

IODP Science Advisory Structure Executive Committee

6th Meeting, 23–24 June 2008

Diaoyutai Hotel, Beijing, People's Republic of China

Science Advisory Structure Executive Committee (SASEC)

Richard Arculus (observer)	Earth and Marine Sciences, The Australian National University, Australia
Nicholas Arndt	Laboratoire de Géodynamique des chaînes Alpines, France
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
Jim Mori (SPC; non-voting)	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 (non-voting)	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
Gerold Wefer	Center for Marine Environmental Studies, University of Bremen, Germany

*Meeting host

Liaisons, observers, and guests

Jamie Allan	National Science Foundation, USA
Rodey Batiza	National Science Foundation, USA
Robert Detrick	Woods Hole Oceanographic Institution, USA
David Divins	JOI Alliance, Joint Oceanographic Institutions, Inc., USA
Nobu Eguchi	Center for Deep Earth Exploration, JAMSTEC, Japan
Dan Evans	ECORD Science Operator, British Geological Survey, UK
David Falvey	Australian Research Council, Australia
Chris Harrison	Rosenstiel School of Marine and Atmospheric Science, University of Miami, USA
Shinji Hida	JAMSTEC, Japan
Tom Janecek	IODP Management International, Inc., USA
Takao Kato	IODP Management International, Inc., USA
Björn Kjerfve	College of Geosciences, Texas A&M University, USA
Shin'ichi Kuramoto	Center for Deep Earth Exploration, JAMSTEC, Japan
Hans Christian Larsen	IODP Management International, Inc., Japan
Chun-Feng Li	Tongji University, China
Catherine Mével	ECORD Managing Agency, France
Severino Falcón Morales	Gobierno de España, Ministerio de Educación y Ciencia, Spain
Julie Morris	National Science Foundation, USA
Seung Il Nam	Korea Institute of Geoscience and Mineral Resources, Korea
Toshiyuki Oshima	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Takehiro Sasayama	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Kazuya Shukuri	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Deborah Smith	National Science Foundation, USA
Yoko Totani	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Barry Zelt	IODP Management International, Inc., Japan

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Executive Summary v.1.0

1.4. Approve SASEC meeting agenda

SASEC Consensus 0806-01: SASEC approves the agenda of its sixth meeting on 23-24 June 2008 in Beijing, China, with minor revisions. Reports from Korea, China and Australia will be presented if their representatives desire. Manik Talwani will give an introduction to item 6: Annual Program Plan, and there will also be a discussion of conflict of interest relating to Science Advisory Structure (SAS) members and their possible involvement in industry activities included in item 6.

1.5. Approve last SASEC meeting minutes

SASEC Motion 0806-02: SASEC approves with one minor revision the minutes of its fifth meeting on 15-16 January 2008 in Santa Cruz, USA.

Taylor moved, Raymo seconded, 8 in favor (Hayes, Kawahata, Kimura, Kono, Raymo, Tatsumi, Taylor, Wefer), 2 abstained (Humphris, Arndt), 2 non-voting (Mori, Talwani).

1.6. Items approved since last meeting

SASEC Motion 0804-01: SASEC recommends that the bid submitted by Bremen for hosting the FUTURE of IODP meeting is implemented by IODP-MI. Out of the four bids received from OSU, Hawaii, Scripps, and Bremen, the Bremen bid is fiscally the most advantageous and meets all meeting requirements. SASEC thanks all proponents for their efforts to support IODP through their bids.

Raymo moved; Kawahata seconded; 9 in favor (Arndt, Hayes, Humphris, Kawahata, Kono, Raymo, Tatsumi, Silver, Weissert); 1 did not vote (Kimura); 2 non-voting (Mori, Talwani); 2 ruled by chair as conflicted (Taylor and Wefer); alternates were Silver and Weissert, respectively.

3. Highlights of IODP-MI and Implementing Organizations (IOs) reports

3.1. IODP-MI

3.1.2 IODP-MI Operations Task Force (OTF) report

SASEC Consensus 0806-03: SASEC reaffirms IODP's commitment to maximize riser drilling with *Chikyu* over the next five years. The program is presently constrained to one riser operational area with 3-D seismic coverage (i.e., NanTroSEIZE), and that area has other logistical limitations (e.g., Kuroshio Current). SASEC encourages acquisition of 3-D site survey data for other potential, highly-rated projects in order to provide other opportunities to utilize riser drilling. Any future riser drilling is critically dependent on such data.

4. Report on the March 2008 Science Planning Committee (SPC) meeting

SASEC Consensus 0806-04: SASEC thanks the Science Planning Committee (SPC) for its conscientious efforts in ranking proposals and sending highly-ranked science to the Operations Task Force (OTF). SASEC concurs with SPC that in their rankings, it is important to consider balance among themes of the Initial Science Plan (ISP). As we consider building toward completion of the present phase of IODP and renewal, SASEC will be paying special attention to thematic balance among expeditions and addressing the objectives of the ISP.

8. Theme for FY2009 long-term thematic review

SASEC Consensus 0806-05: SASEC accepts SPC Consensus 0803-20 to conduct the next thematic review in FY 2009 on Initial Science Plan Theme I: the Deep Biosphere and Subseafloor Ocean. This will include, but not be limited to, reviews of Expeditions 301, 307, 308 and 311. Suggested members of the review panel will be determined by e-mail discussion led by John Hayes.

9. Program renewal

9.1. Steering committee and its mandate

SASEC Motion 0806-06: SASEC approves the following committee to organize an international scientific meeting for all scientists interested in renewal of IODP:

Christina Ravelo (Co-chair), Wolfgang Bach (Co-chair), Jan Behrmann, Bob Duncan, Katrina Edwards, Sean Gulick, Fumio Inagaki, Heiko Pälike, Ryuji Tada, Gilbert Camoin

Raymo moved, Wefer seconded, 10 in favor (Arndt, Hayes, Humphris, Kawahata, Kimura, Kono, Raymo, Tatsumi, Taylor, Wefer), none opposed, 2 non-voting (Mori, Talwani).

SASEC Consensus 0806-07: SASEC names Yoshi Tatsumi and Gerold Wefer as the SASEC liaisons to the steering committee for the international scientific meeting related to renewal of IODP.

SASEC Consensus 0806-08: SASEC adds the following statement to the mandate for the steering committee for the international IODP renewal meeting:

- The steering committee should seek guidance, possibly in the form of liaisons, from national funding agencies and other funding sources, as to the evolving nature of plausible future structure and funding level of a new ocean drilling program.

SASEC Consensus 0806-09: SASEC recognizes that IODP is entering a new framework of doing business. Our ocean drilling facilities' use is no longer sufficiently funded by, nor therefore limited to, scientific drilling. IODP-MI and the Implementing Organizations (IOs) are currently entertaining industry and national drilling projects, and consortia. The possible mix of funding/projects, and what falls within or outside international scientific drilling, is under discussion.

SASEC envisions the possibility of a mixed mode of funding for a renewed program of ocean drilling, including government science appropriations, industry-science consortia, and contracts with industry and/or other government agencies. SASEC requests that the IODP Council, IODP-MI Board of Governors and the IOs consider forming a working group to frame the possible scope and structure of a post-2013 ocean drilling program, and how such a program might be formulated/proposed/funded/contracted.

9.2. Meeting location, timing and funding

SASEC Consensus 0806-10: SASEC recommend the dates of the international IODP renewal planning meeting as 22-24 September 2009 in Bremen, Germany, provided that no conflicts with other workshops/meetings are identified and pending the approval of the steering committee.

10. Continuation of proposal submission: current IODP and renewal

SASEC Consensus 0806-11: SASEC encourages the community to continue to submit proposals for drilling within the current program and in preparation for renewal of the Program. Truly innovative ideas can still be incorporated into the current phase of drilling.

SASEC is particularly interested in receiving preliminary proposals for new and innovative projects that can influence the direction of the Program beyond renewal. In addition, SASEC encourages submission of Ancillary Program Letters for targets of opportunity that may arise as the drilling vessels transit between expeditions.

SASEC Consensus 0806-12: SASEC recommends that the Science Planning Committee (SPC) implement procedures to (i) provide more specific feedback to proponents, particularly in terms of their potential success in prioritization for drilling, and (ii) streamline the processing of proposals forwarded to them from the SSEP.

SASEC Consensus 0806-13: SASEC applauds and thanks the Science Planning Committee (SPC) for its responsiveness to previous requests for reductions in the Science Advisory Structure (SAS) panels, and encourages every SAS panel to continue to review its workload and adjust membership, and schedule meetings only as necessary.

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

SASEC Consensus 0806-14: The SASEC thanks Susan Humphris for her service over the last three years. In her role as SASEC chair she deftly led SASEC through a complex time, providing keen scientific insight and experience, and impressive efficiency right up to the end of her tenure.

SASEC Consensus 0806-15: The SASEC thanks Gaku Kimura for his service on SASEC. His performance has been *faultless*, he has *risen* to every challenge, and *seized* every opportunity to contribute to the work of the committee.

SASEC Consensus 0806-16: SASEC thanks Dr. Shen and our Chinese colleagues for hosting the SASEC meeting in Beijing right before the Olympics. We have very much enjoyed the hospitality, the wonderful surroundings, and all the assistance we have received that have helped make our meeting run smoothly.

IODP Science Advisory Structure Executive Committee

6th Meeting, 23–24 June 2008

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Final Minutes v.1.0

Monday	23 June 2008	08:30-17:00
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1. Introduction

1.1. Call to order and introductions

Masaru Kono called the meeting to order at 08:35. All meeting participants introduced themselves.

1.2. Welcome and meeting logistics

Local host Jianzhong Shen welcomed the meeting participants to Beijing.

1.3. Rules of engagement

Masaru Kono presented some points for consideration, asking participants to speak slowly and clearly and to avoid excessive use of acronyms. He noted that conflicts of interest should be declared. He also explained that SASEC decisions were mostly made by consensus, otherwise a motion would be required followed by a vote of the voting committee members.

1.3.1. Conflict-of-interest policy

Masaru Kono summarized the SASEC conflict-of-interest policy, and asked committee members and other meeting participants to declare any potential conflicts. Wefer declared that he was director of the Bremen Core Repository, and as such may possibly be conflicted on budget discussions. Taylor declared that he was a member of the IODP Board of Governors (BOG), and a member and treasurer of the Board of Trustees for the Consortium for Ocean Leadership.

1.3.2. Robert's rules

Masaru Kono listed some of the salient points from Robert's Rules of Order.

1.4. Approve SASEC meeting agenda

Masaru Kono asked if there were any suggestions for changes to the meeting agenda. Larsen wondered if China, Korea and Australia would like to make presentations during the agency reports (agendum 2). Kono said that these reports would be welcome though it would not necessitate a change to the agenda. Kono noted that for agendum 6 (Discussion of FY2009 Annual Program Plan), Talwani would give a brief introduction. Referring to agendum 5.2 (Industry activities by Implementing Organizations and the IODP-MI), Mori requested a discussion about conflict-of-interest within the Science Advisory Structure (SAS) with respect to industry activities. The committee approved the meeting agenda with the minor modifications described above.

SASEC Consensus 0806-01: SASEC approves the agenda of its sixth meeting on 23-24 June 2008 in Beijing, China, with minor revisions. Reports from Korea, China and Australia will be presented if their representatives desire. Manik Talwani will give an introduction to item 6: Annual Program Plan, and there will also be a discussion of conflict of interest relating to Science Advisory Structure (SAS) members and their possible involvement in industry activities included in item 6.

1.5. Approve last SASEC meeting minutes

Masaru Kono asked if there were any suggested changes to the minutes of the January 2008

SASEC meeting. Shukuri requested that the phrase “by the Cabinet” be removed from the final sentence of the Japan Ministry of Education, Culture, Sports, Science, and Technology (MEXT) report. With this minor correction, the previous meeting minutes were approved.

SASEC Motion 0806-02: SASEC approves with one minor revision the minutes of its fifth meeting on 15-16 January 2008 in Santa Cruz, USA.

Taylor moved, Raymo seconded, 8 in favor (Hayes, Kawahata, Kimura, Kono, Raymo, Tatsumi, Taylor, Wefer), 2 abstained (Humphris, Arndt), 2 non-voting (Mori, Talwani).

1.6. Items approved since last meeting

Masaru Kono reported that since the previous SASEC meeting the committee had approved Bremen as the location for the post-2013 IODP renewal planning meeting scheduled for September 2009.

SASEC Motion 0804-01: SASEC recommends that the bid submitted by Bremen for hosting the FUTURE of IODP meeting is implemented by IODP-MI. Out of the four bids received from OSU, Hawaii, Scripps, and Bremen, the Bremen bid is fiscally the most advantageous and meets all meeting requirements. SASEC thanks all proponents for their efforts to support IODP through their bids.

Raymo moved; Kawahata seconded; 9 in favor (Arndt, Hayes, Humphris, Kawahata, Kono, Raymo, Tatsumi, Silver, Weissert); 1 did not vote (Kimura); 2 non-voting (Mori, Talwani); 2 ruled by chair as conflicted (Taylor and Wefer); alternates were Silver and Weissert, respectively.

2. Highlights of funding agency reports

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

Kazuya Shukuri provided some additional information to the MEXT report in the agenda book. He described the first expeditions (314–316) using *Chikyu*, which began in September 2007 and ended in February 2008, as successful. He noted that subsequent inspection of *Chikyu* revealed damage to the azimuthal thrusters which needs repairing. Shukuri reported that in May 2008, NSF Director Arden Bement came to Japan to meet with the Minister for MEXT, Kisaburo Tokai. They held successful talks including a discussion of the future of the IODP post-2013. Shukuri also reported that the Prime Minister of Australia recently came to Japan to meet with the Prime Minister of Japan. He noted that the IODP was mentioned in a statement that was issued welcoming Australia to the IODP. Shukuri noted that in Japan, the Basic Act on Ocean Policy was recently established. The Japanese government decided on a basic plan for ocean policy last March, with the IODP mentioned as one of the organizations to be promoted by the Japanese government. Finally, Shukuri reported that the Japan Drilling Earth Science Consortium (J-DESC) organized a successful town hall meeting at the May 2008 Japan Geoscience Union (JPGU) meeting, which included discussions about the IODP and the International Scientific Continental Drilling Program (ICDP).

Kono asked if there were any further details available regarding the meeting between the heads of NSF and MEXT. Shukuri replied that he did not have additional information. Kawahata stated that he is the chair of J-DESC, and described the JPGU town hall meeting as very successful. He added that J-DESC plans to continue with the town hall meeting in the future.

