

9th Meeting of the Ecord Science Support & Advisory Committee (ESSAC)



**19th – 20th October 2007
Granada, Spain**

9th ESSAC Meeting
19th – 20th October 2007
Granada, Spain

FINAL AGENDA 09/10/07

Friday 19th October 2007 09:00 – 18:00
Saturday 20th October 2007 09:00 – 17:00

1. Introduction (30')
 - 1.1 Call to order, introductions (Camoin)
 - 1.2 Welcome and meeting logistics (Comas)
 - 1.3 ESSAC procedures (Camoin)
 - 1.4 Discussion and approval of the Agenda (Camoin)
 - 1.5 Approval of the 8th ESSAC Meeting minutes (Camoin)
 - 1.6 Items since the 8th ESSAC Meeting (MacLeod)
 - 1.7 ESSAC Office news (Camoin/Wolff-Boenisch)
 - 1.8 Principal goals of the meeting (Camoin)
2. IODP News
 - 2.1 Lead Agencies and Implementing Organizations (IO) (Mevel) (20')
 - 2.2 SAS Executive Committee - SASEC (Mevel) (20')
 - 2.3 Science Planning Committee SPC & Operation Task Force OTF (Camoin) (40')
 - 2.4 IODP-MI Management Forum (Camoin) (10')
 - 2.5 Science Steering Evaluation Panel – SSEP - (Stein) (30')
3. ECORD News
 - 3.1 EMA - ECORD Council (Mével) (20')
 - 3.2 ESO (Stevenson) (20')
 - 3.3 National Office reports (ESSAC Delegates) (20')
4. Nominations and staffing
 - 4.1 Staffing
 - 4.1.1 Update on NanTroSEIZE and EqPac expedition staffing (MacLeod) (20')
 - 4.1.2 Bering Sea expedition staffing (MacLeod) (30')
 - 4.1.3 Canterbury Basin Sea Level and Wilkes Land Paleoceanography Expeditions (MacLeod) (10')
 - 4.2 Subcommittee report (MacLeod) (30')
 - 4.3 Discussion and future actions (20')
5. Education and outreach
 - 5.1 Summer Schools
 - 5.1.1 Past Global Change Reconstruction and Modelling Techniques Summer School, Urbino, July 2007 (Brinkhuis)

(20')	
5.1.2 ECORD Summer School on Paleoceanography, Bremen, August 2007 (Stein)	(20')
5.2 ECORD Newsletters #9 (Oct 2007) (Maruejol)	(15')
5.3 ECORD Information Database (Maruejol)	
(20')	
5.4 ECORD-net Geomicrobiology database (Tamburini)	(20')
5.5 Subcommittee report (Arnold)	(30')
5.6 Discussion and future actions	(20')
6. Workshops, communication and vision	
6.1 Workshop reports	
6.1.1 Large Igneous Province Workshop (Camoin)	(20')
6.1.2 Addressing Geologic Hazards Through Ocean Drilling Workshop (Urgeles)	(20')
6.1.3 Drilling to Decipher Long-term Sea-level Changes & Effects Workshop (Piller)	(20')
6.1.4 Magellan workshops (Erbacher)	(20')
6.2 Upcoming workshops	
6.2.1 EuroFORUM 08 (Camoin)	(15')
6.2.2 Magellan workshops (Erbacher)	(15')
6.3 Communication	
6.3.1 Topical Symposium North Atlantic Climate variability (Stein)	(20')
6.4 ECORD Distinguished Lecturer Programme (Stein)	(15')
6.4.1 FY 07-08	
6.4.2 FY 08-09	
6.5 IODP-MI « Drills » lecturer programme	(10')
6.6 Subcommittee report (Stein)	(30')
6.7 Discussion and future actions	(20')
7. Expedition reports	
Expedition 311 Cascadia Margin (Teichert)	(30')
8. Highlights on ECORD proposals	
- IODP Proposal #644 - Environmental significance of the Mediterranean outflow water and its global implications (Hernandez-Molina & Stowe)	(30')
- IODP Proposal #482 - Cenozoic East Antarctic Ice Sheet History from the Wilkes Land Sediments (Escutia)	(30')
9. Next meetings (Camoin)	(10')
ESSAC #10, May 2008	
ESSAC #11, October 2008	
10. Any Other Business (Camoin)	

List of Participants

ESSAC Office

Gilbert Camoin (Chair)
Bonnie Wolff-Boenisch

ESSAC Delegate France
ESSAC Science Coordinator

ESSAC Representatives

Fatima Abrantes
Eve Arnold
Bryndís Brandsdóttir
Henk Brinkhuis
Menchu Comas (Meeting Host)
Kathy Gillis
Nalan Koc
Chris MacLeod (Vice-Chair)
Brian McConnell
Judith McKenzie
Werner Piller
Marco Sacchi
Rudiger Stein
Kari Strand

ESSAC Delegate Portugal
ESSAC Delegate Sweden
ESSAC Delegate Iceland
ESSAC Delegate Netherlands
ESSAC Delegate Spain
ESSAC Delegate Canada
ESSAC Alternate Norway
ESSAC Delegate UK
ESSAC Delegate Ireland
ESSAC Delegate Switzerland
ESSAC Delegate Austria
ESSAC Delegate Italy
ESSAC Delegate Germany
ESSAC Delegate Finland

Observers/Guests

Jochen Erbacher
Carlota Escutia
Javier Hernandez-Molina
Patricia Maruéjol
Catherine Mével
Alan Stevenson
Dorrik Stow
Federica Tamburini
Barbara Teichert
Roger Urgeles
Stefan Winkler-Nees

ESF Magellan Committee
IODP proposal 482
IODP proposal 644
EMA
EMA
ESO (BGS)
IODP proposal 644
ECORD-net Geomicrobiology database
Expedition IODP 311
Geologic Hazards Workshop
ECORD Council

Apologies

Dan Evans
Paul Knutz
Rudy Swennen
Rolf Petersen

ESO (BGS)
ESSAC Alternate Denmark
ESSAC Delegate Belgium
ESSAC Delegate Norway

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- 1.7 ESSAC Office news
- 1.8 Principal goals of the meeting

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- 2.4 IODP-MI Management Forum
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- 4.3 Discussion and future actions

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 - 5.1.1.1 ECORD Urbino Summer School Past Global Change Reconstruction and Modelling Techniques (USSP), Urbino; July 2007
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- 6.5. IODP-MI « DRILLS » Lecturer Programme
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- 6.7 Discussion and future actions

7. Expedition reports

- 7.1 Expedition 311 Cascadia Margin

8. Highlights on ECORD proposals

- 8.1 IODP Proposal #644 Gucadrill - Environmental significance of the Mediterranean outflow water and its global implications
- 8.2 IODP Proposal #482 - Cenozoic East Antarctic Ice Sheet History from the Wilkes Land Sediments

9. Next meetings

- 9.1 ESSAC #10, May 2008
- 9.2 ESSAC #11, October 2008

10. Any other Business

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- A.2.1.1.2 NSF report
- A.2.1.1.3 EMA report
- A.2.1.1.4 KIGAM report

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- A.2.1.2.1 CDEX report
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A.2.2 SASEC

- A.2.2.1 SASEC minutes
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A.2.3.1.2 7th SSP meeting minutes (Feb. 2007)

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A.2.3.7 HG DPG

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A.2.5 SSEP

A.2.5.1 SSEP terms of reference

A.2.5.2 7th SSEP meeting minutes (Nov. 2007)

A.2.5.3 8th SSEP meeting minutes

A.5.1.1 Impressions ECORD Summer School, Urbino

Dear ESSAC Delegates , ESSAC alternates and ESSAC#9 meeting attendees,

As you all know, the ESSAC Office has been relocated from Cardiff, UK, to the CEREGE, Aix-en-Provence, France, only ten days ago. Bonnie Wolff-Boenisch, the new Science Coordinator, and I started immediately to prepare the ESSAC #9 meeting that will be held in Granada on october 19th and 20th.

My first thoughts as new ESSAC Chair will be for the previous ESSAC Office, Chris MacLeod - previous ESSAC Chair -, Julian Pearce - ESSAC Acting Chair for a year -, and Federica Lenci and Elspeth Urquhart - the two successive Science Coordinators in Cardiff. They have done a lot for ESSAC's activities over the past two years, and the increasing role of ESSAC within ECORD. Among various and important achievements over the last two years, very successful summer schools have been sponsored and ECORD Scholarships awarded, Education and Outreach activities have expanded with the organization of the ECORD Teachers' Workshop held at the European Geosciences Union meeting in Vienna, and the new ECORD Distinguished Lecturer Programme has started in 2007. ESSAC thanks warmly Chris, Julian, Federica and Elspeth.

The relocation of the ESSAC Office coincides with the start of a new phase of IODP with the three types of drilling platforms operating simultaneously opening a new era for IODP and, at the same time, financial challenges that will have inevitable consequences on the future of IODP. The coming two years will be crucial for ESSAC. The timing is, therefore, appropriate both for some reflection, for immediate actions, and for vision regarding our activities and role.

The first step for a new expansion and strengthening of ESSAC activities has been the settling of a new ESSAC structure in three subcommittees (Staffing and Nominations, Education and Outreach, and Workshops, Communication and Vision) that should increase the efficiency of ESSAC and the involvement of the ESSAC Delegates in ESSAC life. This is only a first step and additional changes will come in the near future to make a « bigger, better and even shinier ESSAC » (*as stated by Chris MacLeod in the ECORD Newsletter #9*) working for the programme over the coming two years.

For the time being, I thank warmly Menchu Comas for making superb arrangements for the ESSAC #9 meeting in the wonderful city of Granada and I wish you a successful and pleasant meeting.

Gilbert Camoin, ESSAC Chair
Aix-en-Provence, october 10th, 2007

9th ESSAC Meeting (19-20 October. Granada, Spain)

Granada Tourist information for can be finding at <http://www.granadatur.com/old/principalen.htm>

MEETING LOCATION:

The meeting will be held at:

Hotel GRANADA CENTER (*see map*)

Avenida Fuente Nueva s/n

18002 - GRANADA (España)

Tel: 34 958 205000

Fax: 34 958 289696

Email: imarquez@hotelescenter.com

WEB: <http://www.hotelescenter.es/hotelesHotel.asp?f=5&idioma=2>

Lunches & coffees will be served at the hotel, at times according with our final Agenda.
(Lunch time would be at 13:30h)

The **meeting room** is "Sala SACROMONTE" at the 6h floor.

FIELD TRIP:

The field trip to the Sierra Nevada National Park will be on Sunday 21 October.

The bus will depart from the Granada Center Hotel at about 09:00h, the lunch will take place in one small village of "Las Apujarras" region, and the return will be to the same Hotel late in the afternoon (about 19:00h). Details on the field trip will be provided at the meeting

SOCIAL FUNCTIONS: (*see map*)

1. - University of Granada hosted Reception

Friday 19th, 19:30h – 21:00h

University of Granada Central Building: *Hospital Real*. Street *Cuesta del Hospicio*

<http://www.ugr.es/>

2. - Visit to the Alhambra

On the night of Friday 19th a guided visit to the enlighten Alhambra for interested people is organized.

The visit will start at 22:00h, from an Alhambra's gate (duration about 90 minutes)

<http://www.alhambra.org/esp/index.asp?secc=/inicio>

http://www.greatbuildings.com/buildings/The_Alhambra.html

3. - IODP-Spain hosted dinner

Saturday 20th, 20:30 – 23:00

The dinner will be at

Restaurante-Carmen "*Mirador de Aixa*"

Street *Carril de San Agustin*, nº 2, *Albayzin*

Tel: + 34 958 223616

<http://www.miradordeaixa.com/>

MEETING HOST Coordinates:

Prof. Dr. Menchu Comas

ESSAC Spain Delegate

Instituto Andaluz de Ciencias de la Tierra (CSIC & Granada University)

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Mobile Tel:+34 696953289

Email: mcomas@ugr.es

<http://www.iact.csic.es/>

<http://www.iact.csic.es/Proyectos/SAGAS/>

9th ESSAC - Granada - Location Map



1.3 ESSAC procedures

ESSAC Terms of Reference are included in the Agenda Book of the ESSAC #9 meeting.

As announced at the ESSAC May meeting, ESSAC has been structured in three subcommittees (Staffing and Nominations, Education and Outreach, and Workshops, Communication and Vision) to increase the efficiency of ESSAC and the involvement of the ESSAC Delegates in ESSAC life. Subcommittee general tasks and composition are summarized below.

The subcommittees meet electronically to prepare the meetings on general issues and to work on specific issues at the request of the ESSAC Chair. Each subcommittee is coordinated by an ESSAC Delegate nominated by the ESSAC Chair. The coordinator is in charge of writing a report for the Agenda book and of presenting the activities of the subcommittee at the meetings. A general discussion follows that presentation.

Some immediate actions have been requested by the ESSAC Chair to prepare the Granada ESSAC #9 meeting and are summarized below. Reports will be given at the meeting by the subcommittee coordinators.

Staffing and Nominations subcommittee

Members :

Chris MACLEOD (Coord.)
Gilbert CAMOIN (ESSAC Chair)
Bonnie WOLFF-BOENISCH (ESSAC Science Coordinator)
Judith McKENZIE
Henk BRINKHUIS
Fatima ABRANTES
Rudy SWENNEN

General tasks :

- > Suggesting nominations of ECORD representatives (delegates and alternates) on SAS panels, PPGs and DPGs.
- > Co-ordinating applications, reviewing all the applications and suggesting nominations of shipboard participants.
- > Reviewing the quota of shipboard scientists between participating countries.
- > Suggesting co-chief nominations for IODP Expeditions.

Immediate actions :

- > Summarize the current ECORD composition of SAS panels, identify future replacements (expertise), and suggest permanent alternates.
- > Summarize the current ESSAC composition, identify future replacements (Delegates and alternates), and make recommendations.
- > Summarize the quota balance for ECORD participation to IODP Expeditions.

Education and Outreach subcommittee

Members :

Eve ARNOLD (Coord.)
Gilbert CAMOIN (ESSAC Chair)
Bonnie WOLFF-BOENISCH (ESSAC Science Coordinator)
Brian McCONNELL
Paul Martin HOLM
Werner PILLER
Kathy GILLIS

General tasks :

- > Developing educational opportunities/programs : Teacher's workshops, Summer Schools etc., especially in non-traditional audiences.
- > Reviewing Summer School proposals.
- > Reviewing applications and suggesting nominations for ECORD scholarships.
- > Providing new ideas regarding new ways to raise funds for E&O activities.
- > Advising on the public outreach (societal relevance of the IODP science).

Immediate actions :

- > Make recommendations for deadlines for submission of Summer School proposals and for applications for ECORD scholarships.
- > Make suggestions of new ideas regarding E&O activities (societal relevance of the IODP science), especially in non-traditional audiences.
- > Make suggestions regarding new ways to raise funds for E&O activities.
- > Monitoring ECORD database (e.g. ECORD publications).

Workshops, Communication and Vision subcommittee

Members :

Rudiger STEIN (Coord.)
Gilbert CAMOIN (ESSAC Chair)
Bonnie WOLFF-BOENISCH (ESSAC Science Coordinator)
Kari STRAND
Bryndís BRANDSDOTTIR
Marco SACCHI
Rolf PEDERSEN
Menchu COMAS

General tasks :

- > Initiating and monitoring workshops.
- > Reviewing applications for participation to IODP workshops and suggesting nominations.
- > Initiating applications of speakers for the Distinguished Lecturer Series and suggesting nominations.
- > Providing stimulation and guidance for the writing of drilling proposals in accordance with the IODP ISP and encouragement of IODP-related activities among participating countries.
- > Assisting and advising on extending the scientific base of the consortium to non-member countries.
- > Looking for gaps in the science spanned by the active proposals relative to the themes and initiatives specified in the Initial Science Plan (ISP),

Immediate actions :

- > Review the ECORD database and make recommendations.
- > Summarize ECORD active proposals by ISP themes.
- > Make recommendations regarding stimulation and guidance for the writing of drilling proposals.
- > Make recommendations regarding the extension of the scientific base of the consortium to non-member countries.

European Consortium for Ocean Research Drilling (ECORD)

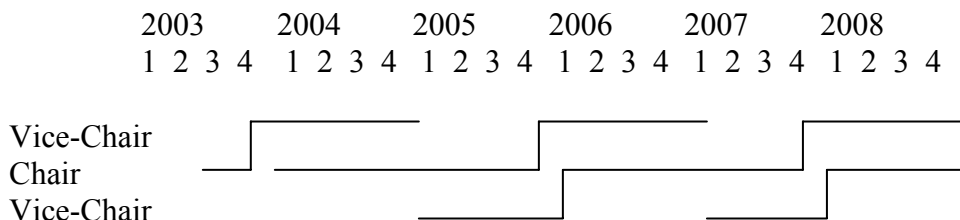
MEMORANDUM OF UNDERSTANDING of European and Other Funding Organisations on Membership and Operation of ECORD in the Integrated Ocean Drilling Program (IODP)

ANNEX D

ECORD Science Support and Advisory Committee (ESSAC) Terms of Reference

A. Representation

1. The ECORD Science Support and Advisory Committee (ESSAC) consists of a national delegate and an alternate from each participating country in the European Consortium for Ocean Research Drilling (ECORD) appointed by the respective Member Organization(s). Alternates can attend, when in addition to delegates, as non-voting members. Additional non-voting representation may be invited on an ad hoc basis. Terms of office of Committee members will be reviewed every three years. It is advised that there is rotation where possible and that no more than one-third of the membership is replaced each year. The first rotation will be in 2005 after an appointment of 2 years. Terms of office will normally begin in October.
2. A Chair and Vice-Chair shall be elected from among ESSAC members and approved by the ECORD Council. The incoming Chair serves one year as Vice-Chair followed by two years as Chair and rotates off as Vice-Chair during the fourth year (see diagram below). They may not self-succeed. The Chair shall be responsible for reporting to the ECORD Council and liaising with the European Managing Agency (EMA) and European Science Operator (ESO).



3. ESSAC's representation in the Science Planning Committee (SPC) should as a minimum comprise the Chair or the Vice-Chair.

B. Division of membership benefits

1. The IODP assigned quota of Leg participants granted to ECORD shall reflect the financial contributions of each member country and specific interests of each participating country over a rolling three-year period.. ESSAC, in consultation with EMA, shall annually review the division effective as of 1 October 2004 and make recommendations in view of the above target ratio and of specific drilling interests.
2. The delegates and alternates on IODP Science Advisory Structure (SAS) panels shall be designated by ESSAC based on national nominations, authorised by ECORD Council and reflect the financial contribution of each participating country: for the first four years the contribution specified in the MOU and thereafter the contribution over a rolling three year period. Normally all ECORD representatives on SAS bodies shall serve for a three-year period and may not be re-appointed for a second consecutive term.

C. Obligations of ESSAC delegates

3. To ensure that all IODP and ECORD meetings are attended by the delegates or by their alternates. If neither can participate the relevant committee shall be informed and, if possible, a substitute nominated.
4. To ensure that the scientific interests of ECORD as a whole are presented by whoever attends SAS meetings on behalf of ECORD.
5. To ensure that minutes of meetings are distributed to their alternate and to the ECORD bodies.
6. To submit a short written report to ESSAC within two weeks of the meeting.
5. To be prepared to attend ECORD workshops and report to ESSAC when requested.

