

IODP Science Advisory Structure Executive Committee

5th Meeting, 15–16 January 2008

University Inn & Conference Center, Santa Cruz, USA

Science Advisory Structure Executive Committee (SASEC)

Richard Arculus†	Earth and Marine Sciences, The Australian National University, Australia
Michael Bickle	Department of Earth Sciences, Cambridge University, UK
John Hayes	Woods Hole Oceanographic Institution, USA
Susan Humphris*	Woods Hole Oceanographic Institution, USA
Hodaka Kawahata	Ocean Research Institute, University of Tokyo, Japan
Gaku Kimura*	Department of Earth and Planetary Sciences, University of Tokyo, Japan
Masaru Kono (chair)	Global Edge Institute, Tokyo Institute of Technology, Japan
Young-Joo Lee (observer)	Korea Institute of Geoscience and Mineral Resources, Korea
Ken Miller ¹	Department of Geological Sciences, Rutgers University, USA
Jim Mori (SPC)	Disaster Prevention Research Institute, Kyoto University, Japan
Maureen Raymo	Department of Earth Sciences, Boston University, USA
Jianshong Shen* (observer)	Ministry of Science and Technology, China
Manik Talwani	IODP Management International, Inc., USA
Yoshiyuki Tatsumi	Institute for Research on Earth Evolution, JAMSTEC, Japan
Brian Taylor	School of Ocean and Earth Science and Technology, University of Hawaii, USA
Hidekazu Tokuyama ²	Ocean Research Institute, University of Tokyo, Japan
Gerold Wefer	Center for Marine Environmental Studies, University of Bremen, Germany

¹Alternate for Susan Humphris
²Alternate for Gaku Kimura
†Provisional observer
*Unable to attend.

Liaisons, observers, and guests

Rodey Batiza	National Science Foundation, USA
Steve Bohlen	JOI Division, Consortium for Ocean Leadership, USA
Dan Evans	ECORD Science Operator, British Geological Survey, UK
David Falvey	Australian Research Council, Australia
Takao Kato	IODP Management International, Inc., USA
Yoshihisa Kawamura	Center for Deep Earth Exploration, JAMSTEC, Japan
Hans Christian Larsen	IODP Management International, Inc., Japan
Catherine Mével	ECORD Managing Agency, France
Julie Morris	National Science Foundation, USA
Toshiyuki Oshima	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Kazuya Shukuri	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Eli Silver (Host)	Department of Earth and Planetary Sciences, UC Santa Cruz, USA
Deborah Smith	National Science Foundation, USA
Masato Sugiyama	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Kiyoshi Suyehiro	JAMSTEC, Japan
Yoko Totani	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Barry Zelt	IODP Management International, Inc., Japan

IODP Science Advisory Structure Executive Committee

5th Meeting, 15–16 January 2008

University Inn & Conference Center, Santa Cruz, CA, USA

Executive Summary (v.1.1)

1.3. Approve SASEC meeting agenda

SASEC Motion 0801-01: The SASEC approves the revised agenda of its fifth meeting on 15–16 January 2008 in Santa Cruz, USA.

Miller moved, Tatsumi seconded, 10 in favor, 2 non-voting (Mori, Talwani).

1.4. Approve last SASEC meeting minutes

SASEC Motion 0801-02: The SASEC approves the revised minutes of its fourth meeting on 25–26 June 2007 in Bremerhaven, Germany.

Miller moved, Tatsumi seconded, 10 in favor, 2 non-voting (Mori, Talwani).

6. Approval of new SPC vice-chair

SASEC Consensus 0801-03: The SASEC appoints Gabe Filippelli as vice-chair of the Science Planning Committee (SPC), effective immediately.

7. Update on action items from the June meeting

7.1. Status report on workshops: (1) *High to Ultra-high Resolution Sedimentary Records*; and (2) *CO2 sequestration*.

SASEC Consensus 0801-04: The SASEC supports co-funding (\$75K) of the workshop “High to ultra-high resolution sedimentary records”

Recommended members of the steering committee, headed by David A. Hodell (University of Florida) and Jürgen Thurow (University College of London) are: Hans-Jürgen Brumsack (Oldenburg University), Tomohisa Irino, (Hokkaido University), Larry Peterson (University of Miami), Ryuji Tada (University of Tokyo), plus climate modelers: Jonathan Overpeck (University of Arizona), Michael Schulz (Bremen University), Thomas Crowley (University of Edinburgh), and ice core scientists: Valérie Masson-Delmotte (IFREMER), Hubertus Fischer (AWI), and one to-be-named.

Workshop objectives: (1) Define the key scientific objectives that can be achieved by drilling high to ultra-high sedimentary records, and how they might be integrated with ice and land records; (2) Identify a global, long-term strategy (including scientific, technical, engineering and operational components, and integration with other scientific programs), to address those objectives.

Workshop deliverables: The SASEC requires that publishable documents will be produced, including a short workshop report in Eos, and a longer comprehensive workshop report that describes the scientific objectives, presents a drilling strategy for addressing those objectives, and explains how the results might be integrated with land and ice records, and efforts by other scientific programs to address those objectives.

7.2. IODP–ICDP integration: status of *ad hoc* committee

SASEC Consensus 0801-05: The SASEC reaffirms SASEC Consensus 0706-11 regarding an *ad hoc* committee on IODP-ICDP integration. The SASEC understands that the ICDP is keen for this effort and has named three individuals (K. Suyehiro, U. Harms, R. Conze) to represent the ICDP. The SASEC chair will ask Jan Behrmann (Europe), Tetsuro Hirono (Japan) and Ken Miller (USA) to act as the IODP representatives to the *ad hoc* committee exploring possible linkages between these programs. The committee will meet electronically

and/or at the April 2008 EGU meeting and report back to the SASEC at its June 2008 meeting.

7.3. Status of IODP DRILLS program

SASEC Consensus 0801-06: The SASEC sincerely thanks its first three IODP DRILLS speakers, Ted Moore, Yoshiyuki Tatsumi, and Bo Barker Jorgensen, for agreeing to serve the IODP through their extensive efforts. The committee reaffirms the DRILLS program as a significant outreach effort to the global scientific community, bringing Japanese, U.S. and E.U. scientists to universities and public forums on five continents. The SASEC recommends the DRILLS speaker program as a very high priority and suggests that IODP-MI should begin the planning process for continuing this program in 2009.

10. Long term evaluation of IODP science

10.3. Nomination of committee members for long term thematic review on *Oceanic Crustal Structure and Formation*

SASEC Consensus 0801-07: For the next long term thematic review, on *Oceanic Crustal Structure and Formation*, the SASEC nominates SASEC members Susan Humphris and Yoshiyuki Tatsumi to serve on the committee. The SASEC recommends Shuichi Kodaira (JAMSTEC), Doug Toomey (University of Oregon), Nobukazu Seama (Kobe University), Mathilde Cannat (IPGP), Georges Ceuleneer (CNRS, Toulouse), Chris MacLeod (Cardiff University) as potential external committee members. The SASEC also requests that at its March 2008 meeting the Science Planning Committee (SPC) nominates a member to serve on the committee.

12. Discussion of IODP Implementation plan: 2008-2013

SASEC Consensus 0801-08: The SASEC will revise the draft document *IODP Implementation Plan: 2008–2013*, taking into account comments received during the public posting of the document in November 2007. In particular, the revised document will exclude any reference to scientific focus areas. Additionally, it should be made clear that the guiding principle “Achieves a balance between risk, cost, and scientific merit” should be applied during the scheduling of expeditions, and not during the SAS review process.

SASEC Consensus 0801-09: The SASEC endorses the Science Planning Committee’s (SPC) continued and periodic re-ranking of proposals residing with the Operations Task Force (OTF) with the goal of making sure the highest priority scientific programs are being put forward for scheduling.

13. Program planning and renewal

13.1. Proposal pressure, readiness, and SAS process

SASEC Consensus 0801-10: The SASEC asks the Science Planning Committee (SPC) to find a mechanism for having discussions of engineering issues earlier in the proposal evaluation and nurturing processes. This may include having Implementing Organization (IO) and/or Engineering Development Panel (EDP) comments on proposals at the Science Steering and Evaluation Panel (SSEP) and SPC meetings.

14. Budget and cost saving issues for FY2009 and beyond

14.2. SASEC role in development of APP for FY2009 and beyond

SASEC Consensus 0801-11: In order to help the SASEC fulfill one of its primary mandates, i.e., to

“review and approve the annual IODP program plan and budget prior to forwarding it to the IODP-MI Board of Governors for corporate approval and contractual submission to the IODP lead agencies”

the SASEC creates a standing budget subcommittee with the following mandate:

1) to interface with IODP-MI and the Implementing Organizations (USIO, CDEX, ESO) to analyze the evolving IODP program budget and its effects on the proposed program plan; and
2) to advise the SASEC on how best to maximize the IODP program deliverables given the available budget, including identifying priorities for possible budget reallocations, enhancements and cuts.

The budget subcommittee shall comprise four members: three nominated by the SASEC (one US, one Japan, one other) plus the chair of Science Planning Committee (SPC). The initial members of this subcommittee are Maureen Raymo, Hodaka Kawahata, Richard Arculus and SPC chair, Jim Mori.

15. Collaboration with industry and other outside entities

15.1. Status of industry contacts

SASEC Consensus 0801-12: The SASEC thanks IODP-MI and ECORD for looking into collaborations with industry and other means for securing outside funding and hopes they will continue their efforts.

19. Review action items, motions, consensus statements from the meeting

SASEC Consensus 0801-13: The SASEC thanks Eli Silver for hosting our meeting at Santa Cruz and especially for the lovely reception Tuesday night at the Earth Science Department. Thanks to you and the UCSC students for all your assistance and hospitality.

SASEC Consensus 0801-14: The SASEC thanks Mike Bickle for his service over the last two years. Mike has provided invaluable help and advice in establishing the role of the SASEC in the overall Science Advisory Structure. We look forward to Mike’s continued involvement in the program.

IODP Science Advisory Structure Executive Committee

5th Meeting, 15–16 January 2008

University Inn & Conference Center, Santa Cruz, CA, USA

Final Minutes (v.1.2)

Tuesday	15 January 2008	08:30-17:30
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1. Introduction

1.1. Call to order and introductions

Masaru Kono called the meeting to order at 08:30. All meeting participants introduced themselves. Kono reviewed the conflict-of-interest procedures for the meeting and asked if any of the meeting participants had a conflict for any of the agenda items. No conflicts were declared. Kono also explained that the SASEC usually reaches decisions via consensus; otherwise a motion would be required followed by a vote of the voting committee members.

1.2. Welcome and meeting logistics

Meeting host Eli Silver welcomed everyone to Santa Cruz and explained the logistics for the evening's reception.

1.3. Approve SASEC meeting agenda

Kono suggested moving agenda item 9 (“Discussion of *IODP Implementation Plan: 2008–2013*”) so that it occurs after item 11. Wefer suggested that agenda item 9 be split into two parts, with an initial overview of the history of the implementation plan document and comments received from the public, to be followed later by a more detailed discussion and recommendations. He noted that this would allow discussion to start as early as possible, and would provide an opportunity for discussion of this topic during the coffee breaks. In response to a question from Taylor, Wefer suggested the first part of agenda item 9 should take only ten minutes. Kono stated that he continued to prefer a single item 9, moved as initially suggested. Taylor suggested that splitting agenda item 9 would be useful to allow for discussion over lunch. Bickle agreed and noted that this type of informal discussion would be valuable in this situation. Kono, reconsidering, agreed to splitting agenda item 9. The first part “Review of *IODP Implementation Plan: 2008–2013*” would occur after agenda item 7; the second part “Discussion of *IODP Implementation Plan: 2008–2013*” would occur after the original agenda item 11. The numbering of the agenda items in these minutes are based on the revision described above.

SASEC Motion 0801-01: The SASEC approves the revised agenda of its fifth meeting on 15–16 January 2008 in Santa Cruz, USA.

Miller moved, Tatsumi seconded, 10 in favor, 2 non-voting (Mori, Talwani).

1.4. Approve last SASEC meeting minutes

Miller commented that the June 2007 minutes were thorough and complete, but noted one mistake under agenda item 12 (IODP and Industry) concerning a statement made by Talwani. Mével pointed out another error under agenda item 10 (Reducing Expenditures for FY09 and Beyond) in which she was mistakenly identified as a SASEC member.

SASEC Motion 0801-02: The SASEC approves the revised minutes of its fourth meeting on 25–26 June 2007 in Bremerhaven, Germany.

Miller moved, Tatsumi seconded, 10 in favor, 2 non-voting (Mori, Talwani).

1.5. Items approved since June 2007 meeting

Kono noted that while he thought the Annual Program Plan had been approved after the June

2007 SASEC meeting, he now understood that it has yet to be approved. He also pointed out that after the June 2007 meeting, the committee decided to not have a call for mission proposals on 1 April 2008, as originally intended. In addition he noted that the draft Implementation Plan document, which had been posted for public comments on the IODP web site, received many negative comments. No other items were completed since the previous meeting.

2. Highlights of funding agency reports

2.1 Japan Ministry of Education, Culture, Sports, Science, and Technology (MEXT)

Kazuya Shukuri reported that *Chikyu* started IODP drilling operations in September 2007. He noted that many guests attended a commemorative ceremony at Shingu port, and that MEXT was very appreciative of the attendees. He reported that some of the Japanese Diet members were very interested in *Chikyu's* activities, and that news of the successful work from the first expeditions had been received well, which was very much appreciated by, and important for, MEXT. Referring to the JAMSTEC budget figure which appeared in the MEXT report in the agenda book (38.8 billion Yen), he stressed that this figure was the total for all activities at JAMSTEC, including the operation of many research vessels, super computers and other equipment and projects. He explained that the money available for the drilling program is, therefore, much less. He indicated that the Japanese contribution to the Annual Program Plan is much less than desirable, but asked for understanding. Addressing other issues, he noted that the basic law of ocean and marine affairs was enforced last July, as decided by the Japanese Diet, and that MEXT was trying to prepare the planning for ocean and marine affairs.

Oshima added that the Japanese Cabinet had decided to merge JAMSTEC and NIED (National Research Institute for Earth Science and Disaster Prevention), but that details such as schedule and budget had not yet been decided. Shukuri noted that the combined entity was established by Japanese law.

2.2 U.S. National Science Foundation (NSF)

Rodey Batiza noted that on 4 February 2008 two pieces of information will be made public: (1) the President's fiscal 2009 budget request to congress; and (2) fiscal FY2008 budget numbers for NSF. He added that preliminary indications were that NSF will not receive the 7% increase requested by the Senate, and, with the recent passing of the Omnibus Bill, NSF will not be doing so well.