2.2. U.S. National Science Foundation (NSF)

Jamie Allan took the NSF report in the agenda book mainly as read. Referring to the meeting of the NSF Director and Minister for MEXT, he stated that the intention of the two agencies was to continue with an ocean drilling program for ten years beyond the current phase of the IODP.

2.3. European Consortium for Ocean Research Drilling (ECORD) Managing Agency (EMA)

Catherine Mével noted that ECORD has been able to substantially increase its contribution to the IODP in 2008, with a budget of \$21M. She reported that at the recent (two weeks ago) ECORD Council meeting in Paris, the Council decided to allocate a budget of \$20M in platform operating costs (POCs) for the ECORD Science Operator (ESO) to implement the Great Barrier Reef and New Jersey mission specific platform (MSP) expeditions. Mével explained that because ECORD does not currently have \$20M, it will have to tap into the FY2010 budget. This means there will not be an MSP expedition in 2010; the next MSP expedition will be in 2011.

Mével gave a presentation with some additional information relative to the EMA report in the agenda book. She reported that ECORD will sponsor two summer schools in 2009: Urbino Summer School in Paleoclimatology; and ECORD Summer School in Bremen on Geodynamics of Mid-ocean Ridges. She reviewed the ECORD Distinguished Lecturer Program for FY2007-2008, noting that the three speakers (Judith McKenzie, Paul Wilson and Benoît Ildefonse) gave talks in thirteen ECORD countries and two non-ECORD countries between September 2007 through May 2008. She reported that the ECORD Distinguished Lecturers for 2008-2009 would be Peter Clift, John Parkes and Achim Kopf. Mével reported that at its last meeting the ECORD Science Support and Advisory Committee (ESSAC) decided that it is essential to discuss the future of ocean drilling within the European scientific community. ESSAC will organize ECORD Conference '09: "Future of IODP – The European Perspectives". Mével also noted that, in addition to the two Magellan workshops mentioned in the agenda book, a third workshop "Lithospheric heterogeneities, hydrothermal regimes, and links between abiotic and biotic processes at slow spreading ridges" would be organized with dates to be determined. She also provided an update on a recent (27-29 May 2008) workshop for potential new members of ECORD, which included representatives from nine non-ECORD countries and was a great success, with strong interest expressed. Mével concluded by noting that ECORD is organizing the IODP booth at the International Geological Congress (IGC) meeting in Oslo in August in coordination with the IODP-MI and IODP Norway.

Talwani noted that he, Humphris and Uli Harms of the ICDP would be chairing a session on scientific drilling at the August 2008 IGC meeting. Humphris asked about the status of planning for the ice-strengthened drill ship (*Aurora Borealis*). Mével replied that a German ministry had funded a design study, the results of which were presented in December 2007. She noted that it is a priority infrastructure project, with a proposal submitted to the European Commission (EC), and a pre-preparatory study funded by the EC which will last for four years to set up the structure and funding of the project. She added that ECORD is involved in this, and that the ship would be used for drilling three months every year, with the intention to coordinate with the IODP post-2013. She noted, however, that the project is not yet funded and is very expensive.

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

3.1. IODP-MI

3.1.1. IODP-MI science planning and deliverables

Hans Christian Larsen provided updates to the report in the agenda book in the areas of SAS activities and proposals, IODP-MI publications and data management. He reviewed the SAS meeting schedule, noting that the July 2008 Site Survey Panel (SSP) meeting was canceled because of a lack of a full agenda, with only a few proposals with new data for review. He explained that some of the SSP reviews will be done electronically. He added that if the decrease in site survey submissions prior to the July meeting represents a trend, it would be a

serious concern for the program. Larsen reviewed the proposal submissions statistics for both the 1 April 2008 submission deadline and for all active proposals. For the former, he noted concern over the low number of new and revised proposal submissions, and said that a healthy number of new proposal submissions are needed to show that the community is engaged in the program. Larsen noted that the next edition of the program journal, *Scientific Drilling*, will be delayed by three months (to July 2008) because of a lack of material resulting from the drilling hiatus. He added that the new editorial review board has started its duties for the July 2008 edition. Larsen noted that there has been discussion about data management within the program. He explained that while the Implementing Organizations (IOs) generate data and enter it into their individual databases, the IODP-MI is developing a Sample Material Curation System (SMCS) to integrate the data in the three IO repositories (e.g., for sample requests, obligation tracking, etc.). Larsen described the Scientific Earth Drilling Information Service (SEDIS) as an umbrella that provides a single entry point into all three IO databases. He explained the three phases in the development of SEDIS and gave details of the components of the system (SMCS). He also reported that the SEDIS Phase 1 website is operational and showed usage statistics which indicate that the number of users per month is approaching one thousand.

Mori mentioned that he had heard rumors that the SSP meeting was canceled because there was nothing for the SSP to do. He said this was not true, but there were only six proposals to review. He added that, because the results from the SSP reviews will feed into the March 2009 Science Planning Committee (SPC) meeting, there is no rush for the reviews.

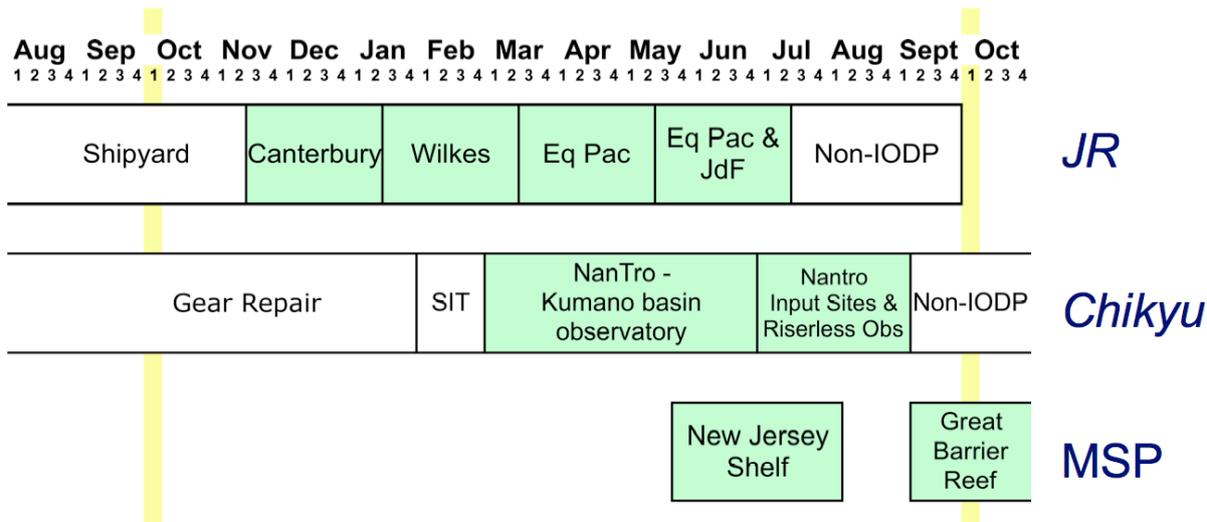
Arndt asked if there was any plan to integrate data from ICDP drilling. Larsen explained that this was indeed a goal, and hence the name SEDIS, which encompasses scientific earth drilling in general.

3.1.2 IODP-MI Operations Task Force (OTF) report

Tom Janecek presented FY2009 platform schedule updates. For each platform, Janecek described changes to the OTF-recommended schedule as of the August 2007 SPC meeting, which were the last schedules presented to the SASEC. Since then, schedules were revised in March 2008 (SPC meeting) and in June 2008. The figure below shows the recommended FY2009 schedules for each platform.

FY2009 Platform Schedules

As of June 2008



Scheduling issues for the *JOIDES Resolution* included shipyard delays, commitment to finishing up the Juan de Fuca and Equatorial Pacific expeditions, the need to provide contingency for additional slippage in the delivery of the vessel beyond mid-September 2008, and retaining at least one of the polar programs.

Humphris stated that she is on the *JOIDES Resolution* oversight committee. She questioned the wisdom of starting operations in such a remote part of the world as the Southern Ocean. Janecek replied that the NSF has said the ship will be fully operational at the start of operations. Divins added that it does not matter where operations start, and that problems could potentially arise at any time, whether on the first or tenth expedition out of the shipyard. He pointed out that any major problems will likely be discovered during the Canterbury expedition, which is a two-day transit to port. He suggested that changing the schedule will not make a big difference to start-up issues, and the assumption is that the *JOIDES Resolution* will be ready to go. Humphris asked if experience has shown that ships immediately out of the yard are indeed ready to go. Divins replied that the vessel would undergo a seven-day shakedown cruise prior to the Canterbury expedition.

Raymo said she was sorry to see the Bering Sea expedition fall out of the schedule, especially when there would be a perfect weather window after the second Equatorial Pacific expedition. Janecek replied that the program has funds for only four expeditions in FY2009. Falvey pointed out that the earlier schedule (August 2007) showed more than four expeditions in a row. Janecek explained that those expeditions cross over a fiscal year boundary, which makes a big difference. Falvey also asked where the money goes if the ship is not being used. Allan replied that the day rate for the ship has to be paid, even if the ship is docked. He stressed the importance of maintaining the present contract with the ship owners because the contracted day rate is one quarter to one third the cost of chartering a commercial vessel. Raymo asked whether it would be possible to do the Bering Sea expedition after the second Equatorial Pacific expedition if there were additional slippage in the delivery of the *JOIDES Resolution*. Janecek replied that, should additional slippage occur, the OTF would have to discuss the options, but at this point he could not answer the question. Tatsumi asked if further delay was possible. Janecek replied that contingency was already built into the current schedule, and that there are plans for dealing with an additional three to four weeks of

slippage. Tatsumi asked about the possible cause of delays. Divins explained that examples of shipyard issues are installing cabling, and getting people to do the job, especially given that the *JOIDES Resolution* project is a very small job in a very large ship yard.

Janecek described scheduling issues for *Chikyu*, including crew training and non-IODP work, fishing union restrictions, damage to thrusters, NanTroSEIZE drilling conditions (unstable formations in hanging wall thrust sheet over the shallow splay fault), and the Kuroshio Current. The latter, he said, currently precludes riser operations. He added that the NanTroSEIZE Project Management Team (PMT) is still developing recommendations for *Chikyu's* schedule, but the OTF has not discussed these and they have not been formally approved. Janecek listed the priorities for the PMT: (1) Drilling to the plate boundary in the seismogenic zone; (2) Installing upper-plate observatories; (3) Sampling inputs to the subduction zone; and (4) Drilling to intermediate depth into the fault zone (Splay fault). He further explained that thruster repairs will delay the start of operations until March 2009, while priority (1) cannot be accomplished due to the Kuroshio Current. The PMT recommendations are thus to make progress on priorities (2) and (3). He reiterated that these recommendations need to be presented soon to the OTF for possible approval.

Humphris asked about the status of the design and construction of observatories. Janecek said in FY2009 holes will be drilled in preparation for installation of observatories, while the observatories would be ready in FY2010 or FY2011. He added that a drill ship would be required for installation and that currently the plan is to use *Chikyu*. Taylor stated that the assumption is that *Chikyu* will be used to install observatories, yet *Chikyu* is uniquely capable of riser drilling. He wondered if the OTF was really looking at a possible mix of all platforms to do things. Janecek replied that part of the mix is the funding issue, and that *Chikyu* cannot operate entirely in riser mode because funding permits only four months of riser operation per year. He added that the OTF/PMT philosophy is that any riserless operations by *Chikyu* would only be contingency options. Detrick asked about the status of the damaged riser tensioners. Kuramoto replied that the tensioners were already repaired and were waiting to be installed. He said this would be done before March 2009.

Janecek presented revisions to the MSP schedule. He noted that ESO had permitting problems for the Great Barrier Reef expedition, but that permits were approved in February 2008. He also noted that platform contracting issues resulted in the delay of the New Jersey expedition to FY2009.

Janecek continued his presentation by discussing some scheduling issues beyond FY2009. He showed a list of proposals residing with the OTF as of June 2008, and noted that there were a lot of Pacific Ocean projects remaining. He added that the SPC in March 2008 made a commitment for the *JOIDES Resolution* to stay in the Pacific through FY2010 if possible (SPC Consensus 0803-29), but this would depend on the location of non-IODP work.

Janecek described a number of operational challenges: (1) Proposal pressure versus scheduling; (2) Short-term changes are a new reality; and (3) Importance of retaining long-lead planning. Referring to (1), he explained that *Chikyu* is fully scheduled with NanTroSEIZE work, only about twelve to sixteen expedition slots are available for the *JOIDES Resolution* after FY2009, and only about two or three more MSP projects will be implemented after FY2009.

Janecek described the new "Tier" scheduling process used by the SPC. He described Tier 1 proposals as the essential proposals that the SPC wants to see implemented, and Tier 2 proposals as the pool of proposals that provide flexibility to fill in scheduling gaps between Tier 1 expeditions and non-IODP work. He also presented a graphical scheduling example

involving Tier 1 and 2 proposals and non-IOD work. Janecek noted that the new process has just been implemented, and it was uncertain how well it will work. He stressed the need for flexibility in scheduling to incorporate non-IODP work. Janecek also showed a table of proposals residing with the OTF, listing ocean, platform and Tier.

Addressing the topic of *Chikyu* riser drilling beyond FY2009, Janecek noted that scheduling beyond FY2009 is problematic. He said that the first priority NanTroSEIZE objective (drilling to the plate boundary in the seismogenic zone) would take ~450 operational days, and probably cannot be finished by 2013. For riser drilling options he listed (1) commitment to drill the deep NanTroSEIZE fault (site NT3-01), though this may not be possible if the Kuroshio Current does not move; and (2) commitment to another riser project, e.g., the Costa Rica Seismogenesis Project (CRISP). Janecek noted that the latter has site survey issues. He added that currently there are no other western Pacific riser proposals at the OTF.

Taylor said that the Kuroshio Current goes into a big loop mode for one to two years, and it is unknown when it will switch back to a straight through mode, but when it does it will stay in that mode for a couple of years. Janecek replied that this was potentially the case, but not always. Taylor continued, saying that historically the current stays in one mode or the other for a while. Janecek disagreed, saying that yearly flips in the mode can be seen. Taylor asked if the OTF has been advised on the Kuroshio Current. Janecek said yes, noting that the OTF has seen many slides on where the current has been for the last ten to twenty years. Taylor said that his information about the Kuroshio Current is different. He described the OTF as “sitting at the gate, waiting” (for the current to change modes and permit riser drilling). He added that this was preventing the OTF from considering other uses for *Chikyu* away from the western Pacific. Taylor agreed that NanTroSEIZE is the top priority project, but expressed concern about trying to do the most complicated thing first (deep drilling to the plate boundary), meaning *Chikyu* must remain in the western Pacific not doing riser drilling because of the Kuroshio Current.