D. Voting

A quorum is required before decisions can be taken. There is no power of attorney for absent members. A quorum requires the presence of a majority of the members. Where possible ESSAC shall proceed by consensus; if this is impossible there shall be a majority vote. Each delegate present has one vote and the Chair has a casting vote. If no decision is reached, the issue will be passed to ECORD Council.

E. Secretariat

The Secretariat shall be determined by the ECORD Council and located with the ESSAC Chair. It will be funded from the budget of the EMA. It shall rotate, on a two-yearly basis, with the Chair of ESSAC. The budget shall be sufficient to provide for a science coordinator with a scientific background, the full cost of maintaining an office and resources to compensate the Chair.

F. Tasks

ESSAC is responsible for the scientific planning and coordination of Europe's contribution to and participation in IODP. The main purpose of ESSAC is to maximize ECORD's scientific and technological contribution.

ESSAC is responsible for:

- Advising ECORD funding organisations on IODP issues.
- Responding to the ECORD Council on requests for evaluation of its activities and initiation of evaluations of the European scientific input to IODP.
- Interacting with the appropriate IODP bodies, in particular the IODP scientific bodies.
- Reporting to the ECORD Council.
- Liaising with the EMA and ESO.
- Nominating representatives (delegates and alternates) on SAS panels.
- Co-ordinating applications, nominating shipboard participants and reviewing the division of the quota of shipboard scientists between participating countries.
- ESSAC shall assist the ESO in preparing a Science Operations Plan for MSP Operations.
- Assist and advise EMA on the formulation of proposals for funding European related infrastructure.
- Initiating and monitoring Workshops and syntheses of European IODP programs.
- Providing stimulation and guidance for the writing of drilling proposals in accordance with the IODP Initial Science Plan and encouragement of IODP-related activities among participating countries.
- Encourage (a) innovative science and technology development, and (b) the formulation of long-term integrated IODP studies.
- Assist and advise the EMA and ESO on the public outreach.
- Assist and advise the EMA on extending the scientific base of the consortium to non-member countries.

G. Proceedings

1. ESSAC shall meet a minimum of two times each year. Meetings are called at the request of ECORD Council, at the initiative of the Chairman, or at the request of one-fourth of the members. The ordinary agenda shall include:
 - Reports from recent SAS meetings;
 - Staffing nominations, progress and evaluation;
 - Planning of ECORD initiatives for forthcoming SAS meetings;
 - Reports from completed legs;
 - Any other task as set down above.
2. ESSAC can implement working groups and define their terms of reference.

1.3.3 ESSAC delegates and alternates

ESSAC Representatives	Delegate	Alternate
Austria	Werner Piller	Michael Wagreich
Belgium	Rudy Swennen	
Canada	Kathryn Gillis	Dominique Weis
Denmark	Paul Martin Holm	Paul Knutz
Finland	Kari Strand	AnnaKaisa Korja
France	Gilbert Camoin (chair)	Benoit Ildefonse
Germany	Rudiger Stein	Jochen Erbacher
Iceland	Bryndis Brandsdottir	Gudrun Helgadottir
Ireland	Brian McConnell	David Hardy
Italy	Marco Sacchi	Elisabetta Erba
The Netherlands	Henk Brinkhuis	Lucas Lourens
Norway	Rolf Birger Pedersen	Nalan Koc
Portugal	Fatima Abrantes	Luis F. Menezes Pinheiro
Spain	Menchu Comas	Victor Diaz del Rio
Sweden	Eve Arnold	
Switzerland	Judith McKenzie	Helmut Weissert
United Kingdom	Chris MacLeod (vice-chair)	Rachael James

1.4 Discussion and approval of the Agenda

A draft Agenda was circulated to all participants in advance of the meeting. A few changes have been made to this draft since that time. The Committee are asked for any further comments and to approve the revised Agenda.

1.5 Approval of the 8th ESSAC Meeting minutes

The minutes of the 8th ESSAC meeting, held in Svartsengi, Iceland, on 11th–12th May, are included in Appendix 1.5. They were circulated to delegates before this meeting. No changes have yet been made to this version. The Committee are asked for any comments and corrections.

8th ESSAC Meeting

Science Support & Advisory Committee of the European Consortium for Ocean Research Drilling

11th – 12th May 2007

The Blue Lagoon, Svartsengi, Iceland

List of Participants

ESSAC Office

Chris MacLeod	ESSAC Chair, and ESSAC Delegate, UK
Elsbeth Urquhart	ESSAC Science Coordinator

ESSAC Representatives

Eve Arnold	ESSAC Delegate, Sweden
Bryndis Brandsdóttir (Meeting Host)	ESSAC Delegate, Iceland
Henk Brinkhuis	ESSAC Delegate, Netherlands
Hans Brumsack	ESSAC Delegate, Germany
Gilbert Camoin (Vice-Chair)	ESSAC Delegate, France
Menchu Comas	ESSAC Delegate, Spain
Brian McConnell	ESSAC Delegate, Ireland
Judith McKenzie	ESSAC Delegate, Switzerland
Paul Martin Holm	ESSAC Delegate, Denmark
Nalân Koç	ESSAC Alternate, Norway
Werner Piller	ESSAC Delegate, Austria
Luis F. Menezes Pinheiro	ESSAC Alternate, Portugal
Marco Sacchi	ESSAC Delegate, Italy
Kari Strand	ESSAC Delegate, Finland
Ulrich Wortmann	ESSAC Representative, Canada

Observers/Guests

Jochen Erbacher	ESF
Chris Franklin	ECORD Council
Lucas Lourens	ESSAC Alternate, Netherlands
David McInroy	ESO (BGS)
Catherine Mével	EMA
Raymond Schorno	ECORD Council
Stefan Winkler-Nees	ECORD Council

Apologies

Fatima Abrantes	ESSAC Delegate, Portugal
Teresa Bingham-Müller	ESF
Dan Evans	ESO (BGS)
Kathy Gillis	ESSAC Delegate, Canada
Patricia Maruéjol	EMA Scientific Officer
Rolf Pedersen	ESSAC Delegate, Norway
Rudy Swennen	ESSAC Delegate, Belgium
Dominique Weis	ESSAC Alternate, Canada

MINUTES

1. Introduction

1.1 Welcome And Logistics

The meeting opened at 09:45 with a welcome introduction from MacLeod, logistics and domestic arrangements followed by a round of self-introductions. Neither the official delegate nor alternate from Belgium or Canada could attend, but one representative (Wortmann) from Canada was present.

1.2 Discussion and approval of the Agenda

After discussion it was agreed by consensus to make minor changes to the order in which agenda would be discussed. Item 2.5 would be deferred until later during the meeting. Item 3.3. the ECORD Review and the evolution of ESSAC would be moved to the end of the first day and the beginning of the second day. The agenda was then approved.

1.3 Approval of the 6th ESSAC Meeting minutes

The revised edition of the ESSAC 6 minutes (Cardiff, May 2006) is included as appendix A1.3 in the agenda book. Brinkhuis would have liked more discussion about IODP media policy (as stated in the document by Nancy Light). Arnold and Mével pointed out that there is currently no official document in existence. The ESSAC 6 minutes were then approved by consensus

1.4 Approval of the 7th ESSAC Meeting minutes

The minutes from the ESSAC 7 meeting in Naples, Italy, November 2006 were approved by consensus..

1.5 Matters Arising from 7th ESSAC Meeting

E7-1.4 Action Item: ESSAC to send personalised letters to SAS panel alternates. MacLeod reported that this action was in progress and to be completed in the near future. This has been completed since the ESSAC 8 meeting.

McKenzie repeated requests from Weissert asking for a new system to keep alternates involved and to have more advance warning of proposed meetings. This lead to a discussion about the attendance record of delegates and alternates at SAS meetings. Brumsack requested that meetings during the Easter vacation period should be avoided if at all possible. MacLeod pointed out that SAS meetings with the exception of SASEC are arranged by IODP-MI from Sapporo. Concern was expressed about the non-attendance of the full quota of ECORD panel members at SASEC meetings. McKenzie relayed a suggestion from Weissert that one alternate should also be always invited to SASEC meetings, though MacLeod countered that SASEC did not permit this. MacLeod noted the problem of SASEC members not only failing to attend the SASEC meetings on occasion but also failing to inform the ESSAC office of their intention of non-attendance. Mével suggested that this issue be raised at the next ECORD Council meeting. She also pointed out that SASEC wished to keep their meetings small and restricted. MacLeod commented that SASEC meetings were not open meetings but that this panel should be encouraged to be more flexible concerning invitees on the

rosters and to be more communicative in general. MacLeod also noted that there was insufficient communication between SAS panels in general and the ESSAC Office. He quoted the recent example of the upcoming EPSP June meeting whereby Enachescu, unable to attend for medical reasons, had not notified the ESSAC Office of his intentions. If ESSAC are unaware of potential non-attendance issues then they cannot take steps to find alternative representatives. Mével suggested that more firm action/penalties are needed.

E7 Action Item 1.4: Delegates to make nominations for EDP ‘small country’ member. MacLeod reported that Maria Ask (Sweden) had been elected as a panel member of EDP and Daniel Ask (Sweden) was elected as an alternate for EDP.

E7 Action Item 3.1: ESSAC to provide MEP with more information. Winkler-Nees reported that he had been in contact with the MEP who had offered help with Framework 7 proposals. Winkler-Nees has arranged a meeting with the MEP (Morgan) for Tuesday May 22nd.

E7 Action Item 3.2: ESSAC to seek further contact with EuroMARC to improve communications. MacLeod referred to the MOU in which full communication with ESF regarding Magellan Workshops and EuroMARC had been agreed. Communications regarding the Magellan Workshops had improved and Erbacher is now the liaison. The position regarding EuroMARC is not so clear and there will probably be no more calls for proposals. Mével asked who would decide this and Franklin answered that it would be the funding agencies.

E7 Action Item 4.1: ESSAC Chair to ask ECORD Council for money for co-chief participation in ESSAC meetings and, additionally, for funds to support ESSAC meetings in general. MacLeod reported that he had asked ECORD Council for funding for meeting venues and co-chiefs talks. ECORD Council had agreed to fund both these items. MacLeod added that at this meeting Camoin, as co-chief of Expedition 310, would give a talk and otherwise there had been no recent expeditions to report on. Winkler-Nees commented that an ECORD Programme Coordinator had been appointed for EuroMARC: Haugustaine, from Gif-sur-Yvette (Paris). Mével commented that ESF and ECORD Council still do not keep EMA informed. Winkler-Nees suggested that with Soren Dürr in the post of acting director at ESF communication should improve.

E7 Action Item 5: ESSAC Chair to ask ECORD Council for money to support ‘over-quota’ ECORD scientists at IODP-MI workshops. MacLeod summarised this issue by saying that normally 3/17ths of the quota are funded by IODP, a system which has previously resulted in a number of European scientists being unable to attend certain workshops. After discussion with IODP Council this council agreed that it was essentially a funding issue alone. ECORD Council has agreed to provide ESSAC with €5,000 to fund some of these over-quota cases. This will be discussed further in Item 5 of this (ESSAC 8) meeting.

E7 Action Item 5.3: ESSAC liaison to Magellan Steering Committee to request that they include named topics in the forthcoming call for proposals, and look favourably on workshop proposals on the subjects of the themes endorsed by SPC. MacLeod deferred discussion with regard to this matter to Agenda Item 5 later in the current meeting.

E7 Action Item 6.1: MacLeod asked the delegates to return all nominations for the EDP and STP panels together with the agreements of the nominees to the ESSAC Office by Monday 13th November 2006. This allows time to circulate the information to all ESSAC delegates and provide them the opportunity to select the final nominees before submitting the names to the ECORD Council for approval on November 27th 2006. ECORD Council approved the nominated

panel members - Gorin (Switzerland) as member of STP with Kotilainen (Finland) as a new alternate; Maria Ask (Sweden) as member of EDP with Daniel Ask (Sweden) as a new alternate.

E7 Action Item 6.3: ESSAC will draft a comprehensive letter to the operators to accompany the NanTroSEIZE applications which explains the grouping procedure and also asks about undergraduate training possibilities. MacLeod reported that he had addressed this issue by email. The USIO at TAMU are considering the explanation and request and MacLeod intends to remind them in the near future. Brinkhuis asked if there had been any response from the Japanese operator CDEX and MacLeod answered that there had been no response as yet. Discussions regarding the NanTroSEIZE staffing exercise are ongoing.

E7 Action Item 7.3: ESSAC delegates should send nominations for the Distinguished Lecturer Programme, together with evidence of the nominee's agreement, to the ESSAC Office no later than Monday 13th November 2006. Voting will be organised as necessary. MacLeod reported that 10 nominations had been received and of these 3 lecturers had been chosen for the first series of lectures. These are Ildefonse (France), McKenzie (Switzerland) and Wilson (UK).

E7 Action Item 7.6: ESSAC Office to get TAMU to provide an extract of ECORD publications during their annual extraction exercise from the AGI/GeoRef database in February 2007. MacLeod reported that the AGI database data extracted for 2006 is included in the appendices of the agenda for this meeting (Appendix A1.5) and annual updates will be produced each year.

E7 Action Item 9: MacLeod to raise the issue of rotation schedules of ESSAC members with ECORD Council. MacLeod reported that he had raised this issue with ECORD Council. In the four years since its inception in 2003, some ESSAC panel members have rotated while others have not. The ESSAC Terms of Reference specify that rotations should take place every three years. ECORD Council's policy is that, although it is generally desirable, they will not force membership rotations especially when 'small country' members are involved. McKenzie suggested that this item should be discussed further in item 2.5 of the day's agenda, *National Office Reports*. It was decided that MacLeod and Camoin would discuss the issue at the end of the day's meeting.

1.6 ESSAC Office News

MacLeod summarised the organisation of the ESSAC Office by stating that the Chair of ESSAC rotates every 2 years and, as documented in the Terms of Reference, the outgoing Chair remains as Vice-Chair. An incoming Vice-Chair is also needed and s/he needs to be elected from the panel members of ESSAC. MacLeod explained that, because overall membership benefits within ECORD are supposed to be in proportion to financial input, rotation of the chairmanship of ESSAC should be guided by the same principles. So far the ESSAC chairmanship/ESSAC Office has been hosted in a small country (Netherlands) from 2003-05, the UK from 2005-07, and will be in France for 2007-09; logically therefore, Germany should be the succeeding host to the ESSAC Office in October 2009. IODP Germany has nominated Rüdiger Stein to be its new ESSAC representative from October 2007, and he should become the incoming Vice-Chair of ESSAC at the same time. MacLeod invited any objections to this proposal. There were none. McKenzie thought it was a good idea to elect someone with Stein's level of IODP experience. Brumsack supported the proposal saying that Stein had a good logistical support system from the Alfred Wegner Institute and that he personally had a long history with ocean drilling programmes going back as far as the Deep Sea Drilling Project. MacLeod suggested that a small country representative should be chosen to hold office in 2011. The financial commitments of the role from the host country should be considered together with experience as a scientist, cruise participant and SAS panel member. He asked if

anyone had objections to this proposal. Arnold had no objections but thought that this was related to the ECORD Review and should be postponed until that discussion occurred.

ESSAC agreed unanimously to elect Rüdiger Stein from the Alfred-Wegner Institute in Bremerhaven as the incoming Vice-Chair in October 2007.

MacLeod continued by reporting that the position of the Science Coordinator had been re-advertised. Brinkhuis asked why the position had been re-advertised as he thought that continuity was important. MacLeod replied that this could also be discussed later in the ECORD Review item but that ESSAC could only make recommendations as the post would be funded by the CNRS.

1.7 Principal goals of the meeting

MacLeod stated that the most important goal of the meeting was to provide a formal response to the ECORD Review document. He suggested that this also provided an opportunity for ESSAC to conduct a self-assessment of its role and review of its efficacy so far. He noted that another important item was to discuss progress with regard to the ongoing staffing of the NanTroSEIZE and Equatorial Pacific expeditions.

2. IODP News

2.1 IODP-MI Management Forum

MacLeod briefly explained the structure and membership of the Management Forum. There was a problem concerning meeting #3 in March 2007 in that no representatives from ESSAC were able to attend, and IODP-MI President Talwani will not accept other alternates. McKenzie pointed out that there would now be two ESSAC Vice-Chairs from October 2007. Franklin suggested that an ESSAC executive was needed.

Mével noted that NSF had not been represented at the management forum because of a scheduling conflict with the signing of the SODV contract. The first objective was to find the 'Vision' and the 'Mission' for the Program. Mével showed a slide of these statements.

Most of the following discussions were focused on the consequences of the funding problems. The *Chikyu* will be available to IODP for only 8 months of the year, of which 2 months would be for maintenance and only 6 months for science operations. The US announced that due to funding shortage that the SODV will also not be available for a full 12 months of the year for at least the next two years, if not for the remainder of the lifetime of the Program. There will therefore be a reduction in services and fewer expeditions.

The science plan therefore needs to be revised, becoming more focused. SASEC has already started discussions on this issue. The panel/management structure also has to become more efficient.

One problem facing IODP is that it costs almost as much money to keep the drill ships in dock as it does to have them actively operating at sea. With regard specifically to *Chikyu*, Japan is considering a proposal to lease the ship to industry. Any revenue from this lease will not go IODP but will cover Japanese expenses. This totally different way of functioning presents several issues, e.g. – will this hybrid model have an impact on industry relations, e.g. will they be willing to share data?

Implications relating to Governments? e.g. after the end of ODP the *JOIDES Resolution* was leased

to India and the money went to US government. Why should India join IODP if they can have one-off lease agreements? The report from the Management Forum will be discussed by the Board of Governors at the end of June, then by SASEC and finally the funding agencies.

The Program will not function in the same way as in the past and so ECORD is due to meet with lead agencies next week for discussions. Currently the IODP members are paying for 12 months of *Chikyu* and SODV but not getting 12 months ship time. MacLeod asked if IODP-MI might utilise the experience the ESO has of running a 'non-12 month' programme. Mével said that the situations were not directly comparable, because ESO was established as a 'part-time' organisation from the start and its members all had other activities outwith IODP. She asked the meeting for feedback. Franklin asked if NSF could foresee any change in the situation. Mével answered that NSF are predicting that the situation will improve in the future. McKenzie asked when a reaction would be required from the delegates. Brumsack stated that he was disappointed that there had been no official announcement about the financial crisis until Steve Bohlen's recent e-mail. McKenzie said she thought that the email from Bohlen had been very positive. MacLeod said that until two weeks ago (late April 2007) the document had been confidential. Mével confirmed that this was the case. Camoin revealed that the first discussion had been at the SPC meeting in March but notes had not been allowed. Brumsack thought that Talwani and IODP-MI had an obligation to provide the information because each delegate needs to account to their own country. Mével suggested that the lead agencies were actually responsible for the lack of information dissemination.

Erbacher thought that, if the SODV or *Chikyu* were leased to industry, these contracts would drive IODP for logistical reasons, e.g. the ship track. Camoin thought the matter would be discussed further at the upcoming SPC meeting in Santa Cruz in August. Franklin noted that industry is very short of platforms at the moment. Mével reported that CDEX would have no problems to lease the *Chikyu*. NSF does not own the SODV and so are not in a similar position. One option might be that they operate in a hybrid mode, i.e. IODP and industry together.

