community to attend its meetings. The European Consortium for Ocean Research Drilling (ECORD) will encompass the whole European component of IODP. Ludden diagrammed the overall structure of ECORD and characterized the planning of the management structure as nearly complete. A designated management agency will control the European funding pool, and a science operator will subcontract to one or more platform operators. Ludden noted that Soeren Duerr of the Deutsche Forschungsgemeinschaft (DFG) currently heads the ECORD Council, but the position may rotate in the future.

Ludden showed a world map of regions where MSPs can operate and explained that JEODI has started to investigate the operational logistics for several of the existing MSP proposals in iSAS. In addition, JEODI may have an opportunity to test its operations in 2003 through PROMESS, a new European Community funded project that will use geotechnical platforms to drill in Mediterranean sedimentary systems, particularly the Rhone fan and later the Po fan. Although PROMESS will not represent an IODP project, it will accept international participants. With regard to other European science planning efforts, Ludden referred to a report published after the APLACON meeting last year and said that he hopes to produce a ten-page summary by May. He also mentioned an upcoming meeting on deep riser drilling in the Mediterranean and said that JEODI has a keen interest in integrating IMAGES into the IODP structure.

Philippe Pezard showed a model for a distributed management structure of the European science operator and gave more details on the JEODI efforts to develop operational plans for existing MSP proposals. They have considered a wide variety of platforms, including jack-up rigs, geotechnical ships, Arctic ships, giant piston coring devices, and other small rigs, and they have examined the logging possibilities for each type of platform. Pezard presented a

model for a European logging network for MSPs, with components for operations, management, and analysis, and he tied the European network into a model for an international IODP logging network. JEODI anticipates that the conditions and requirements for drilling in Exclusive Economic Zones (EEZ) will present a challenge in operating MSPs, especially for core handling and storage, and they have undertaken an inventory of all shipboard and shore-based facilities in Europe for core analysis, handling, and storage.

Moore asked if the funding request to the European Community would also include science support costs. Ludden said that any funds from the EC would go mostly for platform costs, while the national programs would fund the science costs. Suyehiro asked whether JEODI had clearly defined what constitutes an MSP. Ludden said no, they viewed science and not the tool as the driving influence, but they have considered a wide variety of platforms and devices as Pezard just described. Austin suggested that the ICDP lake drilling system (GLAD800) could also serve as an MSP. Ludden confirmed that an ICDP representative attends JEODI meetings. Kinoshita asked about the possibility of sharing equipment with ICDP. Pezard recognized the need to share equipment and personnel at an international level, but he imagined that ECORD would have to determine the most efficient and practical way of conducting operations for each project.

Kato wondered about JEODI examining and planning to implement drilling proposals that belong to iSAS. Suyehiro expressed concern about JEODI undertaking regionally oriented projects and asked if it represented a subset of IODP or something more separate. Ludden replied that all projects done by JEODI would come through the iSAS structure. Herzig emphasized the complexity of coordinating among fifteen different countries in Europe and the short time schedule for possible drilling in 2004, but he assured the committee that IODP definitely represents the umbrella. Fisher praised the European efforts and urged them to maintain good communication with iSAS as a precaution against overextending the reach of IODP.

d. Canada

Matt Salisbury reported that the Atlantic Canada Petroleum Institute won a competition to submit the proposal for Canadian participation in IODP to government funding agencies (CFI and NSERC). They submitted the proposal in early February 2002, had a site visit last week, and expect a decision in May. The proposal requested 40 million Canadian dollars to support full membership in IODP for five years, including substantial funds for science support, similar to the model used by the U.S. Science Support Program for ODP. If the

main proposal succeeds, Canadian industry would also commit several million dollars because they view IODP as a source for technology developments. Salisbury added that iSAS should expect a slight turnover in Canadian representation if the proposal succeeds.

Herzig asked if Canada had a fallback position in case the proposal fails. Salisbury said that they could scale back the commitment to a shorter length or try to join another consortium. Moore congratulated the Canadian efforts, particularly for including science support costs in their proposal.

e. China

Zuyi Zhou reported that China will appoint new government ministers later this year, and certain decisions regarding IODP would have to wait until then. For now, China hopes to double the size of its previous contribution to \$1M and remain an associate member of IODP. Zhou cited some of the national benefits of participating in ODP during the last four years, including the successful drilling on ODP Leg 184, increased national funding of deep-sea research, the establishment of a research base and the training of young students, and increased international exchanges. He then outlined the objectives of the academic program proposed for 2003-2010, including establishment of a multi-disciplinary deep-sea research base, submission of proposals for IODP drilling legs in Chinese marginal seas, and socially relevant aspects such as resource exploration, environmental change, hazard mitigation, and high technology. Zhou said that the government might create an integrated national program for deep-sea research that would include IODP, IMAGES, InterRidge, and InterMARGINS. In any event, IODP would fall under the oversight of the Ministry of Science and Technology and probably receive additional support from the Ministry of Education and the National Science Foundation of China. Research priorities would focus on paleoenvironments, western Pacific marginal seas, and the deep biosphere and sub-seafloor ocean. Zhou announced that the ODP-China Science Committee will meet in May in Beijing and will submit a proposal sometime after that to the Ministry of Science and Technology. He concluded by saying that China hopes to receive strong support from the international community in its efforts to join IODP.