Wefer asked if the Tier 1 designation takes into account the possibility of drilling; he cited the Gulf of Aden (Proposal 724-Full) as an example of a Tier 1 proposal that could not currently be implemented. Janecek replied that Tier 1 designation by the SPC is based on science, so that implementation is not necessarily possible. Mori explained that the SPC did not have sufficient time at its previous (March 2008) meeting to fully discuss the criteria for Tier 1 and 2 designation. He suggested that, in hindsight, designating the Gulf of Aden proposal as Tier 1 was probably a mistake. He added that the SPC will revisit the criteria for Tier designation at its August 2008 meeting. Raymo asked if the SPC considers geographic distribution when designating Tier 1 proposals, and noted that Bering Sea was not designated as a Tier 1 proposal. Mori replied that the Bering Sea, and Asian Monsoon were not assigned a Tier because in March they were scheduled. Janecek added that he assumed that Tier designation for these proposals would be revisited at the August SPC meeting.

Kono observed that there was a great deal of rescheduling for all platforms. He asked how formal discussions occurred between the OTF and SPC. Janecek explained that, prior to this year, the SPC had three members on the OTF, but this was recently increased to five to increase the “comfort level” for the SPC. He added that any changes to scheduled Tier 1 proposals would require full SPC approval, while changes to Tier 2 proposals would be done within the OTF.

Kono asked if the SASEC was happy with the current procedures described by Janecek. Taylor observed that the OTF is coming to the SASEC and asking for guidance. He expressed satisfaction with what the OTF has done to date. But, he added, expeditions for FY2010 are about to be scheduled and the program is facing renewal, while at present there

are no alternative western Pacific riser proposals for *Chikyu*. He described this as a major issue, and asked if *Chikyu* should remain in the western Pacific, waiting for the Kuroshio Current to move (when it could remain in fast mode for five years) or go somewhere else and come back after the current has changed modes. Hayes asked if the azimuthal thrusters of *Chikyu* could be upgraded to cope with the current. Janecek explained that the problem was not with the thrusters, but with vortex induced vibration of the riser, which would severely shorten the riser life at high current speeds. Kuramoto said that CDEX was looking into this issue and investigating possible technical improvements, such as the use of a fairing to protect the riser. Raymo agreed that Taylor raised an important issue that was within the mandate of the SASEC. She asked Janecek about other riser project options. Janecek replied that there were two: CRISP and Indus Fan/Murray Ridge. He explained that the latter was unlikely to get clearance according to MEXT, while CRISP has site survey issues, thus no other riser project is ready for implementation. Mori noted that there are proposals requiring riser drilling residing with the Science Steering and Evaluation Panel (SSEP) that are coming up through the system. Larsen added that a discussion of the next riser project is a major agenda item for the March 2008 SPC meeting.

The committee discussed formulation of a consensus statement in support of maximizing riser drilling with *Chikyu*.

SASEC Consensus 0806-03: SASEC reaffirms IODP's commitment to maximize riser drilling with *Chikyu* over the next five years. The program is presently constrained to one riser operational area with 3-D seismic coverage (i.e., NanTroSEIZE), and that area has other logistical limitations (e.g., Kuroshio Current). SASEC encourages acquisition of 3-D site survey data for other potential, highly-rated projects in order to provide other opportunities to utilize riser drilling. Any future riser drilling is critically dependent on such data.

3.2. Center for Deep Earth Exploration (CDEX)

Shin'ichi Kuramoto presented an update of CDEX activities. He provided a technical review of NanTroSEIZE Stage 1A drilling (Expeditions 314, 315 and 316), noting that operations continued for 138 days without a port call, and thirty-three holes were drilled. He summarized the drilling results for each expedition and reported that some records were set (e.g., deepest drilling by LWD: 1401.5m, and deepest drilling in an accretionary prism: 1057m). Kuramoto showed resistivity images of borehole breakouts which indicate borehole breakout stress parallel to the subduction axis. He also showed images of cores at fault zones, and CT core scans showing unconformities and faults.

Kuramoto provided a detailed explanation of the damage to the azimuthal thrusters on *Chikyu*, noting that cracks and chips to the bevel gears on four thrusters were found during the overhaul inspection in the dock after Expedition 316. Further investigation showed that the design and materials used for the bevel gears was wrong, and the tuning of the gears may also be wrong. He reported that CDEX has decided to replace all the bevel gears with newly designed and manufactured ones to avoid recurring problems. The new gears are expected to be manufactured by the end of November 2008, with repair work to the thrusters finished by the middle of January 2009. He added that the riser tensioners will be re-installed before the recovery work on the thrusters is started.

Kuramoto showed data on the Kuroshio Current (Taylor noted the scale of rapid fluctuations in surface current speed with time), which currently shows an east-west direction for the current in the vicinity of the NanTroSEIZE sites. He showed a video demonstrating vortex induced vibration, and showed model results for predicted riser fatigue life for both unfaired and faired riser; the riser with the fairing having a significantly increased fatigue life. Kuramoto added that CDEX has already decided to build the fairing during this fiscal year,

and it will be available for the next riser operation.

Kuramoto also provided an update on the status of core migration to the Kochi Core Center, noting that by the end of July migration of all core is anticipated to be complete.

There were no comments or questions.

3.3. U.S. Implementing Organization (USIO)

David Divins gave a brief update to the USIO report in the agenda book. He reported that the *JOIDES Resolution* is on schedule for delivery to begin IODP operations with Canterbury Basin in mid-November 2008. He added that the science systems, which were tested by community scientists last week at Texas A&M University (TAMU), are working good and ready to be shipped to the shipyard in Singapore for integration with the systems on the ship.

Björn Kjerfve, Dean of the College of Sciences at TAMU, reported on recent staffing changes at TAMU. Kjerfve said there was a need for a change in leadership at USIO Science Services, TAMU. He announced that Mitch Malone would be Acting Director for a six week transition phase, and Jay Miller would be the Acting Project Manager for the *JOIDES Resolution*. Kjerfve said he was thankful for all the great work done by Jeff Fox and Jack Baldauf, calling them tremendous leaders who did fantastic work. He also mentioned that Jack Baldauf would remain as a consultant. He announced that Steve Bohlen would be the interim director starting 4 August 2008 for several months to one year, and would be responsible for restructuring operations at TAMU so that they will remain viable for the next phase of IODP. Kjerfve said that the challenge is to downscale the staff in an intelligent way, while also making operations more efficient. He said he was delighted to hear the positive results of the recent tests of the science systems for the *JOIDES Resolution* but noted that it was a serious issue that the systems are eight months late. Kjerfve said that the 11 October 2008 deadline for the *JOIDES Resolution* to sail from the shipyard in Singapore was still on track to be met, which will allow drilling of Canterbury Basin to start in mid-November.

Kjerfve said that another real challenge was arranging non-IODP work for the *JOIDES Resolution*. In addition to the industry-sponsored Ocean Drilling Consortium (ODC) concept advocated by Talwani (see agendum 5.2), he said that TAMU was discussing with Ocean Drilling Limited (ODL) and Transocean an arrangement to provide the ship to Fugro. He noted that Fugro, ODL and Transocean are very eager to move forward, but a model needs to be in place for this type of activity. He added that TAMU and Transocean have memoranda of understanding with Fugro to do drilling in the Andaman Sea and Gulf of Mexico, with Transocean wanting a window of 120 days (minimum 90) for operations. This could be implemented quickly with NSF approval. Kjerfve said that he could foresee real scheduling challenges ahead in which IODP drilling would have to be scheduled around non-IODP work.

Arndt asked for clarification about ODL and Transocean. Kjerfve replied that ODL manages the *JOIDES Resolution*, which is owned by Transocean (50%) and a Norwegian Company (50%), with Transocean providing the crew.

Humphris asked how the two different models for non-IODP use of the *JOIDES Resolution* (ODC model versus the purely commercial Fugro model) would be prioritized relative to each other. Kjerfve replied that this was still to be determined. He described the ODC as wonderful if it is available. Divins said that the ODC model would not start work until 2010, whereas work is needed for 2009. Taylor asked if the 120-day window for the Andaman Sea and Gulf of Mexico operations included transit between the two. Kjerfve said that was a detail that still needed to be determined, and the answer could be based on knowing where the *JOIDES Resolution* will be drilling for science versus commercial drilling. Divins added

that this is where Tier 2 proposals come into play, i.e., there would be a need to look for proposals between the Andaman Sea and Gulf of Mexico (he pointed out that the 120-day window for the commercial work does not have to be contiguous). Taylor stated that the division of transit (costs) is a huge contractual issue for the program. Divins replied that the point was well taken, and that no one wants to pay for transit. Kjerfve said that he envisioned that if IODP drilling was taking place in one location, hopefully there would be a commercial operation nearby. Allan pointed out that after a port call for IODP work, the NSF will withdraw the contract, thus any commercial contract has to be done outside the program. He added that any day rate not paid is \$80K saved. Kjerfve said that it was clear that any commercial contract will have to go through the NSF.

Mori, noting that the IODP work would be scheduled around commercial work, asked how this would be done, and by whom. Kjerfve replied that it was too early to know because these sorts of details have not been discussed with Transocean, ODL and Fugro. He added that eventually approval would have to be obtained by the NSF because the U.S. federal government owns much of the equipment on board. Allan added that the NSF would have to approve use of the equipment on board during the period of time the ship was removed from the IODP. He said that a four-month block of work has always been within the model for this type of funding, and it is in the interests of everyone that this works out. Divins said that the intention is to take a Tier 1 proposal, fix it within a schedule, and schedule everything else around it as much as possible. But if the weather window for a Tier 1 proposal and commercial work is at the same time, the Tier 1 choice may have to be adjusted. Allan added that longer commercial blocks of work could result in longer coherent blocks when the ship is within the IODP. Wefer asked if access to data has been discussed with companies. Kjerfve said it has not been discussed because this is not a model that involves community sharing of data; it is purely commercial. Divins agreed, saying that it was not likely to happen for purely commercial work.

3.4. ECORD Science Operator ESO

Dan Evans provided a few additions to the ESO report in the agenda book. He reported that the deadline for tenders to supply a rig for the New Jersey expedition was last week, and ESO will be reviewing these immediately. He added that one of the co-chiefs for New Jersey, Steve Hasselbo, has withdrawn; ESO is looking for a new co-chief. For the Great Barrier Reef expedition, Evans reported that two co-chiefs have been appointed (Jody Webster and Yusuke Yokoyama), and the call is out, or is imminently out, for a science party.

Mori asked if more nominations for New Jersey co-chiefs were needed. Evans replied he has already put out a request for more nominations. Kawahata asked, assuming the Great Barrier Reef expedition occurred in September-October 2009, when the onshore sampling party at Bremen would be held. Evans replied that the sampling party for New Jersey would probably be January-February 2010, and for Great Barrier reef would probably be April-May 2010, but exact dates have not yet been decided.

3.5. Additional information from Korea, China and Australia

Young-Joo Lee reported that a recent change in the Korean government and President has resulted in downsizing of the government, including the merging of ministries to form the new Ministry of Land, Transport and Maritime Affairs. He said that support for Korean IODP (K-IODP) should be no problem for the coming years, and a memorandum of understanding (MOU) for 2009 and beyond will be finalized very soon. Lee noted that Korea hosted its first SAS meeting (SSEP) in May 2008.

Jianzhong Shen noted that the MOU for China's participation in IODP expires this year. He reported that earlier this year the science community in China discussed continuing China's

participation in IODP for another five years. Preliminary results from those discussions are that China will continue and may raise its contribution to the IODP. He added that MOST was providing financial support to the scientific community to enhance proposal pressure from China.

David Falvey reported that, as previously announced, Australia has committed funding for 25% of full membership in the IODP for five years. The Australian Research Council has signed a MOU with GNS Science of New Zealand, resulting in the Australia-New Zealand IODP Consortium (ANZIC). New Zealand will contribute an additional 5% of full membership for two years, with discussions ongoing to extend this to five years. ANZIC will thus contribute 30% of full membership in the IODP for two years, and probably five years. Falvey reported that details of the MOU for ANZIC's participation in the IODP have been ironed out, with the consortium's participation effective as of January 2008. He noted that domestic arrangements are in place, with an administrative office at the Australian National University (ANU) headed by Neville Exon.

4. Report on the March 2008 Science Planning Committee (SPC) meeting

Jim Mori presented a report on the March 2008 SPC meeting (see agenda book for his presentation). Mori showed SPC Consensus 0803-04 on prioritization of expeditions for the *JOIDES Resolution* in FY2009, noting that the SPC is trying to look at the big picture and set priorities for the OTF for what should be done in the short term by the program. He showed SPC Consensus 0803-29 on prioritizing the Pacific Ocean for *JOIDES Resolution* FY2010 operations, noting that the SPC wants to see projects in the Pacific finished. He showed SPC Consensus 0803-21 on incorporating engineering/technical information in SAS reviews and noted that technical information is tracked in a database by IODP-MI. He explained that a process is in place whereby IODP-MI will flag certain technical issues for panels to provide advice on. With reference to the Tier 1 and 2 designation system for proposals forwarded to the OTF, Mori said that Tier 1 proposals will remain as Tier 1 proposals with the OTF for at least two years, while Tier 2 proposals will be re-ranked at each SPC ranking meeting. He displayed a list of proposals ranked at the March 2008 SPC meeting and noted the high standard deviations of the rankings. He also pointed out that, for the first time, the SPC sent a lower ranked proposal to the OTF while some proposals which ranked higher were not sent to the OTF. Mori explained that, before ranking proposals, the SPC discussed what criteria should be used for ranking. He said that in the past the key criteria were always science and relevance to the Initial Science Plan (ISP), and that the rankings for the March 2008 meeting essentially followed these criteria. Mori said that he personally believes the SPC should take a broader view and consider factors such as programmatic balance, regional balance, and readiness (site survey status). He said that evaluation of the science is done well by the SSEP, whereas the SPC does not have all the technical knowledge to judge all of the science issues, which is why the SPC should be considering broader issues. Mori said that at its August 2008 meeting, the SPC will look at its role in the ranking of proposals. He said that at the last (May 2008) SSEP meeting, he sent a message to the SSEP to be consistent when reviewing and assigning a star grouping to proposals forwarded to the SPC. He hoped that science issues would not have to be reconsidered after a proposal has been forwarded to the SPC. Mori said that at its August 2008 meeting the SPC will also discuss long term science goals, examine scientific balance in the program, discuss options for the next riser project, and decide if there should be a commitment to deep crustal ocean drilling.