ESSAC requested that ECORD Council urges the Lead Agencies to disseminate such vital information about IODP as widely and as rapidly as possible in future.

2.2 Operator news: MSPs (ECORD)

McInroy gave short presentations on the upcoming New Jersey Shallow Shelf (NJSS) expedition and progress in preparation for the Great Barrier Reef expedition.

New Jersey Shallow Shelf

He gave an update of operations for the NJSS expedition including the problems encountered with the leasing of a platform from the contractor DOSECC and negotiations with the insurers. The site survey for the NJSS has now been completed and there were no surprises. The expedition will probably start in mid July or later depending on the previous lessee. If this schedule is adhered to then the onshore science party will probably take place early next year.

Great Barrier Reef

A meeting took place in February 2007 with the GBR Parks Committee. The start date for the expedition will probably be late 2008 (September-November weather window) assuming that the site survey is carried out, the required permits are obtained and the funding is in place. The Great Barrier Reef expedition currently requires more funding.

Future MSPs

Future MSPs have been ranked. The Gulf of Mexico Coralgall Banks proposal is the most realistic and the Chicxulub proposal is the most expensive because it requires oil industry style deep drilling. The New England hydrogeology proposal is complicated, involving sampling of pore fluids, and will need a site survey that is currently unfunded. Further discussions of all proposals will take place at the EPSP meeting in June.

MacLeod invited questions. Brinkhuis asked if the Chicxulub drilling was offshore and McInroy confirmed that it was. McKenzie asked if the hurricanes on the east coast during the summer would affect the NJSS drilling schedule. McInroy answered that the platform was substantial and could withstand a hurricane or alternatively be moved inshore until the conditions improved.

2.3 Chikyu (Japan) & SODV (USA) Operator news and IODP Science Advisory Structure panel reports

Camoin summarised –news from the Lead Agencies about potential new members of IODP. Korea is the only member of the proposed Asia consortium and it is hoped that that Australia and Taiwan will also join with New Zealand, Russia and India. Taiwan is however currently showing little interest in becoming a member.

Camoin then summarised the consequences of the NSF budget cuts. Operational costs have been rising and the NSF budget is below what was expected. The consequences are that the 1st January 2008 delivery date for the SODV is currently on schedule but the proposed lengthening of the ship will not now be carried out. A reduction in management costs is required across every aspect of the programme. SPC will have to plan operations within the new budget realities, i.e. reduced drilling opportunities with respect to both time and complexity, and proposals to utilise expensive equipment such as CORKS may be affected. New revenue sources must be found and some scientific prioritisation must be made on a 3 to 5 year time frame.

With regard to the SAS panels a few replacements were announced. Barbara John is to be the new SSEPs co-chair, replacing Mike Underwood; Makoto Miyairi is the new EDP Vice-Chair and Neil Frewin is the new member of the IIS-PPG.

The Science Advisory Structure Executive Committee (SASEC) approved the draft mission implementation plan produced by the mission implementation working group. The final plan is posted on the IODP website. With the status of missions now formalised, Brumsack asked whether Complex Drilling Proposals (CDPs) would be retained. Camoin replied that the issue had not been resolved despite lengthy discussions at SPC in March. The essential difference between Missions and CDPs is not clear, even to SAS panel members. MacLeod commented that at the SPC meeting in August 2006 there had been a move to abolish CDPs entirely because of the lack of a clear definition between them and Mission proposals. However, it appeared that this suggestion had either not been formally carried through or had been disregarded. MacLeod said he thought the scientific community at large would find the retention of CDPs in addition to Missions to be confusing. Brumsack thought it was an example of IODP-MI over-ruling the will of the scientific community. Camoin agreed, adding that CDPs and Missions would be difficult to run at the same time, especially in light of the recent budget cuts.

Camoin continued with his presentation noting that SASEC had recommended that IODP-MI support a revised Large Igneous Provinces (LIPs) workshop. SASEC also encouraged submission

of workshop proposals on 1) Cretaceous/Palaeogene Extreme Climates, 2) IODP/ICDP Ultra-high Resolution Sedimentary Records. MacLeod asked whether the workshop on Ultra-high resolution sedimentary records would receive IODP-MI support or rely upon external funding such as that from ESF Magellan. Camoin replied that it would be supported by IODP-MI.

ESSAC delegates were made aware of SASEC Consensus 0607-11, which aims to revise the Initial Science Plan by the end of 2008. The panel has started to solicit nominations for this task.

Camoin informed the committee of recent news from the IOs. The *Chikyu* shakedown cruises in August – October 2006 were judged by the science parties and by CDEX to have been successful except for a few minor problems. The objectives of the cruises included the examination of the capability of the riser drilling in c. 1000m water depths, to perform a system integration test and to familiarise the crew with the systems and equipment. All major items were tested successfully except for damage to the lower marine riser package. Two holes were drilled offshore Kenya in water depths of 200m and 2700m to test drilling at different depth and different current conditions.

The preparations for the NanTroSEIZE Expeditions are underway; the Stage 1 co-chiefs have been selected; the scientific prospectus has been sent to TAMU for publication; and, invitations have been issued for eight Stage 2 co-chiefs.

–As regards the SODV (riserless vessel), the original plan to extend the length of the ship has been abandoned because of a severe budget shortfall. This has arisen because of a substantial (~50%) increase in shipping costs worldwide. The budget from NSF was, however, still sufficient to allow the ship to undergo a refit. This will result in increased accommodation and science laboratories together with an increase of deck space by 27%. The ship is due to be released to the program on 1st January 2008. Budget concerns mean that USIO will have to work with OTF and SPC to schedule more ‘simple’ (i.e. cheaper) expeditions. There will be increased operational risks as the ship will not be able to carry as many supplies as in the past. Additional sources of funding need to be identified together with “off-contract” work. The amount of time to be spent on off contract work is at present unknown.

Camoin continued by informing delegates of the activities of the SAS panels. A subcommittee of SASEC has been constituted to try and improve the SAS functioning for the second phase of IODP. The final report of the subcommittee is due in June 2007. Camoin described the methodology of their enquiries and the questionnaire that they had circulated. Their preliminary conclusions are that no major structural changes are needed to the SAS structure.

There have already been a number of changes in the SAS panels during the last few years and these are thought sufficient. There have also been budget developments/constraints and additional changes have been adopted since the recent SAS questionnaire in order to make economies.

At its meeting in March 2007, SPC also proposed that it should become more involved in the long-term planning process as it is the panel responsible for proposal scheduling, and that they should identify ‘gaps’ in the objectives of the Initial Science Plan. This will be an important item at the August 2007 SPC meeting where proposals will be prioritised and plans will be made for the next 5 years in relation to the budget realities. SPC will be also involved in the revision of the initial science plan.

Another proposition is to simplify the review process and reduce the residence time of proposals in the system. Currently SPC think there is nothing wrong with the present system. There was a long discussion at the March SPC meeting and some people thought proposals should be killed if they had a long residence time with 5 or 6 revisions. Camoin thinks this is unnecessary as there is no

significant increase in proposal numbers. It was also proposed that there should be a scheme to deactivate proposals that consistently ranked too low to be forwarded to OTF. SPC did not take a position on that for the moment. All proposals will be reviewed again in August and some proposals will probably be deemed too expensive realistically ever to be drilled.

SPC rejected the proposal to constitute an Education and Outreach (E&O) panel, concluding that the SAS should not offer advice. The suggestion that the Site Survey Panel be folded into the SSEP was opposed because the SSEP members don't have the relevant expertise of the SSP members. There was agreement that the SSP watchdogs should liaise with the corresponding SSEP watchdogs prior to meetings in order to have some consensus on the possible achievements of the scientific objectives of the proposal.

SPC approved the OTF recommendations for operations in FY08 & FY09, including the NanTroSEIZE *Chikyu* schedule and the Great Barrier Reef MSP operation. The OTF also made some recommendations for the SODV concerning the scheduling for FY08-FY09. They would start with NanTroSEIZE Stage 1, then the two Equatorial Pacific expeditions, then the Bering Sea, then transit to the Southern Oceans (possibly conducting brief scientific operations on the way) in order to undertake expeditions in the Canterbury Basin and then Wilkes Land in Antarctica. Scheduling is as close as possible to the previously approved schedule but within new budget constraints. The schedule now does not include the initial NanTroSEIZE observatory expedition, so that there is now only one expedition with the SODV rather than two. There will also be no second Juan de Fuca expedition in the foreseeable future. MacLeod asked for details about the maintenance of Juan de Fuca boreholes at the end of the Equatorial Pacific Expedition 2, and Mével answered that it would be simply to fix a leaking CORK installed on Expedition 301.

All proposals remaining with OTF will be re-evaluated at the next SPC meeting in August 2007. Decisions taken then will be crucial for the next few years of IODP.

Brumsack asked whether the safety concerns relating to the Canterbury Basin expedition had been resolved. This expedition will drive the SODV into the southern oceans. Camoin replied that yes, the safety concerns had been resolved by EPSP. Mével said that it should be pointed out the first part of the schedule was firm, i.e. up until the transit to the Southern Ocean, but that there are uncertainties about the second part of the schedule in 2009.

Camoin showed the ranking results from the March SPC meeting. Three of the proposals received were excluded: The Cretan Margin on the request of the proponents because they are reassessing their drilling strategy in the light of new data; the Australian Shelf Eustasy because more industry seismic data are being analysed; and the Atlantis Bank Deep— proposal because a recently resubmitted addendum was deemed to have been so significant a revision to the scope of the original proposal that it should go back to the SSEP for re-evaluation. MacLeod asked if these three proposals will be ranked in August. Camoin replied that the two foremost would go directly to SPC. Camoin then showed the ranking of proposals from the last SPC meeting. He discussed the list with special reference to those led by ECORD proponents. The top twelve in the ranking were forwarded to the OTF.

Brinkhuis asked that if cost was an issue why the Chicxulub MSP proposal had not been forwarded as well. Camoin replied that although the proposed Chicxulub drilling was in shallow water it would be extremely expensive because deep, oil industry style drilling is required. Camoin also stressed however that the ranking was made on scientific merit and not on cost. Brinkhuis established that all proposals, including those previously forwarded to OTF, will be discussed in August.

McKenzie asked why the Oceanic Subsurface Biosphere proposal was ranked so low. Brumsack replied that it was because communication had stalled, i.e. there had been no response from the proponents to feedback from the SAS.

The next SPC meeting in August will be in Santa Cruz, California, USA and be hosted by Barbara Bekins. The meeting after that, in March 2008, will be in Barcelona, Spain and hosted by Angelo Camerlenghi.

2.4 Programme Member Offices (PMO) Report

MacLeod explained that the Programme Member Offices are ESSAC, J-DESC (Japan), USSSP (USA), Korea and China. Camoin presented a brief report from the third PMO meeting in Osaka in March 2007 and added that a draft of the executive summary is included in Appendix 2.4 of the agenda book for this meeting.

Camoin outlined the type of activities the other PMOs were engaged in within their own member countries. USSSP are co-sponsoring three workshops in 2007 (sponsored five workshops in 2006), awarding five Schlanger Graduate Fellowships, organising and sponsoring ~30 Distinguished Lectures. They are also supporting pre-drilling activities related to engineering and technical developments, e.g. CORKS, to help scientists prepare proposals. However USSSP has budget constraints in that their budget from NSF was cut by ~66% this year. They are hopeful that funding will be increased for the next year. To accommodate costs USSSP are looking for ways to economise, e.g. reductions in travel budget, salary cuts etc.

MacLeod asked if the Distinguished Lecturer Series will be eliminated. Camoin said USSSP had to make cuts everywhere but haven't decided exactly where yet. McKenzie asked for clarification about the workshop funding saying that she thought these are IODP-MI sponsored. Camoin agreed but said that they are also supported by USSSP funds.

Camoin continued by reporting that J-DESC (Japan) had organised schools similar to ECORD summer schools, for young scientists and students. They had also supported several domestic workshops and symposia and three international workshops. J-DESC also has an educational museum-based campaign called "Dig up the Memory of the Earth" which they reported was very popular. Camoin suggested that ECORD should have a similar campaign.

Camoin briefly outlined the current problems experienced by CDEX related to the staffing of the NanTroSEIZE expeditions, noting that MacLeod would give further explanations in his report later in this meeting. Camoin explained that there are four stages to the staffing exercise. There are now four NanTroSEIZE expeditions in phase 1 of the experiment instead of the five originally, planned because SODV expeditions 1 and 2 have been merged into one. For the stage 2 riser operations there will be 8 co-chiefs rotating on and off the ship during the operations, together with 'speciality coordinators. This may have implications for the PMOs and national offices, and where and when sampling parties would take place is not clear. Camoin has requested some answers from CDEX, for example the costs of coordinator visiting the ship many times during an expedition. This could have serious budget implications. Camoin reported that no answers have been forthcoming from CDEX as yet. Camoin is also concerned about berth quotas and extra costs. He suggests that costs of sampling parties should be minimised with regard to location and composition. The IOs are to consider all cost aspects of sampling parties including location and co-chiefs on Stage 2. These co-chiefs will have a significantly reduced level of responsibility because of the unusual rotation

schedule. The PMOs have recommended to CDEX that the responsibilities are documented more explicitly than shown in the current CDEX model and that it could serve as a model for similar expeditions in the near future.

The PMOs also came to a consensus over several issues on expedition staffing, not only for NanTroSEIZE but also for the education and outreach (E&O), pre-expedition matters. More comprehensive communication is requested from the co-chiefs both before and after the expeditions in relation to scientific objectives and achievements.

MacLeod raised the issue of the need to supply more comprehensive information within the initial call for applications. He raised the example of the NanTroSEIZE summary, which mentioned little more than the overall seismogenic themes, whereas in fact the expeditions would also collect data of significance to (e.g.) palaeoceanography and many other disciplines. Because none of this was mentioned scientists in fields such as micropalaeontology – who were still needed on these expeditions – consequently did not apply. The authors of the expeditions' background information did not present a broader view of the potential science. Camoin referred the committee to SPC consensus 07-03-04 in answer to this question. MacLeod said that significant numbers and quality of applicants were needed and to achieve this then the quality of the initial calls is important. Camoin agreed that quality of outreach material concerning the background, rationale, etc. of the expeditions is crucial to get the best people with the right balance of expertise on board. It was agreed that the proponents and project management team had been too focused on their own objectives rather than considering a broader view of the science potentially achievable.

Camoin continued his presentation with a report on discussions relating to the revision or revolution of the SASEC structure. It had been agreed at the SPC meeting to maintain the current organisation of the IODP SAS. In order to improve SAS panel efficiency in general and to reduce costs it was suggested that the number of members per panel might be reduced. – J-DESC and USSSP volunteered to reduce their own panel (and hence voting) representation from 7 to 5. Camoin was asked whether ECORD wished to reduce its panel membership from 3 to 2, but he stated that he wished it to remain at its current level. This was accepted by the lead agencies. MacLeod asked if ECORD really needed to maintain this quota of panel members as financial considerations apply to ECORD as well as to other agencies. Camoin replied that he thought the proportionate increase in the relative voting power and hence influence of ECORD on these smaller panels – i.e. from 7:7:3:1 (US-Japan-ECORD-China/Korea) to 5:5:3:1 – was good value for money. It was agreed that this matter would be raised by MacLeod at ECORD Council.

Camoin continued by discussing a further suggestion (PMO consensus 0703-08) that the membership of the technical panels be reduced, especially the Scientific Technology Panel STP. SPC had also proposed that a reduction in numbers (and hence cost) could be made and experts could be asked to join the meetings when needed rather than having too many permanent members. .ESSAC committee members agreed that some reduction in ECORD membership of some of the service panels might be appropriate.

Camoin then reported on the SPC discussion regarding the selection of panel members by SASEC. Camoin personally prefers that this selection process and expertise balance is handled by IODP-MI without excluding the direct communication between the panel Chairs and the PMOs. (PMO Consensus 0703-09)

MacLeod said that as ESSAC Chair he held discussions with Chairs of the technical panels as to the expertise needed by their respective panels. He asked if Camoin was suggesting there should be no direct communication. Camoin said he was not suggesting exclusion but that the general power

should be in IODP-MI hands and not in the exclusive control of the PMOs (PMO Consensus 0703-10).

The issue of flexibility in the term of membership on SAS panels was then discussed. Camoin would like to work on the basis of 3 ± 1 years for the benefit of the panel. This would depend on the expertise needed to be maintained or introduced (PMO Consensus 0703-11).

The idea of a 'tutorial' document for Chairpersons of SAS panels was accepted by the PMOs. This tutorial includes items such as speaking slowly and paying attention to everybody. The final tutorial document will be distributed to the SAS chairs (PMO Consensus 0703-12).

Camoin then showed the status of the active proposals. There were 121 active proposals as of January 2007, not counting the submissions in April 2007. The division of themes related to the Initial Science Plan (ISP) was as follows: 26 Deep Biosphere and Subseafloor Ocean; 54 Environmental Change; and 41 Solid Earth proposals. Of these only 14 proposals were submitted for the October 2006 deadline: 7 Solid Earth and 7 Environmental Change proposals. In the context of the history of proposal submission since 2001 this was the lowest number of submissions ever; however, for the most recent April 2007 submission 33 new proposals were submitted, suggesting that October 2006 was an anomaly rather than a declining trend. The proposal distribution by IODP members shows that ECORD and the US are almost equal in number of submissions (45 and 54 respectively) with Japan submitting 17 proposals and other members a total of 5 proposals. A comparison of drilling platforms required for active proposals shows 90 non-riser platform, 5 riser platform, 13 MSP, 3 unspecified and 13 multiple platform requirements.

MacLeod invited questions and thanked Camoin for a useful summary.

2.5 National Office Reports

MacLeod asked if there were any comments from the ECORD national offices.

Erbacher recalled that in Naples delegates agreed to focus on attracting new groups of young scientists in their own communities. He asked how this was progressing in other countries. MacLeod said that in Naples we had also agreed to pool PowerPoint resources into a central ESSAC library but so far this has not been achieved. Delegates resolved to renew joint efforts to build this library. MacLeod alerted delegates to facilities such as the yousendit.com website, which is a convenient way to transfer large data files.

Brumsack suggested that more effort should be focused on science and less on administration and asked where the next EuroForum meeting is to be held. MacLeod noted that these meetings have traditionally not been the responsibility of ESSAC but of the national office of the host country; however, the 2006 EuroForum in Cardiff had entailed a considerable amount of administrative work for the ESSAC Office. Camoin said that the new subcommittee would work on this and the EuroForum 2008 would be discussed at the next ESSAC meeting in Granada.

Brumsack volunteered the information that Germany has an annual meeting with around 250 participants which is funded by the German Science Foundation.

Brinkhuis presented a summary of IODP-related activities in the Netherlands. Copies of announcements in pdf format are posted on the IODP Netherlands website.