Mikada asked about relations between the science community and industry in China and about the possibility of getting industry support for seismic surveying. Zhou replied that academia and industry enjoy a close relationship, and China has nominated a member to serve on the iILP. He added that many Chinese scientists receive funding from industry, but industry probably would not fund a seismic surveying proposal unless it carried a strong

resource potential. Kinoshita asked about scientific cooperation between China and Chinese Taipei. Zhou said that scientists cooperate closely at the academic level.

4. iSAS Office

Minoru Yamakawa outlined the existing interim Science Advisory Structure and identified several proposed new panels. He reported that iSAS now had a total of seventy-eight active drilling proposals, including sixty-seven transferred from JOIDES and eleven newly received by iSAS. Yamakawa showed the breakdown of proposals among the three main themes of the IODP Initial Science Plan and the global distribution of proposed study areas. He also noted the distribution of lead proponents by nationality. In response to questions from the committee, Yamakawa reported that approximately eight or nine of the active proposals would require the use of MSPs, and several others involved riser drilling.

Thursday

21 March 2002

0900–1700

5. iSAS Panel Reports

a. iSciMP

Jamie Allan delivered two recommendations from SciMP to iPC.

SciMP Recommendation 01-2-02: SciMP recommends that iSciMP investigate using digital core images as the method for archiving core images in IODP.

Austin recognized the complexity of core handling on diverse platforms in IODP and suggested that iSciMP should definitely consider the issue of digital archiving. Moore questioned the wisdom of abandoning film as an archive, despite the great usefulness of digital images. Sager also expressed caution about abandoning film because of the limitations of digital imaging. Allan noted that film has a limited life span. Pezard described an existing tool used for continuous optical imaging in shallow boreholes and suggested that perhaps IODP could develop such a tool for deep drilling. Allan promised that iSciMP would develop a working plan at its next meeting.

SciMP Recommendation 01-2-10: SciMP recommends that the role and maintenance of the Micropaleontology Reference Centers in the IODP structure be addressed by iSAS. Specific topics of concern include adequately supporting curation of the collections and exploiting curator's taxonomic and stratigraphic expertise in advancing program goals (*e.g.*, creation and vetting of dictionaries for paleontological applications, assembling reference sample sets, creation of digital image atlases, creation of stratigraphic databases). It is recognized that

achieving these goals will not be likely under the current *ad hoc* funding of the MRC effort.

Allan explained that this issue could have potential contract implications. Moore noted that the Miropaleontology Reference Centers currently receive support from their home institutions and merely a blessing from ODP to use ODP samples. He suggested that IODP should view this request very cautiously because the MRCs would not necessarily have responsibility for some of the items listed in the recommendation.

Allan reported that the first iSciMP meeting focused on four main topics: the panel mandate, an overview of the current ODP Sample Distribution, Data Distribution, and Publications Policy, the OD21 database concept, and an introduction to issues of biological sampling. Allan then presented the following recommendation from iSciMP to iPC.

iSciMP Recommendation 01-1-1: iSciMP recognizes the novel difficulties presented by IODP, particularly with respect to potential commercial spin-offs associated with sampling the deep biosphere. Given the open access and sharing principles of IODP, iSciMP requests that IWG address those complex issues urgently, possibly through a specialist sub-group. Feedback to iSciMP on this will help iSciMP address iPC Motion 1-06 on developing a sample and data distribution policy for IODP. The ownership of samples and sub-samples (often at the molecular level) is probably pertinent.

Allan explained that Ken Takai educated iSciMP on some of the cultural differences between biologists and geologists and on the complex, non-scientific issues associated with microbiology sampling. Allan added that iSciMP lacks sufficient expertise to address those important issues. Baldauf confirmed that sampling issues related to the deep biosphere have already surfaced in ODP. Malfait noted that ODP has already conducted microbiology sampling and research and wondered exactly how things would differ in IODP. Kinoshita recognized that this issue could pose many difficulties and urged caution with proceeding. Kato stressed the importance of keeping the program open to biologists. He suggested that IODP should decide upon a basic policy about sample rights and work out the more-complicated details on a case-by-case basis.