Kono asked if the NSF budget issues were the reason that the IODP Annual Program Plan was not yet fixed. Batiza replied that it was one factor. Kono, noting that the NSF report in the agenda book stated that NSF would "offer the SODV to the international IODP for approximately 8 months per year" (page 45), asked for confirmation. Batiza replied that the SODV would be available for eight months per year on average; though this could fluctuate year to year. He also indicated there would be an advantage to straddling a fiscal year.

Batiza also announced that Australia was planning to join IODP. Dave Falvey explained that he represents the prime funding agency (Australian Research Council) in Australia. He added that Australia has committed to join for five years, and that the organization in Australia was already well established. He noted that Richard Arculus will lead the organization responsible for the grant for IODP, and expressed hope that New Zealand will join as a member of a consortium very soon. Falvey explained that Australia is committing to 25% of full membership, but that details of the Memorandum of Understanding (MOU) were still being sorted out. Mori asked if Australia will participate as a voting member on the SPC. Falvey said that Australia would have a non-voting member, and would send Arculus to the March 2008 SPC meeting as an observer.

2.3. ECORD Managing Agency (EMA)

Catherine Mével clarified that EMA was not a funding agency, but receives money from funding agencies of ECORD member countries. She announced that a workshop for non-ECORD scientists was planned for May 2008 with the objective of attracting new member countries, such as Poland, Hungary, Israel, Greece and Turkey. She noted that EMA did not expect to receive a lot of money from these countries, but their scientific expertise would be especially valuable.

Kono noted that the EMA report in the agenda book stated “There is a consensus both at ESSAC and at the ECORD Council that the IODP-MI funded DRILLS program duplicates similar efforts done at the national/consortium level and is not really necessary” (page 47). Kono said that he was surprised to read this. Mével stated that DRILLS is a great program, but expensive because it involved flying the speakers all over the world. She noted that there was already a similar program in Europe and, she thought, also in the U.S. and Japan. Kono expressed concern that this information had not been made available earlier. Mével noted that EMA does not want to cut the current DRILLS effort, but provided the information for future consideration.

3. Highlights of IODP-MI and Implementing Organization (IO) reports

3.1. IODP Management International, Inc. (IODP-MI)

Manik Talwani and Hans Christian Larsen noted that there was nothing further to add to the report in the agenda book. There were no questions or comments.

3.2. Center for Deep Earth Exploration (CDEX)

Yoshi Kawamura noted that the highlight for CDEX for the end of FY2007 and early FY2008 was the start of IODP drilling operations for *Chikyu*. He reported that, despite the fact the FY2008 budget for CDEX was not approved yet, two expeditions have already concluded, and a third would conclude in a few weeks. He also added that the data acquired and cores retrieved were a very good achievement, despite some problems during operations associated with currents, weather, etc. Kawamura reported that one Australian took part in Expedition 316.

Taylor asked for an update on the riser tensioners. Kawamura reported that new tensioners will be received in May 2008. These would be tested and riser operations should start in FY2009. He noted that cost for repairs was not yet known, so it was uncertain how long the *Chikyu* would be available for expeditions.

3.3. U.S. Implementing Organization (USIO)

Steve Bohlen reported that the *JOIDES Resolution* is in Singapore being refitted. He noted that the schedule for completion was somewhat uncertain, with the shipyard claiming that work would be complete by 31 March 2008. The onsite USIO team, however, were somewhat skeptical of this estimate. Bohlen explained that there were 19 projects in the shipyard, with the *JOIDES Resolution* being the second to smallest, yet it requires resources greater than the size of the project would imply. He added that Transocean found it difficult to motivate the shipyard, but that the company would be sending a team to the shipyard soon. Because of this, he suggested that the community should expect a possible one month slippage in delivery time, and if so the draft USIO schedule will be impacted.

Kawahata noted that Expedition 318 (Bering Sea) was currently scheduled for July through September 2008 and that the weather window for this expedition was critical. He asked what would happen if the *JOIDES Resolution* is delayed. Mori responded that this has been discussed at the Operations Task Force (OTF), and would result in exchanging of the Bering

Sea and Equatorial Pacific expedition slots in the schedule. Bohlen explained that the USIO has received guidance that the Bering Sea expedition is extremely high priority with NSF and the program, so they (USIO) are keenly aware of concerns about slippage.

3.4. ECORD Science Operator (ESO)

Dan Evans reported that ESO would open tenders for the New Jersey Shallow Shelf expedition at the end of January 2008. He also reported that over the last week ESO had received indications that demand for platforms in the Gulf of Mexico had decreased somewhat, providing some ground for optimism for the availability of a platform. Addressing the Great Barrier Reef expedition, he reported that the Great Barrier Reef Marine Park Authority (GBRMPA) has published its refusal of ESO's application for drilling within the park, and that ESO will ask for reconsideration.

Hayes asked what the expectation was for reconsideration by the GBRMPA. Falvey stated that he was not optimistic, claiming that there was a lack of communication between government agencies within Australia, in addition to concern that Greenpeace may get involved. Kono asked about the time frame for hearing back from the GBRMPA. Evans explained that the GBRMPA has ESO's response letter addressing all points in the refusal, but that the issue was now political rather than technical, as Falvey had indicated.

4. Update of FY2008 Program Plan

Manik Talwani reported that there was no update on the FY2008 Annual Program Plan (APP), and that it has yet to be approved.

Kono stated that the SASEC approved the APP at its previous (June 2007) meeting, but it is still not finalized, hence there is nothing the committee can do in the meantime.

Taylor commented that there appeared to be an impasse in the function of the SASEC relative to the funding agencies. He asked the Lead Agencies to explain how they expect the SASEC to operate in this context, with budget realities. In particular, Taylor asked how can the SASEC fulfill its responsibilities when it can not make decisions because budgets are not known. Batiza stated that the budget reality is that this year is a lot like last year, when NSF did not get its own budget until late. He pointed out that in 2007 the SASEC could not approve a non-existent APP, so it was done later by email. He stated that it was unknown whether this modus operandi will become the norm.

Bohlen noted that the USIO has asked NSF the same question, recognizing that this is a time of unprecedented uncertainty. As an example, he pointed to the *JOIDES Resolution*, and the continual slippage of the delivery dates from the shipyard. He expressed concern that the ship would be available on 31 March 2008, and pointed out that with slippage, the budget changes. Looking ahead to FY2009 he observed that the program cannot support full time operation of the *JOIDES Resolution*, but that it was uncertain where the resources to operate the ship will come from. Bohlen stated that he did not see a solution except for the SASEC to decide on a period of time where there will be no drilling. He cited a combination of two problems: severe funding shortage, and a delay in getting funds. He also opined that there was not enough information to manage the program in a manner that was previously possible.

Taylor stated that it was an expectation and requirement of the SASEC to approve the APP in a timely fashion. He wondered if the expectations and requirements of the SASEC needed to be changed by the Lead Agencies. Batiza suggested that the whole reason for the current SASEC meeting schedule is based on providing budget information. He also suggested that moving the meeting dates could be considered but was uncertain if that would help. He also wondered if the email approval of the 2007 APP was viewed as an acceptable process.

Talwani pointed out that there are uncertainties in budgets (e.g., for NSF and USIO) as well

as shipyard uncertainties, and that he foresees the same problem for FY2009. He noted that IODP-MI does not know when it will get budget guidance or how stable that guidance will be. He concluded that this was a difficult time and that he did not see much room for optimism. Mével agreed that the situation does seem likely to improve, and that therefore what is needed is an evolving program plan. She cited CDEX and *Chikyu*, and their accomplishment of expeditions without an APP, as a positive example.

Hayes argued that current situation represented a “perfect storm” with both of the large vessels experiencing some problems. In his understanding, the job of IODP-MI was to be a buffer between fluctuating funding and science, and he expressed concern that once the APP is resolved there will still be an issue. Kono asked for clarification on what was meant by “a buffer”. Taylor offered as an example the uncertainty of when the *JOIDES Resolution* will get out of dry dock, and the number of expeditions that can be scheduled this year. He pointed out that it is not even known if fewer expeditions this year means more expeditions next year. Taylor asserted that without this information the SASEC cannot even contribute to a discussion on the APP in a practical way. Talwani noted that the Operations Task Force (OTF) is wrestling with this problem all the time. He cited the Bering Sea and Pacific Equatorial Age Transect expeditions as cases where both have moved back and forth on the schedule, all with little meaning until the APP is in place. He stated that some stability in the program plan was necessary. Returning to Hayes’ comment about IODP-MI acting as a buffer he asked what Hayes expected IODP-MI to do. Hayes explained that he was literally asking whether he is correct in stating that IODP-MI is supposed to be a buffer, in the sense that it should make plans with enough flexibility that the scientific community can make some progress. He recognized that not having both large vessels operating made this difficult, but suggested that, when both vessels are available, if IODP-MI were to provide a plan to deal with the fiscal realities, the scientific community would be appreciative. Kono claimed that IODP-MI is currently doing that to some extent. Batiza, returning to Taylor’s point about the uncertainty of the availability of the *JOIDES Resolution*, noted that the “silver lining” behind shipyard delays was that money saved can be applied to FY2009. Talwani noted that the OTF now has more meetings per year than previously in order to respond to changing conditions.

Taylor stated that some first order options may be available. Talwani suggested that in order for the SASEC members to understand the difficulty faced by the OTF, some of the SASEC members should attend an OTF meeting. Taylor replied that this was not necessary as he understood the issues. He also asserted that as the SASEC is a policy making body, attending an OTF meeting was not necessary. Falvey interjected that the program is supposed to be run by professional managers who should be expected to deal with difficult situations. He suggested that a series of options to deal with the budget situation need to be formulated. He also expressed an expectation that professional managers would get together and solve the problem. Kono suggested asking IODP-MI at the end of the meeting what it could accomplish in the coming several months.

5. Report on the August 2007 Science Planning Committee (SPC) meeting

Jim Mori reported on the August 2007 SPC meeting (report appears in the agenda book,, page 115). He noted that the FY2008/early FY2009 schedule approved by the SPC in August is already out of date, and that possible further delays in the availability of the *JOIDES Resolution* could result in exchanging the order of the Bering Sea and Pacific Equatorial Age Transect expeditions. He mentioned that another option would be to remove one of the Pacific Equatorial expeditions if necessary. Additionally, the SPC has identified the Atlantic Ocean as the priority for FY2010 *JOIDES Resolution* operations. Mori noted that, up until now, the philosophy for the SPC had been to send as many proposals as possible to the OTF,

but that the downside to this was having many proposals residing with the OTF that would not be scheduled, at least in the current phase of IODP. He pointed out that, prior to August 2007, 23 proposals resided with the OTF, enough to last until the end of the current phase of the program (2013).

During Mori's presentation he noted that Proposal 694-Full3, Izu-Bonin-Mariana (IBM) Arc Evolution, was not designated as a Complex Drilling Project (CDP) and that this "Decision probably reflects current fiscal situation, especially in regards to drilling a deep 6 km hole." Kawahata asked how the SPC evaluated expensive science. Mori explained that his comment was more of a personal opinion on the mood of the meeting, i.e., there was a background consideration of financial issues, and CDP designation implicitly means a commitment of program resources. He added that the decision not to designate 694-Full3 as a CDP was not a science issue.

Tokuyama asked why, especially given the long delay in getting expeditions in the Pacific implemented, did the SPC approve the move of the *JOIDES Resolution* to the Atlantic Ocean for FY2010. Mori explained that the decision was based on the high-priority options residing with the OTF. At the August SPC meeting, Tom Janecek, chairman of the OTF, presented three different options and, given the mix of proposals available, and given that the *JOIDES Resolution* will start operations in the Pacific, the Atlantic seemed a reasonable choice for FY2010. Mori noted that the second priority for FY2010 was the Indian Ocean. Hayes asked why, given the ship track described, it is necessary to eliminate one of the Pacific Equatorial Age Transect expeditions. Mori explained that the elimination of one of the expeditions was based on late delivery of the vessel combined with weather window issues. Hayes observed that if the ship was going to the Atlantic via the Panama Canal, it would be going past the Pacific Equatorial location.

Tatsumi asked if the SPC had any advice for the proponents, since proposal 694-Full3 was not designated as a CDP. Mori replied that the umbrella proposal (694-Full3) is effectively dead as it was not designated as a CDP. Taylor viewed the SPC decision as liberating for the proponents in the sense that, without CDP designation, it is not necessary for all of the individual components to succeed in order for the entire project to be viewed as successful. He stated that linking via CDP designation would imply that all the components would have to be completed, requiring a major financial commitment for the project to be completed by the end of the program in 2013. Mori noted that this was the view of the SPC, i.e., the SPC rejected the need to link the components together. Larsen suggested that, for the record, the proponents of the IBM proposals should identify themselves for conflict of interest reasons, though he did not view their presence as a conflict. Tatsumi and Arculus identified themselves as proponents of 694-Full3.

Raymo expressed support for SPC in making the hard decision to pull proposals back from the OTF to the SPC. She indicated her preference for putting forward the best proposals every year. Taylor suggested the SASEC should endorse and encourage the approach of the SPC to pull proposals back from the OTF. Zelt noted that pulling a large number of proposals back from the OTF created a different problem: i.e., too many proposals for the SPC to review and rank at a single meeting. Mori suggested that the proper balance needed to be found and agreed that, otherwise, the SPC could not do so many reviews each year.

Talwani rhetorically asked how many proposals were at OTF versus at SPC, as well as residing with the Science Steering and Evaluation Panel (SSEP). With so many proposals in the system, he asked if there was a need for a reality check. Mori replied that he has done the same analysis, but that it was important to convey a positive message to the community, and not to dissuade proponents from submitting new proposals because of the large number

already residing within the Science Advisory Structure (SAS). Raymo suggested, given the scheduling realities, identifying the bottom 20 to 25 proposals and deactivating them. Mori stated that this may need to be done. Taylor suggested that, with proposals being pulled back to the SPC, the onus was now on the proponents to update and improve their proposal, and therefore improved communication with the proponents was necessary. Mori claimed that all the proposals residing with the SPC were scientifically very good, thus it would not be possible to filter some out based on science. Raymo disagreed, but added that issues of balance (e.g., regional) needed to be considered.

6. Approval of new SPC vice-chair

Masaru Kono asked the committee if there were any comments on the appointment of Gabe Filippelli as vice-chair of the SPC. Miller stated that Filippelli was an outstanding choice. Wefer and Raymo agreed.

SASEC Consensus 0801-03: The SASEC appoints Gabe Filippelli as vice-chair of the Science Planning Committee (SPC), effective immediately.

7. Update on action items from the June meeting

7.1. Status report on workshops: (1) *High to Ultra-high Resolution Sedimentary Records*; and (2) *CO₂ sequestration*.

Hans Christian Larsen presented a brief update on the status of workshops. He noted that the Large Igneous Provinces (LIPs) workshop in July 2007 was very successful, with an article now published in *Eos*. He reported that there was not much information available on the Geohazards workshop held in August 2007, and that as yet, no workshop reports were in hand. Larsen mentioned that two workshops were planned for FY2008 (with \$90K allocated in the F2008 Annual Program Plan): (1) High to ultra-high resolution sedimentary records (\$75K); and (2) CO₂ sequestration in sub-sea geological strata (\$15K). He noted that the former was tentatively scheduled for 29 September–1 October, 2008 in either Naples, Italy or Potsdam, Germany, with the location possibly determined based on the number of possible attendees. He listed the proposed steering committee (H. Brumsack, D. Hodell, T. Irino, L. Peterson, R. Tada and J. Thurow) and noted that is up to the SASEC to decide if further expertise is required.