3. ECORD News

3.1 ECORD Managing Agency (EMA) Report

Mével reported on the ECORD Council meeting in Bonn in November 2006 and the on the additional extraordinary Council meeting in Brussels in February 2007. The latter meeting focused specifically on issues concerning Framework 7 funding. The current Chair of ECORD Council is Schorno and the incoming Vice-Chair, who will become the next Chair, is Bruno Goffé. Winkler-Nees reported that ESF are looking for a new director. Dürr who was Chair of ECORD Council, and is now Vice-Chair, has been seconded from DFG to ESF and is bridging the gap for 6 months. Winkler-Nees is replacing Dürr as acting Vice-Chair on the ECORD Council. Thiede has rotated off the IODP Board of Governors (BoG) and Ludden has been appointed as his replacement. The BoG members are now Eldholm, Prieur and Ludden.

At the Bonn meeting the Council endorsed the new ESSAC nominations: Hugh Jenkyns (UK) as SPC member; Maria Ask (Sweden) as EDP member; Daniel Ask (Sweden) as EDP alternate; George Gorin (Switzerland) as STP member; Silvia Spezzaferri (Switzerland) as STP alternate and Aarno Kotilainen (Finland) as STP alternate.

The Council endorsed the ESSAC budget for 2007 which now allows ESSAC to coordinate and fund:

- a Distinguished Lecturer Programme
- sponsorship of summer schools
- provision of scholarships to fund 10 summer school participants
- provision of funding for ECORD scientists to participate in IODP workshops.

The Council also encouraged ESSAC to involve scientists and institutions from European non-ECORD countries in the above activities and to consider non-ECORD European applications on IODP expeditions. The Council also expects ESSAC to issue a call for summer school proposals in 2008 and for ESSAC to submit such a proposal at ECORD Council's June 2007 meeting. MacLeod said this task was in hand.

Mével then continued by reporting on the ECORD budget. From FY08 ECORD is expected to contribute 4 participation units (3 units of Science Operating Costs (SOCs) and 1 unit of Platform Operating Costs (POCs) at a level of \$5.6M per unit. The one POCs unit is to support MSPs. This increase is at a level of 60% and has already been secured for Germany, the Netherlands and Norway. Some countries (Austria, Belgium, Finland, Ireland) have already indicated that they will not be able to accommodate a 60% increase and their contributions will remain at the same level as they are currently. Canada and Spain are hoping to make increased contributions (i.e. more than 60% increase). Italy has been requested by the council to increase its participation by more than 60% to better reflect the strength and the level of participation of its scientific community. Sacchi commented that it is unlikely that Italy will increase its membership by more than 60%. Decisions by the other countries are still pending. Mével urged delegates to encourage council members in their own countries to increase their contributions. ECORD expects to be able to present its FY08 budget to the IODP Council in June because the fiscal year starts in October. Mével then showed a chart detailing the contributions made by the member countries in FY07 and the expected contribution figures for FY08 and beyond. No country has yet declined to maintain its current contribution. For FY08 one IODP participation unit (PU) is now \$5.6 million per year. ECORD is aiming to maintain its contribution of three PUs of SOCs (science operation costs) and one PU of POCs (platform operation costs).

Mével then reported on proposals to strengthen the ICDP-ECORD and IODP relationships. An MoU has been signed between ICDP and ECORD for an ICDP contribution of \$500k to the New Jersey Shallow Shelf Expedition.

ECORD membership of ICDP would mean that instead of individual ECORD countries joining ICDP the ECORD consortium as a whole would join. A delegation from ECORD (Kullin, Goffé, Mével and Eldholm) is to meet with lead agencies on 15th May in Washington DC. Their primary objectives are to obtain more precise information about the overall funding situation in IODP and discuss the consequences, and to discuss the POC/SOC ratio for ECORD for FY08. Only one PU of POCs per year not sufficient for ESO to run an MSP operation every year, which has always been the goal of ECORD and IODP.

Also discussed at the Council meeting was the funding strategy for the European Commission (EC)'s Framework 7 programme (FP7). In FP6, €2.7M of funding provided via the ERAnet scheme had helped to support EMA and ESSAC. For FP7, Council were keen to find mechanisms not only to support administration but also operations and science. To explore these avenues Winkler-Nees met members of the EC, including representatives from the office of the infrastructure programme commission. He was advised that ECORD are eligible to submit a proposal to the ERAnet+ scheme. An ERAnet+ allows some capital funding of science, in contrast to an ERAnet, which can only be used for administration, support and networking costs.

ECORD can apparently qualify for the ERAnet+ scheme because its required pooling of funds is already done with the co-mingling of money ECORD already receives from its national contributions. In a successful ERAnet+ programme the EC can add up to a further 30% to the pooled funds.

To be successful ECORD has to be included in the work programme that the Commission issues every year. ECORD Council is currently seeking political support and national level support to make sure the submission is effective. Individual Council members have a responsibility to lobby at a national level because this work programme is actually written by a programme committee of which each member country has a representative. Mével and MacLeod emphasised that ESSAC delegates must also lobby their individual national representatives.

Winkler-Nees obtained an agreement from the EC that it was acceptable that the ECORD funds eligible could be the full communal funds. Starting in 2008 ECORD funds will be \$22.4M (~€15M per year); potentially the top-up from the EC could therefore be as much as €5M per year. Among a number of stipulations it seems ECORD will need to have a public call for participation in IODP expeditions. If this is acceptable the role of ESSAC in issuing the call and selecting the applicants will have to be open and visible to the Commission. ESSAC needs to be aware of what is required and responsive to requests for information.

Mével went on to explain the launch of the Deep-Sea Frontier Initiative (DSF). This initiative was launched by the ECORD Council after discussion with the EC. ECORD were advised that to obtain major funding through Article 169 the current scientific base would need to be expanded. A proposal was devised to integrate ECORD, HERMES, ESONet, IMAGES and EUROMARGINS. A workshop was held in Naples in June 2006 to discuss a science plan, and the eventual outcome is a foresight paper which will be published by the EC and which will serve as a tool for lobbying. This paper is almost complete. Mével showed a list of the contents of the document. Discussions with the lead author (Phil Weaver from the National Oceanography Centre, Southampton, UK) are ongoing to ensure that ECORD is properly acknowledged; however, Mével said she is not entirely

happy with the presentation of ECORD within the proposal. Apparently they were subsequently told that there was no chance of an Article 169 application being successful because the scientific base is too small.

This Deep-Sea Frontier foresight paper resulted in a call for action related to the work programme for 2007/F7. A proposal coordinated by Weaver was submitted in May. It is a proposal for €1.2M over 3 years requesting money for workshops to prepare for the later years (phase 2) of the FP7 programme. The idea behind this initiative is to generate a science plan for the future which is led by scientists. ECORD as an organisation is not properly involved in this proposal despite the fact that drilling will be an essential tool. Mével stated that she is not comfortable with the current situation, and said that her attempts at further discussion with Weaver have been highly unsatisfactory.

The relationship between ECORD and the *Aurora Borealis* project was discussed at the Bonn ECORD Council meeting. *Aurora Borealis* is now on the ESFRI list. The Council recognises that the *Aurora Borealis* could potentially be used by ESO to drill in the polar regions as an MSP. As a result ECORD will be involved in a 'coordination action' proposal submitted by the Polar Board to the EC this month. Mével stressed that there is no financial commitment at national level at this stage.

With respect to Education and Outreach matters, discussion was deferred until after Arnold's report on the GIFT workshops later in the meeting. Mével reported that the IODP booth and Town Hall meeting held jointly with ICDP at the European Geosciences Union (EGU) assembly in Vienna in April 2007 were very successful. More people had attended than in the previous year (~150) and ECORD and ICDP agreed that they should plan to hold meetings in the same way in future.

Mével reported on the status of three databases that form part of the deliverables in the ECORDnet proposal and which will be posted on the ECORD website:

(1) Database of ECORD participation in IODP

This database includes panel members, numbers and names of expedition participants, ECORD proponents in proposals. It is being compiled by Maruéjol and ESSAC and is up to date.

(2) Biogeochemistry database

This is an outcome of the Deep Biosphere workshop that was held in Switzerland in 2006. The database has been designed and populated by Tamburini (ETH) and will be transferred to the ECORD server this month. Tamburini will maintain it for the moment but the problem of long term maintenance needs discussion.

(3) Site survey database

Mével explained that this is not actually a database but a portal that has been developed by Portugal. It gives access to existing databases, in particular to the EuroSEISMICS database, which is supported by the EC.

The database project is not completely finished but all databases should be online on the ECORD website by late June and will be presented at the next ESSAC meeting in October.

With regard to promotional material, a new brochure is being prepared by NWO (Netherlands science foundation) to illustrate the role of ESSAC in IODP. It should be complete by mid June. Another brochure, already distributed at EGU in Vienna, shows the role of ECORD. A further

glossy brochure is planned on the accomplishments of ECORD during first stage of IODP. It is hoped that this can be published by September 2007.

Mével briefly summarised the contents of ECORD Newsletter #8 which was also distributed at the meeting. She concluded by saying that EMA was open to for ideas and suggestions as they were responsible for E&O activities.

MacLeod mentioned Brinkhuis's previous question regarding the on overlap between EMA and ESSAC regarding promotional material and commented that we should coordinate as much as possible.

Mével also introduced Green Paper issues. Winkler-Nees commented on the need for a response to the call from the EC for a marine conservation policy. A final meeting will be held in Aberdeen in June. The EC has called a meeting between marine scientists for input on the quality of the EC's marine issues. A number of scientific groups including ECORD are working on a response to the ECs call for policy. There are a number of meetings in the programme including one last week in Greenland and there will be one at the Aberdeen meeting in June. Winkler-Nees stressed the importance of a strong political lobby.

3.2 ECORD and the European Science Foundation

MacLeod introduced the Magellan and EuroMARC projects. He had not been able to attend any meetings himself as the UK is not a member. Although he did actually receive a specific invitation as designated liaison to attend one of the meetings ill health had prevented him from accepting on that occasion. Eight of the ESSAC delegates are also on Magellan/EuroMARC panels. MacLeod briefly summarised the past communication problems that ESSAC have encountered with ESF regarding Magellan projects. However now that Erbacher is now acting as ESF coordinator for the Magellan projects MacLeod is now confident that matters will improve satisfactorily.

Mével said that the Council noted that ECORD is not properly acknowledged because people do not know that they should include the appropriate logos and also submit a specifically formatted report for publication on the website. If Magellan money is used to fund a workshop then the report should include an acknowledgement. This is an ECORD Council action item.

MacLeod said that EuroMARC was a different issue. It had been hard to get information as Bernard Avril from the ESF did not respond to emails or supply information. Brinkhuis said that Schorno had been on the committee so there were some potential communication improvements. MacLeod said the process was nevertheless opaque and, while he was sure that all projects eventually funded via the EuroMARC scheme are satisfactory, ESSAC had never been informed or included in the review process, and hence had had little or no opportunity to provide strategic input. Franklin noted that not all the highly-ranked EuroMARC projects are yet funded by the national agencies.

As for the future, apparently no further EuroMARC calls are currently planned. McKenzie suggested that the EUROCORE programme had potential development opportunities – for example, for workshops – and should be investigated further by ESSAC in the future.

3.3 ECORD Mid-Term Review

The official report of the external review panel's evaluation of ECORD is included in the agenda book for this meeting and hard copies were also distributed at the meeting. MacLeod introduced the review and reminded the committee that ESSAC were required to respond to those parts of the report relating to ESSAC. Franklin added that this specifically included items vi– ix in the conclusions. MacLeod explained that he would take ESSAC's views and comments and include them in the official response to the review, which would be authored by Winkler-Nees, Schorno, Mével, Evans, Camoin and himself.

Brumsack asked who chose the reviewers as they seemed to have little knowledge of how IODP functions. He viewed the resulting report to be little more than a conglomeration of disjointed facts. In defence of the panel, Mével said that the council wanted to have reviewers who were not involved in IODP, and that nominations had been solicited and the reviewers had been selected in a totally appropriate manner. Franklin agreed that it is a complex system for outsiders to become familiar with in a short time. Brinkhuis also criticised the review panel's report. Arnold pointed out that there was little mention of the Bremen core repository, and Mével added that EMA had been similarly neglected in the review. MacLeod said that he would convey ESSAC's criticisms of the review process itself to ECORD Council, but reminded the committee that the main purpose of the exercise here was to respond to the specific matters that the panel raised.

MacLeod then chaired a discussion of the review panel's comments and recommendations point by point.

Conclusion vi

"The ECORD administrative structure is complex. While we can see that it mirrors the committee structure of IODP, the overhead in time, cost and bureaucracy is very large and we feel that it leaves itself vulnerable to communication failure."

McKenzie asked what the review committee meant by this item. MacLeod commented that in his opinion the panel was instead commenting on the IODP Science Advisory Structure and IODP central management (IODP-MI). The ECORD management structure itself could hardly be less complex. He conceded that what could perhaps be made clearer is the primary function of ESSAC, as the main portal for exchange of scientific information between ECORD and IODP. Franklin pointed out that several recent reviews of the SAS structure had concluded that the science advisory structure of IODP could not be simplified significantly, and that all the panels were in fact necessary and performed key functions.

Wortmann referred to a diagram in the review panel document showing the linkages between the different parts of ECORD. He found this confusing. He asked why there are four arrows from IODP to different ECORD bodies. It was agreed that the ECORD wiring diagram needed to be redrawn. Mével commented that a new brochure is in preparation to explain the structure and at this stage all suggestions are welcomed. She thought that there probably too many boxes in the current diagram. Wortmann suggested that the scientific aspect and the management aspect should be separated and that the whole explanation of the organisation should be dumbed down.

Wortmann asked why there seem to be no links between ESSAC and ESO on the wiring diagram. MacLeod explained that a formal link between ESSAC and ESO had been written into their terms of reference, to allow ESSAC to offer and ESO to seek scientific advice in helping them with MSP operational planning. ESSAC was and remains willing to advise ESO should the need arise. However, McInroy pointed out that, from ESO's perspective, they could not be seen to have a

relationship with ESSAC that was different to that they had with the other PMOs. Although it was agreed that personal relationships between the ESSAC Office and ESO were excellent, MacLeod nevertheless felt that communications between the two organisations could be improved. Camoin agreed that more interaction is desirable. He reiterated MacLeod's point that the interaction between ESO and ESSAC not only concerned staffing but also MSP scientific planning, publications etc., noting that ESSAC members had a wealth of experience of ODP/IODP operations that surely could be of use to ESO.

Schorio commented that the distinction between the formal and informal links was not clear. MacLeod commented that the ESO-ESSAC link should perhaps remain an informal one. Schorio noted that ESSAC's formal link with ESO should be mirrored by ones to J-DESC and USSSP.

Comas thought the whole issue was confusing and if EMA was the European equivalent of NSF then it was in the wrong place on the wiring diagram. This was clear to Comas but not clear to outsiders. The two committees, ECORD Council and EMA, should be clearly visible as the two main bodies.

Arnold pointed out that it would not be possible to construct a new version of the diagram during this meeting and suggested that Mével should circulate a draft to the ESSAC delegates before publishing the brochure. MacLeod said that ESSAC would assist with the production of the diagram for the brochure, which was being coordinated between EMA and ECORD Council.

Conclusion vii

"In particular, the moving of ESSAC every two years is likely to lead to serious administrative problems in the reasonably near future. We think a higher priority to quality in the selection of scientist and projects is important although we recognise the wish to be democratic and permit participation by all contributing countries but the level of resource and depth of support which is required to be committed in addition to that available from ECORD may not be forthcoming in all cases."

MacLeod reported that the moving of the ESSAC Office in 2005 from Amsterdam to Cardiff could indeed have been smoother. The move was complicated by a number of factors: (i) outgoing Chair Jeroen Kenter did not stay in the position of Vice-Chair, as the terms of reference required him to do, but rotated off ESSAC completely; (ii) the incoming Chair MacLeod was not able to take up the role for some months because of illness; (iii) although Julian Pearce took up a role as Acting Chair, he had had no prior experience of ESSAC; and (iv) the outgoing and incoming Science Coordinators did not overlap sufficiently.

Plans are now in place for the handover of the ESSAC Office from Cardiff to Aix-en-Provence in October 2007, and a much smoother transition is anticipated. None of the above should be a factor this time.

Further to the review panel's comment, the length of the tenure of the ESSAC chairmanship and management of the ESSAC Office was something that was debated at great length when ESSAC was first set up. The consensus at the time was that a two-year rotational period for the Office is optimal, as it ensures that the membership benefits and responsibility of management are seen to be shared across the consortium. It was also felt that the kind of research-active, sea-going scientist whom ECORD wanted to act as ESSAC Chair would be unlikely to want to serve for more than two years. MacLeod concurred wholeheartedly. He asked if everyone agreed that the two-year term was still appropriate. Delegates were still in favour, though Brinkhuis suggested that it would maybe be better to keep the same science coordinator for a longer term than two years. Mével

thought it was likely to be impractical in most cases, and unreasonable to expect the person to relocate every two years, but conceded that it could be something ESSAC should consider. MacLeod said that the original vision for the science coordinator position was to employ a younger person, such as a recent marine geoscience PhD graduate who was looking to change to a career in science coordination/management. Erbacher commented that from personal experience in a similar role a serious young scientist would not find that the position helped his or her career as a scientist. McKenzie commented that the system had worked well for ODP.

Conclusion viii

“We recommend thought is given to streamlining the ESSAC structure, perhaps with a central executive body to which national representatives are seconded for a period rather than a wholesale transfer of operations from office to office with the associated down-time, loss of corporate memory and disruption to participants.”

MacLeod stated that Camoin’s plans for ESSAC under his reign addressed these concerns almost completely, and they would be explained shortly. Mével suggested that ESSAC should utilise EMA to maintain the corporate memory. MacLeod agreed and emphasised that continued regular communication with EMA was extremely important.

Conclusion ix

“The targets which MSPs can address are of great interest to a much wider range of scientist (glaciologists, geomorphologists, coastal engineers and a plethora of others) than are captured by the Ocean Science community alone. ECORD needs to decide how it will engage and involve this community in future science proposals and planning. ECORD needs to have a strategy and a policy.”

Camoin pointed out that, once again, these concerns would be addressed specifically in his proposed new structure for ESSAC.

MacLeod summarised the views of the committee regarding the ECORD review. He noted that most of the comments in the report were focused on the functioning of the ESSAC Office rather than of the 17-member ESSAC committee. He then stated that he thought this was a good opportunity for ESSAC to review itself and decide whether it should change any aspects of how it functioned as a committee. With the change of chairmanship from MacLeod to Camoin and relocation of the ESSAC Office on 1st October 2007, it would be opportune for the committee to comment on ideas Camoin is proposing to introduce for ‘ESSAC 2007’. MacLeod therefore handed over to Camoin to allow him to explain his vision for the future.

Camoin explained that he wished to increase the involvement of the ESSAC delegates in day-to-day ESSAC business. It was a model that had been tried with the SSEP and aimed to create empathy between delegates. He hoped it would also encourage them to work more in their own countries with their own communities. He proposed to form three sub-committees of ESSAC:

- 1) Staffing & Nominations (coordinator: MacLeod)
- 2) Education & Outreach (coordinator: Arnold)
- 3) Workshops, Communication & Vision (coordinator: Stein)

Each subcommittee would be led a sub-committee coordinator, in conjunction with the ESSAC Chair, Science Coordinator and a third of the ESSAC delegates. There would also be an ESSAC Executive, consisting of the Chair, the ESSAC Science Coordinator and the three sub-committee coordinators.