iPC Consensus 2-3: The iPC accepts SciMP Recommendation 01-2-02 on using digital core images for archiving purposes in IODP, SciMP Recommendation 01-2-10 on maintenance of micropaleontology reference centers in IODP, and iSciMP Recommendation 01-1-1 on development of an IODP sample and data distribution policy. The iPC further encourages the iSciMP to address these topics at its next meeting.

b. iSSP

Shin'ichi Kuramoto reported on the first iSSP meeting in Beijing. The agenda focused on the iSSP review process, the policy and procedures for handling seismic data, and the requirements for a site-survey data bank in IODP. The panel discussed the need for 3-D data for riser drilling and database technology for analyzing and reviewing seismic data. They reached a consensus on how they would review site-survey data, provide information and advice to iPC, provide guidance to proponents through the iSAS Office, and set guidelines for evaluating the site-survey readiness of riser, non-riser, and MSP proposals. Kuramoto presented a set of matrices that iSSP plans to use as internal guidelines for reviewing proposals. Suyehiro asked about the availability of the internal matrices. Austin suggested that the matrices should be available to proponents. Byrne recalled that iSSP discussed that issue but worried that some proponents might not understand the matrices.

Kuramoto presented the following recommendation from iSSP to iPC concerning site surveying for riser drilling.

iSSP Recommendation 1-1: The iSSP recognizes that the site-survey data required for riser drilling is considerably more comprehensive than previously required for non-riser drilling. In particular, high-resolution, 3-D surveys of the shallow subsurface will be required for safety purposes and most likely to satisfy regulatory agencies as well. This will require a two-tier process, with separate requirements to satisfy (1) scientific criteria for site selection in the proposal and (2) safety and regulatory criteria for drilling. We recommend that high-resolution, 3-D survey data in support of drilling fall under the purview of IODP and be included in the planning and funding process.

Moore suggested that this recommendation should go up to the IWG. Malfait responded by reviewing the proposed operational structure of IODP and explaining that the operators would have responsibility over site surveys for safety purposes. Austin wondered whether the advisory structure or the proponents would identify a given proposal as a riser-based activity. He stated that 2-D data might provide an adequate basis for defining and reviewing the scientific objectives of a proposal, whereas selecting exact sites would require 3-D data, and he hoped that the burden for acquiring 3-D data would not necessarily fall on proponents. Karner agreed that suitable 3-D data might not always exist, or proponents might not always have access to it, at the early stage of proposal development. Mayer called it unrealistic to expect to always use 3-D data for defining a scientific problem, but absolutely necessary for operational planning. MacLeod imagined that certain proposals would require other site-survey data besides just seismic data to evaluate the science and pick the sites. Moore

expected that an expanded operations committee would ultimately decide how to map the science onto the technology. He concluded that iPC could endorse or accept the first iSSP recommendation, and the committee agreed on the following consensus statement.

iPC Consensus 2-4: The iPC has received and discussed iSSP Recommendation 02-1-1 on the need for a two-tiered approach to site surveys in support of riser-based drilling. We note that the IWG has agreed that appropriate science operations costs include “engineering or geophysical surveys required for hole design or evaluation of drilling safety during final site selection.” We also note, however, that the need for complex, high-resolution, 3-D imaging in support of IODP activities may extend beyond riser-based drilling. Therefore, the iPC urges the iSSP to continue examining this issue.

Kuramoto presented the following recommendation from iSSP to iPC concerning the future IODP data bank.

iSSP Recommendation 1-2: The future IODP data bank is to have the capability of accessing all future data and interpretations for riser, non-riser and MSP projects remotely accessible in digital/electronic form, and to have all shipboard data packages assembled in the form of “projects.” Importing existing data, handling proprietary data and largely analog data are handled within such a system. We recommend that a systematic review of how this data bank can best serve the processes of proposal and site-survey data review and support of drilling activities be undertaken immediately. This includes a re-evaluation of the necessary data types to be imported, managed and maintained by the data bank. Technical assistance required for support and management of the data center also needs to be carefully assessed.

Karner thought that the need for digital data stemmed from the desire to integrate it into the IESX system. He suggested that iPC should define the desired path before proceeding down it because proponents would not submit data in the desired format without a clear policy established. Kuramoto said that the data bank already encourages proponents to submit digital data, but not all proponents have experience with it or access to it for their proposals. Fisher suggested asking iSSP to specify the required format for each type of data. Moore preferred to remain flexible on the format of seismic data as long as it meets the objectives for reviewing science and safety.