Taylor asked, with regard to balance, if the SPC has looked at expertise balance on its own committee. Mori replied that this was an issue, particularly at the March 2008 meeting in which there was a relative shortage of members with solid earth expertise. He said that the Program Member Offices (PMOs) have been informed about the shortages. Taylor said he

was concerned by Mori's comment questioning the need for a commitment to deep crustal drilling. Mori explained that it was not a question of whether there should be a commitment, but more of a question of what to do. Taylor replied that he was still worried to hear that. Harrison said that deep crustal ocean drilling has been a part of scientific ocean drilling programs since 1970. He suggested that it was long overdue for IODP to make some progress in this field. Arculus questioned if, given the stress in the system, it was time for the SASEC to look at expertise balance on the SPC, i.e., not leave it up to the SPC or the PMOs. Mori said that he would welcome that. Returning to Taylor's comment on deep crustal drilling, Mori said that the issue is that it is difficult when it comes to choosing which specific proposals to implement. He said he is trying to push the SPC into thinking more about scientific balance (in proposals forwarded to the OTF). Li asked how many deep crustal drilling proposals were active right now. Mori replied that there were four or five currently with the SPC.

Humphris, addressing the issue of criteria for ranking proposals, commented that when the SPC ranks only on science, it ends up with some proposals that cannot be drilled for various reasons. She said the SASEC wanted engineering and technical issues to be factored in so they could affect the ranking. She added that it was not good to send a message to the community that a highly ranked proposal cannot be drilled. She recommended informing proponents early on during the SAS review process if a proposal cannot be drilled. Mori agreed. Continuing, Humphris said that currently it is not clear how the technical information gets used in the ranking process. Larsen commented that it was important to realize that a written review goes back to the proponent, not just the ranking.

Taylor stated that, in the past, the planning committee had information about the science and drillability. He asked if that combination of factors has been relegated to the OTF. Falvey said yes, but that the problem in the past was that the planning committee was trying to do everything without the necessary expertise. Kono asked the committee if it wished to make a consensus statement on ranking and drillability. Taylor said it was unnecessary as the SPC was in the process of working it out.

Raymo suggested that the SASEC should look at SPC expertise. Mori said he would welcome a recommendation from the SASEC for the SPC to look at its expertise balance. Raymo replied that it might be more useful if the SASEC examined the expertise balance and send a message to the SPC. Larsen noted that he had already asked Mori and the SPC to re-address expertise balance, but a reminder from the SASEC would not hurt. Arculus said that the review of expertise on the SPC needs to be done by the SASEC, not the SPC. He said that you cannot expect the SPC to evaluate themselves. Raymo agreed.

A list of the SPC members, including expertise was distributed to the committee; Kono asked for comments. Wefer replied that, although there may be a few more paleoceanographers and microbiologists than necessary, he was very satisfied with the expertise balance. Arndt said that he had heard that at the previous (March 2008) SPC meeting there were no petrologists, but he had also heard that there were a lot of alternates at that meeting. Mori replied that there were a lot of alternates, and it was difficult to find alternates with the same expertise as those they replaced. Kono asked if, in general, the SASEC was satisfied with the expertise balance on the SPC. He also asked if a consensus statement was necessary. Mori replied that it was not necessary. Talwani said that he had received some vigorous complaints from the community regarding lack of expertise in certain areas. He suggested that the committee may not want to immediately approve the current balance of the SPC. Hayes seconded that comment. Humphris suggested looking at the list more carefully. She said the expertise may be too heavily weighted to sedimentology and paleoceanography, but she said she understood

that the balance at the last meeting may have been off due to alternates. Allan pointed out that at the March 2008 SPC meeting one of the two petrologists was non-voting, and he said many of the crustal proposals were presented by members for which the subject was outside their field of expertise. Larsen commented that the SAS is funded by the PMOs, and the PMOs fund the members. He suggested that there was good communication with the PMOs with respect to what expertise is needed, and he opined that the PMOs were doing their best. He added that, once the membership balance is off, it is a slow process to correct it. Regarding alternates, he said that this was a different issue and he understood that sometimes it was difficult to replace someone with the same expertise. Tatsumi suggested encouraging more dialog between the SAS chairs and PMOs. Kono suggested asking the IODP-MI or SPC to consider the issue and persuade the PMOs to consider what expertise is needed, though he said it was not an easy situation because sometimes there is only very short notice. Kawahata said that prior to the March 2008 SPC meeting J-DESC asked several scientists to attend as alternates, but March is a busy time so many did not want to attend. He added that J-DESC intends to nominate a geophysicist as a new member of the SPC. Kono asked if it was possible to make any improvement to the issue of alternates. Taylor replied that the short term exigencies seem to be under control.

Taylor said that a primary issue is that the Tier 1 and 2 rankings do not bear resemblance to the long term priorities in the ISP. He complained that the Superfast Spreading Crust project, which he described as doable and set up with casing, is not a Tier 1 proposal, saying he could not understand this result (unless the proposal itself is flawed) because the program has said that it is a Tier 1 proposal. Kono said that the scientific evaluation of proposals is in the hands of the SPC. He said if the SASEC takes issue with the SPC rankings, it can tell the SPC to do something differently, but he cautioned Taylor that the SASEC should not consider individual proposals. Taylor replied that if the planning structure is not consistent with itself, there is a problem. Mori suggested that the ranking of Superfast (#13 of 26 in March 2008) was not so much affected by the committee membership as it was by the evaluation of the SSEP, which the SPC takes very seriously. Larsen added that he has asked for an agenda item at the August 2008 SPC meeting to discuss how the SPC ranks proposals in relation to long term program priorities. He said the ranking process will be reassessed then to see how well it is working.

Humphris said that, for the SASEC, the key issue to address is ensuring that the program completes as much of the ISP as possible, i.e., are the proposals that are going forward addressing high priority questions related to the ISP? She said that the SASEC has an oversight role to address this, and suggested it would be very helpful if at the next meeting the SPC rankings were presented in terms of how the proposals will address the ISP. Arculus said that these are difficult issues. He suggested that the relatively low rating of Superfast by the SSEP is all community-based. He added that proponents have to present the best possible proposal to the SSEP because effectively there is a competition.

Mori said that the SPC was reluctant to obey mandates from above, e.g., “this proposal should go forward”, citing missions as an example where something mandated from above was not accepted. Taylor replied that the SPC should be reminded that the bottom-up community wrote the ISP. Mori said that, regardless, the SPC would be rankled if the SASEC was to dictate that a certain proposal should be drilled. Harrison added that hundreds of people contributed to the ISP, so there can be no denying that it is a bottom up program. Kono said that the IODP proposal process works on the theory that the best science will rise to the top and be drilled. He added that the decisions on which proposals to be drilled based on science are made at the SPC level. Taylor argued that the SASEC is the watchdog of the program to make sure it fulfills programmatic goals. Talwani said that there is a conflict

because there is an overlap between the responsibilities of the SPC and SASEC. He said that the roles should be clearly defined. Raymo said that, from what she has seen, the OTF and SPC reports show that a really good job is being done. She suggested that thematic balance exists, if not in any one year. Taylor said that he agreed with what Mori had said, and he was happy with Mori as chair of the SPC. But, he noted, the SAS is a creation of the SASEC. Referring to Talwani's comment on the difference in roles between the SPC and SASEC, Taylor said that the SASEC is a policy group. He added that if the SAS is getting off track with respect to the written word of the community in the ISP, then the SASEC has to question this. Talwani asked if it should be the SPC or SASEC that should make that judgment. Taylor replied that hopefully the SPC would question themselves, but if not, the SASEC should do it.

Kono said that he was personally satisfied with the decisions by the SPC and the Tier 1 and 2 designations. He added that he felt the rankings by the SPC were not in conflict with the ISP. He asked the committee members if they felt the SPC was off track in its rankings and Tier designations in relation to the ISP. Arndt replied that it appears that the SPC is making decisions based on scientific quality when ranking. He suggested that if one field is not well represented, it could be because the proposals in the field are not up to standard. He asked if the SASEC could make a recommendation that, after evaluating proposals for scientific quality, the SPC also factors in thematic balance. Kimura said that, with respect to the rankings, SASEC members have not read each proposal, so it is difficult to evaluate or criticize the rankings. He suggested that, in the future, the SPC should be asked to explain or justify its rankings in relation to the ISP.

Larsen pointed out that, prior to NanTroSEIZE, four of twelve IODP expeditions were crustal-oriented (seven of fifteen including NanTroSEIZE). He said there was no crisis, but that in the future thematic balance does have to be monitored. Mori, looking at the list of proposals forwarded to the OTF, said that thematically the list was pretty well balanced. He suggested that it might be appropriate for the SASEC to remind the SPC to consider scientific balance when sending proposals to the OTF. Kono agreed. Hayes said that that was about half of what the SASEC needs to say. He added that it would be counterproductive to condemn the activities of the SPC, but he agreed with Taylor that the SASEC should oversee how the program deals with the ISP. He suggested that the second half of the statement should say that as we consider building towards renewal, it is incumbent on the SASEC to consider balance and fulfillment of the ISP. Kono asked if there was a consensus to make a statement as suggested by Mori and Hayes. Raymo and Hayes drafted a statement which was approved by consensus of the committee.

SASEC Consensus 0806-04: SASEC thanks the Science Planning Committee (SPC) for its conscientious efforts in ranking proposals and sending highly-ranked science to the Operations Task Force (OTF). SASEC concurs with SPC that in their rankings, it is important to consider balance among themes of the Initial Science Plan (ISP). As we consider building toward completion of the present phase of IODP and renewal, SASEC will be paying special attention to thematic balance among expeditions and addressing the objectives of the ISP.

5. Finances and budgets

5.1. SASEC Budget Subcommittee report

Maureen Raymo reported that there was "not much to report". She noted that at its previous meeting the SASEC decided to form a standing Budget Subcommittee (SASEC Consensus 0801-11), and she read the committee's mandate. Raymo explained that the budget was not available until last week, and it was not obvious what advice the subcommittee could

provide. She suggested that the subcommittee focus on the proposals that are to be implemented, for each expedition ensuring that the scientists have the facilities they need to carry out a successful expedition.

Raymo said that at its last meeting, the SASEC decided to support a big meeting for planning the renewal of the IODP. She said it is the SASEC's role to get funds for this meeting into the budget if that is something the SASEC wants. Talwani said that in four weeks there will be a meeting to deal with budget issues, and he would appreciate input from the SASEC.

Mori said that at present it was not possible to make meaningful comments on the numbers, and the subcommittee members do not have the time to go through the budget in detail. He suggested it might be useful to address SASEC priorities, i.e., specific items that SASEC feels should or should not be in the budget.

Allan suggested that when the final budget is available, operations of the drilling platforms versus other activities should be prioritized. Talwani said that there were two ways to deal with contracts that ask for certain deliverables. One way is to let the contractor specify how the deliverables will be met; the other is to specify how to deal with the full-time equivalents (FTEs). He said that in most cases, the former is how it has been done, but that philosophically there is a need to decide which approach is best.

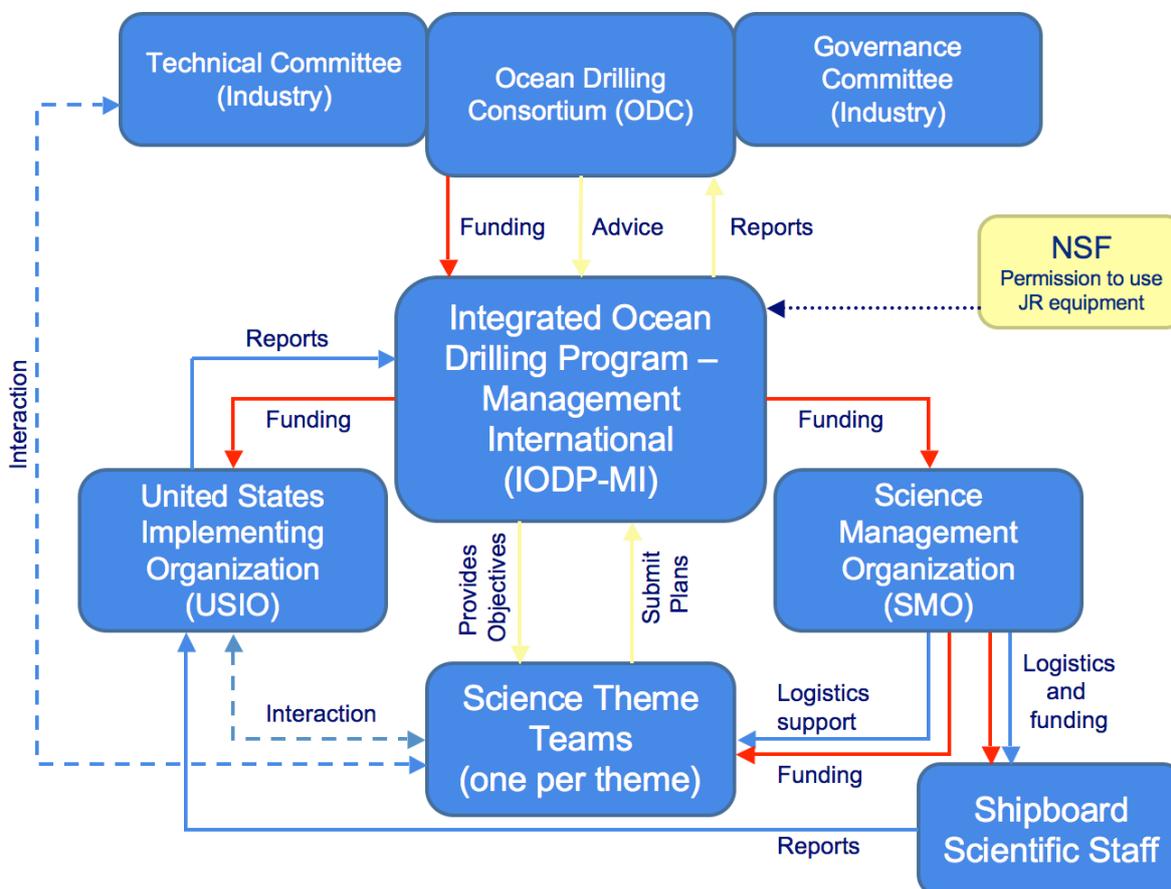
Arculus said that, if nothing else, the Budget Subcommittee is serving a watchdog role. He said he understood that it will not be able to burrow down into the details. Kono noted that, as Raymo said, the subcommittee's task is not yet finished, or hardly started.