Camoin would like a slightly different system for expedition participation, with more emphasis on the scientific excellence of the applicants and less upon their nationality. Camoin then showed a PowerPoint slide using the example of the Education & Outreach sub-committee to illustrate its likely tasks and linkages. Schorno suggested that links to the ESF should be included explicitly. Mével asked Camoin how he intended to establish better links with the ECORD SASEC members, which has been a problem so far.

Camoin explained that the ESSAC Executive sub-committee is needed in the case of fast decisions needing to be made. He pointed out that the new subcommittee model requires delegates to work together between meetings and to bring reports to the ESSAC meetings. Camoin wants fresh and new ideas in various topics. In order for this to work the delegates will need information and Camoin will provide this. Camoin asked delegates to indicate which subcommittee they wished to work on. MacLeod asked that the emails be cc'd to ESSAC at Cardiff.

Schorno suggested that a strategic sub-committee may be needed to look for European funding sources, i.e. for fund raising and framework opportunities. MacLeod asked that ECORD Council provide advice on this issue as most ESSAC delegates are not familiar with the internal mechanisms of the EC.

Erbacher congratulated Camoin on this proposed new scheme and asked if the committees would meet physically in between ESSAC meetings. Camoin replied that they would not, but that business would be carried out by email and cc'd to the ESSAC Office. Franklin asked that the potential capabilities of MSPs as a means of doing innovative science should be more widely advertised. Brumsack agreed that the IODP concept is to make the programme science driven and not platform driven.

4. Expedition reports

4.1 Tahiti Sea Level Expedition 310

Camoin gave a presentation of the Tahiti sea level expedition (IODP Expedition 310) which drilled offshore Tahiti in October – November 2005. He discussed the offshore and onshore teams and the scientific rationale.

MacLeod asked Camoin whether he had any procedural concerns about the Tahiti operations. Camoin replied that more communication is needed between ESO and ESSAC. McInroy asked what kind of interactions he was referring to, and whether it was correct that it should be any different from that with the other PMOs. MacLeod said that it was not a matter of trying to get preferential treatment but instead that ESSAC could potentially have a role to play in assisting ESO in science planning (see ECORD Review). Mével thought that the learning curve was now resolved.

5. Workshops

5.1 Campi Flegrei workshop

Sacchi presented a report on the Campi Flegrei workshop held in November 2006.

5.2 SealAIX'06

Camoin presented a report on this workshop.

5.3 Past Workshop reports

Erbacher commented on the three Magellan workshops held in 2006: Salt Giants, Campi Flegrei and Submarine Slides.

5.4 Forthcoming workshops

Erbacher reported on the Magellan workshops scheduled in 2007: Mud Mounds/Mud Volcanoes; Marine Impacts; and South African Climates.

The next call for funding for Magellan workshops is scheduled to be on 15th May 2007 and short visit grants will also be offered. MacLeod asked when the deadline for applications would be and Erbacher said it would be one month later, i.e. 15th June.

MacLeod mentioned workshop themes which should be encouraged and have been forwarded to Kenter. ESSAC identified such themes during the ESSAC 6 meeting in Cardiff in 2006 (see minutes of ESSAC 6).

McKenzie suggested targeting people who would run workshops. Erbacher said that there are only enough funds to support one or one-and-a-half workshops so an open call would not be advisable. Franklin suggested workshops should address specific topics. Mével thought ESSAC should solicit proposals for an Arctic workshop. MacLeod asked for named items on 15th May. Erbacher said it would be an entirely open call. He said that in the last round there was money for three workshops and there had been 10-12 proposals. Brinkhuis said that the link to active and viable drilling proposals still wasn't being made and he doesn't see evidence for it happening still.

MacLeod asked for recommendations for stimulating proposals, saying that Erbacher could only evaluate what is in front of him. Erbacher said the aim was not to fund Magellan if it is only IODP – so had to open it to groups like IMAGES. MacLeod commented that this was inconsistent with the original concept of Magellan.

MacLeod raised the issue of participant funding for IODP-MI workshops. He reported that participant support came from co-mingled funds, thereby restricting the number of ECORD scientists that could attend. Now, thanks to a modest provision of funds from ECORD Council to ESSAC, a mechanism was in place for supporting over-quota ECORD participants. Mével asked for a full explanation and MacLeod explained how the ESSAC Office had liaised with IODP-MI, the Magellan Steering Committee and national offices to coordinate ECORD scientist funding at the LIPs and Geohazards workshops.

The IODP Topical Symposium is a new concept initiated by SASEC and sponsored by IODP-MI. It will be an annual event starting in August 2007 in Bremen with a symposium on North Atlantic and Arctic Climate Variability.

Mével said there was a communication problem with SASEC also, in that they had planned this symposium completely in isolation from the IODP science community, and without liaising with

the PMOs. She predicted that in the new era of limited budgets IODP workshops may cease. MacLeod commented that in this case the significance of the Magellan workshops would increase.

6. Staffing

6.1 Nomination for new SAS panel members

MacLeod asked if there were any objections to nominating a German candidate to replace Stein on SSEP. There were no objections. Brumsack reported that the proposed nominee (Hinrichs) had been a post-doc of John Hays, and then worked in Bremen on fossil lipids (indicators for active microbial life). His research fits well into the IODP themes and he had sailed on Leg 201 and one other Leg.

Kai-Uwe Hinrichs was approved by consensus as a nominee to replace Rüdiger Stein on SSEP

MacLeod reported that Neil Mitchell UK had been nominated by UKIODP to replace Roger Searle on SSP. Mitchell is a geophysicist with broad background and experience, and led the recent site survey cruise in support of the Equatorial Pacific drilling. Once again he was approved by consensus.

Christophe Basille is due to rotate off the STP panel. The Chair, Mike Lovell has been consulted and it has been agreed that Ildefonse and Camoin will work to find a suitable replacement.

All nominees will be formally ratified at the ECORD Council meeting on June 8th.

6.2 Report of staffing of Expedition 313

McInroy gave an account of the staffing procedures for Expedition 313. The science party has been selected and is being kept on hold, with regular updates, until a final date for operations can be fixed. McKenzie asked about microbiology, i.e. do the scientists bring their own equipment as on Expedition 310. McInroy said that ESO were addressing this problem and hoped to be able to provide a clean lab for microbiology.

6.3/6.4 Report on staffing applications for NanTroSEIZE and Equatorial Pacific expeditions

MacLeod explained the recent history of the NanTroSEIZE staffing procedure, commenting that the latter stages had involved extensive consultation between the ESSAC Office and the Japanese (and US) operators to fill the final places. This stage of the process has primarily been expertise-driven rather than quota-driven.

Expedition 314 (Logging-While-Drilling) will have a reduced science party of 16 instead of 24 because there will be no coring. This means that ECORD will have only 5 participants instead of the usual 8. Recruitment possibilities from Aachen were noted.

Expedition 315 – MacLeod showed a table of the suggested invitees for this expedition, sent to him by CDEX the day before the meeting. A couple of the ECORD slots remain to be filled.

MacLeod explained how he monitored the intra-ECORD quotas when he made recommendations. Brinkhuis asked for an explanation of his methodology and asked MacLeod to rethink allocations.

MacLeod reminded Brinkhuis that in Naples ESSAC decided against insisting upon rigid allocations for specific expeditions and it was necessary to give some flexibility to the operators.

Mével said that if member countries are allowed to go too far over quota then there is no incentive to increase contributions. MacLeod added that this was the reason why it was necessary to monitor the quotas carefully during the staffing exercise and, if necessary, occasionally refuse to endorse certain nominations.

Sacchi asked what had happened to the application by Paola Vanucchi. MacLeod said he had put her name forward but she had not been selected by the operators.

McKenzie asked about the status of Swiss applicants Strasser and Girault, and stated that Jackett was a higher national priority than Girault. MacLeod said he would attempt to accommodate this request in his continued negotiations with the operators.

Mével said that discussions re FY08 financial contributions are ongoing and therefore modifications to the relative intra-ECORD quotas are not yet known. MacLeod said he was not expecting any enormous changes.

There were no objections to MacLeod continuing the staffing negotiations as he has been doing at the moment.

Wortmann asked whether the over-quota figures would be carried over into Phase 2 (2008-2013). MacLeod confirmed that they would, i.e. they will be included in the long term balance. McConnell asked if Ireland doesn't increase their contributions would it dilute the quota? MacLeod answered that yes, it would, but not significantly. Schorno asked if decisions can be delayed until ECORD Council is ready. MacLeod replied that some but not all could be delayed as some staffing decisions were needed by next week.

MacLeod reported that overnight he had been informed that CDEX had issued invitations for Expedition 314 in error to two applicants who had not been approved by ECORD. CDEX apologised for the mistake and, after consultation with MacLeod, had immediately cancelled the invitations. The committee agreed that this was a very unfortunate error and hoped it would not happen again.

Tobin from the NanTroSEIZE project management team had contacted the ESSAC Office regarding a vacancy on Expedition 314 and suggesting that a Spanish scientist, Maria Jose Jurado, had the appropriate expertise and might be an appropriate candidate. She had responded positively to an email from MacLeod expressing her interest. Comas said she was happy to nominate Jurado for Spain and would give her 3 stars. Her nomination was approved by consensus.

ESSAC also approved by consensus the nomination of Boeckel (Germany) to replace Casellato on Expedition 315.

6.5 Report on upcoming Bering Sea expedition

MacLeod announced that the call for the Bering Sea Expedition was due out shortly. He asked delegates to seek nominations when the time comes.

7. Education and Outreach

7.1 ECORD Newsletters #8 (April 2007) & #9 (October 2007)

Mével gave a short presentation outlining plans for the next ECORD Newsletter #9 in October 2007. She discussed the planned content and said that the issue could expand to 16 pages if needed and invited input from the delegates as to what they thought should be included. Brinkhuis would like to see reports from the summer schools, Camoin suggested inclusion of a list of references from past expeditions, and MacLeod suggested short summaries of scientific highlights from recent IODP-related research papers, as is done in (for example) EOS. Camoin agreed to provide an article about the Tahiti sea level expedition and Brinkhuis also agreed to provide a similar article from the Arctic expedition. Mével commented that we have now reached a point in the programme where more science can be reported.

7.2 GIFT/ECORD Teachers' workshop EGU Vienna 2007

Arnold reported on the Teachers' Workshop recently held at EGU. ECORD contributed funds this year to enable an extra day to be added onto the GIFT workshop already being held at EGU. The talks presented during this extra day concerned IODP topics chosen in connection with the theme of 'natural hazards'.

The teachers attending were from Europe (62), China (2) and the USA (5). Of the ESSAC delegates Camoin, Sacchi and McKenzie presented talks as did Jan Behrmann (SPC) and Stevenson (ESO). Tadashi (CDEX) also came from Japan and presented an excellent talk about *Chikyu*, illustrated by a DVD and posters. Arnold intends to make a CD of all the PowerPoint files presented and to circulate to all interested parties. The brochure from the workshop can be downloaded from the ECORD website. To date Arnold has received a lot of positive feedback from the teachers who attended.

Arnold considers this exercise to be good value for money and seeks further funding of €10,000 to repeat the event in 2008.

Mével commented that this event was a good example of activities ECORD would like to do in the future but in this case the funding came through ECORD-net and was therefore a one-off. MacLeod asked Schorno and Erbacher if there was any potential for future funding from the ESF Magellan funds. Arnold commented that the GIFT workshop runs at EGU anyway and so the only funds required are for an additional one night of accommodation. There are no registration fees or travel costs involved. MacLeod asked Erbacher to raise this request for €10k with the Magellan Steering Committee and Erbacher agreed to do so. Arnold suggested that it could be included as part of ESSAC's 'additional activities' package (summer schools, Distinguished Lecturer Programme etc.). MacLeod agreed to raise the issue with ECORD Council. Schorno added that ESSAC funding will be discussed when ECORD-net finishes at the end of 2007. ECORD Council must make a strategy decision about funding in the future. He felt that Education and Outreach should be part of ESSAC activities and thought that ECORD did not have a clear strategy at the moment. Mével suggested that ESSAC should investigate further opportunities to obtain funding through the EU.

7.3 ECORD Distinguished Lecturer Programme

MacLeod summarised the activities of the new Distinguished Lecturer Programme (DLP). This programme is currently on a one-year trial and will be reviewed by ECORD Council in the autumn of 2007. The programme is modelled on the successful US Distinguished Lecturer Series and the talks follow the three IODP themes. In this first year trial three lecturers were selected from the applications received and they will each give a presentation on one of the three IODP themes: Judith McKenzie presenting a talk on *Deep Biosphere and Subseafloor Ocean*, Benoit Ildefonse presenting the theme *Solid Earth Cycles and Geodynamic* and Paul Wilson presenting *The Processes and Effects of Environmental Change*. Flyers have been produced for circulation and display on institutional notice-boards, there is an information page on the ESSAC website together with an online application form and a link from the ECORD web site. Promotional activities were also carried out at EGU. The programme is also about to be advertised on mailing lists. Brinkhuis suggested that the programme should be promoted by the national delegates in their own countries and MacLeod agreed. McKenzie suggested that the delegates also use their own networks of scientific contacts. MacLeod stated that plans for the future of the programme in 2008-2009 will be formulated based on experience gained from this first trial and circulated in due course. The new International lectures series organised by the US called **IODP DRILLS** (the **Distinguished Researcher & International Leadership Lecture Series**) was discussed briefly.

7.4 ECORD Summer Schools

MacLeod introduced the background to the two ECORD sponsored summer schools taking place this year. For 2007 ESSAC had decided (at the ESSAC 7 meeting in November 2006) that the best plan was to support existing schools and in subsequent years to have an open call. ECORD Council, however, indicated that they preferred to fund a dedicated ECORD-only school. At the Council meeting in Bonn in November 2006 Gerold Wefer offered to host such a summer school in Bremen, to be held in conjunction with the IODP-MI 'Topical Symposium'. At the Bonn meeting a compromise solution was reached whereby ECORD Council agreed to support summer schools in both Bremen and Urbino for 2007. In future years there would be an open call for summer school proposals, and it was agreed that over the longer term the schools to be sponsored should encompass the three themes of IODP.

ECORD Council also agreed to ESSAC's suggestion of introducing a scholarship award scheme for students and young scientists participating in 2007 summer schools in Urbino and/or Bremen. These awards are valued at up to €1000 each for 10 awardees (whose names are published in ECORD newsletter #8). In total there were 48 applicants for these scholarships. Several ECORD national offices funded their unsuccessful applicants and several others obtained bursaries through other programmes such as IMAGES.

The €10k for scholarships and €7.5k each given for the two summer school amounts to a €25k total investment in summer schools for 2007 by ECORD.

Potential organisers are invited to submit proposals for summer schools for 2008. A deadline of 1st June 2007 has been set. Recalling their conversation the previous year about future summer school plans, MacLeod asked Brandsdottir if she still intended to try to organise a summer school in Iceland. Brandsdottir answered that they were sponsoring a school in 2008 in conjunction with the Iceland Deep Drilling Project, and that there were plans for a geothermal summer school in 2009. It was thought that Erba (Milan) may be submitting an application as she had previously expressed interest. Brinkhuis mentioned that Mark Leckie's course (part of the JOI School of Rock) had been secured for the Urbino 2008 summer school and that this included a practical exercise. He also mentioned that there were some excellent core replicas available for teaching. These are currently in

the custody of Mével should anyone wish to borrow them. MacLeod said that he would take all proposals for summer schools to ECORD Council on June 8th. Brinkhuis thanked ECORD Council and ESSAC for the support Urbino had received for 2007.

8. Next ESSAC Meeting

8.1 ESSAC #9, October 2007

Camoin announced that the next ESSAC meeting would take place in Granada, Spain in October 2007. This will be hosted by Menchu Comas. Camoin referred to the excellent SSEP meeting three years ago also hosted by Comas. Comas then presented the proposed logistics for the meeting. Camoin suggested that he would like the meeting to take place during the first two weeks in October and that it should be a two-day meeting together with a one-day field excursion. It was eventually decided that the meeting should be held on 19th-20th October and immediately followed by the excursion on the 21st.

9. Any Other Business

Brinkhuis suggested that there should be an annual ESSAC Report. This should include minimal bureaucracy and be a brief overview of activities in each of the member countries. Topics could include items such as websites, teaching and national office activities. MacLeod asked if this kind of information would be appropriate for inclusion in the ECORD Newsletter. Brinkhuis suggested that possibly a one-page report from each country would be suitable. Mével thought it was a good idea but asked if it was practical. Brinkhuis suggested that it could be either web-based or printed. Mével considered that the suggestion needed to be thought through more. Camoin would like to have these reports presented in the ESSAC meetings. Mével repeated her earlier plea for newsletter input.

Brinkhuis suggested that there should be an ECORD award at EGU for an outstanding young scientist (or similar). He had been impressed with the recent awards/award ceremony at EGU earlier this year.

McConnell asked whether a copy of the introductory presentation for the Teachers' Workshop could be made available. Arnold offered to send him a copy of the Teachers' Workshop CD but pointed out that it would also be posted on the ECORD website. She also informed the committee that an on-line library of teachers' workshop presentations was available on the IODP web site. MacLeod asked that links be sent to the ESSAC database. Koç suggested that each expedition co-chief should also be asked to provide a PowerPoint presentation from their expedition.

Camoin thanked MacLeod for his service as Chair of ESSAC as he will stand down in October 2007 before the next ESSAC meeting and resume the role of Vice-Chair. MacLeod in turn thanked Julian Pearce, Federica Lenci and Elspeth Urquhart for their roles in supporting ESSAC during the last 2 years.

Thanks were extended to Hans Brumsack, who is rotating off ESSAC after this meeting. Thanks were also offered to Bryndis Brandsdóttir and the Icelandic Council for hosting a splendid meeting in a spectacular setting.

Meeting closed at 13:05

1.6 Items since the 8th ESSAC Meeting

Since the last ESSAC Meeting in Iceland a couple of items arose. At the meeting Chris MacLeod will briefly summarize the actions taken on those items.

1.7 ESSAC Office news

The ESSAC Office is located at the CEREGE (Centre Européen de Recherche et d'Enseignement de Géosciences de l'Environnement) in Aix-en-Provence since October 1st, 2007 with Gilbert Camoin as the new ESSAC Chair and Bonnie Wolff-Boenisch as the new ESSAC Science Coordinator. Myrthyse Joanides, from the CEREGE staff, will be in charge of the ESSAC budget. Furthermore, several people from the CEREGE are ready to assist Bonnie Wolff-Boenisch upon request (e.g. ESSAC web site). All conditions look therefore optimal for a very efficient ESSAC Office for the next two years.

A new ESSAC logo has been designed by Jean-Jacques Motte (CEREGE) with inputs from Leonard Bik and Henk Brinkhuis. This logo has been selected among three propositions by the ESSAC Delegates.

Since 1st October 2007 all e-mail communications with ESSAC should be addressed to essac@cerege.fr.

The web site (www.essac.ecord.org) will remain unchanged for the moment before being modified probably in november.