Sager raised the issue of database security, especially concerning proprietary data obtained from industry. Austin noted that the risk and liability of a security breach increases once you have data in digital format. Pezard characterized this issue as lying at the heart of the relationship with industry. Mikada suggested that this recommendation and the previous one

also relate more broadly to other matters such as complex drilling programs and iSciMP issues. Becker noted that JOIDES maintains a very clear policy on seismic data in ODP, with very restrictive limits on access. Moore asked whether iSSP itself could take on the second recommendation. Kuramoto answered yes, and the committee agreed on the following consensus statement.

iPC Consensus 2-5: The iPC recognizes the need identified in iSSP Recommendation 02-1-2 for a thorough evaluation of the requirements and procedures of an IODP data bank. We request that the iSSP complete such an evaluation and report the results at our next meeting in August 2002. The iSSP report should include recommendations concerning (1) the requirements for digital versus analog data, (2) allowable data formats, specified by type (i.e., seismic, bathymetric, hydrographic, etc.) and form (both analog and digital), (3) the mechanisms and timing of communications with IODP panels and proponents, and (4) facilities, hardware, software, and personnel required for creating and operating an IODP data bank that meets the needs of a diverse, international community.

Kuramoto presented the following recommendation from iSSP to iPC concerning the pending appointment of an iSSP co-chair.

iSSP Recommendation 1-3: The iSSP recommends that the vacant position of co-chair will be seated by Dr. Andre Droxler.

Several committee members offered supporting comments, and Moore called for a motion to approve the recommendation.

iPC Motion 2-6: The iPC approves iSSP Recommendation 02-1-3 and appoints Andre Droxler as a co-chair of the iSSP.

Austin moved, Tada seconded; 16 in favor, none opposed.

c. iSSEPs

Gilbert Camoin reported on the first iSSEPs meeting at JAMSTEC. He explained that the iSSEPs worked jointly with the JOIDES SSEPs on legacy issues, on recommendations concerning the iSSEPs structure and procedures, and on how to handle proposals for long-term drilling projects. They concluded that the iSSEPs should retain the current two-panel structure at least during the interim period, with joint working groups also playing a critical role. They encouraged iSAS to coordinate the rotation of iSSEPs members so as to maintain an appropriate breadth of expertise, and they recognized a potential need for guidance on logging and operational matters during the interim period. They also recommended that an

iSSEPs liaison should attend iSciMP and iTAP meetings, and the iSSEPs should have a consistent liaison from the iSSP.

Camoin reported that the iSSEPs had drafted a preliminary procedure for grouping proposals at their next meeting, and they worked with the iSAS Office to ensure that the proposal review forms provide clear advice and guidance to proponents. They also recommended that the proposal cover sheet should include a space for identifying companion proposals submitted to other organizations. Camoin said that the iSSEPs recognized the importance of Program Planning Groups (PPGs) in the future program and the possible need to establish such groups in iSAS. The iSSEPs therefore intend to form a working group to identify any proposal gaps relative to the Initial Science Plan. They also recommended that PPG chairs should report to the SSEPs at the end of their term rather than during it.

Moore explained the difference between PPGs and DPGs for the benefit of the committee and added that the iPC must receive the concurrence of the iSSEPs before forming a PPG, especially if proposed by scientists from outside the advisory structure. The committee then debated the philosophy behind PPGs and the wisdom of whether or not to exclude proponents from PPG membership. Austin assessed some of the past shortcomings of PPGs under JOIDES and cautioned against forming any too quickly in iSAS. Suyehiro characterized PPGs as a mechanism to encourage proposals from outside the IODP culture. Pezard emphasized the importance of giving clear guidance to the PPGs while allowing them enough independence to use their expertise. Allan recommended identifying more explicitly the expected outcome of a PPG before establishing it.

Camoin concluded his report with a brief summary of the recommendations concerning the twenty-two drilling proposals reviewed at the first iSSEPs meeting, noting that they forwarded five proposals to the iPC for review (see below) and requested revised versions of the remainder.

6. Proposal Presentations and Evaluation

a. Review of grouping procedure

Moore reviewed the procedure for grouping and categorizing proposals, as discussed at the first iPC meeting in Portland. He explained that the iPC would review proposals in groups according to the three main themes of the IODP Initial Science Plan, and they would categorize the proposals within each group on a three-level scale of maturity. If warranted, a proposal at the highest level of maturity could also receive a star for exceptional scientific quality. Kato said that it might prove difficult to avoid thinking about quality when judging

maturity. Austin expressed concern about maintaining the quality and integrity of top-notch proposals until operations would commence with the various drilling platforms. Zhou asked for clarification about the difference between maturity and scientific quality. Moore repeated that the committee would only judge the scientific quality of the proposals in the most mature category.

Moore reviewed the iSAS conflict-of-interest statement presented in the agenda book. Since the committee would only group proposals at this meeting and not rank them, they decided to exclude conflicted members and guests from the discussion of only their own proposal.

With regard to the procedure for ranking MSP proposals at the next meeting, Moore proposed to compare the list of proponents with the iPC membership, then notify the appropriate national offices of any conflicts and give them the option of naming an alternate member or having the conflicted member excluded from the entire procedure. Moore also proposed that a quorum for voting would amount to two-thirds of all members regardless of nationality.