5.2. Industry activities by IOs and the IODP-MI

Manik Talwani reported on the 15-17 June 2008 Ocean Drilling Consortium (ODC) workshop. He started by showing a graphic of FY2008 budget shortfalls (USIO: \$25M, CDEX: \$60M), and noting that the total IODP budget for this year was about \$235M. (Mével noted that, though not shown on his figure, ECORD is also experience a shortfall because it was originally planning on one expedition per year, but can only afford one every two years.) Talwani added that the budget shortfalls mean less drilling time, and have led to great debate over what the program can and cannot do. He stated that both the NSF and MEXT are doing all they can to get more money into the program. He said that, beyond the funding agencies, the IOs are primarily responsible for getting more money into the program, but that to solve the problem everyone needs to work together with the IOs. He suggested there was a need to think a bit beyond trying to do the best science, and also to keep the scientists involved. Talwani said that ideally during off months when a drilling platform cannot be used by the program, a fairly stable, low-cost program with a long term arrangement with industry or other agencies or countries would be best. This, he suggested, would help to obviate problems such as transit time between IODP and non-IODP projects. Talwani added that ideally the data gathered during off months would be available to the scientific community.

Talwani described the mission for the ODC, which focuses on "understanding the processes that govern basin evolution that have important implications for current and prospective petroleum systems along the world's continental margins." He noted that the deliverable for the June workshop was an outline of a proposal for a four-year drilling program. Talwani reported that he has a commitment from industry participants and the ODC steering committee to put together, at a meeting in July 2008, elements of a proposal for a two-year program with two additional years. He explained that the proposal would be sent to many companies to sound out interest. He said that industry people are more interested in considering themes of problems to be solved rather than specific sites to be drilled. Talwani listed the three themes to be considered by the ODC: (1) Genesis and evolution of extensional

margins and basin architecture; (2) De-risking uncertainty in shelf margin and deep water reservoirs; and (3) Distribution and genesis of Mesozoic through Paleogene marine source rocks on passive margins. He noted that the workshop was funded by four energy companies, and pointed out that the NSF and MEXT have stressed that the ODC cannot be an IODP project. Talwani explained that IODP-MI corporate funds were being used to support planning for the ODC. He mentioned that the intention was to keep the June workshop small (~20 participants), but he was surprised by the large number of people that wanted to participate. He added that, because of this, cyber-workrooms were set up so that non-attendees could present material. He noted that the workshop was attended by various types of observers, such as those who will report back to their organization (e.g., Mével – EMA, Revello – USAC, Bangs – MARGINS, etc.), observers from the IODP BOG (Nagao, Taylor), and invited personnel from the USIO (Divins, Fox, two staff scientists, one engineer). Talwani also reported that industry representatives said they would make sure that there were adequate site surveys to support the proposed drilling and, if necessary, the rights to the site survey data would be purchased. He provided further details on each of the three proposed themes, and reported feedback from the industry representatives, noting that the main reason for industry interest is that it provides an opportunity to acquire data that the companies would otherwise never get individually. Industry representatives also said that at least six companies would be necessary to sponsor the program, though ten would be better, and good justification for the costs will be necessary to satisfy managers that the money will be well spent. Talwani reported that there was extensive debate about the 2000m penetration limit with the *JOIDES Resolution*, particularly with respect to drilling the South Atlantic margin, but he added that Petrobras will come up with some suitable locations for drilling. Talwani displayed an organizational chart showing the relationship between the IODP-MI, ODC, and other entities (see figure below).



Talwani concluded by showing a comparison of various features of the ODC and IODP. He stated that the ODC model is much easier and simpler, and, if it succeeds, will last for four years. He reiterated that a proposal for the ODC will be put together in July. Twenty to thirty companies will be invited to participate. He hoped to get a response by May 2009 at which point a decision will be made on whether to proceed with the ODC.

Batiza asked for a clarification of the time scale. Talwani replied that an indication of the success of the ODC will be known by December 2008, but a final decision will not be known until May 2009. He added that the program would start in 2010. Wefer said that he appreciated the efforts to involve academic scientists. Humphris asked for confirmation that the ODC was an IODP-MI corporate activity, and that the IODP SAS would not be involved in ODC projects. Talwani replied that this was correct, but said that the IODP would be informed of ODC activities. He added that the issue of paying for vessel transits was an important issue to both the ODC and IODP. Arndt asked to what extent, and under what conditions, data collected by the ODC would be available. Talwani replied that after two years there would be full access for everyone. He noted that many countries require a two-year confidentiality period. Mori asked about conflict-of-interest issues with SAS members, noting that IO representatives cannot serve on SAS panels and committees. Batiza replied that he had checked this with the office of General Council at the NSF; there is no conflict by NSF standards, but, he added, it would be appropriate if the SPC or SASEC wants to make a statement on this issue. Mori added that he was concerned about perceived conflicts. Talwani said that concerns have been expressed over proposals that were submitted to the IODP, but he stated the ODC would only use those ideas if the proponents involved gave permission. He added that conflict-of-interest was more of an issue for the SPC to be concerned about; from the ODC perspective there is no concern. Kawahata asked how the ODC was related to *Chikyu* non-IODP work. Talwani replied that he had discussed the ODC with the Executive Director of JAMSTEC, Asahiko Taira, who thought that something like the ODC could be useful. Talwani added, however, that *Chikyu* is different because it is very expensive to operate.

Kuramoto reported that CDEX had been negotiating with ExxonMobil for work offshore Australia, but that this was canceled by the company. He added that immediately afterwards, the gear trouble with the azimuthal thrusters was discovered. He said that CDEX was continue negotiating with other companies for use of *Chikyu* in FY2010.

Mével mentioned the EUREKA scheme which she reported on at the previous SASEC meeting (for developing an industry-academic project for drilling in the Arctic). She reported that investigations into the possibility of using this scheme, which would allow industry to share the risk (with governments) and would tap other funding sources, were ongoing. Arndt asked if industry would be involved and how the scheme would work. Mével replied that industry would be involved, but it was not yet known how it would work. Kono commented that ECORD does not have a platform. Mével said this is correct, but it does have expertise.

Divins said that Kjerfve has already explained the situation with the USIO under agenda 3.3. He said that one approach to finding non-IODP work was the ODC described by Talwani, but that this would not be viable until 2010. For FY2009 he reiterated that the USIO was working on an arrangement with ODL and Fugro, which would give the *JOIDES Resolution* to Fugro for a period of time. He added that the USIO is also talking with the Korea Institute of Geoscience and Mineral Resources (KIGAM) about potential gas hydrate work the following year. Divins stated that the USIO wants the ODC to succeed, but currently was not locked into one particular approach. Kono asked when the arrangement with Fugro would be settled. Divins replied that a meeting with Fugro occurred last Friday,

and it would probably take a few months to go through the contracts. Kono asked if the NSF foresaw any problems. Batiza replied that he saw no problems with this arrangement, and was confident that permission will be given.

Lee reported that Korea intends to lease the *JOIDES Resolution*, or other IODP ships in July-September 2010 for gas hydrate studies. He noted that last year this kind of work was performed through a contract to Fugro, and gas hydrates were successfully drilled and sampled. He said the Korean government is very interested in studies of gas hydrates, and more information would be given during IODP Day. Humphris asked if the drilling was at depths where a riser was required. Lee replied that they were drilling just below the BSR, and a riser was not required.

Li stated that Chinese companies are drilling offshore in the South China Sea area. He said perhaps later on Chinese companies would be interested in the ODC.

Falvey said the ODC was a great idea so long as there was no cross-subsidy. Kono noted that at the previous SASEC meeting the committee thanked the IODP-MI and IOs for their efforts (SASEC Consensus 0801-12). He asked if the committee would like to do that again. Arculus said that the last statement expressed thanks and hope that the IODP-MI and IOs will continue their efforts; therefore, there is no need to repeat the statement. Talwani commented that he does not want the committee's thanks, instead he wants its practical help. Kono personally thanked the IODP-MI and IOs for their efforts.

6. Discussion of FY2009 Annual Program Plan (APP)

6.1. FY2009 Program Plan, budget and activities

Manik Talwani noted that the budget in the APP is not final. He welcomed any suggestions for changes to the budget. He said that the IODP-MI may not have any response, but will note any concerns that the SASEC may have.

Kono noted that Raymo had already mentioned there was no item for the IODP renewal planning meeting in the budget, yet the SASEC, at its last meeting, deemed this important. Talwani explained that he was reluctant to put it in the budget because the IODP contract lasts until 2013, and thus it was not appropriate to comment on what happens after that. He added that, after discussion with Allan, he was convinced that an item should be put into the APP.

Raymo asked about engineering development items in the APP, saying she had no clue as to the scientific value of these projects. Humphris added that, as an example, she had no clue what a "Motion Decoupled Hydraulic Delivery System (MDHDS)" would be used for, and said it would be helpful if there was an explanation in the APP. Janecek explained that the IODP-MI has set up a very detailed engineering development process, vetted by the SAS (including the Engineering Development Panel – EDP) and by the SASEC, in which unsolicited proposals are submitted and evaluated by the EDP with respect to how they fulfill the Technology Roadmap. He noted that the successful proposals are forwarded to the IODP-MI, which develops an engineering plan that is presented to the SPC for approval. This plan, he explained, is what appears in the APP. With regard to the MDHDS, Janecek explained that when doing downhole experiments and injecting something into the sediments, the motion of the drillpipe is not decoupled from the sensor. The MDHDS, he said, does that, providing a new way to decouple downhole measurements from heave of the drillpipe. He stated that about half of the measurements made during Expedition 308 were no good due to heave problems. Mori confirmed that engineering proposals are discussed by the SPC. Raymo asked if the engineering projects are developed in association with high priority expeditions. Mori said that was hard to answer, but that they are approved because the SPC thinks they are

important. Janecek added that ~30% of proposals have observatory elements, and downhole experiments are an important element of many proposals, so there is a science driver behind the engineering proposals.

Humphris observed that the committee has heard about the restructuring at IODP/TAMU. She asked if, given that the program is looking to save money, the restructuring will save the amount of money by which the budget must be decreased. Divins replied that the restructuring could contribute to, but would not totally solve, the budget problem. Allan said that the level of services on the *JOIDES Resolution* will drop with the reduction of staff that will occur. He pointed out that most of the budget goes towards fuel costs and day rate, while personnel costs are a small amount of the total. He added that any additional cuts will mean that the program is really losing a lot.

Humphris expressed concern about the timing of the IODP renewal planning meeting, questioning if September 2009 was possibly too early. She said for the meeting to be fruitful will require guidance from the lead agencies as to the level of budget that should be considered for the type of program envisaged. She suggested that perhaps funding for the planning meeting should be deferred until next year or the year after. Kono noted that, prior to the SASEC meeting, he had distributed a document with answers from the lead agencies to questions posed by Kono. The lead agencies say that the planning meeting is very important. Travel expenses will be paid by national funding agencies.

Regarding the budget, Kono noted that Talwani is organizing a meeting for next month in Washington, DC, which Raymo will attend. He asked the committee members to send comments and suggestions regarding the budget to Raymo. Talwani noted that the budget had to be reduced from \$37M to \$35M, so suggestions for accomplishing that would be useful. Janecek said that Allan's earlier suggestion to look at priorities is good. He suggested not focusing on details of the budget, but recommended providing an indication as to which programmatic functions are most important. Kono noted that the APP cannot be approved now.

6.2. Platform scheduling

This was covered under agendum 3.1.2.

6.3. Others

Larsen suggested that the committee may want to discuss the process for how it approves the APP. Kono replied that last year it was done by email. He suggested that after Raymo attends the Washington meeting in July she can send an update to the SASEC. This would be followed by a discussion by email, and eventually a motion to approve the APP. Talwani added that the revised budget will be available as soon as possible after July 23.

7. Update on action items from the January 2008 meeting

7.1. Status report on workshops: *High to Ultra-high Resolution Sedimentary Records and CO2 sequestration*

Hans Christian Larsen gave a brief update on workshops. He reported that the workshop on "Acquiring high to ultra-high resolution geological records of past climate change by scientific drilling" would be held in Potsdam, 29 September–1 October 2008. He added that the deadline for applications through the IODP was 29 May, and the deadline for applying through the ICDP is 4 July. He noted that the IODP-MI was providing \$75-90K support, while the ICDP was contributing \$30K. Larsen reported that more than 100 applications had been received, with a target of about 60 participants. He mentioned that, to provide ties to the ice coring community as recommended by the SASEC, Valerie Masson-Delmotte was added to the steering committee.

Larsen reported that USAC did not support the CO2 sequestration workshop, therefore it will not be implemented in 2008. He added that the \$15K that IODP-MI had set aside for this workshop has been reserved to amend the \$75K budget for the workshop on high resolution geological records, if necessary.

7.2. Status of long-term thematic evaluation: *Ocean Crust Formation and Structure*

Larsen reported that the final report from the first IODP thematic review (on climate variability) was posted on the IODP website. He noted that the second review (on oceanic crustal structure and formation) would take place 2-3 October 2008 in Zurich, hosted by SPC member Gretchen Früh-Green. He added that Humphris and Tatsumi would be the SASEC liaisons. Larsen reported that four IODP expeditions have addressed issues of crustal structure (304, 305, 309 and 312), and the review would include two highly relevant late-ODP legs (206 and 209). He mentioned that, after this thematic review, all IODP expeditions except 301, 307, 308 and 311 will have been reviewed. He suggested that these four could be folded into a review of subseafloor ocean and biosphere-themed proposals.

Raymo commented that older ODP legs were not included in the first thematic review. Larsen said that the older legs were not included in the actual review, so it was harder to add them into the written review afterwards, whereas this time the two ODP legs will be included because they are closely tied to the IODP expeditions.

7.3. Status of IODP DRILLS program

Manik Talwani presented a report on the Distinguished Researcher and International Leadership Lecture Series (DRILLS). He noted that the inaugural series, which ran from November 2007 to May 2008, was very successful, featuring three speakers: Bo Barker Jørgensen, Ted Moore and Yoshi Tatsumi. He also presented feedback from the DRILLS hosts, noting that half of all hosts responded to an online survey, and of those most were very supportive of the program and would like to host a DRILLS speaker in the future. Talwani suggested that, in the future, better coordination with distinguished lecture series organized by other entities (e.g., ECORD) was needed.

Arculus commented that it would be useful (e.g., for teaching purposes) if the lectures were made available on the IODP website. Talwani asked to be reminded by email and said he would ensure the lectures were made available. Evans noted that the lecture by Tatsumi in Edinburgh was filmed, though he was not sure what happened to the video. Larsen pointed out that one of the presentation slides indicated that the lectures were posted at www.iodp.org/drills. Arndt noted that ECORD has a distinguished lecture series, and wondered why IODP-MI was duplicating this effort. Talwani reiterated that, indeed, more coordination was needed to avoid duplication. He said that DRILLS was an excellent way to spread the word about IODP. Mori pointed out that Japan also has a similar program.