Chris MacLeod will remain on ESSAC as out-going Vice-Chair for a year, and a new incoming Vice-Chair, Rudiger Stein, will be appointed by 2008. The appointment must be approved by ECORD Council.

The handover of the chairmanship of the committee and consequent relocation of the ESSAC Office from Cardiff to Aix-en-Provence had no impact on the ESSAC activities. From experiences in the past lessons were learnt of how to effectively transfer the ESSAC office from one site to another. A three to four day visit to the antecessor office is necessary to transfer corporate memory, know-how, best practice methods as well documents of various kinds to the novice office.

ESSAC thanks warmly Chris MacLeod - previous ESSAC Chair -, Julian Pearce - ESSAC Acting Chair for a year -, and Federica Lenci and Elspeth Urquhart - the two successive Science Coordinators in Cardiff – for the outstanding work that they have done over the last two years.

At the meeting in Grenada Gilbert Camoin will present the current state of activities of the ESSAC Office. Bonnie Wolff-Boenisch will give an outlook presentation of how the office could be shaped and prepared for future challenges and strategic setting of points. Future activities will be presented, subdivided by a) short-, mid- and long-term undertakings as well by b) the different arrangements needed resulting from the fact of a satisfying multiple ECORD stakeholders and ECORD target groups such as the science community, the general public, politics and industry.

1.8 Principal goals of the meeting

Unlike some previous ESSAC meetings, we do not have a significant staffing exercise to go through, although the NanTroSEIZE and Equatorial Pacific staffing needs to be updated, the Bering Sea staffing reviewed and the quota balance for ECORD participation to IODP Expeditions discussed. Under these circumstances, we can take this opportunity to discuss in depth the various issues brought by the subcommittees and, ultimately, our own role within ECORD and IODP, and our past actions : what we have done well, what we need to improve and how.

The current financial situation of the Programme is a crucial issue that will have inevitable consequences on the future of IODP.

Significant input from delegates will be required for these tasks.

A comprehensive review of ECORD activities will be given through reports on summer schools, workshops, Distinguished Lecturer Programme, ECORD database etc. Highlights on a past expedition (Exp. #311), on a scheduled expedition (Wilkes Land) and on a well-ranked proposal (#644) will be presented.

Report on Lead Agencies and IOs

- IODP membership

The increase in the Korea contribution from 0.3 to 1 M\$ in FY08 is still pending. China will not increase its contribution (presently 1 M\$).

Australia is joining IODP in FY08 with a 1/4 membership.

IODP MI has set up a scheme to allow non-IODP outstanding scientists to sail on IODP expeditions. This will be favored in particular by the fact that there will be additional berths on the refitted JOIDES Resolution.

- IODP Funding situation

The funding situation at the IODP level is difficult because of budget restrictions at NSF but mostly because of the increased price of all activities related to oil industry.

For the **JOIDES Resolution**, the money available will not allow to run the ship all year round. However, the operation day rate and the stand by day rate are almost similar. As a consequence, NSF is considering to go off contract and lease the ship to industry or other agencies when it is not operating for IODP. There are still a number of issues to resolve.

Operating the **Chikyu** is more expensive than initially planned. As a consequence, JAMSTEC also will have to lease the Chikyu. Presently, the preferred solution seems to contract it to other Ministries in Japan, rather than industry.

For the **phase 2** of the programme it is anticipated that the funding will allow to operate

- the JOIDES Resolution 7-8 months a year

- the Chikyu ~5 months in riser mode, ± 2 months in riserless mode

The remaining time will be used for commercial operations, or for projects for other government agencies. The impact on the scheduling of the ships is not yet well assessed.

- Implementing organizations

- Status of the JOIDES Resolution

There are some delays in the refitting of the JOIDES Resolution because the Singapore shipyard is overbooked. Transocean, the owner of the ship, is putting pressure to accelerate the process. As it stands now, the JR will not start before mid-May.

- Status of the Chikyu

The Chikyu sailed for the first Nankai expedition at the end of September as planned. An inauguration ceremony was organized to celebrate this event, and ECORD was invited. However, CEDEX has experienced some problems with the riser during the test phase. The start of drilling in riser mode will be delayed, while these problems are being assessed.

The consequence is that FY08 will be a transitional year, with less drilling activities within IODP than initially planned. But also, it is clear that flexibility in the schedule at IODP level will be necessary, because of the necessity for the two drillships to do commercial work, and of the difficulty for ESO to contract a platform in this context of high demand for drilling equipment. But there will still be plenty of exciting opportunities for scientists.

Catherine Mével, ECORD Managin Agency
7/10/2007

IODP Implementation Plan: 2008-2013

DRAFT – 8 AUGUST 2007

EXECUTIVE SUMMARY

The IODP Initial Science Plan (ISP) identified three major themes – The Deep Biosphere and the Subseafloor; Environmental Change, Processes and Effects; and Solid Earth Cycles and Geodynamics – as well as eight new initiatives requiring major advances in drilling platforms and technologies, and expansion of the drilling community into new areas of specialization. *These themes and initiatives continue to be the drivers of the program in the long-term.* However, it has now become clear that the IODP budget through 2013 will fall considerably short of that anticipated. This will result in a decrease in operational days for IODP to between 6-8 months per year for each of the large vessels, and significant reductions in other parts of the program. It will also require a focusing of IODP's priorities over the next few years on those themes/initiatives that have the highest potential for major scientific impact prior to renewal of the program.

In order to achieve this, the following guiding principles will be implemented to assist in the proposal submission and review processes, as well as in the scheduling of expeditions for 2008-2013.

Guiding Principles for Selecting Expeditions for 2008-2013

1. Likely to have very high scientific impact within the next 5 years
2. A necessary precursor for future investigations – building for the future
3. Will reach major milestones
4. Of high societal relevance
5. Demonstrates an integrated and interdisciplinary approach
6. Achieves a balance between risk, cost, and science impact

Furthermore, within this context, IODP will focus on four major areas over the next six years:

- The deep biosphere and the limits of life
- Rapid and extreme climate change
- Processes of ocean crust formation and a deep crustal section

- The seismogenic zone and initiation of borehole observatories.

Variations in the costs of expeditions will result in a trade-off between operational days and the conduct of high priority, expensive science. While there must be consideration of the balance between priority, cost (both financial and operational), risk, and potential science impact, the program requires a minimum level of continuity in drilling activities in order to sustain community interest and involvement. Based on these considerations, expeditions should be scheduled to conform with the following ***minimum operational requirements***:

- *Chikyu* – average of 7 months per year over a 5-year period (this *must* include riser drilling)
- *JOIDES Resolution* – average of 7 months per year over a 5-year period
- *Mission Specific Platforms* – one every two years.

IODP must make every effort to develop projects with potential partners (e.g. industry, foreign governments, etc.) that might increase science operational days and/or provide resources to IODP that increase its flexibility in the expeditions that can be accomplished for the remainder of the program.

INTRODUCTION

Since 1968, scientific ocean drilling has recovered unique global historical records preserved in marine sedimentary deposits and underlying basement rocks. These records have been key to making major advances in our understanding of Earth's dynamic nature and its changing tectonics, climate, ocean circulation, and biota.

Building on more than thirty years of experience, an international community of earth scientists developed a bold new vision for an Integrated Ocean Drilling Program (IODP) to begin in 2003. The centerpiece of IODP's efforts was envisaged to be a brand new, riser-equipped drillship to be operated by Japan, partnered with a modern, non-riser drillship to be operated by the United States. These drillships would be supplemented by "mission specific platforms" as needed (e.g. drilling barges, jack-up rigs, etc.) to be leased and operated by the European Consortium. This multi-platform approach, and new, state-of-the-art tools and technologies for downhole measurements and long-term

seafloor observatories, was anticipated to result in the most ambitious program of ocean drilling and exploration ever conceived.

The vision for IODP was articulated in an Initial Science Plan that identified three major themes: The Deep Biosphere and the Subseafloor; Environmental Change, Processes and Effects; and Solid Earth Cycles and Geodynamics. In addition, eight new initiatives were proposed that require major advances in drilling platforms and technologies, and expansion of the drilling community into new areas of specialization. This Initial Science Plan continues to guide the proposal submission process and the selection of expeditions to schedule to the present day, and will continue to represent the goals of IODP until 2013.

IODP began in 2003 while the Japanese drillship, *Chikyu*, was still under construction. During its first three years, IODP conducted a series of expeditions using the non-riser drillship *JOIDES Resolution* (from the previous Ocean Drilling Program) and mission-specific platforms. These expeditions included, among others, the first scientific drilling expedition in the Arctic Ocean, the most extensive study of sea level changes ever undertaken in a coral reef area (Tahiti), and recovery of the first continuous section through volcanic basement into the uppermost plutonic rocks at the superfast-spreading section of the East Pacific Rise.

In early 2006, the *JOIDES Resolution* was taken out of service to undergo major modifications and upgrades, and is expected to be ready for IODP operations in January 2008. The riser ship, *Chikyu*, is already operational, and will begin IODP drilling in September 2007 with the first expedition of the NanTroSEIZE project. The first year of multi-platform operations as articulated in the Initial Science Plan will be 2008. Expeditions for FY2008 and early 2009 are already scheduled and are well into the planning process.

During the first half of 2007, however, it became clear that the IODP budgets for FY'08 and beyond in both the US and Japan would fall considerably short of those anticipated. This will result in a decrease in operational days for IODP to between 6-8 months per year for each of the large vessels, and significant reductions in other parts of the program.

FOCUSING SCIENCE PRIORITIES FOR 2008-2013

At its June 2007 meeting, the Science Advisory Structure Executive Committee (SASEC) discussed the shortfall and the consequences for the science that IODP can reasonably expect to accomplish. There is very limited drilling time before the case has to be made for renewal of the program (the process for which has to begin early in FY'11), so significant progress in all thematic areas and initiatives of the ISP cannot be made in the available time.

In response to this situation, SASEC recognized the need to focus IODP's priorities over the next few years on those themes/initiatives that have the highest potential for major scientific impact in the time available prior to renewal. SASEC developed a set of guiding principles to assist in the proposal submission and review processes, as well as in the scheduling of expeditions for 2008-2013.

Guiding Principles for Selecting Expeditions for Scheduling in 2008-2013

7. Likely to have very high scientific impact within the next 5 years
8. A necessary precursor for future investigations – building for the future
9. Will reach major milestones
10. Of high societal relevance
11. Demonstrates an integrated and interdisciplinary approach
12. Achieves a balance between risk, cost, and science impact

Based on a review [How thorough was this review – is it documented? Proponents for the other initiatives will want to know in what ways their initiatives fell short.] of the ISP themes and initiatives in the context of these guiding principles, IODP will focus on four major areas over the next six years:

- The deep biosphere and the limits of life
- Rapid and extreme climate change
- Processes of ocean crust formation and a deep crustal section
- The seismogenic zone and initiation of borehole observatories.

Although this represents a focusing of IODP science in the short-term, it is important to note that *the themes and initiatives of the Initial Science Plan continue to be the drivers of the program in the long-term*. Hence, there will be drilling expeditions over the next few years in other thematic areas that will build for future IODP drilling.

IODP SCIENTIFIC FOCI: 2008-2013

1. The Deep Biosphere and the Limits of Life

Over a surprisingly broad range of subsurface depths, temperatures and pressures, the seafloor (sediments and rocks) hosts an extensive microbial population comprising the deep biosphere. As much as two-thirds of Earth's microbial population may be deeply buried in oceanic sediment and crust. Recognition that the seafloor may teem with microbial life poses fundamental questions about the evolution, distribution and limits of life and the operation of the carbon cycle.

During the last decade, ODP and IODP have begun to explore and sample this largely undocumented biosphere. Initial results indicate that microbial ecosystems thrive in both oceanic igneous crust and in deep (more than 750 m) seafloor sediments – regions previously thought to be barren.

The marine sediment pile and the underlying igneous crust are to microorganisms as the ocean is to fish. That declaration explains the scope of the questions that now present themselves:

- How are the microorganisms obtaining energy to sustain life?
- What are their types and distributions with respect to geography, temperature, depth, and the compositions of sediments and pore waters?
- What are their abundances and roles in rocks beneath the sediments?
- What are the roles of seafloor microorganisms in the global cycles of the chemical elements?
- What do the characteristics and interactions of these organisms tell us about microbial evolution, ecology, physiology, and biochemistry?

During the next six years (until the year 2013), top priority will go to studies of distribution. Until the limits on seafloor microbial life are known, plans for

investigations of the other questions cannot be completed. The “limits” to be examined are diverse. They relate not only to depth, temperature, and geography but also to porosity, the abundance and composition of organic matter, and the availability of electron donors and acceptors. Special expeditions and dedicated microbial holes or sites on other expeditions will be designed to examine these limits systematically. Where possible, microbially catalyzed chemodynamics should be studied directly. Alternatively, advanced molecular probes capable of providing phylogenetic and functional information will be used.

Second priority is held by studies devoted to biological objectives. Key studies will examine microbial diversity (which can be approached using metagenomic techniques), the provenance of subseafloor microorganisms (are they from the water column or is there a unique population being propagated within the sediments and rocks), the compositions of subseafloor microbial communities (culture-independent techniques at present giving conflicting results), and viruses in pore waters and crustal fluids. An ultimate goal is to establish subseafloor microbial observatories for *in situ* studies.

Where possible, parallel studies using the most modern tools will be conducted on appropriately stored materials from cores already on hand. Legacy samples suitable for microbiological study will be preserved from nearly all cores. Microbiologists should be included as team members on any expedition that will obtain samples of potential interest. Coring technology needs to be improved to increase the quantity and quality of samples for microbiological study. Methods for tracing and quantifying contaminants must be further developed and applied.

2. *Rapid and Extreme Climate Change*

A second major theme of the IODP ISP is the causes of environmental change on all time scales. Most observations of environmental change can be grouped into times scales ranging from tectonic (>500 kyr), to orbital (20-400 kyr), to oceanic (hundreds to a few thousand years), and to seasonal-to-centennial. Through expeditions already completed or scheduled for the *JOIDES Resolution* and for mission-specific platforms, IODP is greatly adding to the global array of cores needed to understand fundamental aspects of

climate and oceanographic changes. For example, major inroads will be made into deciphering sea-level change (Expeditions 310, 313, and Canterbury Basin), the response to astronomical forcing (Expeditions 303, 306, Wilkes, and Bering), and transient climate and extreme episodes (ACEX, PEAT1, and PEATII).

For the remaining drilling time through 2013, the focus of drilling for the Environmental Change, Processes and Effects theme will be the two Initiatives defined in the ISP: Extreme Climates and Rapid Climate Change.

Earth is now in an extreme – the geologically unusual situation of bipolar glaciation – and debate continues as to how the climate reached this state. Understanding the mechanisms by which climatic extremes develop, are maintained, and end, is also fundamental to a quantitative description of global change. Changing gateway configurations, elevation of mountains and plateaus, and CO₂ drawdown by chemical weathering are all factors that may contribute. Continued global warming could become a serious problem, but the case of extreme global warmth presents a challenge that is beyond the human experience. The last time the world was as warm as it is hypothesized to be in the year 2150 was during the early Eocene (~50 Ma). Analyses of the thick Cenozoic sequence in cores recovered from the Arctic Ocean by ACEX documents the transition of the Arctic Ocean from a warm “greenhouse world” in the Late Paleocene and Eocene to the cold “icehouse world” from the Miocene to present, with a long hiatus in sedimentation in between. To further investigate the conditions on Earth during times of past extreme climates, IODP will drill at locations that will yield critical information about the nature of past oceanic and atmospheric circulation, such as equatorial and subpolar regions, and the Arctic Ocean. In addition, sites with higher sedimentation rates in Cretaceous and early Eocene times, coupled with reduced overburden, such as on some oceanic rises and plateaus, are particularly desirable drilling targets because the lack of significant diagenesis may result in primary geochemical and isotopic signals being preserved.

Recent research has also demonstrated that climate can change abruptly across the globe – within decades in some instances. Records of “natural” rapid climate change provide an indispensable context for evaluating contemporary anthropogenic inputs to the

environment. The timing and distribution of the present warming trends may match those of previous times, or they may differ in some way explainable only by anthropogenic forcing. A full understanding of the causes and consequences of rapid climate change requires recovery of a global array of high-resolution cores spanning different time intervals. Records of, or proxies for, such events may be preserved in laminated marine sediments, massive corals, and deep-sea sediment drift deposits. In addition, collaboration with the International Continental Drilling Program (ICDP) could result in the recovery of a global array of high-resolution records from marine and lacustrine settings that will provide detailed proxy records of both marine and continental climate change.

3. Processes of Ocean Crust Formation

The formation and evolution of the oceanic lithosphere (which covers more than 50% of Earth's surface) is the dominant process in the chemical differentiation and physical evolution of our planet. This evolution encompasses the transfer and transformation of material and energy from Earth's mantle to the crust, and from the crust to the ocean and atmosphere. Independent of sunlight, the evolving ocean crust supports life in unique subsurface and seafloor habitats that may resemble the earliest of Earth's ecosystems. From its formation until it returns by subduction to the mantle, the oceanic lithosphere interacts with seawater, sequesters surface materials (including water) and recycles them back into the mantle. The potential for IODP to contribute to an improved understanding of the composition, structure, and evolution of the ocean lithosphere is enormous; in fact, recovery of a complete crustal section has been a goal of Earth scientists since the 1950s.

Scientific drilling in oceanic basement has already led to major improvements in our understanding of the ocean crust architecture and of mid-ocean ridge processes. Although the number of deep basement holes is limited, IODP has extended the successes of ODP Holes at 504B and 735B to include two deep holes at complementary sites. Hole U1309D, in slow-spread Atlantic Ocean crust, reached 1415 m below sea floor and recovered a complex series of gabbroic rocks. Hole 1256D, in superfast-spread crust of the eastern Pacific Ocean, reached 1507 m below seafloor and, for the first time, passed

through a complete Layer 2 (pillow basalt and sheeted dike) sequence, into the transition between sheeted dikes and underlying gabbros.

It is now time for IODP to build on these successes and on its unique ability to collect physical and chemical data, and sample fluids, substrates, and micro-organisms below the seafloor. Over the next six years, a priority for IODP will be making significant scientific and technological progress towards the ultimate future goal of the ISP Initiative of a 21st Century Mohole – a complete *in situ* section through oceanic crust, most likely at a fast-spreading mid-ocean ridge. A high priority will be to recover intact and tectonically undisrupted sections of oceanic crust formed at mid-ocean ridges with a variety of spreading rates. [A “variety” means more than two – this hardly seems a feasible goal before renewal.] This not only will be essential to fully understand the architecture of oceanic crust, but also will require the technological developments that will build for the future achievement of a complete crustal penetration.

4. *The Seismogenic Zone and Initiation of Borehole Observatories*

More than 90% of all seismic energy worldwide is released in subduction zone earthquakes. Loss of lives and vast amounts of property and infrastructure have resulted from these earthquakes and associated tsunamis, as tragically demonstrated in the recent 2004 Sumatra earthquake.