Taylor stated that he had read the workshop material, which mentions integrating IODP and the International Continental Scientific Drilling Program (ICDP). He asked if ICDP proponents were represented in the workshop. Larsen replied that if the meeting is held in Potsdam, Uli Harms (Secretary of ICDP) would be hosting.

Wefer suggested that the steering committee should include at least one person from the ice core community if high resolution is the objective. Larsen asked for specific recommendations and noted he was also concerned about the lack of a modeler.

Miller pointed out that Larsen did not mention that IODP supported a sea level workshop in Salt Lake City, and that a report from this workshop will be submitted very soon to *Scientific Drilling*. He noted that this was a multiply funded workshop.

Bickle asked about the status of the CO₂ sequestration workshop. Larsen reported that the lead workshop proponent, Dave Goldberg, has not secured sufficient funding yet (the IODP and LDEO funding is not sufficient), and perhaps by April 2008 there will be more information available. Bickle expressed dissatisfaction that the proponents are making a case for a workshop related to subseafloor sequestration when more could be done on land, and suggested that better justification was needed in their workshop application. Larsen replied that the SASEC has already recommended funding of \$15K.

Returning to the high-resolution sedimentary workshop, Kono asked Larsen if another statement of support from SASEC was required. Larsen replied that it was not, but that further guidance with respect to the steering committee would be useful. Various names were suggested and a consensus on recommended members of the steering committee, workshop objectives and deliverables was reached.

SASEC Consensus 0801-04: The SASEC supports co-funding (\$75K) of the workshop

“High to ultra-high resolution sedimentary records”

Recommended members of the steering committee, headed by David A. Hodell (University of Florida) and Jürgen Thurow (University College of London) are: Hans-Jürgen Brumsack (Oldenburg University), Tomohisa Irino, (Hokkaido University), Larry Peterson (University of Miami), Ryuji Tada (University of Tokyo), plus climate modelers: Jonathan Overpeck (University of Arizona), Michael Schulz (Bremen University), Thomas Crowley (University of Edinburgh), and ice core scientists: Valérie Masson-Delmotte (IFREMER), Hubertus Fischer (AWI), and one to-be-named.

Workshop objectives: (1) Define the key scientific objectives that can be achieved by drilling high to ultra-high sedimentary records, and how they might be integrated with ice and land records; (2) Identify a global, long-term strategy (including scientific, technical, engineering and operational components, and integration with other scientific programs), to address those objectives.

Workshop deliverables: The SASEC requires that publishable documents will be produced, including a short workshop report in Eos, and a longer comprehensive workshop report that describes the scientific objectives, presents a drilling strategy for addressing those objectives, and explains how the results might be integrated with land and ice records, and efforts by other scientific programs to address those objectives.

Talwani recommended that in the future, the SASEC should decide on a steering committee before approving a workshop because the current approach is not very efficient. Kono replied that SASEC Consensus 0706-04 did address workshop conveners, but did not specify names. Talwani said that there had been complaints of insufficient time between approval of a workshop and nomination of the steering committee members. Kono explained that in the present case, the committee only received the list of recommended members within the last week. He agreed that this was not very efficient, but that there was no real choice in this case, especially as the topic is very important. Larsen suggested that, in the future, the committee should try to do both things together to speed up the process. Talwani noted that in the past there was a person within IODP-MI to organize workshops, but no longer, and this needed to be considered when choosing conveners.

7.2. IODP–ICDP integration: status of *ad hoc* committee

Masaru Kono noted that a meeting between representatives of IODP and ICDP took place during the December 2007 AGU meeting, but not much progress was made. Mori added that there are plans for a joint IODP-ICDP symposium at the August 2008 International Geological Congress (IGC) meeting in Oslo. Names and topics were discussed at the December meeting, and Uli Harms was compiling a list. Mével reminded the committee of the joint IODP-ICDP EuroFORUM’08 meeting that will take place in Vienna in April 2008 during the EGU meeting. She also mentioned that every year a joint ICDP-IODP town hall meeting takes place at the EGU meeting. Talwani stated that the IGC symposium is important and suggested that SASEC suggest some names to participate in the symposium. He noted that he, Uli Harms and Susan Humphris were conveners, and also noted that the IODP newsletter will give information on how to submit abstracts. Kono asked how the SASEC could invite people. Talwani suggested that after the newsletter is published,

recommendations can come by email. He referred to the symposium as an excellent opportunity to highlight some of IODP's work.

Evans added that ESO recently sent three people to a course run by ICDP, and they found it very useful. He suggested that this might be useful for IODP scientists, and perhaps it would be worthwhile considering the formation of a course that integrates IODP and ICDP. Kawahata added that last December both IODP and ICDP within J-DESC had a meeting on how to promote activities within Japan. He reported that J-DESC announced several courses for young students and scientists on how to analyze cores, paleomagnetism, etc.

Kono reminded the committee of SASEC Consensus 0706-11 on the recommendation to form an *ad hoc* implementation group to study closer integration of IODP and ICDP. Kono noted that, to his knowledge, nothing had happened since the previous SASEC meeting, and asked if the SASEC should propose some names to populate the implementation group. Larsen pointed out that some names were already mentioned (the consensus statement named Greg Mountain, Jan Behrmann and Tetsuro Hirono as SASEC nominations to the *ad hoc* committee), and thus what was needed was to activate the working group. Mori noted that former SPC chairman, Keir Becker, had started something, but had not got beyond discussions about (1) closer integration on proposal with sites on both land and in water; and (2) joint core archiving. Talwani noted that there was an IODP-ICDP joint dinner at the AGU in December 2006 which resulted in the formation of two *ad hoc* committees to write reports on (1) joint review of proposals; and (2) joint core repositories. He reported that both committees wrote reports, but the recommendations were hard to implement because of complications involving, among other things, funding agencies. Larsen pointed out that SAFOD has some sort of agreement to deposit their cores in the Gulf Coast repository. Mori recommended not doing anything right now unless a specific task could be identified, i.e., form a working group when there is a task that needs to be accomplished. Miller commented that, to his knowledge, the three names appearing in SASEC Consensus 0706-11 were never asked to participate. He recalled that Uli Harms had committed to taking charge, but did not think that anything ever happened. Miller asked Larsen to confirm this. Larsen replied that nothing was done by IODP-MI because it was a SASEC activity. Talwani agreed. Taylor noted that, according to minutes from the June 2007 SASEC meeting (page 40), the ICDP Science Advisory Group (SAG) was skeptical about joint reviews, and interested in joint core storage on a case-by-case basis.

Kono summarized the discussion and noted that there appeared to be a lot of case-by-case joint activities. He asked if the SASEC needed to push ahead with Consensus 0706-11, or just continue with case-by-case collaborations in the future. Mével reminded the committee that ICDP is contributing \$500K to the New Jersey Shallow Shelf expedition, so collaboration is happening, albeit on a case-by-case basis. Kono asked if there was general agreement to table the previous consensus statement. Raymo suggested that, given the current fiscal realities within IODP it made sense not to push forward with expanded collaborations except on a case-by-case basis. Although there was general agreement that the previous consensus should be tabled, Kono later reported (on the second day of the meeting) on a development subsequent to the above discussions. He reported that Miller had been told by Uli Harms that ICDP was in fact very keen to investigate possible collaborations. Taylor reminded the committee that at the previous meeting there was a consensus to move forward with an *ad hoc* implementation group to investigate closer collaborations between IODP and ICDP, and that three names were mentioned. Meanwhile, he pointed out, ICDP has identified three people to represent their program, and thus the situation cannot be left as it currently stands. Raymo presented a statement reaffirming SASEC Consensus 0706-11 and naming three individuals (Behrmann, Hirono and Ken Miller) to act as representatives of IODP. This

statement was accepted by consensus.

SASEC Consensus 0801-05: The SASEC reaffirms SASEC Consensus 0706-11 regarding an *ad hoc* committee on IODP-ICDP integration. The SASEC understands that the ICDP is keen for this effort and has named three individuals (K. Suyehiro, U. Harms, R. Conze) to represent the ICDP. The SASEC chair will ask Jan Behrmann (Europe), Tetsuro Hirono (Japan) and Ken Miller (USA) to act as the IODP representatives to the *ad hoc* committee exploring possible linkages between these programs. The committee will meet electronically and/or at the April 2008 EGU meeting and report back to the SASEC at its June 2008 meeting.

7.3. Status of IODP DRILLS program

Manik Talwani briefly reviewed the speakers, topics and schedules for the 2008 Distinguished Researcher and International Leadership Lecture Series (DRILLS): Ted Moore (“The Warm Earth We Know”), Yoshiyuki Tatsumi (“Drilling Into the Memory of the Earth”), and Bo Barker Jorgensen (“The Deep Subseafloor Biosphere: Discovering the Largest Living Community on Earth”). He also noted that 33 lectures were scheduled to take place in twelve different countries between early February through May 2008, in addition to a successful lecture already given by Ted Moore in Brazil. Talwani stressed that it was important to try and get other countries to join IODP. He also stated that IODP-MI would be happy to get a recommendation from the SASEC to continue with a DRILLS program next year, and with a recommendation an item would be added to the FY2009 budget.

Bohlen noted that the universities scheduled for Jorgensen’s lectures were mainly already heavily involved in the program, and asked what the strategy was for choosing universities. Talwani explained that interested universities responded to an advertisement, and in Jorgensen’s case he wanted to go to these specific schools. Raymo described most of the universities visited by Jorgensen as top earth science schools, which she said were also important to address. Talwani noted that, Jorgensen is talking about microbiology, which is a new field for most of the universities. Bohlen again asked what the strategy was for choosing universities. Talwani replied that the strategy was generally to try to go to schools not involved in IODP.

Mével commented that the DRILLS program overlaps with other programs at the national and consortia level. Miller disagreed. Kono said that the program was great, but there was a question of resources, so should money be spent in somewhat duplicating other efforts. Talwani suggested that in times of limited funding it is extremely important to reach out and go places that have not been closely involved in IODP. Taylor asked about the total DRILLS budget. Larsen replied that it was in the order of \$60-70K. Raymo asked if there was cost saving by the host institution. Talwani replied that he believed the host institution may handle the local expenses. Arculus stated that within Australia the general feeling is that talks about IODP by international experts are well received; he noted Ted Moore would be giving several lectures in Australia. Miller suggested that the SASEC should thank the three DRILLS lecturers for their efforts. Kono agreed, but asked whether the SASEC wishes to continue the program and ask IODP-MI to set aside funding. Taylor suggested that, as the current DRILLS lectures have not even occurred yet, it is too early to think about shutting down the program, and thus the SASEC should ask IODP-MI for funding to continue the program.

SASEC Consensus 0801-06: The SASEC sincerely thanks its first three IODP DRILLS speakers, Ted Moore, Yoshiyuki Tatsumi, and Bo Barker Jorgensen, for agreeing to serve the IODP through their extensive efforts. The committee reaffirms the DRILLS program as a significant outreach effort to the global scientific community, bringing Japanese, U.S. and

E.U. scientists to universities and public forums on five continents. The SASEC recommends the DRILLS speaker program as a very high priority and suggests that IODP-MI should begin the planning process for continuing this program in 2009.

8. Review of IODP Implementation plan: 2008-2013

Masaru Kono briefly summarized the history of the draft SASEC document *IODP Implementation plan: 2008-2013*. He noted that discussion on the document began at the previous (June 2007) SASEC meeting, followed later by email discussion, resulting in a set of guiding principles, focus areas, and minimum operational requirements. The draft document was posted on the IODP-MI web site on 1 November 2007 for a four-week period of public commenting. IODP-MI sent email to more than one thousand IODP supporters (proponents, SAS members, IO representatives, Program Member Office representatives, etc.) announcing that the document had been posted and requesting comments. Kono noted that there was a mostly negative response to the draft plan, and at the IODP town hall meeting during the December 2007 AGU meeting the community again expressed disagreement with the SASEC plan. Kono also summarized opinions of support for the document, noting that there were not many. He noted that while there were no negative comments about the guiding principles, there were many comments against the focusing of the study areas, and the minimum requirements received no response. Kono concluded by asking the committee what should be done next.

Hayes stated that the summary was accurate. Taylor mentioned that he had heard or read a few other comments about an inconsistency between trying to collaborate with industry while excluding margins from the focused study areas. Referring to comments received that suggested the document needs to be written with a more optimistic tone, Taylor said that he sensed a great desire to not do anything that will affect parallel funding for things such as site surveys and lab studies.

9. Proposed Changes to SASAC and SPC Terms of Reference

Masaru Kono provided background information on the proposed changes to the terms of reference for both the SASEC and SPC. He noted that changes to the SASEC terms of reference would need to be approved by the Board of Governors (BoG), and that the SPC plans to discuss its terms of reference at its March 2008 meeting. He indicated that there are a number of overlaps and ambiguities regarding the extent of the authority and responsibility for various matters. As an example he mentioned the phrase "...custody and initial implementation of the IODP Initial Science Plan (ISP)" which appears in the SPC terms of reference. Kono said that both he and Mori believe that custody of the ISP is a SASEC responsibility. He also noted that Mori proposes to replace "science" by "expedition" in the phrase "...carrying out long-term science planning..." which appears in the SPC terms of reference.

Taylor said that he was confused about the proposed changes to both the SPC and SASEC terms of reference as described on page 157 of the agenda book. He stated that the proposed changes would give both the SASEC and SPC responsibility for implementing the ISP. Mori explained that the SPC is primarily responsible for implementation, while the SASEC is responsible for creating and having custody of the ISP. Kono suggested that the phrase "implementation of the ISP" is also needed in the SASEC terms of reference. Arculus suggested taking out the entire first clause on implementation of the ISP from the SPC terms of reference. Mori indicated that he was agreeable to that, but that the intent was to clarify the distinction between SASEC and SPC responsibilities. Taylor commented that the proposed changes actually add two new duplications between SASEC and SPC responsibilities. Speaking as a member of the BoG, he stated that the BoG would like the SASEC to clarify

what it wants to be doing. Talwani suggested that the committee could form a subcommittee, including BoG members, to write a revised, proposed terms of reference for the SASEC, then bring it back to the entire committee for approval. Taylor reiterated that the BoG is trying to understand how the SASEC sees its role, so the SASEC needs to specify its role. Talwani replied that the SASEC is a committee of the BoG, and normally it would be the BoG who decide what it wants the SASEC to do. Taylor agreed, but suggested it would be helpful for the SASEC to explain to the board what they want to do. Talwani responded by pointing out that in the past, proposed changes to the SASEC terms of reference were denied three times by the BoG. Based on the discussion, Kono sensed that the proposed changes in the agenda book would not work, so he recommended the formation of a small working group to look at the SASEC terms of reference overnight, and return with recommendations on Wednesday morning. The small group comprised Mori, Hayes, Kono and Tatsumi.