8. Theme for FY2009 Long-term thematic review

Jim Mori noted that the agenda book includes SPC Consensus 0803-20 on a recommendation for the theme of the deep biosphere and the sub-seafloor ocean for the next thematic review. He said the SPC feels it is too early to do a review on the theme of the seismogenic zone.

Humphris said that she supported the SPC recommendation. Wefer and Raymo agreed. Kono asked Hayes if he felt the biosphere theme was ready to be reviewed now. Hayes said it definitely was, and that there were many fertile topics to review. The committee accepted the SPC recommendation by consensus.

SASEC Consensus 0806-05: SASEC accepts SPC Consensus 0803-20 to conduct the next thematic review in FY 2009 on Initial Science Plan Theme I: the Deep Biosphere and Subseafloor Ocean. This will include, but not be limited to, reviews of Expeditions 301, 307,

308 and 311. Suggested members of the review panel will be determined by e-mail discussion led by John Hayes.

Wefer said the SASEC should suggest names for the review committee. Hayes asked if the review committee members should be unconnected with the IODP. Larsen replied that previously members have been both from inside and outside IODP, with not too many directly involved in the expeditions (e.g., could have perhaps one co-chief). He noted that the review theme was very broad with diverse topics to be covered, and therefore suggested eight members (instead of six, as for previous reviews). Larsen suggested that the SASEC provide a draft list of names to the IODP-MI for checking to see who is willing to participate. He recommended finalizing the selections by email.

Tuesday

24 June 2008

08:30-16:00

9. Program renewal

Masaru Kono reported that he had sent emails to funding agencies (U.S., Japan, ECORD) soliciting opinions on points raised by Talwani in his letter to the SASEC (see agenda book, page 203). A document including the questions and responses was distributed to meeting participants prior to the meeting. Kono gave a presentation of the questions with a summary of the responses received. The fundamental questions he asked were: (1) Should we stop receiving new proposals; (2) Does the SAS structure need downsizing; (3) Is the renewal part of the IODP business; (4) Is the planning conference for renewal of the program important for IODP; (5) Where is source of funds for this meeting; and (6) What (else) should be done for the renewal?

On the issue of whether or not to continue receiving new drilling proposals, Kono said that Talwani had raised the question, effectively suggesting that the receiving of new proposals be stopped. Kono noted that the NSF, MEXT and ECORD considered it important to continue the submission process.

Regarding the need for restructuring of the SAS, the NSF and MEXT replied that no major restructuring is necessary at the moment, while ECORD called for evolution of the SAS so that proposals with no real chance of implementation are rejected early in the review process.

Regarding the necessity for the IODP renewal planning meeting, the NSF, MEXT and ECORD replied that the meeting was important, though ECORD questioned whether the timing (September 2009) was too early.

Regarding the nature of the program after 2013, the NSF and MEXT replied that no major shift was anticipated, though large changes could occur (i.e., involving industry). The intention is to seek full-year funding, but if that is not possible, other sources need to be identified. ECORD said that it was too early to answer.

Commenting on the current preparations for renewal, the NSF and MEXT described the preparations as excellent. ECORD replied that the most important elements are the need for a convincing science plan, and external evaluation of scientific achievements. Regarding other activities necessary for renewal, the NSF and MEXT also highlight the need for an evaluation of scientific achievements, review of program structure and review of national contributions.

Kono presented a revised timeline for planning for renewal:

September 2009	Big meeting
Early 2010	Proceedings of meeting
Late 2010	New science plan (draft)

Early 2011	Completion of science plan
	Review of IODP science
Late 2011	Review of new science plan
Late 2011-early 2012	Approval by National Science Board
	Approval by Council for Science and Technology Policy
	ECORD countries?

Falvey expressed displeasure that he, as the representative for the Australian Research Council (ARC), did not receive the same set of questions sent to the NSF, MEXT and ECORD. Kono apologized for not involving the ARC, MOST and KIGAM in his survey, explaining that he had limited time to formulate his questions and, in the rush, forgot to solicit input from these agencies.

Kono asked the NSF, MEXT and ECORD representatives if his summary of their responses was accurate. Batiza said he thought Kono's summary was great. Shukuri said he had nothing to add. Mével noted that she received the questions just before the ECORD Council meeting. She noted that with seventeen countries involved in ECORD, there were lots of opinions expressed. Falvey commented that with regard to planning for renewal, the time to start planning is now. He said the actual bid will have to come from the scientific community (not the funding agencies, which can only provide advice and support), led by the SASEC in three years time. He stressed the importance of achieving significant scientific results prior to the renewal bid. Kono asked Falvey if the presented timeline looked reasonable. Falvey said yes. Both Lee and Shen had no comments.

Kono asked the committee if it had any questions for the funding agencies. Arndt asked the lead agencies about the need to look for funding from other sources, such as industry. Batiza replied that obtaining support from other sources such as industry, other countries, or private foundations was important, and the lead agencies will continue their efforts in this regard because of the budget shortfalls.

Humphris asked how realistic it was for the funding agencies to raise funds for full time operation of all platforms. She noted that currently with \$235M the program cannot run one platform full time, while projecting into the future the cost for full time operation of all platforms would be approximately \$500M. Batiza replied that full time platform operation is the goal, though he could not say whether it would be successful. He added that the NSF was exploring all options, and valued help from the community in these endeavors. Shukuri added that MEXT must seek more funding, e.g., from other ministries or private companies or industry, but he noted this was difficult to do. Hayes, responding to Humphris, said that five years from now the world will likely be on the cusp of a global environmental crisis. He said that the IODP holds the world's reservoir of scientific ocean drilling expertise and capability, with two state of the art ships and all the expertise on how to program the ships, operate them, and extract input from the scientific community. He suggested that to think that full funding for the program is unobtainable is crazy, but it is necessary to think about how to structure the program in such a way that the rest of the world (at least the part with money) understands what an important contribution the capabilities of the IODP can make. Hayes said that looking forward to renewal requires thinking as broadly and flexibly as possible in order to communicate what the program has to offer. He added that half a billion dollars is the least of the problem. He recommended not planning to "continue what we are doing", because that would lead to being seen as part of the problem, and not part of the solution. Hayes suggested that the time is right to take the lead and say we can contribute to this, and are ready and willing to do so.

Larsen said that Humphris asked how feasible it was to ask the funding agencies for full time

use of the drilling platforms. He suggested it might not be viable to ask the funding agencies for part time use of the platforms. Falvey stated he concurred with all that Hayes said, adding there was nothing wrong with pursuing funding for full time platform operation. He said this would require explaining to the funding agencies why it is a valid thing to do, but that just being the reservoir of a vast body of knowledge and expertise was not good enough. Mével said that ECORD agrees the program needs to be more visible and attractive to the public, and to tackle societal problems. She added that, post-2013, ECORD is considering developing ties with industry. Morris said that the same trends mentioned by Falvey and Mével are seen in the U.S., with climate change now a big focus for scientific efforts. She said that the path for ocean sciences, in general, is to address what basic ocean research can do to benefit society. Kimura added that the science plan for IODP post-2013 will be very important, citing the July 2008 G8 Summit meeting in Japan, and the Japanese government's desire to cut carbon dioxide by 50%, as a need for development of technology. He added that geosciences and ocean sciences can provide important information towards this problem, and persuading the public of this will make budget issues easier.

Raymo wondered if there was a large subgroup of the community longing for the old days of one ship focused mainly on paleoclimate research. She said that was the old model, but a new model is required. She added that the community will be asking questions about the format of the new program at the renewal planning meeting. Falvey commented that if the policy of this program is to recreate the past, it won't have a single ship in three years time.

Larsen, mentioning that the director of the NSF recently met with the Japanese minister for MEXT, wondered if there was any mention of a commitment to a high level of funding. Batiza explained that the NSF's director congratulated the minister on the achievements of NanTroSEIZE and *Chikyu*, and said the U.S. was strongly committed to renewal of the program. He added that the minister agreed and said the U.S. and Japan should again take the lead. Morris added that the budget for the next phase of ocean drilling will depend on what the next President and Congress do with the U.S. budget. She said this was unpredictable and could change quickly. She recommended considering different scenarios, including one in which there is no new money relative to the current budget. Morris said that if Congress decides that the NSF and oceans are very important, there could be growth in the IODP, but she cautioned against translating the NSF director's positive comments into increased support for the IODP. Arculus reminded the committee about discussions at the previous SASEC meeting, where \$500M was compared to a big NASA mission. He said that the IODP should be competing with other such grand ideas, be careful with the technology that is used, and address important societal issues.

Talwani responded to some of the comments made by the funding agencies in their replies to questions from Kono. Regarding the continued submission of drilling proposals, Talwani said that, given the opinion of the funding agencies, there is not much to say, but he respectfully said that some of their comments "fly in the face of common sense". He said that there are currently eighty active proposals, and twenty-six with the OTF, with Janecek estimating there are only twelve to sixteen slots for the next four years, and, given the number of excellent proposals already with the OTF, perhaps not more than three or four new proposals will make it to the OTF. Talwani stated that maintaining the current structure is not a cost effective or appropriate way to do science. He recommended thinking outside the box on how to deal with the current batch of proposals, such as putting together a portfolio of proposals for implementation.

With regard to the size of the SAS, Talwani stated that asking any body to reduce itself in size is non-productive. He said that the size of the SAS is much too large for what can be

accomplished in the next few years. But, he acknowledged, the funding agencies recommended no significant changes.

Addressing the issue of funding for renewal, Talwani said he agrees with Hayes on the need to look to the future, and with Humphris that \$500M is a lot of money. He again recommended thinking outside the box. He suggested that other countries have to do more, and perhaps there was a need for different kinds of agreements, because they are not paying their share of the \$235M budget. He speculated that perhaps a different kind of MOU would result in more countries participating in the program, and hence more funding. For the future Talwani said there was a need to think of different realistic models for the program, but he added that a program operating two ships part time on \$235M will not succeed.

9.1. Steering committee and its mandate

Kono noted that at the previous SASEC meeting, a small subcommittee (Raymo, Kawahata and Wefer) was established to recommend a venue and gather recommendations for steering committee members for the renewal planning meeting. Raymo explained that, for the steering committee, a call for nominations was made, about one hundred nominations were received, and these were reduced to eighteen and circulated amongst the SASEC. A few more names were added and the list was winnowed down to ten names (see page 196-197 of the agenda book). She noted there was an effort to maintain thematic and member balance, with a focus on mid-career scientists. Raymo read the steering committee's mandate. She said that the nominees were provided with the mandate, but they will probably want more guidance, so the SASEC may wish to anticipate this and provide more details now. Kono asked if the SASEC was happy with the list of ten nominees for the steering committee of the renewal planning meeting. Raymo moved to approve the steering committee, seconded by Wefer.

SASEC Motion 0806-06: SASEC approves the following committee to organize an international scientific meeting for all scientists interested in renewal of IODP:

Christina Ravelo (Co-chair), Wolfgang Bach (Co-chair), Jan Behrmann, Bob Duncan, Katrina Edwards, Sean Gulick, Fumio Inagaki, Heiko Pälke, Ryuji Tada, Gilbert Camoin

Raymo moved, Wefer seconded, 10 in favor (Arndt, Hayes, Humphris, Kawahata, Kimura, Kono, Raymo, Tatsumi, Taylor, Wefer), none opposed, 2 non-voting (Mori, Talwani).

Raymo noted that the SASEC needs to appoint liaisons for the meeting. She nominated Wefer. Wefer nominated Mori; however, Kono suggested that Mori was too busy with other things. Kono nominated Tatsumi. The committee appointed Tatsumi and Wefer as liaisons to the renewal planning meeting by consensus.

SASEC Consensus 0806-07: SASEC names Yoshi Tatsumi and Gerold Wefer as the SASEC liaisons to the steering committee for the international scientific meeting related to renewal of IODP.

Referring to the steering committee's mandate, Humphris expressed concern that the steering committee has not been given guidance on the frame work or scale of a renewed program. She said if the steering committee is left to set scientific directions with no limitations, the community will find itself in the same situation it currently faces, with planning for a program that cannot be afforded. She added that it would be helpful to know what level of funding can be anticipated. Raymo agreed that the steering committee will ask that question early on in the process. Batiza explained that, in addition to the scientific planning process, there will be a parallel process involving funding agencies and the IODP Council to determine the new program architecture, including who will be leading the program (lead agencies), funding level, etc. He said that a group similar to the past International Working Group (IWG), but comprising in addition to funding agency representatives, representatives

from the IOs and the IODP-MI, and perhaps other international groups, would probably be established, possibly with liaisons from the renewal planning meeting to ensure interaction and exchange of information. Batiza stated that during the planning process, more will be learned about the FY2009 and FY2010 budgets. He said he eventually foresees a master schedule that integrates scientific planning with program architecture planning. He added that consistency in planning is required to achieve the best possible proposal to present to the funding agencies. Humphris reiterated that it was not possible to effectively determine the best science without understanding the potential size of the renewed program, and suggested the meeting would be more meaningful if the funding level were known. Larsen said that the steering committee is not the right group to be determining the size of the program, though he did see there could be disadvantages to operating in a vacuum. He suggested that the mandate could be modified to indicate the scale of the new program. Humphris agreed that this would be useful.

John Hayes gave a brief presentation on his own thoughts relating to the issues of continuing proposal submission and planning for the renewal meeting. Noting that there are currently 112 active proposals in the system, he said this is easily enough to cover remaining slots for expeditions in the current program as well for the first two years of a hypothetically fully-funded renewed program. The current challenge, he said, was to achieve program renewal, and community activities should focus on that goal. He described the continued preparation of routine drilling proposals as “a serious distraction”. Instead, he recommended: (1) proponents submit streamlined documents outlining opportunities and which serve to shape the forthcoming renewal proposal; and (2) the SAS should focus on preparation for the renewal proposal, rather than routine evaluation of drilling proposals. In addition, he recommended the “retirement” of about 70 proposals that are still in the system but which have failed to attract attention for ranking at SPC. He added that the concepts within them should be preserved as some of the first of the new, streamlined submissions. Hayes said that the details of these procedures should be shaped at the renewal planning meeting, at which an evolution of the present SAS should be defined. He said an important input to the conference will be a straw-man schedule for all opportunities remaining in the present program. This, he added, will provide a foundation for the renewal proposal and may reveal gaps that should be filled prior to the end of the present program. He recommended that the form of the proposed, new program should strive to use all resources of the *JOIDES Resolution*, *Chikyu*, and MSPs, incorporating energy-related and other applied programs as imaginatively as possible. Hayes suggested the streamlined documents submitted should include proposals for ways in which that might be accomplished.