Oppo asked about institutional conflicts. Moore answered that the committee must identify those conflicts as well and decide how to handle them on a case-by-case basis.

<p>iPC Motion 2-7: The iPC adopts the JOIDES conflict-of-interest rules pertaining to the procedure for ranking mission-specific-platform proposals.</p>

Mayer moved, Austin seconded; 16 in favor, none opposed.

After the committee reviewed the proposals by scientific theme, the individual members categorized each proposal according to the agreed procedure, and the iSAS Office staff compiled the results. Moore presented the overall results and asked for comments. Fisher said that the committee members apparently had not interpreted the meaning of the categories in a uniform way. Moore agreed and defined the categories once again. Oppo suggested that the difference of opinion for certain proposals could reflect a matter of technical readiness versus scientific interest.

Several committee members asserted that the results of the grouping exercise essentially constituted a form of ranking. Fisher saw the goal of the review procedure as to present IODP with a body of good proposals and not a ranking or proposed schedule. Austin expressed a strong preference against any form of ranking, no matter how subtle. He also worried about categorizing a proposal now as mature and then letting it stagnate for several years until drilling begins. Suyehiro noted that decisions on proposals and scheduling could come as early as next year. Mayer suggested abandoning the category scheme altogether. Kenter proposed just classifying each proposal as either ready for ranking or not ready.

Salisbury doubted whether that would satisfy the goal of identifying a body of excellent science proposals to present to IODP. Herzig said that the iPC should only receive good science proposals from the iSSEPs and would thus only need to identify them as either ready or not ready.

Byrne questioned the entire iPC review process because he could not see how it differed from the reviews conducted by the iSSEPs. Several committee members echoed his concern about the iPC just repeating the job of the iSSEPs. Tatsumi asked if revised proposals would go back to the iSSEPs. Moore said yes, but he suggested that the iSSEPs might not need to review the proposals that previously underwent an external review for JOIDES and then went forward to SCICOM. Camoin agreed that perhaps the iSSEPs could immediately forward all of the proposals that SCICOM had already ranked. Suyehiro disagreed because the iSSEPs might not necessarily forward all of those proposals if they reviewed them. Moore concluded that the iSSEPs could decide for themselves what to do with each proposal.

The committee ultimately decided to adopt the simpler scheme with only two categories (ready or not ready for ranking) and turned toward discussing the final recommendation on each proposal (see below). Fisher, Becker, and Gillis then left the room as conflicted proponents. Fisher and Becker returned after the discussion of Proposal 545-Full2, and Gillis stayed out for the entire discussion. Mayer presented a generic introductory statement to accompany the specific comments of each review. Salisbury noted that the watchdogs could provide continued feedback to the proponents.

b. Deep Biosphere and Sub-seafloor Ocean

Proposal: 545-Full2 Juan de Fuca Ridge

Watchdogs: Herzig, Kato, and Pezard.

Conflict-of-interest: Fisher as lead proponent and Becker as a co-proponent.

Recommendation: ready for ranking

c. Environmental Change, Processes, and Effects

Proposal: 477-Full2 - Okhotsk-Bering Seas

Watchdogs: Mayer, Oppo, and Tada.

Conflict-of-interest: none.

Recommendation: not ready for ranking

Proposal: 482-Full3 - Wilkes Land

Watchdogs: Salisbury and Kenter.

Conflict-of-interest: none.

Recommendation: ready for ranking

Proposal: 549-Full3 - Arabian Sea OMZ

Watchdogs: Oppo, Mayer, and Tada.

Conflict-of-interest: none.

Recommendation: not ready for ranking

d. Solid Earth Cycles and Geodynamics

Proposal: 551-Full - Hess Deep

Watchdogs: Tatsumi, Suyehiro, and Pezard.

Conflict-of-interest: Gillis as lead proponent.

Recommendation: not ready for ranking

Friday

22 March 2002

0900–1700

7. Response to actions requested by IWG

For the response concerning the development of a data and sample distribution policy, see the discussion and recommendation under Item 5a. For the response concerning MSP proposals, see the discussion under Item 6a. For the response concerning the establishment of two new iSAS panels, see the discussions and recommendations under Items 8b and c.