Discussion on a new draft set of mandate changes written by Hayes continued on Wednesday. Zelt asked what was meant by the phrase "...monitors plans for implementation of the ISP..." in the SASEC mandate. Miller suggested replacing "monitors" with "oversees". Talwani asked how the SASEC would oversee, and that it was not clear in a substantive way what the SASEC would be doing. Hayes replied that approving the Annual Program Plan is how the SASEC oversees. Talwani stated that he thought oversight of the ISP was an SPC role. Kono stated that the SASEC asks the SPC to implement the ISP, but the SASEC oversees and approves what is done. Taylor suggested that the original SASEC mandate is fine as it is. Talwani agreed. He stated that the BoG gives SASEC its mandate, and the SASEC gives the SPC its mandate. He approved of Hayes' change to the SPC mandate, but did not like the proposed changes to the SASEC mandate. Hayes replied that he tried to make changes he thought had been agreed upon by the committee and chair. Taylor also did not agree with the suggested changes to the SASEC mandate. Kono suggested letting the SPC come up with its own suggested mandate. Taylor said that the SASEC should decide the mandate for SPC. Mori declared that he would like to first get SPC approval for proposed changes to its mandate, then come back to the SASEC for approval. Talwani stated that this process was backwards; the SASEC should write the mandate for the SPC, then the SPC can comment on it. Clarifying, Kono said he was not saying that the SPC should write its own mandate, but it is acceptable for the SPC to suggest changes to its mandate. Similarly, for the SASEC, it is the BoG's responsibility to write the mandate, but the SASEC can make suggestions based on what it is doing. Hayes suggested that this constituted an efficient form of communication. Taylor asked why there was an agenda item for changes to the SASAC and SPC terms of reference if the committee is not going to do anything about it. Kono explained that, for the case of the SPC, he and Mori agreed to present planned changes that would be presented to the SPC at its March 2008 meeting. Mori stated that the agenda item was intended to clean up the two mandates, but he now recognized that it was a mistake to raise the issue now with the SASEC without first addressing it with the SPC.

Talwani suggested that if the main problem with the current mandates is that both groups are currently responsible for doing long range planning, would it not be simplest to just remove long term planning from the SPC and do nothing else. Mori agreed that, effectively, this is what was intended.

10. Long term evaluation of IODP science

10.1. Report on IODP Topical Symposium *North Atlantic and Arctic Climate Variability*

Gerold Wefer reported on the North Atlantic and Arctic Climate Variability Topical Symposium. He noted that the symposium was based on Expeditions 303 and 306 (North Atlantic Climate), there were fifteen invited speakers, with an attendance of 150 people from around the world, including many young people. He also reported that Hans Christian Larsen

gave a presentation on IODP.

Taylor asked if there is a web site with any of the symposium material available. Wefer replied there was not, and that the most important result is the report. Arculus pointed out that for Margins workshops all the PowerPoint presentations are available on the web, making them useful from an educational aspect. Kono suggested that, while it may be too late to do that for this symposium, perhaps this could be done for future symposia and workshops. Taylor stated that this would be very valuable in terms of outreach and making information available for younger people, since they get much of their information from the web. Raymo added that one reason the symposium was so good was that it had modeling people attending, and there was good synergy between the modelers and ice core people. Miller noted that the original information about the topical symposium is still on the IODP web site. Taylor pointed out that the presentations were not available. Larsen pointed out that other workshops have an approximately ten-page white paper as a deliverable. He suggested that it was important to have similar deliverables for thematic symposia.

10.2. Report on long term thematic review on *Climate Variability*

Hans Christian Larsen reported on the first IODP long term thematic review, for which the theme was understanding climate variability by scientific ocean drilling. He noted that the draft report presented in the agenda book was for information purposes and for possible comments on format and content, with the final report to be posted on the IODP web site upon completion. Larsen noted that three IODP projects comprising four expeditions were reviewed, with the expeditions leading to considerable scientific findings in all three sub-themes (extreme climate, rapid climate change, internal/external forcing and sea level). He summarized several conclusions and recommendations: (1) broke new ground in terms of drilling strategy, environment, methodology and by sampling within the Arctic Ocean basin; (2) no indications that the field yet has reached a mature stage; (3) has obvious societal relevance - IODP must carefully monitor its position in the field of rapid climate change and how IODP data might support the IPCC (e.g., sea-level change during deglacials); (4) reach out to related programs, be interdisciplinary and modeling inclusive from planning of sites through interpretation and dissemination of data; (5) carefully consider a return to the Arctic; (6) explore potential linkages between deep biosphere, carbon cycle and climate; and (7) analytical techniques and experiment designs may require revision of sample policies, more cores to be sampled at each site, and revisits to legacy sites.

Raymo commented that she had read the report and thought it was very good. She observed that there is a lag in the influence of science after drilling, thus some of the important results from drilling were not included in the report, perhaps because there were obtained under the ODP. She felt strongly that IODP still needs to claim these results of ocean drilling. Larsen replied the Thematic Review Committee decided not to include the ODP results, but he does see her point, and wondered if Raymo had a solution. Raymo said she would provide suggestions for further revisions.

Miller claimed that it is an issue of “what have you done for us lately”, i.e., this was an IODP review, so the review looked only at the accomplishments of the current (IODP) program. He did concede that having a page or two of background to set the theme from previous (ODP) drilling could be useful. Raymo added that the ODP results were only bearing fruit now, or recently. Falvey agreed there should not be overemphasis on the difference between the two programs because people see no difference between ODP and IODP, so it would be a big mistake to exclude results from ODP. Talwani remarked that there are two audiences, and the most important audience wants to know what drilling has accomplished. Taylor agreed that having a preamble to describe results from ODP would be useful. Arculus suggested that it

would not hurt to emphasize that it takes time for results to mature; it is a global effort, and integrating global results takes time. Larsen expressed concern about a major rewrite of the draft report. Kono agreed that a short preamble may be acceptable in this case, but in the future past work with a strong impact now should be incorporated. Raymo repeated that she would give Larsen suggestions for improvements and additions to the review document.

10.3. Nomination of committee members for long term thematic review on *Oceanic Crustal Structure and Formation*

Masaru Kono suggested that the SASEC should nominate one or two SASEC members for the next long term thematic review committee, and ask the SPC to nominate one SPC member. He also suggested including one or two co-chiefs from the related expeditions. Wefer recommended adding external people instead of co-chiefs, because the review should be done by people outside the direct drilling. Larsen noted that there were no co-chiefs on the first Thematic Review Committee. The committee generally agreed not to invite co-chiefs.

Tatsumi nominated Susan Humphris. Taylor stated that she was the only member of the SASEC with this particular expertise (oceanic crustal structure formation). Bickle pointed out that both Taylor and Tatsumi are also qualified. Kono suggested that, for national balance, a second nominee should be from Japan; he nominated Tatsumi. Both Tatsumi and Taylor asked how many members serve on the Thematic Review Committee. Larsen said that six is the minimum. Arculus agreed that Tatsumi would be a good choice as he is not as closely involved in the expeditions in comparison to Humphris. The committee agreed that Humphris and Tatsumi would be the two SASEC nominees for the review committee. Mori agreed to ask the SPC to nominate a member at its March 2008 meeting.

Raymo asked if the purpose of the review was for the SASEC or for the public. Bickle said he saw it as a review and not a publicity exercise, though the results of the review could be useful when applying for renewal of the program. Kono added that this is also a good reason to invite external people. Talwani stated that the Science Planning and Policy Oversight Committee (SPPOC) had said that expeditions should be reviewed in two senses: (1) operational, involving IOs, co-chief scientists, etc.; and (2) scientifically.

Kono asked for recommendations for external members. Tokuyama said that the committee needs a reflection seismologist; he nominated Shuichi Koidara (JAMSTEC). Kawahata suggested that an alteration petrologist was required. Arculus suggested Doug Toomey (University of Oregon). Tatsumi nominated Nobukazu Seama (Kobe University). Mével suggested Mathilde Cannat (IPGP), Georges Ceuleneer (CNRS, Toulouse), and Chris MacLeod (Cardiff University). The committee agreed by consensus to recommend the above mentioned names as external members of the Thematic Review Committee. Larsen asked for confirmation that the review needs to include more recent ODP findings. Kono said yes.

SASEC Consensus 0801-07: For the next long term thematic review, on *Oceanic Crustal Structure and Formation*, the SASEC nominates SASEC members Susan Humphris and Yoshiyuki Tatsumi to serve on the committee. The SASEC recommends Shuichi Kodaira (JAMSTEC), Doug Toomey (University of Oregon), Nobukazu Seama (Kobe University), Mathilde Cannat (IPGP), Georges Ceuleneer (CNRS, Toulouse), Chris MacLeod (Cardiff University) as potential external committee members. The SASEC also requests that at its March 2008 meeting the Science Planning Committee (SPC) nominates a member to serve on the committee.

11. Assessment of Mission concept

11.1. Report on reviews of Mission proposals

Hans Christian Larsen presented a summary of the external Mission Review Panel (MRP)

meeting, which took place immediately before the SPC meeting in August 2007. He noted that the panel comprised Chris Hawkesworth, Jose Honnorez, Ted Moore, Harutaka Sakai, John Sclater, Uri ten Brink, Seiya Ueyda, and Mark Zoback (chair), and that Keir Becker (SPC) and Hans Christian Larsen and Barry Zelt (both IODP-MI) attended as observers. He also emphasized that the MRP was provided with only the three mission proposals for review, and not any of the component proposals. In addition the MRP was not privy to the results of the May 2007 SSEP reviews of the mission proposals. Larsen then summarized the three mission proposals and the results of the reviews by the MRP: (1) 713-MP: Mission Monsoon; (2) 719-MP: Mission Moho; and (3) 720-MP: Birth of Oceans Mission. He noted that the MRP did not believe that mission designation was warranted for (1) and (3), but the panel did strongly support mission designation for Mission Moho.

Jim Mori reported on the SPC evaluation of the three mission proposals at its August 2007 meeting. He reviewed the overarching principles for missions and the criteria for mission designation. Mori summarized the SPC results of the reviews, noting that none of the mission proposals were designated as an IODP mission. For Mission Monsoon he reported that, as requested by the SSEP, a Detailed Planning Group (DPG) would be formed to coordinate, organize, and prioritize a drilling plan for the component proposals. Mori commented that the SPC and SSEP did not buy into the mission concept. He mentioned that the SPC looked very closely at the mission definition, including consideration of timelines, and decided that Mission Moho could not be done within the timeline.

11.2. Discussion of future for Mission concept

Taylor asked, given that the SASEC created mission, how should the SASEC respond. Bickle noted that missions originated from the May 2005 Frascatti, Italy meeting of the IODP Management Forum. He suggested that the mission proposals show that these studies are so complicated that they do not fit the mission definition, and the lesson to learn is to draw back and develop a planning framework for complex proposals (e.g., DPGs).

Kono summarized the current status of the mission concept, noting that the SASEC recently agreed not to have a call for mission proposals for 1 April 2008. He suggested not accepting any more mission proposals in the current phase of IODP because there is not enough time for implementation. He added that he was personally against the mission concept, but felt that now it was not wise to dump it unless it was very bad. He pointed out that some proposals cannot be done without extra planning.

Mori, raising the issue of the distinction between missions and CDPs, asked why missions are needed. Tatsumi replied that the difference was that with missions the Implementing Organizations (IOs) were involved earlier in the planning. He added that it was very difficult for proponents to prepare all the site survey data on their own, as for example in the case of Mission Moho. Mori then asked why the CDP concept could not just simply be extended to allow for earlier IO involvement in the planning. Kono mentioned that the lead agencies had sent a letter to the SASEC (appears in agenda book) with questions on the proposal process for the SASEC to consider. Larsen announced that the letter would be dealt with in a later agenda item.

Arculus observed that the SASEC, as scientific managers, having set up the rules for the mission concept, now finds out missions cannot happen, or are happening in other ways. Bickle suggested that the comment from Arculus was a bit simplified. He added that what was needed was a mechanism to allow people to do things that are complicated. He suggested that the fundamental problem with the concept is that the evaluation of the implementation aspects was not separated from the scientific evaluation. Raymo stated that missions are imposing an unnecessary level of bureaucracy. Miller added that the community response

was that missions are perceived as top down. He suggested that the mission concept was not as top down as it appears and may still be a viable process, but budget cuts make it impossible to proceed with the concept at this time. Taylor stated that some members of the SSEP were concerned with budget issues and the SSEP would therefore never designate a mission.

Bohlen explained that, given the science funding framework, the Management Forum at the Frascatti meeting needed to find a way to develop coordinated efforts to accomplish a large portion of the ISP, while including an education and outreach component. He stated that the initial concept was eventually modified which, in the end, was not a good thing. He added that he does not accept that the mission concept is a flawed idea. Talwani said that, even if the program had money, he was uncertain if the SAS would approve missions. He stated that the Frascatti meeting led to a concept for missions, but after the concept was changed by various groups that were unsympathetic to the concept, it was not possible for a proposal to satisfy the conflicting requirements for mission designation as specified in the final *IODP Missions: Designation and Implementation* document. He made an analogy to NASA missions and suggested that there can be a bottom up way to propose missions, but he reiterated that, as implemented, missions were incompatible with the way the SAS reviews proposals. Kono agreed that, as currently defined, missions will not work and, further, in a democratic system, it is very difficult to propose a mission that will succeed. However, he suggested missions could work if the Memoranda of Understanding (MOU) included funding for specific missions, but that this would require the Lead Agencies to support the idea.

Taylor stated that the SASEC needs to recognize that in the time frame of the current program plan, missions as currently defined cannot be implemented. Larsen suggested that NanTroSEIZE is a *de facto* mission, and this project shows that it is possible for resources to be committed. Kono said that NanTroSEIZE is in the MOU, and that is why it has succeeded. Taylor mentioned that, during ODP, he was on a committee charged with exploring the depth capabilities of the *JOIDES Resolution*, and at that time the community was encouraged to come up with proposals that would push the *JOIDES Resolution* to its limit. He explained that this led to a whole series of holes that fell short because they would take too many resources, and not rate high enough scientifically to succeed. Taylor said that to test the limit of current resources requires programmatic direction from that lead agencies to show that there is support. He suggested that this has never been done in IODP (i.e., taking things to the limits), and this needs to be considered in the discussion of program renewal. Bickle stated that if we have to choose, the most important objectives are the simple, relatively inexpensive, drilling legs that are currently being scheduled, e.g., Paleoclimate studies. He claimed that cost effectiveness needs to be considered, and that in the medium term the simple legs will return far more than really expensive legs. He added that a framework for allowing planning for really expensive and difficult projects was, however, required. Kono stated that he believes it was impossible to start with the current ISP and implement missions later. He wondered if the Lead Agencies had any comments. Morris pointed out that funding has risen with respect to previous levels, but the level of funding did not reach what was hoped for so that, given the time left to implement, and costs, missions are not feasible.