Talwani stated that for renewal it will also be important to consider a broader platform than just excellent science, such as the interests of a large number of countries. Raymo said that the stock of ideas within the program will not disappear, but will roll over into the new program. She added that it would be great if many other countries participated with new proposals. She recommended proponents think about targets of opportunity. Raymo also suggested that the way proposals are received could possibly be altered, and that panels should only meet when necessary, but she said to stop receiving proposals would be very bad. Hayes replied that he was not calling for the receiving of proposals to be stopped. Talwani suggested there was a need to change the type of proposals received. Wefer suggested asking the community to send letters of interest as a bottom-up way of getting new ideas and getting the community involved. He suggested that with hundreds of letters of interest, the program could show that it has the backing of a large community. He added that it was also necessary to figure out a way to get industry involved, by having something to offer that will interest industry. Wefer said that the next science plan needs to be prepared with industry

involvement. Larsen suggested that this would necessitate rewriting of the mandate for the steering committee to specify industry involvement and letters of interest. Kono said that the committee would return to discussion about the mandate. Arndt asked if the SASEC has already thought about asking industry to participate in the renewal process. Kono replied that the committee did not discuss this at its previous meeting. Arndt wondered if some thought should be given to how the program will proceed with both the ODC and another more fundamental science program, i.e., addressing this issue at the renewal planning meeting.

Talwani mentioned that he has talked with Janecek about a “consortium of consortia”, explaining that with the need for a half billion dollars, the federal government, industry, other countries with different interests may all play a part in a new program. He suggested that these sort of things need to be considered early on, and the fact that the present program is not fully supported is a warning that thinking in different terms will be required.

Larsen expressed concern about changing the mandate of the steering committee and making it too broad, saying he thought that it was a science committee and science plan that the SASEC wanted.

Kono said that the renewal planning meeting is essential for science planning, but the new program’s budget will impose limitations. He added that if the budget is too small, then there will be possibilities for relationships with industry to help cover shortfalls. He suggested, however, that ways to get money external to the funding agencies should be considered by other groups, such as the funding agencies, or a special working group established for that purpose.

Taylor observed that the SASEC was struggling with a different way of doing things. He suggested that the steering committee for the renewal meeting should be left alone to focus on science, and some other body (e.g., IODP Council and/or the BOG) should deal with the issue of program framework. Taylor said the IODP was an over-capitalized, facilities-based program doing not only science but also entertaining industry, national programs, and hybrids of these, but the proper mix of these for a renewed program has not been established. He said the community was not used to doing business in this framework, describing the program as previously making all its decisions within a box. He added that this was no longer the case, and this needed to be recognized. Taylor said the renewal planning meeting is a science meeting at which there will be talk about how a fraction of the total drilling capacity will be used. This, he said, will require a renewal plan that is very different from previous plans. He suggested that a major question was how to make a proposal to the funding agencies for a program that includes a mix of industry and national interests, without having any commitments to the funding level for the program. Taylor said that concern over the mandate for the steering committee was a distraction. He suggested that the SASEC should deal with the science aspects of program renewal, but the BOG or IODP Council will need to provide guidance on how to deal with issues of framework for the renewed program. Kono agreed, saying the SASEC can deal with the science part, while other parts are beyond the ability of SASEC to deal with. He suggested that the SASEC could send a liaison to whichever group will meet to deal with framework issues.

Raymo said that the SASEC should not micromanage the steering committee, or place too many restrictions on it. She suggested adding a phrase to the mandate such as “the steering committee should seek guidance from the lead agencies, etc., to determine the future level of program funding”.

Falvey stated that the harsh fiscal reality faced by the IODP has been dealt with by other science programs around the world for decades. He said that a mixed mode of funding to

deliver a broadly based science program is not uncommon. Falvey suggested that the renewed program will have to become more outcome oriented, and the outcomes will have to fit with the public relations used to justify the funding. But, he added, the program should not be afraid to seek big money, but this will have to be done in a different context than previously.

Arculus stated that during the previous SASEC meeting, the committee discussed some of the big ideas that the next science plan will address. He said that, in addition to what scientists want to do, now there are other components to be considered (e.g., industry work or work for other countries). He suggested that these other elements should not be dealt with at the renewal planning meeting, which should focus on science. Kono agreed that the other elements cannot be dealt with at the planning meeting, saying that other measures need to be taken to cope with these complex situations (e.g., industry relations, public relations, convincing the funding agencies that ocean drilling is important).

Morris said that within the ocean drilling community there are scientists who consider an increased involvement of industry to be an exciting possibility. She suggested not defining the science so narrowly as to exclude those individuals. Talwani said that inviting industry scientists does “not do the trick”, because they cannot speak for industry. He said the more difficult trick is to involve the management of industry.

Returning to Raymo’s suggested addendum to the mandate for the steering committee, Taylor said it was innocuous, but wondered if it served any purpose. He said it was not needed. Kono said that the additional statement helped to define the boundary conditions for the steering committee. Humphris agreed it would be good to include it, saying that it acknowledges that the steering committee should be working within some sort of framework. Talwani suggested that the extra statement was unnecessary. The SASEC decided, by consensus, to add a statement to the mandate of the steering committee.

SASEC Consensus 0806-08: SASEC adds the following statement to the mandate for the steering committee for the international IODP renewal meeting:

- The steering committee should seek guidance, possibly in the form of liaisons, from national funding agencies and other funding sources, as to the evolving nature of plausible future structure and funding level of a new ocean drilling program.

Kono suggested that the SASEC, as suggested by Taylor, request that the IODP Council or BOG, or other relevant body should consider the framework for a renewed program. Humphris agreed and asked Taylor to draft a statement, which was approved by consensus.

SASEC Consensus 0806-09: SASEC recognizes that IODP is entering a new framework of doing business. Our ocean drilling facilities’ use is no longer sufficiently funded by, nor therefore limited to, scientific drilling. IODP-MI and the Implementing Organizations (IOs) are currently entertaining industry and national drilling projects, and consortia. The possible mix of funding/projects, and what falls within or outside international scientific drilling, is under discussion.

SASEC envisions the possibility of a mixed mode of funding for a renewed program of ocean drilling, including government science appropriations, industry-science consortia, and contracts with industry and/or other government agencies. SASEC requests that the IODP Council, IODP-MI Board of Governors and the IOs consider forming a working group to frame the possible scope and structure of a post-2013 ocean drilling program, and how such a program might be formulated/proposed/funded/contracted.

Kono, referring to Wefer’s suggestion to solicit letters of interest for the next program, noted that Wefer said it would be too late for the steering committee to do this, and wondered if it

would be better to ask the IODP-MI to implement this. Wefer said that ideally, the deadline for such letters would be the end of 2008, so that the steering committee could use them when planning the renewal meeting. Raymo said the steering committee has already been convened and can start working right now. She said the SASEC can tell the steering committee to start by soliciting letters of interest from the community. Larsen concurred that the steering committee has been told that they should start to work when this SASEC meeting is over. Kono agreed to leave this matter to the steering committee.

Wefer suggested dates of 22-24 September 2009 for the renewal planning meeting in Bremen, Germany. Kono asked if there were any known date conflicts. Larsen suggested tentatively agreeing to these dates so long as no conflicts were found with other major conferences. Arndt stressed the need to publicize the meeting and dates so that other conflicts will be minimized.

SASEC Consensus 0806-10: SASEC recommend the dates of the international IODP renewal planning meeting as 22-24 September 2009 in Bremen, Germany, provided that no conflicts with other workshops/meetings are identified and pending the approval of the steering committee.

Kono again displayed the revised timeline for renewal planning and asked for comments. Arculus said the timeline was fine for the science aspects, but was missing integration with the other components that have been discussed (e.g., issues of program framework, etc.). He added that, going down the list, more and more integration with the other parts will be necessary. Kono replied that it was not known who would start that other process, making integration at this point difficult. Batiza explained that there will be parallel efforts that should be superimposed on the timeline, but no details are available yet. He said that everyone is now aware of the issues that need to be addressed, and emphasized that they will be addressed although it is not yet certain by whom. Talwani suggested it may be useful to raise this question with the BOG, adding that perhaps the BOG can work with the lead agencies and others to address the issues.

Tatsumi expressed concern about creating a science plan for the renewed program. He said that, previously, when planning the IODP, the new riser ship stimulated the community, but for the current renewal effort there is no such stimuli. He said he had no answer, but suggested that something was needed to strongly stimulate the community to think about new science.

Raymo, commenting on the timeline, said the timeline shown was for the SASEC, but she acknowledged that there will be parallel timelines. She said there does not appear to be any other action items that need to be addressed right now. Kono suggested that the process of writing the next science plan should start now. Raymo suggested that perhaps at the January 2009 SASEC meeting there could be reports from liaisons to the planning meeting, and that at that time plans for writing the next science plan could be discussed. Kono asked the committee if the process of writing the next science plan should start now, or wait until the January 2009 SASEC meeting. Humphris agreed it was too early now to start writing before the steering committee has had time to do any work. Raymo and Hayes agreed it would send a bad signal. Kono agreed to defer discussion on the next science plan until the next SASEC meeting. He asked the committee if there were other aspects that needed to be considered now in planning for renewal. There were no additional comments.

9.2. Meeting location, timing and funding

9.3. Entire process, deliverables and timeline

9.4. Process of writing science plan

9.5. External review board for science plan**9.6. External review committee for IODP****9.7. Others**

Discussion for the above agenda items took place under agendum 9.1.

10. Continuation of proposal submission: current IODP and renewal

Masaru Kono noted that he had already presented background information, including opinions from the NSF, MEXT and ECORD, and that Talwani and Hayes had also already provided comments (see agendum 9).

Hans Christian Larsen presented information on proposal pressure and issues for consideration regarding whether drilling proposal submissions should continue. He started by showing the number of active proposals over time, and number of proposal submissions at each deadline. He noted there was relatively strong proposal pressure during the late ODP phase. Larsen showed statistics for new proposal submissions by IODP members, noting that for the most recent deadline three new proposals were submitted from Australian lead proponents. He asked how stopping proposal submissions would affect other new members that might consider joining the IODP. Larsen showed a breakdown of proposals by primary ocean basin, noting there were many proposals for the Pacific, and fewer for other oceans. He said it was important to have viable options for all oceans. Larsen showed a breakdown of proposals based on primary drilling platform. He noted that there are few currently drillable MSP proposals in the system, and, besides NanTroSEIZE, no other currently viable riser proposal.

Raymo asked why there were so few riser proposals. She wondered if the community feels that *Chikyu* is devoted solely to NanTroSEIZE. Larsen replied that perhaps this was a factor, but he added that site survey issues were also important due to the high cost of obtaining 3-D seismic data for site characterization. Eguchi said CDEX was very concerned about the low number of riser proposals, calling it a bad sign. Talwani expressed confusion, saying he understood that NanTroSEIZE was all that *Chikyu* could handle up to 2013. Larsen replied that Talwani was not incorrect, but noted that discussions from earlier in the meeting (agendum 3.1.2) suggested that *Chikyu* may not be able to drill there due to the Kuroshio Current. Talwani asked if there was a realistic chance that *Chikyu* could do riser drilling elsewhere. Larsen replied that it was not likely. Eguchi said that the requirement of 3-D seismic data for riser drilling may change in the future. Talwani asked how that requirement could be relaxed. Eguchi replied that the level of site characterization needed was dependent on the geology. Taylor suggested that a 3-D seismic survey would be necessary even if drilling in igneous basement; otherwise he said a fortune would be spent drilling blindly. Talwani agreed, saying he thought it misleading to think that deep drilling could be done without 3-D seismic data. Raymo said it was important to ask why there are so few riser proposals. Hayes stated that a single riser proposal represents drilling for one year.

Larsen presented a list of other points to consider regarding proposal submissions. He noted that (1) Proposal submission and SAS evaluation is an integrated part of the MOUs; (2) Transition from the ODP to the IODP benefited from the availability of proposals (proposals for twelve out the fifteen IODP expeditions completed so far were submitted prior to start of the IODP); (3) Review of proposals includes new proposals, updates (e.g., preliminary to full proposal) and revisions (Full, Full2) in response to review comments; (4) Currently there are 112 active proposals representing about one thousand proponents - new and prospective members, however, have few or no proponents; (5) ~80% of proposals are for the *JOIDES Resolution* riserless platform - there is a shortage of mature and high-ranking MSP and riser drilling proposals.

Tatsumi said that one difference between the ODP and IODP, in terms of proposals, is the presence of complex drilling projects (CDPs) in IODP. But, he said, the financial situation is not good for implementing CDPs. He asked if such large projects should be considered after renewal. Kono replied that CDPs and missions will be discussed at the renewal planning meeting, and suggested it should not be discussed now.

Humphris said she was concerned about stopping proposal submissions for a number of reasons. She cited concern that the drilling hiatus may have resulted in a loss of part of the ocean drilling community. She said that the low number of new proposals received recently may also be a result of the drilling hiatus. Humphris said that stopping proposal submissions for the next five years could result in the loss of an even larger part of the community. She also said it was important to continue to receive new proposals to help justify the need for renewal of the program. Humphris added that she could perhaps see a change to a single proposal submission per year, but again expressed concern about stopping submissions until the end of the current phase of the program. Arculus endorsed Humphris' comments, saying that the community knows what the risk is when a proposal is submitted, i.e., it will have a minimal chance of being implemented in the current phase, but will have a chance after renewal.

Talwani stated that stopping proposal submissions was not what Hayes had suggested. Talwani suggested there was a need to figure out how to get exciting new proposals and a system for evaluating them. Taylor stated that 80% of the proposals drilled under the IODP were originally submitted for the previous (ODP) program. Regarding the current system, Taylor rhetorically wondered what is broken. He said the system is working. Talwani replied that there are eighty-five proposals in the system waiting to go forward. He said this represented sufficient proposal pressure. Taylor replied that proponents submitting proposals now recognize that it is unlikely to be drilled in the current phase. He said that if the program isn't growing it is dying, adding that the program should not be saying that it will deal with proposals only up until 2013. He suggested that the current proposal pressure is not enough to guarantee enough proposals for the next ten years.

Kono said that at its last meeting, the SASEC asked the SPC to consider re-ranking proposals residing with the OTF. He noted the SPC plans to do this every two years or so, so that there is a mechanism in place to take proposals away from the OTF and allow other good proposals to be implemented.