8. Establishment of New iSAS Panels

a. iPPSP - approve membership

Moore reported that as a result of the email vote conducted since the previous meeting, the iPC had appointed Barry Katz as chair of iPPSP. Moore referred to the list of nominees for iPPSP membership, as distributed at this meeting, and called for any additional nominees from iPC members. Moore asked for authority from iPC to work with Katz to produce a final list of nominees for later approval, noting that Katz had identified a shortcoming of expertise in petrophysics and sedimentology. Pezard indicated that France might propose an additional nominee within the next two weeks to fill the needed expertise. Claypool suggested adding a reference to MSPs in the iPPSP mandate. Becker suggested that iPC should settle the iPPSP membership as soon as possible to allow for a joint meeting with PPSP in June. Moore agreed and asked the committee to approve the iPPSP membership as

it stood, recognizing that they could always change it later or fill the gaps in expertise with invited guests.

iPC Motion 2-8: The iPC approves the membership of the interim Pollution Prevention and Safety Panel (iPPSP) as nominated at this meeting. We note that the membership may still change slightly to ensure that the panel maintains an appropriate balance of expertise to fulfill its mandate.

Fisher moved, Austin seconded; 16 in favor, none opposed.

b. iTAP - approve mandate, review nominees

Moore asked for comments on the proposed mandate for the new interim Technology Advice Panel (iTAP). Kinoshita presented a few editorial changes as suggested by the IWG, and Austin suggested an additional slight change in wording. Moore emphasized that iTAP must look toward the future of the new program and therefore must have a clear idea of the proposed science that lies ahead. Austin added that the iTAP mandate should promote coordination of efforts for all platforms in IODP. He expressed concern about maintaining cross-platform continuity and wondered where the seam should lie between iTAP and iSciMP. Moore thought this sounded like a task for management rather than an advisory panel, but he suggested that iTAP and iSciMP might wish to hold joint meetings. Moore called for approval of the iTAP mandate, with the suggested changes (see Appendix A).

iPC Motion 2-9: The iPC approves the terms of reference and mandate for the interim Technology Advice Panel (iTAP) as revised at this meeting and presented with the minutes.

Mayer moved, Austin seconded; 16 in favor, none opposed.

Moore referred to the list of nominees for iTAP membership, as distributed at this meeting, and asked the committee to nominate candidates for chair from among the list. The committee nominated only one candidate, and Moore called for a vote.

iPC Motion 2-10: The iPC appoints Kathryn Moran as chair of the iTAP.

Austin moved, Mayer seconded; 11 in favor, none opposed, 5 abstained (Kato, Kenter, MacLeod, Pezard, Suyehiro).

c. iILP - approve mandate, review nominees

Moore asked for comments on the proposed mandate for the new interim Industry Liaison Panel (iILP). Kinoshita noted several changes received from the IWG, and MacLeod and Salisbury suggested other minor changes. Moore called for approval of the iILP mandate, with the suggested changes (see Appendix B).

iPC Motion 2-11: The iPC approves the terms of reference and mandate for the interim Industry Liaison Panel (iILP) as revised at this meeting and presented with the minutes.

Suyehiro moved, Fisher seconded; 16 in favor, none opposed.

Moore referred to the list of nominees for iILP membership, as distributed at this meeting, nominated one additional industry candidate himself, and asked for other nominees from the committee. He also asked the committee to nominate potential candidates for co-chairs, preferably one from academia and one from industry. After Salisbury noted a lack of expertise from the mining industry, and Herzig nominated a retired mining representative, the committee nominated five candidates as possible co-chairs. Moore proposed that the iPC co-chairs would first contact these candidates to see if they would accept the position of co-chair, then they would present a final list to vote on by email, and the committee agreed.

9. Industrial Liaison Working Group brochure

Moore noted that the text of the ILWG industry brochure had changed somewhat since the committee had received the agenda book. He reviewed the changes as circulated at the meeting and asked in particular for a consensus on whether or not to include the lexicon table. The committee agreed to leave it in, and they also suggested a few other minor changes. MacLeod offered to submit a better picture for one of the figures. Austin wondered about the distribution of the brochure. Moore decided to leave that up to the iILP. He concluded that the IWG Support Office could soon receive the final revised document for publishing.

iPC Motion 2-12: The iPC accepts the latest revised version of the informational brochure, “Opportunities for Scientific and Industry Cooperation,” produced by the Industry Liaison Working Group (ILWG) and intended for use by the international community as a companion document for the IODP Initial Science Plan.

Austin moved, Herzig seconded; 16 in favor, none opposed.

iPC Consensus 2-13: The iPC appreciates the extraordinary efforts of the Industry Liaison Working Group (ILWG) and its co-chairs, Kathryn Moran and John Armentrout, in authoring the industry brochure. We also recognize the services of William Hay and the many other members of the international scientific drilling community who contributed to or reviewed the brochure, and we thank the staff of the IWG Support Office at JOI for their excellent work in designing and publishing the final document.

10. Complex Drilling Projects in IODP

As a prelude to the discussion of complex drilling projects (CDPs), Suyehiro reported that he and Austin had begun drafting a new Guide to IODP using the contents of the existing Guide to ODP as a starting framework. Suyehiro described some of the anticipated differences between ODP and IODP in terms of platforms, operators, management, and technical capabilities, and he reviewed the current schedule for the start of operations with the various platform types in IODP.