Kono, summarizing, suggested it was not practical to implement missions in the current phase of IODP. He added that the current system can handle large scale projects. Tatsumi asked Kono if he meant that by 2013 mission drilling cannot be implemented or mission proposals submitted. Kono replied that there is no real possibility of doing a mission type of expedition by 2013, and therefore no reason to call for mission proposals. Tatsumi agreed that by 2013 mission drilling cannot be implemented, but he believed there should be a call for mission proposals. Kono said he was uncertain if mission proposals should be received

without the possibility of implementation in the current phase of IODP. Tatsumi pointed out that implementation of a big project requires that planning and preparation starts as soon as possible, either as a mission or in some other form.

Larsen noted that he was a part of the group that wrote the IODP ISP, and there were some areas that were effectively viewed as missions, or “golden spikes”. He stated that in terms of 2013, there can be different ways to view missions, e.g., missions could be something that appear in a new Science Plan. Mori stated that he believes one of goals of missions was to help with renewal of the program, and that, for renewal, NanTroSEIZE represents a successful mission-type of project. Arculus suggested that most scientists are wary of claims that a big project will be a great thing for science, thus small projects must not be forgotten because one never knows when a small two-month expedition will lead to fantastic results.

Talwani stated that there is some assumption that missions should be top down. He disagreed with this assumption and suggested that all missions should come from the community. Taylor mentioned that this is how missions work with NASA, though he recognized there were different scales of budgets, but this could be accounted for. Batiza suggested that a single review process will not be able to deal with regular proposals and mission proposals. Taylor agreed and wondered if the program should transition to a scenario with different evaluation processes for regular and mission proposals. Miller pointed out that Larsen’s presentation showed that good mission proposals can be developed within the current system. Zelt asked for clarification about which mission concept the committee was discussing, i.e., were they referring to missions as defined in the document *IODP Missions: Designation and Implementation*. Kono replied that they were talking about the broad mission concept.

12. Discussion of IODP Implementation plan: 2008-2013

Continuing from agenda item 8, Masaru Kono opened the floor for discussion on the draft SASEC document *IODP Implementation plan: 2008-2013*.

Miller summarized the IODP Town Hall meeting at the December 2007 AGU, noting that the last two things mentioned were missions and the draft implementation plan, and that neither went well. He reported that three people spoke on the implementation plan and all were very critical, so that the meeting ended with a sour note. Miller said the document was supposed to be an expression of what was thought could be achieved, but other communities saw it as exclusionary, and others thought it very top down. He suggested the SASEC needs to rethink how it goes back to the community with a revised plan. Bickle added that the mistake, in hindsight, was to suggest topics for focus areas, which does not work in this community. He stated that the community had to be reassured, because its support was needed, together with new drilling proposals coming in, to justify renewal. The question, according to Bickle, was how to go about that with a revised implementation plan.

Taylor posited removing the focus areas and leaving the rest of the document as is. He added that, together with a revised implementation plan, the SASEC needs to explain to the community that it put out a draft document, the community responded, the SASEC heard the comments loud and clear and factored these into the revised document. Miller added that positive aspects need to be emphasized, e.g., the program is doing bold things such as the Arctic, Tahiti and New Jersey expeditions, there is a brand new *JOIDES Resolution*, *Chikyu* is now drilling, and that while the reality is that there is not as much drilling time as originally envisioned, the program is still moving forward. Miller suggested perhaps that Talwani’s and Jamie Austin’s vision for an industry sponsored ocean drilling program (see agenda item 15.1) may change the way IODP does business. Wefer stated that a positive statement needs to include a planning phase for beyond 2013, as it is clear that everything in the ISP cannot be accomplished by 2013. He suggested that the positive message should be

that drilling is open for all fields, and the best proposals will be drilled. Miller added that this is an opportunity to start planning for the renewal process (e.g., developing the time frame), and the document needs to stress this is still a community-driven program. Batiza noted that USSAC is currently meeting and discussing planning for beyond 2013. Taylor, raising a procedural question, noted that there is some expectation that the SASEC will respond to community comments and revise the implementation plan, but he added that it is not clear that it will be possible to link a revised document with a plan for renewal, because there is not enough time at this meeting. He suggested that the two things need to be disassociated.

Kono said he sensed a consensus that it was a mistake to specify focus areas in the implementation plan, and suggested that that part should be removed. Bickle agreed, stating that it is not the job of the SASEC to decide what science areas are important, rather it is the job of the SSEP and SPC. Miller, referring to the Birth of Oceans mission proposal, said that this community did feel disenfranchised. He pointed out that the number two ranked proposal at the March 2007 SPC meeting was 659-Full (Newfoundland Rifted Margin), which seems inconsistent with statements in the implementation plan document. Taylor noted that the document did make clear other areas would be drilled, but that "perception is everything". Talwani agreed that the perception is that the document said there would be a focus on specific areas, and that cannot be discounted. Raymo suggested that listing focus areas with numbers may have been a mistake as it gave a sense of prioritization, and perhaps the numbers could just be removed; the message has to be that the very best science will go forward. Kono disagreed with any mention of specific focus areas, and suggested the easiest thing is to remove the focus areas. Taylor asked if any SASEC members wanted to keep the middle section about the scientific foci. Wefer questioned the purpose of the document if the middle part is removed. Kono replied that the guiding principles are still important. Bickle added that the document should explain how the SASEC sees the program in light of reduced drilling and respond to concerns raised about the draft. Arculus agreed that there has to be a new document, and that the implementation plan can not just be abandoned. Kawahata suggested that the document was needed to encourage IODP scientists, and to emphasize that the selection of proposals is based on science. Miller suggested that the document should restate the themes in the ISP (while possibly adding geohazards). Taylor, summarizing the situation, noted that last year was the first time the community got a hint that there would be only seven expeditions for the major platforms every year and a MSP expedition every other year. When the document was drafted last year it was about focusing resources and informing the community. He stated that the SASEC made choices on scientific foci in order to get to renewal, but the community did not like choice of focus topics. He added that the guiding principles and minimum operational requirements are still important information for the community. Larsen stated that the community will accept increased competition for ship time, but will not accept that certain scientific areas cannot compete. Raymo agreed, describing the scientific bar as being higher, but still allowing everyone to compete.

Kono sensed a general consensus to eliminate the scientific focus areas and retain the guiding principles and minimum operational requirements. He asked how the document should then be modified, assuming that the guiding principles, which were well accepted by community, and the minimum operational requirements should not be changed. He noted that the latter were written with the consensus of the Lead Agencies and IOs. He added that the revised document should sound more optimistic and be more encouraging to the community, e.g., could ask the community to come up with very innovative proposals that are even outside the ISP.

Taylor noted that proposals residing with the OTF have recently, and for first time, been pulled back from the OTF to the SPC. He suggested that the SASEC should communicate

this to the community. Kono suggested that the SASEC should endorse the re-evaluation of OTF proposals. Miller mentioned that this was new only within IODP, but it did happen earlier. Talwani reiterated that this is first time within IODP, and agreed with Taylor that the community should be informed of the new process. Arculus asked if something about proposals being pulled back from OTF should be added to the implementation plan. Kono did not think that this was the best choice, because adding something new to the document may create a “new storm”. He suggested that the revised implementation plan should include the guiding principles and minimum operational requirements, while another document could show the SASEC’s endorsement of the new review process. Mével suggested that the new OTF process with Tier 1 and 2 groupings should also be conveyed to the community. Mori pointed out that this process has not yet been endorsed by the SPC.

Suyehiro asked if proponents of existing proposals would be asked to update their proposal in light of the new guiding principles. Kono replied that the guiding principles are for internal SPC reviewing. Suyehiro pointed out that up until now proponents did not address issues such as balancing cost and risk as mentioned in the guiding principles. Larsen stated that the guiding principles would appear on the proposal submission page. Kono asked if the new guiding principles would be unfair to proponents with proposals already in the system. Taylor suggested that the SASEC could decide that the new implementation plan applies starting 1 April 2008. Talwani mentioned that he thought cost versus risk is already considered at the OTF even if not explicitly stated anywhere. Larsen stated that if the guiding principles apply only to the OTF then there is nothing new about them. Tatsumi suggested that costs should be considered by the OTF only, in which case the guiding principle mentioning cost should not be included. Mori agreed that only science should be evaluated and considered at the SPC, and the OTF is the appropriate place to factor in costs. Suyehiro agreed that the SPC should review and rank based on science only. Kono suggested that the guiding principles are for selecting expeditions. Larsen pointed out that the OTF assessment always goes back to the SPC for approval anyway, but the OTF assessment does not affect ranking. Evans noted that the proponents of the Chicxulub proposal (Proposal 548-Full2), which would require a very expensive MSP operation, have been given a ceiling on costs, and have been asked to resubmit a revised proposal on that basis.

Zelt pointed out that, as currently worded, the draft implementation plan says the guiding principles will apply to the “review processes, as well as in the scheduling of expeditions...”. Taylor suggested removing the phrase “to assist in the proposal submission and review processes, as well as” in the second paragraph of the executive summary.

Kono suggested continuing the discussion by email. Larsen expressed concern that an email discussion could take a long time. Taylor volunteered to edit the draft implementation document for review on Wednesday.

SASEC Consensus 0801-08: The SASEC will revise the draft document *IODP Implementation Plan: 2008–2013*, taking into account comments received during the public posting of the document in November 2007. In particular, the revised document will exclude any reference to scientific focus areas. Additionally, it should be made clear that the guiding principle “Achieves a balance between risk, cost, and scientific merit” should be applied during the scheduling of expeditions, and not during the SAS review process.

SASEC Consensus 0801-09: The SASEC endorses the Science Planning Committee's (SPC) continued and periodic re-ranking of proposals residing with the Operations Task Force (OTF) with the goal of making sure the highest priority scientific programs are being put forward for scheduling.

Wednesday
16 January 2008
08:30-17:30

13. Program planning and renewal

13.1. Proposal pressure, readiness, and SAS process

Hans Christian Larsen reported on proposal pressure, readiness and the SAS process. He mentioned the status letter from the OTF chair and letter from the Lead Agencies which appear in the agenda book (see pages 195 and 200) and noted that both point to a reduced number of possible expeditions, and ask questions about SAS efficiency. Larsen presented statistics on active proposals and proposal submissions over time. He noted that there was no break in the acceptance of proposals between ODP and IODP. He also pointed out the stability of the number of active proposals and number of active Full proposals. Larsen mentioned that IODP-MI believes that maintaining a high level of proposal pressure including new and innovative science is important. He added that proposal pressure, and having an adequate number of drilling initiatives for implementation within the first 3-5 years post-2013, is considered by IODP-MI to be a pre-requisite for successful renewal of a multi-platform drilling program regardless of the detailed nature and structure of the post-2013 program. Larsen presented key questions for consideration: at what rate, and based on what criteria, should the schedule for pre-2013 drilling be filled; is anything at OTF up for re-consideration every year, or does the program commit to a limited number of 'must do' proposals that will remain at OTF. He noted that a full schedule could mean that the community is less likely to submit new or revised proposals; while less program commitment to "golden spikes" could mean less chances of achieving them. He asked what the balance should be, and how it should be reached. Larsen mentioned that he heard strong support for taking proposals back to the SPC from the OTF, but heard no details, and he suggested this should be finalized at this meeting. (Mori suggested a two year cycle for pulling proposals back for OTF for re-review and ranking by the SPC.)

Larsen presented the three questions raised by the Lead Agencies in their letter to the SASEC, together with his own comments, and asked the committee for input. The first question raised the issue of early involvement of the IOs in the review of drilling proposals. Larsen noted that the IOs normally send liaisons to the SSEP meetings and wondered what more the IOs can afford to do, and how they can weigh in on the process at the SSEP stage.

Batiza explained that a major concern of the Lead Agencies is that many proposals are highly ranked but have engineering aspects that make them too expensive to implement. Larsen wondered at what stage in the SAS process it would be appropriate to consider engineering aspects. Batiza said that during ODP there would be an engineer who would look at all proposals and give a recommendation. He added that the program wants to expand the proponent base, but the proponents need to be schooled about the tools available (and their costs). He added that it made no sense to nurture along proposals that are too costly to implement. Mori stated that the Engineering Development Panel (EDP) would like to be involved, and that it does now send a liaison to the SSEP meetings. Talwani said that the OTF consults with the IOs when a proposal seems very expensive, and the OTF reports back

to the SPC, so at least the extremes are currently being addressed. He stated that he believes things should stay as they are and the OTF should be the place where logistic decisions are made. Batiza expressed concern that technological considerations come in too late. HCL stated that he was amenable to IO involvement at the level where comments from IO representatives go into the minutes of the meeting, but he warned against changing the review process completely with the IOs evaluating each proposal. Tatsumi stated that it would be difficult for the IOs to answer questions. He added that if the SSEP co-chairs think the IOs should look at specific proposal, they should specifically ask for this on a case by case basis. Batiza said that any mechanism to achieve early IO involvement is acceptable. Zelt pointed out that the SSEP mandate is for the panel to review the scientific merits of the proposals, not evaluate technological or engineering issues except to the extent that proposals identified with these types of issues should be sent to the EDP or Scientific Technology Panel (STP) for evaluation. Falvey stated that the five-star grouping system used by the SSEP is absolutely critical to maintain, pointing out that most of the people on that panel are not experts in assessing technological challenges. He did not want to see a proposal fail based on a perception of difficulties, and advised maintaining IO involvement as described by Larsen.

SASEC Consensus 0801-10: The SASEC asks the Science Planning Committee (SPC) to find a mechanism for having discussions of engineering issues earlier in the proposal evaluation and nurturing processes. This may include having Implementing Organization (IO) and/or Engineering Development Panel (EDP) comments on proposals at the Science Steering and Evaluation Panel (SSEP) and SPC meetings.

Larsen presented the second question from the Lead Agencies which suggested that the SPC should consider factors such as operational aspects, clearance, engineering challenges, and expedition cost in its ranking. Larsen commented that this is done by the OTF, and that it is one of its prime functions. He added that later discussion between Lead Agencies and IODP-MI concluded that the status quo should be maintained in this regard.

Larsen presented the third question from the Lead Agencies which recommended that the SSEP and Site Survey Panel (SSP) should coordinate together regarding the review of proposals and databank seismic data. Larsen responded that currently this is done through (mutual) liaisons plus an IODP-MI science coordinator, and is facilitated by web-based access to the data. He explained that site survey data typically become available at different stages, and sometimes with detailed site specific data arriving as late as the SPC ranking process, so that it was not advisable to combine the two panels. He mentioned that, in addition, the SSEP already has more than 30 members, and making it larger would add other problems. Kono asked if Batiza had any comments. Batiza indicated that he accepted this explanation.