Hayes asked Taylor for his definition of "growing". He asked if proposals submitted by proponents willing to "play the game" constitutes growth. Taylor said no, it constitutes feeding. Hayes said he agrees that cutting of "inputs" to the program is destructive, adding that the present problem is the nature of the inputs. He said that the current form of inputs are futile, and that this viewpoint is quite widespread. Hayes said that he would like to see development of the inputs that are presently missing, which is why he recommended a change to a different kind of proposal submission.

Arndt asked whether it was widely known that proposals submitted now will most likely not have a chance to be drilled until the next phase of the program. He also expressed support for the concept of receiving letters of intent, saying they could stimulate new ideas for proposals. Larsen replied that the most recent call for proposals mentioned limited drilling time under the current phase, and that proposals will be considered under a renewed program. Kimura said that, undeniably, new revolutionary proposals will be submitted, but it cannot be predicted when. He said the program has to be open to this opportunity and therefore needs to encourage new proposals.

Kawahata said that he attended the last (March 2008) SPC meeting as an alternate. He said he was very impressed by the evaluation procedure. He added that the program should continue to welcome new proposals, but expressed concern about having too many proposals residing with the SPC or OTF. He suggested that proposals be re-evaluated or re-ranked every three or four years.

Hayes said he would like to see a system where preliminary proposals are given more prominence. He suggested that something that would make preliminary proposals more reliably productive and more respectable would go a long way to achieving his objective.

Raymo stated that the message that goes back to the community from this committee will be very important. She said that a positive message is needed, explaining that in the current program the platforms will be used for non-IODP work for part of the time, and Tier 2 proposals can be drilled in between non-IODP work and Tier 1 proposals. She said that proponents do not need to propose a full drilling leg, but could take advantage of targets of opportunity. Larsen said that a mechanism for dealing with short periods of drilling was already in place: ancillary project letters (APLs). Mori agreed for the need to send a positive, but realistic message. He said the science community is always optimistic when submitting proposals to an over-subscribed science program. Talwani said there is a strong interest within industry to use the *JOIDES Resolution* as a test bed for experiments. He said that it would be good if that sort of use could be combined with a few days of drilling, and recommended advertising the possibilities for short-term experiments.

Kono summarized the discussions and sensed there was a general feeling that proposal submissions should continue. He noted that mechanisms to get short proposals into the system (preliminary proposals and APLs) already exist, and suggested that what is needed is a mechanism to encourage the community to come up with proposals of all kinds. Arculus said that, in reality, preliminary proposals will be put into a bin, adding he was not sure what would be done with them. Mori said the idea is they will be developed into full proposals. Arculus replied that that is what is currently done. Mori agreed, suggesting that an encouraging message to the community is needed to get new proposals. Larsen suggested that a message could be sent to the community that now is the time to submit preliminary proposals that will influence the direction of the new program. Arndt agreed that an optimistic message to build up a bank of good proposals was needed for renewal. Mével asked how the solicitation for new ideas and the renewal planning meeting in 2009 will work in parallel. Larsen replied that it needs to be sorted out. Mével said there is a big difference between submitting a letter of intent for the renewal planning meeting versus submitting a preliminary proposal. Wefer said it would be dangerous to stop receiving proposals, but he suggested that the fact that all proposals can't be drilled needs to be dealt with. He said the SAS needed to be changed. He also suggested changing to one submission deadline per year and changing the way proposals are reviewed. Mével also said that the program needs to continue to receive proposals, but added she did not understand how letters of intent and preliminary proposals would work together. She said a new science plan will come from the renewal planning meeting, and asked how preliminary proposals would integrate with that. Larsen said that the new science plan does not come from the renewal planning meeting; but is written afterwards.

Kono asked the committee if it agreed that proposals should continue to be received. He also asked if the committee should encourage new ideas using current planning methods (preliminary proposals and APLs). Humphris read a draft statement which, after some modifications, was accepted by consensus.

SASEC Consensus 0806-11: SASEC encourages the community to continue to submit
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proposals for drilling within the current program and in preparation for renewal of the Program. Truly innovative ideas can still be incorporated into the current phase of drilling. SASEC is particularly interested in receiving preliminary proposals for new and innovative projects that can influence the direction of the Program beyond renewal. In addition, SASEC encourages submission of Ancillary Program Letters for targets of opportunity that may arise as the drilling vessels transit between expeditions.

Kono listed other issues for discussion: number of proposal submissions per year, earlier rejection of proposals by the SSEP and SPC if they have no possibility of implementation and/or reducing the amount of nurturing, and size of the SAS. Taylor said that decreasing the number of proposal submissions would leave the SAS less responsive to proposals which take advantage of targets of opportunity.

Mori said that the SPC will try to reduce the amount of nurturing at the SPC and be a bit more ruthless in dealing with proposals that have little chance of implementation. But, he added, any proposal that makes it to the SPC is considered drillable or it wouldn't get that far. He said the SSEP is becoming more conscious of deactivating proposals deemed unlikely to succeed.

Hayes said that if a proposal has been in the system for a long time it must have some positive points. He suggested devising some way to harvest the positive aspects of these proposals and to carry the ideas forward for renewal. Larsen replied that a bigger concern is proposals that remain with the SPC and always rank low. Zelt noted that proponents get a written SPC review, and can update their proposals (e.g., via an addendum or response letter) in order to improve its ranking. Mori suggested that perhaps there should be no nurturing of proposals at the SPC level. Humphris followed up, saying perhaps once a proposal gets to the SPC, and after a certain number of low rankings, it should be deactivated. Hayes said that the important thing was to remove proposals that are congesting the system, adding this needed to be done in a manner that was respectful to the proponents. He preferred a systematic approach. Raymo disagreed, saying a systematic approach with elimination after a specified number of low rankings would be problematic. As an example, she said that a proposal for drilling in the Indian Ocean may currently rank low since it is not on people's radar (because the drill ships are currently in the Pacific), but perhaps three years from now the situation may be different. She said there is fine line between deactivating and providing realistic advice. Arculus said the SSEP and SPC should not be shy of saying "no" to a proponent.

Tatsumi asked if, after a proposal is ranked, the proponent receives any communication from the SPC. Mori replied that the proponent receives comments from the watchdogs on how their proposal can be improved. Talwani asked if a proposal that has been deactivated can be resubmitted. Mori replied that it could, but that it would have to go through the whole system, i.e., starting with evaluation by the SSEP. Harrison stated that most NSF proposals are rejected, but proponents can resubmit. Batiza asked if it did not make sense to maintain a reservoir of proposals based on geography, so when a ship goes to a specific ocean basin there will be a lot of options for implementation. Humphris said the ship track is driven by the location of highly ranked proposals, therefore geographic location should not be a part of the criteria for ranking. Mori said that geographic region does not enter into rankings. Hayes suggested that if a proposal descends in ranking, or has been with the SPC for some specific number of years without advancing, it should be deactivated. Allan urged care when saying that proposals are "ranked by science". He said that financial considerations mean that the program has to think about getting as much science as possible out of a ship track. He agreed with Batiza that it would be good to have more viable proposals as a resource. Raymo expressed concern that sometimes proponents are asked to make a small change to their

proposal which ends up making no difference to the proposal's ranking. She suggested that perhaps more realistic feedback and assessments are needed. Raymo also wondered what is lost by having a lot of proposals in the system. Mori replied that proposals have to be reviewed at each ranking meeting, and the SPC cannot review thirty to forty proposals at every meeting.

Kono asked if the SASEC would like to send a message to the SPC.

SASEC Consensus 0806-12: SASEC recommends that the Science Planning Committee (SPC) implement procedures to (i) provide more specific feedback to proponents, particularly in terms of their potential success in prioritization for drilling, and (ii) streamline the processing of proposals forwarded to them from the SSEP.

Kono again asked for comments on the number of proposal submission deadlines per year. Taylor replied that he had already stated his preference to two submissions per year. Raymo agreed, citing the need for the system to be responsive. Mori added the SSEP has a fairly full agenda with the current two submission deadlines per year. Kono noted that the committee generally agrees to maintain two proposal submission deadlines per year.

Kono asked if the committee had comments on the structure of the SAS. Taylor said he applauds Jim Mori and the SPC for its responsiveness to previous directions from the SASEC, and for trying to self-regulate itself. He cited a decrease in the frequency of some SAS meetings, and no adjustment to the SSEP as positive signs, and encouraged the SPC to continue its good work. Raymo said that at the next SASEC meeting she would like to know if there is additional room for reduction of the SAS panels. She also wondered if engineering development was a luxury and questioned if the program should be accepting engineering development proposals, adding that she did not have answers to these questions. Mori said that some of the panels are being reduced in size, while others, e.g., the Environmental Protection and Safety Panel (EPSP) cannot be reduced. He mentioned the perennial question of whether the EDP and Scientific Technology Panel (STP) should be combined, noting that these panels say no. Mori said, however, perhaps this suggestion could be revisited, but questioned whether further relatively small adjustments to the SAS would result in saving of significant money. Larsen added that the EPSP now meets only once per year. He mentioned that the July 2008 SSP meeting was canceled, and perhaps that panel may transition to one meeting per year, as may the STP. He also noted that the Industry – IODP Science Program Planning Group (IIS PPG) nominally meets twice per year, but is waiting for a full agenda, so it is currently meeting less than twice per year.

Kono asked Janecek if the technical panels make a contribution to the OTF when the latter is scheduling expeditions. Janecek explained that there were two different time scales at work, with the EDP operating on a longer time scale of one to five years for engineering developments, while the OTF works on a yearly cycle. He added that the EDP also needs a full agenda to justify a meeting. Mori observed that not holding a meeting translates to saving travel money for the PMOs, but does not translate into more ship time. He added that the benefit of meetings are they keep the community engaged. Kono noted that Talwani had said a body will never recommend reducing itself in size, but nevertheless asked if the SASEC approved maintaining the current SAS without reduction. There was general consensus on this point. Further, the committee agreed by consensus to commend the SPC, and encourage the SAS to continue streamlining its business.

SASEC Consensus 0806-13: SASEC applauds and thanks the Science Planning Committee (SPC) for its responsiveness to previous requests for reductions in the Science Advisory Structure (SAS) panels, and encourages every SAS panel to continue to review its workload

and adjust membership, and schedule meetings only as necessary.

Kimura, returning to the issue of requirement of 3-D seismic data to support riser drilling, said that costs of 3-D surveys are very high. He mentioned that the 3-D survey for NanTroSEIZE cost ~\$10M three years ago, and said that the same survey today would cost two or three times as much. He said the 3-D data are necessary for providing the best image of the target, and for evaluating environmental and pollution issues, but he said that the expense created a bottleneck for riser proposals. Larsen replied that a 3-D survey is not necessarily always required, but practically would be. He said the SSP would require data to review which image the target adequately. He concluded that if 3-D data are too expensive then it means that riser drilling will not be possible. Humphris added that the data requirement needs to be looked at in terms of an investment for riser drilling, which may take one year of drilling time. She said she recognized that 3-D seismic data were expensive and the cost will limit the number of viable riser projects. Site Survey Panel member, Li, said in some cases 2-D data would be sufficient for site characterization. Talwani countered that in some situations, industry required not just a 3-D survey, but a high-resolution 3-D survey. He said the committee was “dancing around the issue” that site surveys and drilling are not part of the same program. This, he said, is the basic problem. Mori noted that this issue comes up many times: why does the program not provide support for site surveys. He suggested it was something to think about for renewal. Larsen pointed out that a proponent can still make a good riser proposal on the basis of 2-D seismic data. He added the program has to focus early on regarding decisions on future riser projects, then focus on getting the resources. Kimura suggested that it will be very difficult to get 3-D data for the other current riser proposals (excluding NanTroSEIZE). Kono said it is the responsibility of the proponents to get money for a 3-D survey.

Mori asked if the lead agencies should be asked about including funding for site surveys in the renewed program. Batiza replied that site surveys have not been a part of the program (except if needed for safety reasons, in which case it would be a program cost), though it was possible this could change with renewal. Taylor said there was no need to ask anyone to do anything. He said that for riser drilling a 3-D survey will be required, period; therefore there is nothing to do. He added that it was not within the purview of this committee to consider the issue any further. Taylor also stated that both the Sagami Bay and CRISP proposals will absolutely require 3-D seismic data, and without it they will not be implemented.

11. IODP- International Scientific Continental Drilling Program (ICDP) Relations

Larsen said there was nothing to add to the information in the agenda book. He said that both communities have nominated people to meet and do something, but noted it was not an IODP-MI activity. Larsen reminded the committee that Talwani, Humphris and Uli Harms of the ICDP would be chairing a session on scientific drilling at the August 2008 IGC meeting, and suggested that perhaps at the next SASEC meeting there could be a report on this session. Larsen added that IODP and ICDP continue to have close contact on the publishing of *Scientific Drilling* journal.

12. Review of rotation schedule for SASEC members

Barry Zelt noted that the SASEC member rotation schedule appears on page 210 of the agenda book, and asked that any errors be reported to him. Wefer stated that his term on the SASEC has been extended one year, so that his final meeting will be June 2009.

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

The committee reviewed the motions, consensus statements and action items from the meeting. Kono reminded the committee to provide recommendations for members of the Thematic Review Committee on the deep biosphere and the sub-seafloor ocean to John

Hayes. The committee also thanked Jianzhong Shen and his colleagues for hosting the meeting, and Susan Humphris and Gaku Kimura for their service on the committee.

SASEC Consensus 0806-14: The SASEC thanks Susan Humphris for her service over the last three years. In her role as SASEC chair she deftly led SASEC through a complex time, providing keen scientific insight and experience, and impressive efficiency right up to the end of her tenure.

SASEC Consensus 0806-15: The SASEC thanks Gaku Kimura for his service on SASEC. His performance has been *faultless*, he has *risen* to every challenge, and *seized* every opportunity to contribute to the work of the committee.

SASEC Consensus 0806-16: SASEC thanks Dr. Shen and our Chinese colleagues for hosting the SASEC meeting in Beijing right before the Olympics. We have very much enjoyed the hospitality, the wonderful surroundings, and all the assistance we have received that have helped make our meeting run smoothly.

14. Future meetings

Mével reported that the next SASEC meeting will be during the week of 19-23 January 2009 in Lisbon, Portugal, hosted by Fatima Abrantes.

Kono noted that the subsequent (June 2009) SASEC meeting may perhaps be in Washington, DC, held in conjunction with the IODP BOG meeting.

15. Closing remarks

Richard Arculus thanked Masaru Kono for “retaining some degree of control over this crowd”.

Kono adjourned the meeting at 15:27.