Suyehiro then presented a draft outline of how to handle CDPs in IODP, including the involvement of proponents, the science advisory structure, and the science management structure. He suggested that proponents should first submit a preliminary proposal presenting their overall scientific goals and strategy, and the iSSEPs would determine whether it addressed important goals of the Initial Science Plan and constituted a CDP. Suyehiro explained that the development of individual proposals representing integral parts of a CDP might occur through planning workshops funded by either the national program offices or the IODP management structure, if recommended by the science advisory structure and approved by the executive authority. He added that proposal development could also occur on an *ad hoc* basis through individual efforts of the proponent team. Suyehiro proposed that the science advisory structure should review the overarching document of the CDP together with the associated individual drilling proposals, and once they judged a CDP as a high scientific priority, they would probably have to establish a detailed planning group (DPG) to define a concrete operational plan. He also proposed that a project management team consisting of a principal investigator for science, a principal investigator for engineering, and a project coordinator would ultimately carry out the plan.

Byrne reported that the SSEPs also discussed the issue of complex drilling projects in IODP and the iSSEPs decided to forward the example of Proposal 609-Pre to the iPC as a means of stimulating a similar discussion at a higher level. Byrne presented a draft flowchart from the SSEPs for the path of a CDP proposal within the advisory system. He also noted that the SSEPs raised a series of important questions concerning how to define and identify a CDP, whether CDP proposals required a new format, how to establish a related DPG, what would constitute an appropriate oversight mechanism, and how to insure that other organizations would provide the necessary support in a timely manner.

Mayer wondered what it would take to define an overarching theme for a CDP, such as for Proposal 609-Pre, and he asked whether the overarching document would open the door for other proponents to contribute a complementary proposal. Fisher said that the San Andreas

drilling project worked that way, whereby a request went out for proposals to conduct pieces of the project. Moore cited the seismogenic zone as an example of how to think about opening up a project. Austin stated that iPC should definitely help the iSSEPs decide how to define and identify a CDP, but he feared that if the program would advertise an opportunity for submitting overarching theme documents it could lead to a flood of proposals from proponents thinking that the program could make a commitment to them. He also wondered about the best timing for making a commitment to developing and managing a CDP and whether an identifiable flaw in one piece of a project could conceivably delay or scuttle the entire project.

Allan asked if the project management team would have control of the budget. Moore said that that would depend on the central management structure. Kinoshita asked about the placement of workshops within the organizational and funding structures. Moore suggested that the national program offices should support the workshops because the program as a whole should keep the process of developing proposals separate from the process of evaluating proposals. Farrell noted that the U.S. Science Support Program had already received several inquiries about supporting such workshops. He added that the U.S. community wanted to coordinate its efforts with the international community. Pezard suggested that external science programs could perhaps play a role in developing CDPs. Austin agreed as long as the external programs covered all aspects of the Initial Science Plan. He recommended setting an extremely high standard for defining and committing to a CDP, and he expressed concern about ensuring the necessary advisory oversight once the management structure would take over.

Fisher asked about the timeline of producing the new Guide to IODP. Austin said that he and Suyehiro hoped to have a draft ready for review by the next iPC meeting in August. Moore encouraged them to do so.

11. Other Business

Liaisons to other panels: Moore called for volunteers from iPC to serve as liaisons to the other iSAS panels. Kenter and Fisher volunteered for the iSSEPs, Austin volunteered for iSSP, Salisbury volunteered for iTAP, and Suyehiro volunteered Ito *in absentia* for iSciMP. Kato volunteered to serve as a liaison to JEODI. Mayer asked about establishing a liaison with the International Continental Scientific Drilling Program. Suyehiro replied that he could do it since he attends ICDP meetings anyway, though he only serves as an alternate on iPC. Moore explained that he and Kinoshita invited ICDP to send a liaison to this meeting

but they did not respond. He saw it as more important to have ICDP representatives at the iSSEPs meetings.

12. Future Meetings

a. August 2002 – Brussels, Belgium

Kenter announced that the location of the 3rd iPC meeting had changed from Brussels to Ghent, Belgium. He explained that the meeting would take place on 26-29 August, with an optional fieldtrip that could begin on Saturday afternoon, 24 August.

b. March 2003

Jamie Austin volunteered to host the 4th iPC meeting in mid March 2003 at Thompson Conference Center of the University of Texas at Austin, Texas.

c. August 2003

The committee did not discuss the location of its fifth and final meeting, tentatively scheduled for August 2003.