Larsen presented the text for the standard request for proposals (RFP), e.g., that appeared in *Eos* to announce the 1 October 2007 submission deadline. He suggested that the SASEC may want to recommend changes to the wording of the RFP. Kono asked for volunteers to work with Larsen to change the wording. Hayes asked what needed to be changed. Kono explained that the RFP should mention the low likelihood of being scheduled during the pre-2013 phase of program. Hayes said that if the SASEC wants to tell the community this, that is an important decision. He asked if the committee really wanted to do that. Bickle suggested that the RFP should specify how many total months of drilling are available prior to the end of the current phase. Raymo asked, with such a message in the RFP, why would anyone ever want to submit a proposal. Larsen said he did not want to discourage proponents, and suggested that the RFP should indicate that the program will go beyond 2013. Kono noted that the committee had already decided to write a letter to the community that would explain the

current situation. Hayes stated that some revision to the RFP is required, especially after the very critical comments received on the draft implementation plan. Hayes and Bickle volunteered to work with Larsen on modifications to the wording of the RFP.

13.2. Implementation principles (pre-2013)

Masaru Kono noted that the draft implementation plan with Taylor's edits (science focus areas removed) had been distributed. Bickle and Hayes volunteered to do further revisions and distribute a revised version by email next week. Hayes commented that, since the schedule for *Chikyu* is essentially filled, the possibility of fifteen months of drilling per year, with only six to eight months on the *JOIDES Resolution*, did not create a need for increased numbers of proposals. Bickle stated that most new submissions will not be ready for drilling until post-2013. He suggested that three issues needed to be mentioned in the revised document: (1) there will be more drilling, but not as much as hoped due to funding; (2) following extensive community consultation the SASEC reasserts the primacy of the SAS; and (3) the SASEC is looking forward to next the phase of program. Wefer suggested it is good to mention real numbers (e.g., about ten more new expeditions can be drilled), rather than saying "limited number". Talwani agreed that "about ten" is correct. Larsen expressed concern about equating proposals with expeditions. Wefer then suggested mention drilling time instead of expeditions (e.g., 20 months). Mori agreed.

Taylor pointed out that on Tuesday the committee had started to discuss missions but had deferred any decisions until today. He reminded the committee that it has not yet addressed the future of missions and the timeline for post-2013 renewal of the program. Bickle stated that the issue is whether or not to publicize the possibility for missions in the future. Raymo stated that she thought the committee had decided that mission concept was poorly defined. Kono said he believed missions, for the time being, are not feasible at least until 2013. But he added that, without this concept, big projects cannot be done. He stated that NanTroSEIZE is written in the MOU. He suggested that for the next version of the program missions need to be defined. He added that, although Taylor wants to consider more about missions, he thinks it should be left until the renewal process.

13.3. Timetable and roadmap for new Science Plan (post-2013)

Masaru Kono presented a proposed timetable and roadmap for the new Science Plan, beginning with the already completed long term thematic review on climate variability, and proceeding to a big CONCORD-COMPLEX-type planning meeting in 2010 and a full science plan for the next phase available in 2011.

Batiza suggested that a full science plan for the next phase of IODP should be completed by 2010 because by then the 2011 budget will essentially already be established. Shukuri noted that the timing is similar, though Tatsumi pointed out that the Japan fiscal year is different and therefore would need to have the plan 1 year earlier. Wefer observed that 18 months are needed to write the Science Plan, and it needs to be finished by September 2010, then the big conference would need to be in March 2009. Larsen noted the later the meeting is, more results will be in hand prior to going for renewal, and he suggested early FY2010 as the time for the big meeting. Bohlen expressed skepticism that this would leave enough time to write the Science Plan. Larsen mentioned that the current Initial Science Plan took two years to write. Bickle suggested that the big conference should take place in September 2009, with planning starting earlier. Wefer recommended that one to two page white papers be solicited prior to the conference, and formation of an organizing committee in 2008. The committee would organize the conference in July 2009. Bohlen suggested that an organizing committee should be in place by March 2008. Taylor suggested that before going too far with the planning, other items on the agenda need to be considered first which could significantly

impact the timeline.

The final timeline presented by Kono is shown below:

2013 Sept.	End of IODP (this phase)
2012	
2010 Sept.	Full science plan for next phase
2009 Sept.	Big conference (CONCORD/COMPLEX-type)
2009 July	Committee organizes symposium
2009 Jan.	Request for short papers
2009	Thematic review 3 (Seismogenic zone)
2008 Mar.	Form committee
2008	Thematic review 2 (Ocean crust)
2007	Thematic review 1 (Climate, sea level)

Taylor stated that IODP (together with its predecessor programs) has been a very long standing and successful program. But, he warned, without due care the program could be sacrificed. He suggested that, rather than one large meeting of the community to plan for program renewal, an alternate scenario would be to empower a variety of groups to contemplate what they would propose for missions, e.g., by holding workshops to define what their mission is. Renewal would then be a bottom up process based on missions proposed by the community, which could be presented to the Lead Agencies. For such a scenario, Taylor stated that the timeline has to start now, so the discussion on planning has to occur soon. He pointed out that this is a billion dollar program, and suggested that the program has to start to think like NASA, i.e., take big ideas from the community to the funding agencies. He suggested that reduced platform availability is short term, and that by 2013 it will be necessary to justify fulltime use of all platforms. To do this, Taylor added, will require a combination of small legs and bigger mission type projects. He stressed the need to establish a conscious path forward to start the renewal process.

Raymo suggested it was the obligation of the SASEC to challenge the science communities to start thinking in very different way about how they will come to the table and plan for a very different program. Taylor responded that that is one way, but stressed that it does not involve a linear timeline with one big meeting. Larsen asked Taylor to clarify if he was suggesting that the community workshops would come up with themes for missions, or actual drilling proposals. Taylor said he was undecided.

Bickle suggested that for renewal the “usual projects” were required, plus missions such as Mission Moho that will not become technically feasible unless scoping starts. He recognized a need to encourage a framework where ideas can be evaluated. Taylor noted that some science communities may be satisfied with the current (non-mission) framework, and suggested that it is not an either/or choice, i.e., he did not want to force the community to come up only with missions. Batiza agreed with Taylor. He pointed out that one thing people ask at renewal time is what is the big advantage of multiple platforms, and missions could potentially require the use of all three platforms for a single goal. Taylor suggested that NanTroSEIZE is like that. Wefer said that one question is to decide what are the scientific challenges, another is how to work on the challenges. He agreed that one possibility would be a single leg, the other would be a mission.

Suyehiro framed a question for the committee. He stated that since DSDP times the program has mainly been a facility provider, while money for science had to be acquired in a different way. But, he added, to rise to the mission level would require an all-inclusive scientific program. He recognized that this is a big challenge and asked the SASEC how that could be achieved.

Kono noted that, under the current definition, missions have not been successful. He cautioned that if the SASEC were to encourage more missions, it would need to be careful how it is done, otherwise it could be viewed as top down. He added that there was a short time until a new science plan is needed. Taylor suggested asking the SAS and/or IODP-MI if they can identify potential mission planning workshops. Talwani agreed with Taylor with respect to the need for both individual programs and missions, regardless of whether there is eight or twelve months drilling per year. He emphasized that even missions need to be bottom up. He suggested that one possible way would be to invite suggestions for workshops with a deliverable being a preliminary mission proposal. He thought IODP-MI might be able to finance upwards of six to eight workshops at the \$40K level. The community-driven workshops would develop ideas for missions, and from these three or four missions could be put together for a new program. Kono asked for confirmation on the number of workshops and funding level. Talwani confirmed and stated that with a strong recommendation by the SASEC, IODP-MI could put it into the budget. Raymo expressed uncertainty about how the workshops would fit into the timeline, and stated that the timeline needed to be established now. Kono said that Talwani's idea is great, but pointed out the need for a big planning conference in 2009, which he pointed out, would leave little time for other activities.

Miller provided some history of previous big planning conferences such as COSOD (prior to ODP) and CONCORD and COMPLEX (prior to IODP). He noted that these previous conferences were successful, but said it was necessary to think outside the box and consider ideas like Taylor's.

Taylor noted that, given that the ISP was written with a vision of twelve months per year operational time for the major platforms, the fact is that by the end of 2013 much of the ISP will not have been implemented. Because of that, he stated that it is not clear how, rather than updating with some results, much of rewrite is necessary. He suspected that the ISP will serve quite well for next 5-10 years beyond 2013. He suggested a program based on single and multiple leg expeditions may not require a huge planning effort. But he added that if missions are to be included, then there may be a need for meetings to decide how to do that.

Wefer argued that going for renewal requires a good update of the ISP. He added that what is new is the experience gained with the different drilling platforms. He suggested a powerful new document could be written, but perhaps not with many new questions, and it could contain a mixture of missions and single leg expeditions. Mével suggested that it is important to position drilling in the larger context, and to collaborate with, for example, observatory scientists and biologists. She described the ISP as too narrow with its focus on drilling. Larsen summarized by suggesting that while the framework of the ISP should be maintained, it needs to be completely rewritten, and missions need to be defined within the Science Plan.

Kono noted that the target date for the big planning conference is September 2009. He stressed that preparing for such a meeting will be big task, and this was a good reason to follow the old-style planning model as described by Miller. He noted that there was also the model described by Taylor and Talwani. He asked the committee for any comments on a big conference. Raymo stated that a big conference, with all the stakeholders was necessary, and if done in concert with a number of thematic workshops with subcommittees, that would give time for writing reports which could be prepared for the big conference. Mével reminded the

committee that there had already been a number of workshops that came up with plans for missions. Taylor asked the Lead Agencies, and Mével as director of EMA, if they have a preference for a big conference versus other mechanisms. Batiza replied that big meetings have worked in the past, and that he was unsure how a series of smaller meetings would work. Mével agreed that it was good to have a big event. Arculus stated that he was in favor of both. He likened a big meeting to a trawl net, nothing that you cannot be certain what will happen or what you will get. But he also felt it would be good to go ahead with mission workshops as well. Miller suggested that in bringing 200-300 people together it would still be possible to break into mission or thematic groups. He voiced support for a single big conference at which the mission concept would be clarified. He also suggested that there is not enough time to plan topical workshops, which would require 18 months of planning. Kono agreed, expressing concern about the already short lead time for a big conference, and that in addition trying to organize several small workshops may prove too much. He pointed out that it could result in upsetting a substantial component of the community because of a lack of time to organize and contribute to a mission scheme. He added that, with the upcoming workshops in 2008, seven workshops will have been funded. Larsen suggested that, as a compromise perhaps one or two more workshops could be held. Kawahata stated that fairness is important in IODP. He noted that different platforms may require different implementation strategies, e.g., riser drilling may take many years of preparation. He suggested that a big conference could, for example, have breakout groups on how to set up missions. Raymo expressed support for a big planning conference.

Taylor stressed that it was important to communicate from this meeting what the SASEC is contemplating for a renewal process and post-2013 plan. Kono suggested the communication would take the form of a letter asking for papers for the big conference. He recommended that the call for papers would ask for papers not only related to drilling, but vision statements for the program beyond 2013.

Talwani agreed that missions take a long time to get organized. He pointed out that workshops are where the development of missions could get an early start. He suggested that if done later, it could still be done, but would require forming the mission group later, which would result in some loss of time.

Kono said that he could see no possibility to have specific missions in a revised Science Plan given the timeline. He suggested that the new Science Plan can include a system for how missions could be implemented. Arculus cautioned that it was dangerous to sell just the concept. He argued that the new Science Plan needed to have concrete missions as flagships. Alluding to the three previously submitted mission proposals he asked why there should be reluctance to proceed with these. Kono recommended that the selection of missions should come after the new Science Plan was written.

Suyehiro asked what the SASEC meant by “mission”, e.g., is it just focused drilling time. He stressed the need to attract outside money and asked how this will be done. Taylor stated that, effectively, NanTroSEIZE was “blessed” at the 1999 COMPLEX meeting. He suggested that a similar process with missions would occur at the big conference, hence the need for mission ideas to be presented at the meeting. Larsen asked Taylor to clarify if he was talking about generic missions. Taylor replied that he was talking about missions such as Mission Moho. Kono recommended proceeding with planning for a big conference now, and seeing if mission groups are interested in contributing.

Tatsumi, seeking clarification, asked if the big conference was for establishing a science plan, and not for establishing missions. Kono confirmed that this was correct.

Miller returned to Talwani's earlier comment about fostering mission development by funding workshops. He suggested that \$20K per workshop should be sufficient and added that the Mission Moho proponents should be encouraged. Kono noted that the possibility for workshops would need to be announced to the community, and wondered if there was sufficient time to do this. He also pointed out that Talwani had originally said \$40K per workshop, whereas Miller now mentioned \$20K per workshop. Miller explained that \$20K for a smaller group of 10-15 people can be organized much faster than a \$40K meeting which would require about one year of lead time. He emphasized that the workshops would need to deliver a product. Taylor asked how this could be communicated. Larsen noted that there is a budget issue, and pointed out that it must be done in a way that is perceived as fair to the community. Raymo suggested that the community should be reminded that funds for thematic workshops are available. Kono noted that it has not been confirmed if IODP-MI will have the money, and asked if that was a problem. Larsen replied that it might be a problem. He stated that IODP-MI would have a meeting tomorrow with the Lead Agencies during which it can be explored. Talwani added that numbers cannot be given until after receiving guidance from the Lead Agencies.

Taylor mentioned openness, and said that if some set of planning meetings will be used to inform and leverage the big September 2009 conference and to be a basis for renewal, then the components that comprise the renewal will have to be communicated to the community. Talwani added that the message needs to clearly state what this is for and how it will fit into the plan, as well as make clear that anyone can apply, and that it is relevant and important for renewal. Larsen stressed that the message should not give the impression that the previous workshops did not count. Kono stated that this will be done by email, and he will organize.

Taylor suggested announcing to the community a CONCORD-COMPLEX-type of meeting in September 2009 and, in anticipation for that meeting the program envisages seed money for planning groups for program or mission development leading up to the big conference. Kono added that it needs to be clear that missions are just one possible mechanism. Tatsumi said that missions are important to implement, but expressed concern that the community may be very confused, especially after the SASEC started, then stopped missions, then is re-starting missions again. Kono agreed that a very good letter to explain this, and stating that the SASEC still thinks missions are a viable mechanism, was required. Raymo suggested that perhaps the word "mission" should not be used, e.g., could ask for identification of overarching scientific problems that need to be addressed by drilling. Taylor recommended that the workshops must have deliverables, e.g., leading a session of the big conference.

Kono suggested that an invitation letter, or first circular, needs to be completed by email before the next SASEC meeting. Taylor suggested that other planning groups, e.g., for workshops that would seed the big meeting, would have an even shorter time fuse.