Despite the current quantitative knowledge of plate motions monitored by arrays of seismometers, geodetic measurements, and the Global Positioning System, the sudden release of long-term accumulation of strain in the seismogenic zone is not predictable. Rapid advances in far-field observations are revealing more details about how a large earthquake rupture nucleates and propagates over a fault with asperities. Physical models of earthquakes are being developed and tested by laboratory experiments and modeling, but the behavior of these areas remains highly speculative. In trying to understand how, when, and where devastating earthquakes occur, we lack fundamental knowledge of the physical and chemical conditions within the seismogenic zone that change over time and lead up to sudden rupture.

The Seismogenic Zone was identified as an Initiative in the ISP, and IODP has committed to undertaking an unprecedented, comprehensive, multidisciplinary project to investigate the behavior of rocks, sediments and fluids in the seismogenic zone. This will be a priority until 2013. IODP will drill directly through a seismogenic fault at Nankai Trough to characterize the composition, deformation microstructures and physical properties of the rocks at in situ conditions. Downhole logging will augment the characterization of *in situ* physical conditions across the fault. Borehole observatories able to record under high-temperature conditions will be placed across the fault and will provide time-series records of *in situ* fault conditions including pore pressure, temperature, stress changes, and changes in tilt and strain, as well as near-field seismic observations. This project will lead to rapid new progress in understanding the nature of this zone and the earthquake generation mechanism.

PRINCIPLES OF IMPLEMENTATION

The IODP Initial Science Plan identified six principles of implementation for its scientific expeditions:

- Coordinated use of multiple platforms within a single program
- Engineering developments and use of special measurement and sampling tools
- New logging program
- Coordination with observatory science
- Establishing a site survey program
- Cooperation with other initiatives and industry.

While all of these continue to be desirable, the budgetary constraints may not allow them to be implemented at the level initially envisioned. Significant reductions in components of IODP, such as engineering development or establishing a site survey program, are likely for the foreseeable future.

It is estimated that there will be a decrease in operational days for IODP to between 6-8 months per year for each of the large vessels. Variations in the costs of expeditions will result in a trade-off between operational days and the conduct of high priority, expensive science. While acknowledging that there must be consideration of the balance

between priority, cost (both financial and operational), risk, and potential science impact, the program requires a minimum level of continuity in drilling activities in order to sustain community interest and involvement. Based on these considerations, expeditions must be scheduled to conform with the following ***minimum operational requirements***:

- *Chikyu* – average of 7 months per year over a 5-year period (this *must* include riser drilling)
- *JOIDES Resolution* – average of 7 months per year over a 5-year period
- *Mission Specific Platforms* – one every two years.

In addition, IODP must make every effort to develop projects with potential partners (e.g. industry, foreign governments, etc.) that might increase science operational days and/or provide resources to IODP that increase its flexibility in the expeditions that can be accomplished for the remainder of this phase of the program.

2.3 Science Planning Committee – SPC and Operation Task Force – OTF reports

The 10th Meeting of the IODP Science Planning Committee was held at the Coast Hotel, Santa Cruz, USA on August 27–30 2007. A short report of this meeting prepared by Chris MacLeod and Gilbert Camoin is included below.

IODP Science Planning Committee

10th Meeting, 27–30 August 2007

Coast Hotel, Santa Cruz, USA

MEETING AGENDA

1. Introduction
 - 1.1. Call to order and introductions
 - 1.2. Welcome and meeting logistics
 - 1.3. Approve SPC meeting agenda – highlight action items
 - 1.4. Approve last SPC meeting minutes
 - 1.5. Items approved since March 2007 meeting
 - 1.6. SPC procedures and protocol
 - 1.6.1. Terms of reference, Robert's Rules, voting procedures
 - 1.6.2. Conflict-of-interest policy and statements
2. Agency reports (see written reports; questions/updates only)
 - 2.1. MEXT
 - 2.2. NSF
 - 2.3. EMA
 - 2.4. MOST
 - 2.5. KIGAM
3. Implementing Organization (IO) reports
 - 3.1. CDEX
 - 3.2. USIO
 - 3.3. ESO
4. IODP Management International, Inc. (IODP-MI) report
 - 4.1. Activity report
 - 4.2. Nomination of an editorial board for Scientific Drilling
5. OTF Report: IODP expedition scheduling I
 - 5.1. Update on FY07-09 schedule developments
 - 5.2. SPC discussion and potential approval
6. SASEC report
7. SPC review of OTF proposals I
 - 7.1. Objectives of review and procedures
 - 7.2. 621-Full Monterey – status after OTF + SASEC
 - 7.3. OTF proposals with observatory components
 - 7.4. OTF riser programs
 - 7.5. MSP proposals
8. SAS panel reports (see written reports; updates/questions only)
 - 8.1 SSEP (excluding mission proposal reviews)
 - 8.2. SSP
 - 8.3. EPSP
 - 8.4. STP

- 8.5. EDP
- 8.6. IIS-PPG
- 8.7. Hotspot Geodynamics DPG report
- 9. STP report on reduced service options
- 10. FY09/10 engineering development I – EDP rec's
- 11. SPC review of OTF proposals II – categorization of proposals
- 12. Complementary Project Proposals
- 13. Initial Science Plan Phase 2 Focus I
 - 13.1. SASEC draft principles and foci; charge to SPC
 - 13.2. SPC discussion – breakout groups if needed
- 14. Mission proposal review I
 - 14.1. Objectives of review and procedures
 - 14.2. Presentations of mission proposals
 - 14.2.1. Mission Monsoon (713-MP)
 - 14.2.2. Mission Moho (719-MP)
 - 14.2.3. Mission Birth of Ocean (720-MP)
 - 14.3. Summary of SSEP mission proposal review process
 - 14.4. Summary of external panel review process
 - 14.5. Charge to SPC
- 15. IODP FY09/10 scheduling I – OTF options
- 16. ISP Phase 2 Focus II – develop SPC recommendations
- 17. SPC recommendations re STP service reduction options
- 18. FY09/10 engineering development II – SPC prioritization
- 19. Mission proposal review II – SPC recommendations
- 20. IODP FY09/10 scheduling II – SPC recommendations
- 21. Potential CDP designations
- 22. Review of 712-APL
- 23. Other business
- 24. Future meetings
 - 24.1. Liaisons to other panels and programs
 - 24.2. 11th and 12th SPC meetings
 - 24.2.1. March 2008; Europe?
 - 24.2.2. August/Sept 2008; Asia?
- 25. Review of motions and consensus items

REPORT ON IODP SCIENCE PLANNING COMMITTEE (SPC) MEETING, SANTA CRUZ, CA, USA, 27–30 August 2007

Chris MacLeod & Gilbert Camoin

Financial situation and consequences for IODP

It is now recognised that the new fiscal realities facing IODP are such that for the foreseeable future it will be possible to fund only ~7 months of scientific operations per year each on *JOIDES Resolution* and *Chikyu*. In the remaining periods the ships will be used for commercial work, and the IODP Science Advisory Structure (SAS) will have no say in what happens to the ships. Non IODP work could include inter-agency projects (e.g. DOE-Methane hydrates), pure industry work (e.g. geotechnical investigations), technology developments (e.g. testbed, equipment), and industrial-science collaborations.

SPC debated and approved guiding principles for ‘complementary project proposals’ – a possible hybrid mode of collaboration between IODP and outside sponsors, for those external customers who only wished to part-fund operations. Potential such customers were envisaged to be organisations such as governments or government agencies rather than industrial companies. Central to the philosophy of these complementary project proposals is the concept that the core material and data would be treated in an IODP fashion, with similar rules of access to samples and data as with IODP material. In this case the sub-contract would be arranged with IODP-MI rather than with the ship owners/operators themselves. It was, however, recognised that this would probably be seen as a less attractive option than a full charter, and it was quite likely that operations under such conditions might therefore never happen. A working group of SPC members (Ruppel, Camoin, Mori) will examine the evaluation process for such proposals.

Whatever the nature of any commercial contracts negotiated for use of *JOIDES Resolution* and *Chikyu*, it is clear that the non-IODP commercial operations will have considerable bearing on scientific programmes in the future: in terms of requiring short and long term flexibility and greater speed in IODP expedition scheduling; and in dictating the geographical areas of (scientific) operation of the ships. For this reason SPC has informally adopted the Operations Task Force (OTF) suggestion that it defines ‘tier 1’ and ‘tier 2’ proposals among those previously forwarded for possible scheduling, and any more that may be highly ranked by SPC in the future.

Tier 1 proposals are those of the highest strategic importance for IODP as a whole that will be essential in helping achieve the goals of the Initial Science Plan (and assisting renewal), and which should definitely be drilled by 2013. Half of the proposed tier 1 proposals are complex (expensive or long dead time items). 5 or 6 programmes could be scheduled over 3 years.

Tier 2 proposals are those of high scientific merit but which may realistically not all get drilled before 2013. SPC will annually rank those proposals that will be prioritised globally and regionally. Those proposals constitute a pool that provides flexibility to fill in gaps between tier 1 and non-IODP work. Scheduling of tier 2 proposals will depend on budgets, length of non-IODP work etc.

The SPC prioritised the proposals from each ocean basin, identifying one tier 1 proposal in each, so that OTF would have clear guidance as how best to arrange scientific operations around industry contracts wherever the ships might be in between commercial operations.

The SPC supported the recommendation by the Scientific Technology Panel (STP) in the background to STP Recommendation 0708-01 that the expedition science party not be reduced in size.

Operations FY08-09

The riserless scientific ocean drilling vessel (SODV) is currently undergoing a major refit at the Jurong shipyard in Singapore. Its progress can be monitored at: www.iodp.tamu.edu/labs/ship.html. The \$115M allocated for the refit of *JOIDES Resolution* has proved insufficient even for the scaled back improvements recently agreed. In order to complete them and return the ship to an operational state ODL (the ship owners) have invested \$15M into vessel improvement costs, in return for a higher day rate for the improved vessel from FY09 until the current end of the program in 2013. The USIO has now decided not to change the name of the vessel.

In addition to the increase in costs it has become obvious that the refit schedule for *JOIDES Resolution* has slipped by at least 1-2 months, and the ship will not be able to resume operations in March 2008 as planned. SPC approved the OTF request to further revise the FY08 SODV schedule. The Expedition 317 Subduction Inputs/Kumano Basin NanTroSEIZE has now been removed from the SODV schedule, and the proposed Shatsky Rise expedition is also shelved. The first of the Equatorial Pacific expeditions, originally scheduled for March–May 2008 (co-chiefs Pälke & Ahagon), has been put back to September–November 2008, in place of the expedition to the Shatsky Rise. Riserless operations are now scheduled to commence only in May 2008, with what was previously the second Equatorial Pacific expedition (co-chiefs Lyle & Raffi; also including remedial cementing operations at Expedition 301 sites on the Juan de Fuca Ridge). The two expeditions will be sandwiched by the Bering Sea expedition in July–September 2008, and followed by operations in the Canterbury Basin (November 2008–January 2009) and Wilkes Land, Antarctica (January–March 2009).

Mission-specific platform (MSP) operations at the New Jersey Margin (Expedition 313) have been delayed to FY08 from summer 2007 because of the difficulty of chartering an appropriate platform in the right weather window. Planning for an MSP expedition at the Great Barrier Reef (Australia) is under way, and it is hoped that operations there will take place in FY08 or FY09, possibly even before New Jersey.

Phase 1 of the Nankai Trough seismogenic zone experiment (NanTroSEIZE) commences in September 2007 with three riserless operations on Chikyu (Expeditions 314, 315 and 316, September 2007 to February 2008). Inspection, maintenance and non-IODP work is planned for the period February–September 2008. What was to have been Expedition 317 (Subduction Inputs/Kumano Basin) on *JOIDES Resolution* will now probably be conducted on Chikyu at the end of 2008. Riser operations – NanTroSEIZE phase 2 – will be delayed, probably until January 2009, in order to allow full investigation of the riser tensioner problems that became apparent during the riser trials in the shakedown cruises conducted earlier in 2007. All NanTroSEIZE expeditions are related to proposal 603-CDP3 and component proposals.

Future scheduling FY09-10

Previously, at its March meetings, SPC has reviewed and ranked proposals that had been passed to it by the Science Steering & Evaluation Panel (SSEP). The most highly-rated of these proposals had been passed to the Operations Task Force (OTF) for potential scheduling. The proposals were forwarded in two groups: (1) those of the very highest scientific priority, which should remain at OTF until eventually scheduled; and (2) those that were passed on a one-time basis for possible scheduling that year, but which would be returned to SPC for re-ranking at the next March meeting if not selected immediately by OTF for drilling. Because of the lack of IODP operations between late 2005 and mid 2007, the number of unscheduled proposals residing at OTF has grown to a large and unmanageable number (potentially up to 30) and, considering the new fiscal realities of IODP and likelihood of only 6-8 months of science operations per year, it had become clear that reprioritisation is necessary (*vide* SASEC implementation plan above).

At the Santa Cruz meeting, therefore, SPC was asked for the first time to consider the costs of potential expeditions in addition to their scientific merit. SPC therefore re-reviewed those proposals it had previously forwarded to OTF that include observatory components (CORKs) because these are considerably more expensive than 'normal' drilling operations.

For FY09 SPC agreed that OTF should attempt to schedule a combined expedition based upon proposal 505 (Mariana convergent margin, but minus the CORK component; Fryer et al.) and 693-APL (CORK operations at Chamorro seamount, Marianas; Wheat et al.). Proposal 677 (Mid-Atlantic Ridge Microbiology; Edwards et al.) will stay at OTF. All other proposals that include observatory components were returned from OTF to SPC for reassessment and re-ranking (633 - Costa Rica mud mounds, Brueckmann et al.; 537A - Costa Rica seismogenic zone, Vannucchi et al.; 537B - Costa Rica seismogenic zone, Ranero et al.; 553 - Cascadia Margin Hydrates, Riedel et al.; 589 - Gulf of Mexico Overpressures, Flemings et al.). Non-IODP work for the *JOIDES Resolution* should begin mid-May 2009.

SPC voted that *JOIDES Resolution* should head into the Atlantic Ocean for scientific operations in FY10, with Mid-Atlantic Ridge Microbiology (proposal 677-Full) as the top priority tier 1 program. The 2007 March SPC (Osaka) rankings should guide expedition priorities for tier 2 FY10 *JOIDES Resolution* operations in the Atlantic Ocean.

If FY10 *JOIDES Resolution* operations in the Indian Ocean become necessary, the SPC priorities for expeditions are: (1) 595-Full3 (Murray Ridge); (2) 549-Full6 (Northern Arabian Sea Monsoon); and (3) 552-Full3 (Bengal Fan).

The Juan de Fuca Flank Hydrogeology proposal (545-Full3) is the tier 1 choice for FY10 *JOIDES Resolution* operations in the Pacific Ocean; Superfast Spreading Crust (Proposal 522-Full5) is the top-ranked tier 2 choice.

In addition to any new proposals forwarded by the SSEP for SPC review and ranking at its March 2008 meeting, the SPC will review and rank those proposals that were previously forwarded to OTF. The only exceptions would be those that were identified at this meeting as clear group 1/tier 1 proposals, or those that might appear in the FY09/10 schedule options to be approved by the SPC after further OTF schedule development in autumn 2007.

SPC were asked to review the riser proposals currently at OTF in order to determine a scientific priority for Chikyu riser drilling after NanTroSEIZE, or instead of it if it were to be delayed or suspended for some reason. The two riser proposals residing at OTF were assessed: 537B (Costa

Rica seismogenic zone; Ranero et al.) and 595 Indus Fan/Murray Ridge (Himalayan climate-tectonic links; Clift et al.). SPC decided that the Indus/Murray proposal was clearly of higher scientific priority in terms of meeting the goals of the Initial Science Plan. It was noted, however, that difficulty may be encountered in obtaining permission to drill in Pakistani territorial waters and that CRISP-B should not be discounted. The SPC affirmed that the Chikyu FY10 riser programme should be at site NT3-01. A non-riser *Chikyu* expedition should be scheduled in FY10; and the Asian monsoon expedition has been prioritised as the highest alternative programme.

As regards future MSP operations (post New Jersey and Great Barrier Reef), three proposals currently residing at OTF were also re-reviewed by SPC. These are: proposal 548 (Chicxulub impact crater; Morgan et al.); proposal 581 (Gulf of Mexico corallgal banks; Droxler et al.); and proposal 637 (New England hydrogeology; Person et al.). Proposal 637 lacks essential site survey information, and requests for site survey funding from NSF have been declined repeatedly. This proposal cannot be considered for possible operations in the foreseeable future and was therefore returned from OTF to SPC. Proposal 581 was not deemed by SPC to be of sufficiently high priority that it should be kept at OTF – it has never received a particularly high ranking – so will be returned to SPC for re-ranking in March 2008. The scientific excellence of the Chicxulub proposal was recognised by SPC, but the cost of such an operation is prohibitive (at least \$20M). Among the guiding principles in SASEC's draft IODP implementation plan, it is stated that MSP operations should be conducted at least once every two years up until 2013; however, ECORD's budget for operations is currently only ~\$5M per year. SPC therefore recognised that, unless significant external funding is found, it is unlikely that the Chicxulub proposal can ever be scheduled.

Strategic scientific planning

Mission proposals:

The Mission concept was an initiative introduced by IODP-MI a couple of years ago as a proactive mechanism to ensure the strategic goals of Initial Science Plan were met as completely as possible by end of IODP. Missions were envisaged as 'super-proposals' focused on a particular scientific concept and requiring multiple expeditions to multiple places over many years to address.

Mission proposals had been solicited for a 1st April 2007 deadline and three were received by IODP-MI: proposal 713-MP (Mission Monsoon); proposal 719-MP (Mission Moho); and 720-MP (Birth of Oceans Mission). These proposals all contained conventional constituent drilling proposals bundled together with an umbrella overview. They were reviewed by the SSEP and by an external review panel, and then evaluated by SPC in Santa Cruz.

Proposal 713-MP (Mission Monsoon) was not designated as a Mission. However, the SPC concluded that the deep drilling objectives of four proposals (552-Full3 Bengal Fan, 595-Full3 Murray Ridge, 618-Full3 East Asia Margin and 683-Full East Asia Topography and Monsoon) could benefit from detailed scoping at this stage. A detailed planning group (DPG) will be formed to prioritise components of proposal 713-MP (Mission Monsoon). The DPG will: (1) have a timeline of 1 year; (2) be chaired by a non-proponent; (3) prioritise the drilling programmes; (4) address technical issues; (5) include an outreach and education plan; and (6) include a modelling component to help prioritise sites.

Proposal 719-MP (Mission Moho) was not designated as a Mission but SPC requested that the Engineering Development Panel (EDP) works with IODP-MI and the Implementing Organisations to assess the technological needs required to achieve the deep penetrations required for a Mohole.

Proposal 720-MP (Birth of Oceans Mission) was not designated as a Mission.

Given the parlous financial status of IODP it is unclear whether any proposals will ever receive Mission designation in the future.

Complex Drilling Projects (CDP) :

Two proposals were discussed for potential Complex Drilling Project (CDP) designation by the SPC. Proposal 707-Full2 (Sagami Bay Seismic Monitoring; Kobayashi et al.) incorporating component proposals 722-Full2 (Sagami Bay Tectonics and Paleoseismology; Yamamoto et al.) and 723-Full (Sagami Bay Kanto Asperity Network; Kobayashi et al.) was designated as a CDP. However, proposal 694-Full3 (Izu-Bonin-Mariana Arc Evolution; Tatsumi et al.), incorporating component proposals 695-Full (Izu-Bonin-Mariana Pre-Arc Crust; Arculus et al.), 696-Pre (Izu-Bonin-Mariana Deep Forearc Crust; Pearce et al.), 697-Full (Izu-Bonin-Mariana Rear-Arc Crust; Tamura et al.) and 698-Full (Izu-Bonin-Mariana Arc Middle Crust; Tatsumi et al.), was not designated as a CDP.