Meeting adjourned

1700

APPENDIX A – Terms of Reference for iTAP

8. interim Technology Advice Panel (iTAP)

8.1 General Purpose: The interim Technology Advice Panel (iTAP) will advise the iPC and, through the iPC, the IWG (and the management office) on matters related to the technological developments necessary to meet the scientific objectives of the IODP Initial Science Plan.

8.2 Mandate: The iTAP will identify long-term (2-5 year lead time) technical needs and recommend ways to meet those needs. Appropriate topics of concern may include:

- Advice and recommendations on performance requirements for specific technological needs.
- Assessment of whether commercial “off-the-shelf” technology can most optimally meet those needs or whether they require research and development within IODP.
- Recommendations concerning the appropriate mode for pursuing such research and development (i.e., through IODP, universities, industry, or joint ventures).
- Advice and recommendations on the process and procedures for developing and evaluating program contracts in support of technical design and innovation.
- Regular review of the progress made by iSAS and the science community in planning for the technological needs of IODP.

8.3 Meetings: The iTAP should meet twice per year or as required and approved by the iPC co-chairs. The iTAP may hold its meetings separately or in conjunction with the iSciMP when appropriate.

8.4 Membership: The iTAP will consist of fifteen to eighteen members, with a nominal term of three to five years for individual members. Each IWG member may name one representative to the iTAP and nominate other candidates for membership. The iPC will select and approve all other iTAP members from the additional nominees based on the expertise needed on the panel. Members of iTAP should specialize in the fields of marine operations on a variety of platforms, down-hole logging and instrumentation, drilling technology (including mining technology and drilling under extreme conditions), geotechnics and other disciplines as necessary. The iTAP may recommend the establishment of working groups to address specific technological issues that require an added breadth of expertise and the timely delivery of technical advice.

8.5 Liaisons: To ensure that iTAP members stay fully apprised of the scientific objectives of the IODP as well as the progress of the scientific program, the iPC Co-chairs or their designates will brief the iTAP at least once per year on the status of the science program. In

addition, liaisons from the operators, the management office, the interim Industrial Liaison Panel, the data centers and other cooperating scientific programs may regularly attend iTAP meetings. The iTAP Chair should attend iSSEPs meetings as a liaison.

8.6 Chair: The iPC will appoint the iTAP Chair.

APPENDIX B – Terms of Reference for iILP

9. interim Industrial Liaison Panel (iILP)

9.1 General Purpose: To facilitate ongoing communication and cooperative scientific activities between IODP and selected industries, with the goal of benefiting IODP science and technology and maximizing economic benefits from sharing resources, such as drilling of sites for shared scientific and technical goals, development of joint drilling and sampling technologies, and the development of improved downhole measurement and observatory capabilities. Industrial sectors of interest include oil & gas companies (e.g., offshore deepwater technology, petroleum geology, and engineering), mining (e.g., understanding potential economic targets), microbiology (e.g, development of new enzymes, etc.), insurance industry (e.g., hazards and climate predictions) and research and development organizations in these fields.

9.2 Mandate: The iILP will:

- Develop effective links between academic and industry scientists with mutual research, technical, and engineering interests,
- Identify barriers to industry participation in IODP and recommend solutions for overcoming these barriers,
- Develop mechanisms for sharing industry data, expertise, and resources between IODP and industry scientists,
- Act as the liaison group for IODP to industry and selected industry associations, and promote IODP educational and outreach activities within selected industry professional organizations,
- Assist with the identification of scientists and engineers from industry to serve on panels, committees and working groups of IODP,
- Define industrial priority research within the IODP context and facilitate communication and cooperative scientific and technical development activities between IODP and industry,
- Assist iPC in the establishment of interim Detailed Planning Groups for complex multiple-platform, multiple-leg drilling programs and/or interim Program Planning Groups as needed.

9.3 Meetings: The iILP should meet twice per year. The iILP may hold its meetings separately or in conjunction with other iSAS panels or professional societies as appropriate.

9.4 Membership: The iILP will consist of 15 members representing as many IWG member

nations as possible to maintain reasonable size and balance of expertise and research interests, with an ideal goal of about two thirds of the members from industry and one third from academia. Nominations will be solicited from the JOIDES and OD21 science advisory structures, industry colleagues, and national ODP offices. The iPC Co-chairs will consult the iILP Chair and recommend candidates for membership as needed. Academic iILP members should have experience in scientific ocean drilling and scientific expertise related to industry interests or else an active involvement in academic/industrial collaborations. The iPC will approve the iILP membership.

9.5 Liaisons: To ensure that iILP members stay fully apprised of the scientific objectives of the IODP as well as the progress of the scientific programs, the iPC Co-chairs or their designates will brief the iILP at least once per year on the status of the science program. In addition, the iILP should establish liaisons with the iSSEPs and the iPC.

9.6 Chair: The iPC will appoint the iILP Chair.