Kono asked if there were volunteers to host the big conference. Wefer offered Bremen. Kawahata mentioned that either Yokohama, Tokyo or Kyoto were possible. Larsen asked if the offers cover meeting expenses? Wefer noted that at Bremen it was a university facility, so there would not be many expenses for the meeting. Kawahata could not confirm. Bickle suggested appointing a small committee to manage the meeting. Raymo volunteered to collect suggestions for venues over the next 3 weeks and then report back to the committee. Wefer and Kawahata also volunteered to join Raymo in a small committee to make comparisons and recommend a venue.

Kono noted that lead conveners would need to be named for the big conference, and asked for suggestions. Taylor stated that previously (e.g., CONCORD, COMPLEX, etc.) key people in the program were asked to be the leaders. Kono suggested taking nominations by

email. Wefer asked how many names are required. Kono suggested two or three. Raymo suggested that the third member should be associated with the host venue. Raymo asked who chooses the steering committee. Miller noted that usually the steering committee is chosen first, and would want about twelve members. Raymo asked everyone to send suggested names for the steering committee to the small committee charged with venue recommendation. Batiza suggested asking the Program Member Offices for suggested names. Raymo recommended also asking the SSEP and SPC.

Note: subsequent to the SASEC meeting the SASEC, together with IODP-MI, decided to send an email announcement to the IODP community asking for nominations. The message was sent out on 23 January 2008 with a deadline of 4 February for nominations. A total of 111 responses were received with a total of 86 individuals nominated.

14. Budget and cost saving issues for FY2009 and beyond

14.1. Level of, and implementation of science services

Hans Christian Larsen reported on the responses of the IOs to questions from IODP-MI regarding different levels of science services. He noted that the motivation for the questions was based on the very significant costs associated with IO science support (e.g., scientific measurements, data management). The IOs were asked to consider various service options ranging from no shipboard core splitting or core description up to full services as used for original FY2008 planning. He reported that the USIO presented three basic models: (1) core recovery only model; (2) ephemeral minimum measurements model; and (3) FY08 baseline program plan model. Costs for the latter two were very similar (within 2-5%), while model (1) based on twelve months of operation and four expeditions would be \$9-10M less than the other two. He showed total funding breakdown figures for the USIO for FY2009 and beyond based on twelve and eight month ship operations. These indicated the relative cost of the science support and lab services increase from ~20-25% to ~40-50% for eight versus twelve months operations. Larsen also presented results from the CDEX model analysis based on various service options, noting that the maximum variation amongst all models for science operating costs (SOCs) per year was \$3.5M. CDEX opinions on the model analyses were that (1) integrated on board science party activities are the key/heart for IODP; (2) reduction of services does not make a big impact on total operation cost; (3) reduction of services has a bigger affect on IODP science results; and (4) fluctuation of service levels may increase maintenance costs.

Taylor asked, for the USIO, how it was possible for science support services to go from 20% to 40% for twelve versus eight months of operation. (Several comments later questioned these numbers and suggested there was a problem with the figures.) Taylor also asked if the IOs considered the costs of doing work on shore. Larsen replied that this had been considered, but that it turns out to be much more expensive. Bohlen noted that, in such a case, the funds would come from different pots. Larsen explained that the program pays if the analyses are done onboard, but he added there would be no overall savings if done on shore.

Larsen concluded by noting there was strong community, IO and possibly funding agency support for splitting core, sailing a science party and taking advantage of the new (higher) level of possible scientific measurements. The question, said Larsen, is can solutions to lower the cost of IO scientific services (e.g., measurements, data management) be found and adapted to operational and fiscal realities. He pointed out that IODP-MI can only address these issues within the mandate given by the Lead Agencies, and that the mandate is limited by technical budget issues, i.e., SOCs, platform operating costs (POCs) and Operational SOCs, and by a limited mandate to review cost levels at a specific function level.

14.2. SASEC role in development of Annual Program Plan (APP) for FY09 and beyond

Masaru Kono stated that at the previous SASEC meeting there was no budget information, and now at this meeting the APP is still not finalized. He suggested that the situation cannot continue in this fashion, and pointed out that it was uncertain what can be done at the SASEC level to approve the budget and APP. He mentioned that discussions last year raised three points: (1) large number of IO employees; (2) large amount of administration and management costs (20% of budget); and (3) large amount spent for database management improvement. The latter he called important, but the costs seemed excessive to the SASEC given the tight budget situation. Kono asked what the SASEC can really do in terms of advising, what is the SASEC's role from the point of view of the Lead Agencies, IOs and IODP-MI, and what can be hoped for. He asked for other comments and opinions.

Miller recalled that at the June 2007 SASEC meeting discussions on the program plan revealed that the USIO has 180 full time positions including open slots. He noted that there are now indications that this number will be reduced, but without knowing the details, or seeing numbers, it is hard to make plans or evaluate the APP. He said that, as such, the SASEC cannot make a recommendation on services based on the information that has been provided (which he called "essentially meaningless"). He asked what the target was for the USIO. Bohlen replied that this was not yet known. He pointed out that NSF just had a budget cut of 5%, and that the USIO is trying to assess the appropriate level of service and fit the number of full time equivalent (FTE) positions to the required service, as well as manage other projects. He stressed it was a complicated situation, which he likened to a step function, as opposed to a smooth transition, and which the USIO was trying to sort through. He noted that the goal was to maximize the number of days at sea for the *JOIDES Resolution*, and maximize the science for the community. He added that the USIO needs clear guidance from the community about what it wants. Bohlen also indicated that the USIO was headed for significant staff reductions, but he voiced concern about staff looking for other jobs when the USIO has a responsibility to deliver services to the international community. Bickle asked how the SASEC could choose any options if it does not understand the cost implications. Bohlen agreed that this was a fair comment.

Kono suggested that the problem is that the SASEC is not equipped to go into necessary budget details. He reiterated that, as Bohlen had said, the needs of the community need to be represented. Kono said that the SASEC did that, e.g., by asking for the longest possible ship time, while not excluding high-cost experiments which may lead to scientific breakthroughs. But, Kono pointed out, that implies spending more money on technical things which takes financial resources, thus there are conflicts between items the SASEC asked for. He agreed that the IOs do need clear guidance, and noted that as scientists the SASEC can formulate priorities, but this does not translate into budgetary figures very easily. Larsen agreed that everyone wants to maximize the days at sea and science support. He mentioned that he was impressed by new core description method on *Chikyu*, which he suggested could save time and money. He added that there may be other ways to reduce costs that have not been fully explored.

Taylor stated that the first order analysis of options for core splitting or not is a big divide as shown by the IO analysis. He suggested that details about how much work a scientist does in the lab is in the noise level. Larsen, referring to Taylor's "noise level" comment, stated that the program was in a situation where a \$1-2M savings could mean an extra expedition.

Taylor pointed out that in the past there was a budget committee. He suggested that if the SASEC wants to discuss budget details it should create a small subcommittee called the budget committee. Falvey recalled that the last time the budget committee met was in 1996. He explained it was a mechanism by which the IOs could expose issues that cannot be

exposed in a public committee like the SASEC. He suggested a budget committee should comprise one U.S., Japanese and ECORD member each plus the SPC chair. He pointed out that the budget committee would need time to go through the numbers, understand them, and make recommendations to the SASEC based on them.

Batiza stated that from an NSF perspective, coring only makes no sense - indications are that splitting cores on land is more expensive, so there is no cost saving. He added that delaying any scientific results and discoveries was not a realistic option for renewal. Taylor agreed and noted that at the outset of the program a decision was made to have a scientific party at sea and to split and describe core at sea. He suggested that the SASEC should make a statement recommending that core splitting not be done on shore.

Batiza suggested that the only way a budget committee will work would be by hiring four or five people full time to do the job. He did not think that four or five SASEC members will be able to do it. He explained that there are people at MEXT, NSF, etc. trying to do the job, and it would be unreasonable to expect that a SASEC subcommittee would be able to accomplish much. Bohlen added that the fluidity of the situation makes it difficult for the science community to understand the problem. Batiza said that the funding agencies and The Consortium for Ocean Leadership are examining a wide variety of options for soliciting money from other sources, industry, and off-contract work. He noted that options are being pursued by the vessel owner that are outside of IODP, and that, given all of this, it is difficult to understand the dynamics of the situation. He reiterated that he was not sure that a small SASEC subcommittee will be able to do very much. Taylor pointed that, regardless, it does not change the SASEC's obligation to deal with one of its mandated functions, i.e., to recommend to the BoG options to provide the most efficient financial operation of the program. He reiterated that back in the mid-1990s it was the tight budgets which caused the creation of the budget committee. Taylor stated that it is, of course, the Lead Agencies that would provide a summary of the information to the budget committee. He acknowledged that the budget committee does not do budgeting, but it should have the information available for making decisions Taylor suggested that without a group like a budget committee the SASEC is waking away from its responsibility.

Miller said that he is on the Scientific Ocean Drilling Vessel (SODV) oversight committee, which he described as very difficult to be on. But, he added, this committee does provide some oversight, and thinks it works out well. He suggested that a budget committee would be analogous to the SODV oversight committee. Talwani commented that a budget committee sounds good, but he tended to agree with Batiza that there is a moving, difficult target. He also noted that the SASEC has been worrying about expenditures, but has not looked into the revenue side. He suggested that focusing on where to get more funds will do more good for the program than setting up a budget committee. Taylor rejoined that the SASEC has only three mandated tasks, which he read from the SASEC Terms of Reference. He reiterated that reviewing and approving the annual IODP program plan was one of the three mandated tasks for the committee, and asked how can the SASEC ignore it. Batiza said that Taylor made an excellent point, and asked how the committee can fulfill its obligation when some of the key pieces of information are business-sensitive or cannot be disclosed by NSF for legal reasons. He suggested that the USIO may be able to give some numbers, but because the situation is so fluid, it is not clear what could be accomplished.

Arculus stated that, having heard the SASEC's mandate, he agreed that a subcommittee looking into budget details could provide some useful information. He described the current budget situation as such a big issue that the SASEC cannot grapple with it, but has to just "take it on faith and then move on". Raymo commented that Miller seemed to be saying that

there is a huge number of USIO employees doing all kinds of science services. She suggested that perhaps the SASEC should look at what services are required, assign priorities, and give some guidance to the USIO. Batiza explained that NSF had asked JOI (now The Consortium for Ocean Leadership) to ask TAMU to begin staffing up for IODP, but, given the new budget reality, there is now a need to retrench. He added that what the required staffing levels are is not known. Bickle expressed support for Talwani's remark about the need to identify how to acquire new resources. He suggested that Batiza sees the situation as more complicated than necessary. He explained that the SASEC does not need to understand every detail, but does need to have some understanding of cost implications.

Suyehiro commented that he would like the SASEC to think about identifying duplication amongst the IOs. He also recommended discussions with other scientific programs as a means to try to bring money into the program.

Bohlen said that he understands the concern of the SASEC, and wants to give a fairly accurate picture of the situation. He sensed concern about the number of FTEs at TAMU and pointed out that the SASEC seems to be unaware of guidance that the USIO received from NSF on FTEs. He explained that in 2003 the USIO has heading into a period of no drilling, and staff was ramped down with lots of sea-going technicians furloughed. Bohlen elucidated that the reason the FTEs increased to 150 was to start Phase 1 and to plan for the refitting of the *JOIDES Resolution*. He said it was a "big shock to system" to get people to figure out what was needed to do to get the drill ship on the ocean and drilling. He added that the USIO was asked to drill one of the most complicated legs right out of the box. Thus, he concluded, going from 120 to 150 FTEs was completely defensible in terms of what the USIO was trying to do. Kono stated that this digression was not productive. Bohlen explained that he was concerned that the committee was drawing conclusions not supported by reality.

Hayes stated that the questions to the IOs about service reductions asked by IODP-MI are the right ones. He described the "so called moving target" as having only two components of unknown: (1) the NSF budget is not known; and (2) the possibility of other funding (e.g., from industry) is not known. He suggested that these two unknowns create the uncertainty of what can be eventually funded. Kono agreed that this may be true, but addressing the current situation he asked what purpose was served if, like last year, the SASEC just "rubber stamps" the budget. He pointed out, as Taylor had already stated, that one of the mandated tasks of the SASEC is to approve the annual IODP program plan and budget. He explained that last year the numbers changed from time to time and the committee did not feel that it was paying attention to its responsibilities to the science community. Kono suggested that a budget committee may help to fill in the gap, even if not all of the numbers can be revealed (such as the NSF budget numbers). He added that a budget committee could help to make decisions from a scientific point of view. He suggested that with a budget committee reporting to the SASEC, the SASEC would feel more comfortable in approving the APP.

Talwani had an alternate suggestion. He pointed out that IODP-MI sends a budget, with great detail, to the SASEC. He suggested that either individual members or a budget committee could ask IODP-MI specific questions about the budget, and IODP-MI would get the information from the IOs and provide it to the SASEC. Kono stated that, theoretically, this sounded very good, but he expressed uncertainty as to whether it would work in practice. He pointed out that the APP comes out a week or two before the June SASEC meeting. He noted that the SASEC has to evaluate the entire APP, not just the budget, and at the time of the meeting it is too late to do this. Talwani offered that, in the future, IODP-MI can provide preliminary budget information two months in advance. Larsen asked the committee to keep in mind that IODP-MI will have to do some of this work anyway, so there was no need for

the SASEC to duplicate the effort. He mentioned that he would strongly support a budget committee that liaises with IODP-MI.

Falvey offered a historical reference. He pointed out that in the mid-1990s budget committees saved millions of dollars, and no one realized a significant loss of service because of that. He noted that IODP-MI is a non-profit corporation, and that its Board of Governors have a legal responsibility to know what is going on with the finances. He explained that the BoG look to the SASEC for information on that, so that the SASEC has the legal responsibility to provide that information. Falvey added that, in his opinion, a budget committee is absolutely essential. He pointed out that he needs to be able to reassure the Australian Research Council that this program is spending its money wisely and appropriately, but at present, he would not be comfortable doing that. Mével, speaking on behalf of the ECORD Council, said that they are in same position of having an APP to review, but not understanding the costs. She noted that the ECORD Council also wants to make sure that the money is spent appropriately.

Kono summarized the discussion, noting there were two lines of thought. One option is to form a budget committee that would be a subcommittee of the SASEC and would consult with the Lead Agencies, IOs and IODP-MI and would go into details of the budgets as far as possible, and look into different options for setting up the budget. Once the budget committee is convinced that the final budget is optimal from a scientific point of view it can report back and provide advice to the SASEC. With the other option IODP-MI would provide early budget information. The SASEC could then ask questions to IODP-MI, who would then contact the IOs and report back to the committee. Kono stated that in his opinion, the latter did not solve the biggest problem, which is that last year many on the SASEC felt the committee was forced into rubber stamping approval of the budget, without enough information. He noted that some questions to IODP-MI were asked, though not in an organized fashion, but just single questions from various members. Kono suggested that a more organized approach, as would be provided by a budget committee, was needed. Taylor added that most importantly, the committee should be a standing committee, and not be expected to do something at just one time per year. He said that the budget situation is fluid, so the budget committee would need to interact with the Lead Agencies and IOs as fiscal realities change. Thus, he said, it would be a standing subcommittee to look at the situation as things change and report to the SASEC.

Kono asked if the committee is willing to establish a standing subcommittee to look into budgetary issues. There was no dissent.

Talwani noted that the mandate of the budget subcommittee would have to be defined very precisely, and that IODP-MI would want to know how and when it will interact with the subcommittee. Kono agreed and suggested that four members be nominated to work with IODP-MI to define a mandate after the meeting, which the SASEC would then approve either by email or at its next meeting. Following Falvey's earlier suggestion, the SASEC nominated one member each from the U.S., Japan and ECORD, with the SPC chairman to be the fourth member. Hayes nominated Raymo. Raymo suggested Taylor, but Taylor pointed out that, because he served on the board of trustees for The Consortium for Ocean Leadership, he was conflicted. Bohlen agreed that Taylor should be considered conflicted. Talwani suggested that the SASEC chair should be on the budget subcommittee. After a coffee break, the Japanese members of SASEC suggested that Kawahata should serve instead of SASEC chair, Kono. With Bickle rotating off the committee, Wefer was left as the only possible ECORD nominee for the subcommittee, but he noted that he was conflicted and recommend Arculus instead.

Mori asked for clarification on the ultimate goal of the subcommittee. Kono explained that,

after looking at options, the subcommittee will provide a recommendation on budget approval to the SASEC. Taylor stated that it was imperative to come up with a mandate at this meeting, so that the committee understands what it is creating. Tatsumi recommended that a chairman of the subcommittee be nominated. Kono agreed.

Taylor prepared a draft mandate which, after review and edits by the SASEC, was accepted by consensus.

SASEC Consensus 0801-11: In order to help the SASEC fulfill one of its primary mandates, i.e., to

“review and approve the annual IODP program plan and budget prior to forwarding it to the IODP-MI Board of Governors for corporate approval and contractual submission to the IODP lead agencies”

the SASEC creates a standing budget subcommittee with the following mandate:

1) to interface with IODP-MI and the Implementing Organizations (USIO, CDEX, ESO) to analyze the evolving IODP program budget and its effects on the proposed program plan; and
2) to advise the SASEC on how best to maximize the IODP program deliverables given the available budget, including identifying priorities for possible budget reallocations, enhancements and cuts.

The budget subcommittee shall comprise four members: three nominated by the SASEC (one US, one Japan, one other) plus the chair of Science Planning Committee (SPC). The initial members of this subcommittee are Maureen Raymo, Hodaka Kawahata, Richard Arculus and SPC chair, Jim Mori.

15. Collaboration with industry and other outside entities

15.1. Status of industry contacts

Manik Talwani mentioned that IODP-MI is involved in a proposal to study the steps required to deploy and test a mud recovery system at ultra-deep sites. He noted that this proposal was to carry out a preliminary feasibility study and that, if successful, could enhance the capability of the *JOIDES Resolution*. He mentioned that the results of the proposal would be known soon, and that this represents the first efforts of IODP-MI, together with the USIO, to obtain outside funding (from DeepStar). Talwani also mentioned that the same group in India which had previously leased the *JOIDES Resolution*, may want to lease it again for a few months.

Talwani gave a presentation on “Industry and IODP”. He showed that the FY2008 projected budget shortfalls for the IOs were \$25M (USIO) and \$60M (CDEX), and noted that his presentation was mainly about addressing the shortfall. He said that the main problem (in addition to unfulfilled expectations, and possible impact on program renewal) with only seven months drilling per year was sustaining the IO infrastructure over the 5 month gap. He also explained that his presentation dealt mainly with the USIO.

Talwani listed three mechanisms for cooperation with industry: (1) regular IODP expeditions; (2) hybrid (complementary) expeditions; and (3) industry funded expeditions. He suggested that the limited amount of ship time for regular expeditions prior to 2013 meant that inviting new proposals of interest to industry through the regular IODP proposal process would be unrealistic. He also mentioned that the SASEC’s draft implementation plan (see discussion under agenda items 8 and 12) was not favorable to industry interests. Talwani pointed out that existing IODP rules as well as contract terms inhibit hybrid or complementary proposals in which costs are shared by IODP and industry. With this preamble, Talwani presented details on a proposal for an industry sponsored ocean drilling program. He presented information on participation, rough costs and deliverables that was distributed to industry. He noted that a meeting was planned for 21-22 February 2008 to arrive at a framework with

companies to form the basis for a five-year drilling proposal by academic scientists, and that this proposal would be presented to interested companies by, or somewhat after, March 2008. Talwani anticipated that five to eight companies may join this program. Deliverables for participating companies would be: (1) a comprehensive report the end of each two-month expedition; and (2) full access to all the cores and logs obtained. Talwani also mentioned that a separate Arctic drilling program could be proposed if there was enough industry interest.

Talwani noted that, while the participation of academic scientists would be essential to the program, the exact role for academic scientists has yet to be determined, but the basic premise is that these scientists would have access to at least part of the data collected, and the rights to eventually publish results.

Talwani described the program as parallel and complementary to IODP, but with no government contract funds to be used, and no participation from the IODP Science Advisory Structure (SAS). He also noted that NSF would have to grant permission for the use of U.S. government equipment on the *JOIDES Resolution*. He estimated the total cost of the program for five years (assuming five months operation per year) at \$125-150M. He concluded by mentioning that the objective of this industry sponsored ocean drilling program is not to get a one time assistance from industry, but to build a long term mutually advantageous program.

Falvey, referring to the list of industries visited, corresponded with and contacted, noted that industry from a fair range of Japanese Australian and European countries have not been brought into this nor offered an opportunity to participate. Talwani replied that, by U.S. law, all companies will be offered the opportunity to participate. Falvey stated that it should be clearer that everyone can participate. Talwani noted that this new program is not a part of IODP (Falvey suggested that it will be perceived that way), and is operated by two nonprofit companies: IODP-MI and the USIO. He added that they will try to involve as many companies as possible.

Tatsumi asked if the USIO is independently trying to work with industry. Taylor observed that he sees a number of models for industry involvement: (1) the one proposed by Talwani; (2) the USIO talking directly to companies; and (3) discussions directly with ODL, i.e., having ODL take back the ship for five or ten months (e.g., back to back). He described these as three very different models for how to fill the shortfall.

Tokuyama asked if new technology would feed back to academia. Talwani replied that the industry sponsored program was not so much about new technology development. He suggested that one advantage of a consortium is that there is much less worry over confidentiality, thus if something new is developed, he guessed that it would be shared, but noted that this would have to be discussed.

Miller, noting that the SAS was not to be involved, asked specifically about the Environmental Protection and Safety Panel (EPSP). Talwani reiterated that members of the SAS cannot be involved in this kind of project, thus the USIO's safety panel would be used. He added that corporate IODP-MI funds will be used to bring together five scientists to help set up a framework for the program.

Taylor suggested that the SASEC should thank IODP-MI and ECORD and its representatives for looking into industry collaborations and outside sources of funding; however, he did not think it was appropriate for the committee to endorse the efforts. Talwani responded that it would be nice to get an endorsement, and he pointed out that at the previous meeting the SASEC asked IODP-MI to look into other resources. Taylor agreed that the SASEC did ask, and, he mentioned, the Board of Governors agreed to the use of non-contract (corporate) funds to look into this. Kono agreed and noted that the results were outside of IODP, and

therefore not the responsibility of SASEC to endorse. He did agree that the SASEC should thank IODP-MI and ECORD because the committee did ask for this process and it was implemented.

Shukuri observed that this collaboration with industry will take a lot of effort and personnel, and will be paid by corporate funds (not commingled funds). He noted that the ship operator is the USIO, and asked, in the future, whether this type of collaboration would be done only by the USIO or by both the USIO and IODP-MI. Talwani replied that all efforts are joint IODP-MI/USIO efforts, except one, and he confirmed that commingled funds would not be used. Batiza noted that the NSF is working with legal and contracts people to make sure that all things are in place so that if a company is interested in using the *JOIDES Resolution* there will be a framework in place to allow it to happen. Taylor commented that the Japanese are ahead of the game in getting outside funding, but without their efforts, this type of effort would be necessary for Japan as well.

Catherine Mével gave a presentation describing the ECORD Council's investigation into the possibility of using the EUREKA/EUROGIA scheme to develop an industry-academic project for drilling in the Arctic. She explained that EUREKA is a pan-European network for market-oriented, industrial R&D. She also explained that a EUREKA Cluster is a long-term, strategically significant industrial initiative which brings together large companies along with small and medium-sized enterprises (SMEs), research institutes and universities, which share both the risk and benefits of innovation, and focus on developing and commercially exploiting new technologies. She added that EUROGIA is a Cluster of EUREKA. Mével explained that the advantages of the EUREKA/EUROGIA scheme are that: (1) it allows industry to share the risk (with governments); and (2) at the government level, it is tapping other funding sources. She noted that industry may be more interested in participating in an Arctic project if the cost is shared. She stressed that there are still a number of questions to be addressed, such as whether or not this scheme is applicable, and if so, what level of funding can be expected. She noted that a meeting was taking place today and that outlook was positive for receiving some funding that could be used for Arctic drilling. Mével asked the committee if there was interest in this initiative.

Taylor said yes, because some MSP expeditions are needed in order to maintain the ESO structure. But, he added, it depends on the response to Talwani's industry sponsored option for the Arctic, thus he recommended coordination of efforts.

Kono asked how this would work as ECORD/ESO does not have a platform. Mével explained that a platform would have to be obtained through a contract, and that this would require submission of a proposal to get funding for the contract.

Arculus described the initiative as a "no lose situation", and therefore suggested that it should be tried. Mével noted that it remained to be determined what kind of scientific return can be expected, and this still needed to be investigated.

SASEC Consensus 0801-12: The SASEC thanks IODP-MI and ECORD for looking into collaborations with industry and other means for securing outside funding and hopes they will continue their efforts.

15.2. Status of Complementary Project Proposal concept

Jim Mori reported that, in response to the SASEC request to formally adopt Complementary Project Proposals (CPPs) as an IODP planning mechanism (SASEC Consensus 0706-08), the SPC established a small working group (Mori, Carolyn Ruppel and Gilbert Camoin) to examine the evaluation process for such proposals (see SPC Consensus 0708-22). He was hopeful that a short report will be presented at the March 2008 SPC meeting. He noted that,

as Talwani mentioned during his presentation on industry collaboration, there probably will not be many CPPs, and therefore it may be best to deal with any CPPs on a case by case basis. He suggested that a CPP would likely not be viable unless industry came up with at least half funding. Addressing the evaluation of CPPs, Mori said that the SSEP would probably provide a single evaluation, i.e., no nurturing, since industry would demand a fast turn around time. The SPC would then look at each CPP on a case by case basis, either sending it to the OTF with a message about priority, or rejecting the proposal. He stressed that a simple and fast system for evaluating these proposals is necessary, and added that access to data would have to follow the normal IODP rules.

15.3. SASEC role in facilitating collaborative efforts

Discussion for this agenda item took place as part of agenda item 15.1 (Status of industry contacts).

16. SPC and SSEP expertise balance

Jim Mori noted that the SASEC has recently reviewed the SAS structure and, as a result, asked for reduced panel sizes. He pointed out that this has led to some concern about expertise balance. Mori noted that the Program Member Offices (PMOs) at their previous (March 2007) meeting requested that IODP-MI coordinate with the panel chairs and the SPC chair to determine the required expertise. Kono stated that he welcomed this approach to maintain expertise balance in the panels.

17. Miscellaneous SASEC issues

17.1. SASEC members serving on IODP-MI Task Forces and SAS panels

Manik Talwani noted that members of the SASEC are invited to attend at least one Task Force or SAS panel (or OTF) meeting; IODP-MI would provide funds for this. He suggested that this might lead to suggestions for improvements. Kono asked if Talwani was inviting members to attend an OTF meeting. Talwani said yes, e.g., when the meeting is in, or near their country.

17.2. Location of SAS meetings: preference for universities?

Manik Talwani said that everyone wants meetings to be as nice as possible, but some locations, particularly those held in hotels, are expensive. He noted that meetings held at universities have the benefit that students can be involved, thus he suggested it would be preferable if SAS meetings were held at universities or research institutions. Wefer, and several other members expressed support for this. Kono noted that in some circumstances a meeting cannot be at a university, but in general this would be good.

18. Review of rotation schedule for SASEC members

Barry Zelt noted that the SASEC member rotation schedule appears on page 244 of the agenda book, and asked if there were any comments. Bickle stated that while the table in the agenda book shows him rotating off on 1 July 2009, he in fact started (on the SPPOC) in July 2004, and this meeting is his last.

19. Review action items, motions, consensus statements from the meeting

The committee reviewed the consensus statements and action items from the meeting. The committee also thanked Eli Silver for hosting the meeting, and Mike Bickle for his service on the committee.

SASEC Consensus 0801-13: The SASEC thanks Eli Silver for hosting our meeting at Santa Cruz and especially for the lovely reception Tuesday night at the Earth Science Department. Thanks to you and the UCSC students for all your assistance and hospitality.

SASEC Consensus 0801-14: The SASEC thanks Mike Bickle for his service over the last two years. Mike has provided invaluable help and advice in establishing the role of the SASEC in the overall Science Advisory Structure. We look forward to Mike's continued involvement in the program.

20. Future meetings

Masaru Kono noted that next (sixth) SASEC meeting was scheduled for China. Talwani reported that meeting host Jianzhong Shen wanted to confirm the meeting in Beijing, China. Talwani noted that 24-25 June were the planned SASEC meeting dates; however Shen wanted the first week of June. Talwani mentioned he is waiting for further information from Shen. Taylor noted that the BoG has already said the meeting will be during the week of 22 June. The committee agreed to 24-25 June for the dates of the Beijing meeting. IODP-MI would make arrangements.

Larsen asked if there were suggestions for the following (seventh) meeting. Kono suggested that the next winter meeting should be somewhere in Europe. Mével noted that it was not known who will replace Bickle. Kono suggested that the ECORD members look into possibilities.

Taylor asked if the timing of the winter SASEC meeting should be shifted for budget consideration reasons. Talwani noted that it is the June meeting that deals with the APP. Kono suggested tabling any decision on shifting meeting dates, and recommend maintaining a mid-January date for now.

21. Closing remarks

Masaru Kono thanked the committee and IODP-MI for their support during this first meeting of his chairmanship. He also expressed hope that the community would be more agreeable to the decisions made by the SASEC at this meeting, and looked forward to successful preparations for the big planning conference in September 2009.

Kono adjourned the meeting at 18:09.