Initial Science Plan – Implementation Plan

Also concerned with longer-term strategic planning, the SAS Executive Committee (SASEC) had intended to rewrite the IODP Initial Science Plan (ISP) by the end of 2008. In June 2007, however, it instead wrote a draft implementation plan for phase 2 of IODP (2008-2013), which would serve as an Addendum to the ISP, *in lieu* of a complete revision. SPC reviewed this draft and supported its concept and, in general, its content. It sets out the highest priorities for the themes and initiatives in the ISP that they deemed to have the highest potential for major scientific impact prior to planned renewal of IODP in 2013. They set out six guiding principles for selecting expeditions for the 2008-2013 period:

- (1) Likely to have very high scientific impact within the next 5 years
- (2) A necessary precursor for future investigations – building for the future
- (3) Will reach major milestones
- (4) Of high societal relevance
- (5) Demonstrates an integrated and interdisciplinary approach
- (6) Achieves a balance between risk, cost, and science impact.

They also dictated that available platform funds be utilised by the operators in such a way that, over a 5-year period, an average of no less than 7 months per year of operations be scheduled on *JOIDES Resolution* and *Chikyu* (including riser drilling in the latter case), and one Mission Specific Platform (MSP) every two years.

Although they reiterated that the themes and initiatives of the ISP continue to be the drivers of the program in the long term, SASEC recommended four major scientific areas of focus for the period up to 2013:

- (1) The deep biosphere and limits of life
- (2) Rapid and extreme climate change
- (3) Processes of ocean crust formation and a deep crustal section
- (4) The seismogenic zone and initiation of borehole observatories.

USIO RISERLESS VESSEL PLANNING SCHEDULE FOR FY08 and FY09 OPERATIONS
(as of September 2007)

Expedition		Port (Origin)	Dates ^{1,2}	Total Days (Port/Sea)	Days at Sea (Transit/Ops)	Co-Chief Scientists	Alliance Contact(s)
Deployment, mobilization, sea trials, transit	N/A	Singapore	1 April - 18 May 08 ¹	47 (15/32)	25/7	N/A	Jack Baldauf
Equatorial Pacific/JdF ³	317	Honolulu	18 May – 18 July	61 (7/54)	19/35	Mitch Lyle Isabella Raffi	Cédric John
Bering Sea	318	Astoria ⁴	18 July – 17 September	61 (3/58)	12/46	Kozo Takahashi Christina Ravelo	Carlos Zarikian
Equatorial Pacific	319	Tomakomai	17 September – 17 November	61 (6/55)	26/29	Heiko Pälke Naokazu Ahagon	Kusali Gamage
Canterbury	321	Tahiti	17 November – 17 January 09	61 (5/56)	11/45	TBD	Jörg Geldmacher
Wilkes Land ⁵	323	Wellington	17 January – 22 March	64 (5/59)	16/43	TBD	Adam Klaus
Mariana ⁶	TBN	Wellington	22 March – 22 May	61 (5/56)	18/38	TBD	Jay Miller

¹ Dates for expeditions may be adjusted pending final vessel delivery date from shipyard

² The start date reflects the initial port call day. The vessel will sail when ready.

³ The expedition will consist of operations in both the Equatorial Pacific (30 days) and Juan de Fuca (5 days). Following Equatorial Pacific operations, scientists will disembark in San Diego on or about 7 July prior to Juan de Fuca operations.

⁴ The port of call is tentative. Note that the port call is split between San Diego (2 days) and Astoria (3 days).

⁵ Wilkes Land activities include completion of the Adelie Drift APL.

⁶ Although the Mariana expedition is currently shown, the actual implementation of this expedition is awaiting final FY09 budget guidance.

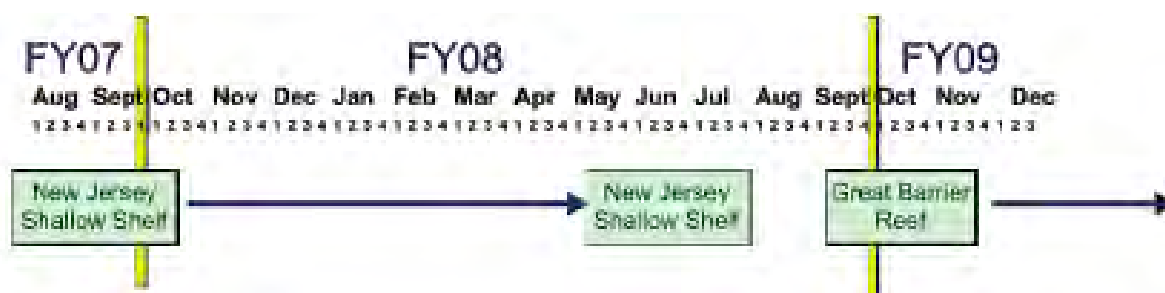
PROPOSED CHIKYU SCHEDULE FOR FY08 and FY09 OPERATIONS
(as of July 2007)

2007											
US FY07									US FY08		
JP FY H18			JP FY H19								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ODS (Oversea's Drilling Shakedown)							Dock		IODP:NanTroSEIZE Stage1 Riserless		

2008											
US FY08									US FY09		
JP FY H19			JP FY H20								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
IODP Stage1/RL		Dock & Inspection			Non-IODP				IODP:NanTroSEIZE Stage 1 Riserless		

2009											
US FY09									US FY10		
JP FY H20			JP FY H21								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
IODP:NanTro Stage2/Riser		Non-IODP			IODP:NanTro Stage2/Riser				IODP R/L ??		

PROPOSED ESO OPERATIONS FOR FY08 and FY09
(as of July 2007)



2.4 IODP-MI Management Forum

IODP-MI Management Forum tackles issues that concern IODP as a whole. It reviews and offers advice on policies, procedures, and current and future activities. The IODP Management Forum, while representing the views of the various separate entities that comprise IODP, is also able to express a joint perspective on the program.

The IODP-MI Management Forum includes key personnel from IODP-MI, the Heads of the Implementing Organizations, the Chairs of the Advisory Committees of the National Program Offices, the SPC Chair, and the SASEC Chair.

The meeting frequency is one annual two-day meeting in the form of a « retreat ». « ...*the Forum Retreat has established both personal connections and a venue for free flow of ideas and information among the IODP leadership. We are optimistic that future meetings will continue the tradition of constructive dialog established at Frascati.* » (from Mike Coffin after the Frascati Management Forum).

The previous IODP-MI Management Forums were held in Frascati, Italy (May 24-26, 2005), Salt Lake City, USA (March 29–30, 2006) and Nikko, Japan (March 28–29, 2007).

Gilbert Camoin has been contacted by Manik Talwani, IODP-MI Chair, to organize the next IODP Management Forum which should be held in southern France late March 2008. The discussion topics are yet to be defined.

(August 08, 2007)

Report of the 8th SSEP Meeting (Houston/USA, May 29 – June 01, 2007)

ECORD participants of the meeting: Jan Backman (Sweden), Timothy Elliott (UK), Frederique Eynaud (France), Jens Konnerup-Madsen (Denmark), Achim Kopf (Germany), Bénédicte Menez (France), Heiko Pälke (UK), Ruediger Stein (Germany, co-chair).

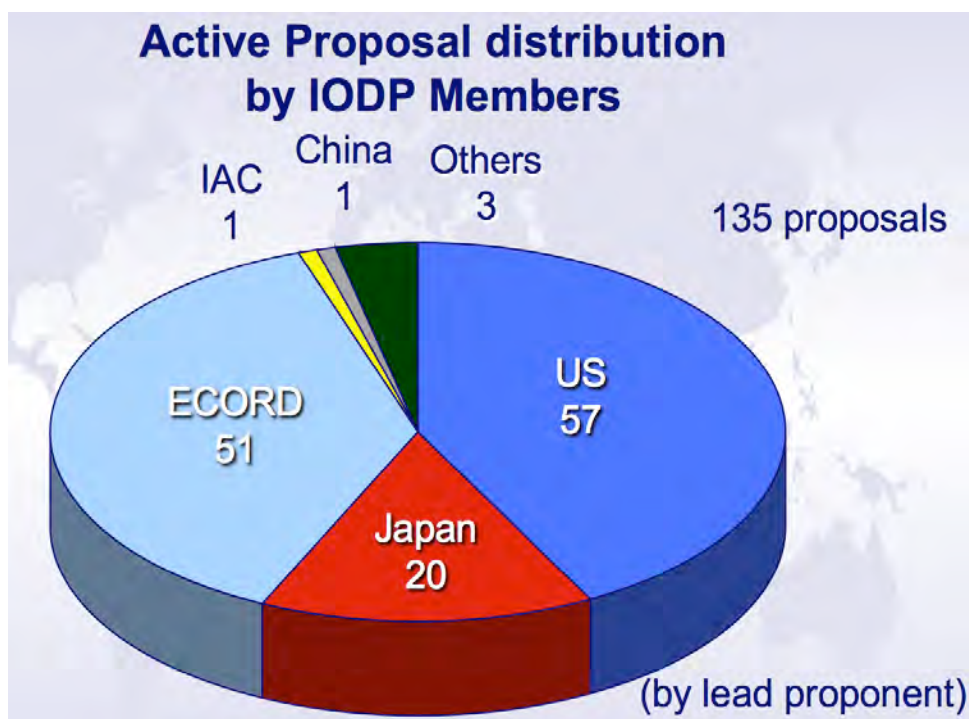
The 8th Meeting of the Science Steering and Evaluation Panel (SSEP) has been held in Houston/USA from May 29 to June 01, 2007.

Reports and Meeting overview

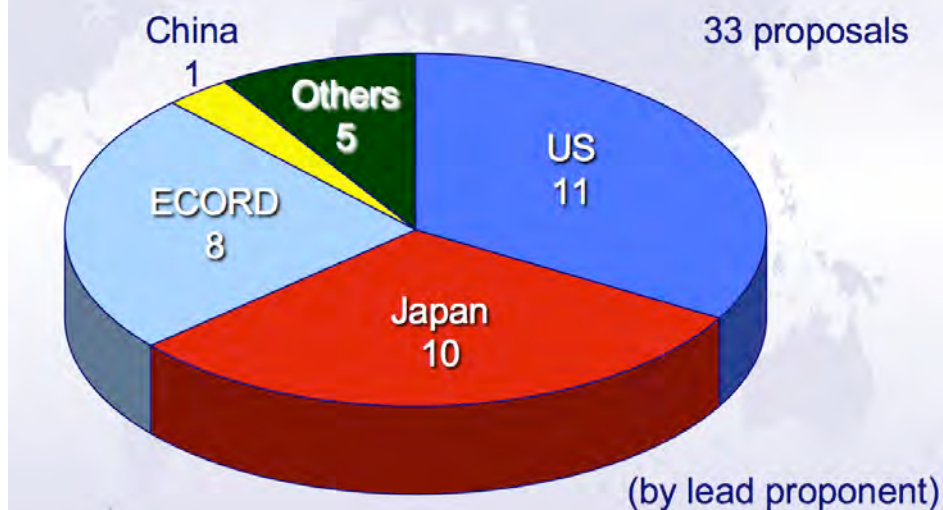
Following the reports of IODP-MI and the other SAS panels, Ruediger Stein reviewed the SSEP mandate, conflict-of-interest rules, confidentiality of proposals, proposal review process, purpose of breakout sessions, the purpose and content of general sessions, the content of final reviews for proposals forwarded to SPC, and 5 star grouping system. Mike Underwood gave an introduction to the Mission Concept, and outlined the SSEPs role in Mission implementation, the goals and definitions of missions, the review mechanism, and SSEPs evaluation responsibilities.

Proposal review

According to the IODP-MI Report, in total 135 active proposals are in the system, 51 of them have ECORD lead proponents:



Proposal distribution by IODP Members 1 April 2007 submission



	Status	Proposal No	Short Title	Lead Proponent	Country	Theme
1	re Full	514-Full6	Maldives Sea Level	Droxler	USA	2
2	re Full	567-Full4	South Pacific Paleogene	Rea	USA	2
3	re Full	601-Full3	Okinawa Trough Deep Biosphere	Takai	Japan	1
4	re Full	623-Full4	Ontong Java Plateau	Neal	USA	3
5	re Full	634-Full2	Antarctic Circumpolar Current	Barker	UK	2
6	re Full	656-Full4	Belize Margin Paleoclimate and Tectonics	Droxler	USA	2
7	re Full	662-Full3	South Pacific Gyre Microbiology	D'Hondt	USA	1
8	re Pre	671-Pre2	Campi Flegrei Caldera	Sacchi	ECORD (Italy)	1(&3)
9	new Full	683-Full	East Asia Topography and Monsoon	Wang	China	2
10	new Full	686-Full	Southern Alaska Margin 1: Climate-Tectonics	Jaeger	USA	2
11	re Full	694-Full3	Izu-Bonin-Mariana Arc Evolution	Tatsumi	Japan	3
12	new Full	695-Full	Izu-Bonin-Mariana Pre-Arc Crust	Arculus/Fujioka	Australia	3
13	new Full	697-Full	Izu-Bonin-Mariana Reararc Crust	Tamura	Japan	3
14	new Full	698-Full	Izu-Bonin-Mariana Arc Middle Crust	Tatsumi	Japan	3
15	new Full	703-Full	Costa Rica SeisCORK	Brown	USA	1
16	new Full	704-Full	Sumatra Seismogenic Zone	Goldfinger	USA	1
17	re Full	706-Full2	Kerguelen Large Igneous Province	Coffin	Japan	3 (&2)
18	re Full	707-Full2	Sagami Bay Seismic Monitoring	Kobayashi	Japan	1
19	re Pre	709-Pre2	Pacific Mesozoic Extreme Environment	Ohkouchi	Japan	2 (&3)
20	new APL	712-APL	Sediment-CORK Trial Installation	Davis	ECORD (Canada)	1
21	new Mission	713-MP	Mission Monsoon	Clift	ECORD (UK)	2
22	new APL	714-APL	Gulf of Cadiz Paleooceanography	Lobo	ECORD (Spain)	2
23	new Pre	715-Pre	Mediterranean Landslides	Camerlenghi	ECORD (Spain)	1 (&3)
24	new Full	716-Full	Hawaiian Drowned Coral Reefs	Webster	Australia	2 (&3)
25	new Pre	717-Pre	Western Australia Margin Magmatism	Müller	Australia	3
26	new Pre	718-Pre	Pacific Plate Petit Spot Volcanism	Hirano	Japan	3
27	new Mission	719-MP	Mission Moho	Ildefonse	ECORD (France)	3
28	new Mission	720-MP	Birth of Oceans Mission	Hopper	USA	3
29	new APL	721-APL	Bering Sea Sub-millennial Climate	Cook	USA	2
30	new Full	722-Full	Sagami Bay Tectonics and Paleoseismology	Yamamoto	Japan	1
31	new Full	723-Full	Sagami Bay Kanto Asperity Network	Kobayashi	Japan	1
32	new Full	724-Full	Gulf of Aden Faunal Evolution	deMenocal	USA	2
33	new Full	725-Full	NE Atlantic Volcanic Rifted Margin	Huisman	ECORD (Norway)	3
34	external review	556-Full4	Malvinas Confluence	Wefer	ECORD (Germany)	2
35	external review	669-Full2	Walvis Ridge Hotspot	Sager	USA	3

A total of 35 proposals were reviewed during the meeting that include new external reviews available for 2 proposals. Eight of the proposals discussed during this meeting had leading proponents from ECORD members. Panel members were subdivided into three breakout sessions for detailed discussions of the proposals: Breakout Session Theme 1: Faults/Fluids (chaired by Ruediger Stein); Breakout Session Theme 2: Paleoclimate/oceanography (chaired by Ryuji Tada); Breakout Session Theme 3: Solid Earth/Petrology (chaired by Barbara John).

As result of the SSEP's review of proposals, the dispositions are as follows:

Pre-Proposal: request Pre2 Proposal = 2 Pre-Proposal: request Full Proposals = 1 Full Proposal: forward to SPC = 2 APL: forward to SPC = 1 Full Proposal: forward to SPC for CDP approval = 2 Full Proposal: send for External Review = 5 Full Proposal no action needed = 1
Full Proposal: request revision = 11 Full Proposal: request new submission = 3 Pre Proposal: request new submission = 2 APL: request new submission = 2 Mission proposal: mission designation not necessary = 3

All decisions were reached by consensus.

Discussion of Mission proposals

Three Mission proposals (713-MP Mission Monsoon, 719-MP Mission Moho, 720-MP Mission Birth of Oceans) were submitted by the deadline to be considered at the SSEP meeting. The SSEP was charged to recommend to SPC if Mission Proposals warrant Mission designation based on their definition as 1) intellectually integrated and coordinated drilling strategy, 2) originating from the scientific community, 3) address a significant aspect of an IODP Science Plan theme over an extended period, and 4) merits **urgent** promotion in order to achieve overall IODP program goals. Breakout group discussions on Mission proposals were led by 5 assigned watchdogs and followed the review procedure similar to other ordinary proposals except the evaluation step which focused on whether the proposals satisfied the four criteria required to satisfy Mission designation. In the joint session discussion, the three mission proposals were evaluated again based on the Mission designation criteria to assure the same criteria were applied to all the three proposals. Mission designation was deemed unnecessary in each case, by consensus of the full panel.

During discussion of the 713-MP (Mission Monsoon) proposal it was recognized that the four proposals dealing with the Asian Monsoon and Tibetan Uplift History, all proposals reviewed very positively during earlier SSEP meetings, need further coordination, organization and prioritization. This can be best achieved by forming a Detailed Planning

Group (DPG) to develop an optimal plan (including drilling, proxies to be used, post-cruise science, etc.) for addressing the main objectives of research.

Other topics

- New ECORD co-chair (replacing Ruediger Stein) : SSEP recommends that SPC consider Heiko Pälike (UK) for appointment as the next Co-Chair of SSEP.
- 9th SSEP Meeting tentatively scheduled for November 12-15, 2007 (Bordeaux/France)
- 10th SSEP Meeting (May 2008) in Asia (place open for discussion)
- Resolutions were presented thanking outgoing SSEP members for their years of dedication: John Chen, Jerry Dickens, Jeff Gee, Makoto Ito, Zhimin Jian, Juli Morgan, Ruediger Stein, Lori Summa, and Mike Underwood.

**EMA-ECORD report
ESSAC meeting, Granada 19-20/10/2007**

1) ECORD council

As of Oct 1st, Bruno Goffé (France) is the ECORD council chair, Severino Falco-Morales (Spain) the incoming vice-chair, and Raymond Schorno the second vice-chair.

The last council meeting was held in Den Haag, June 7-8

Summary of the meeting is available on the ECORD website

<http://www.ecord.org/rep/council11-rep.html>

The next meeting is scheduled in Madrid, Oct 22-23.

Among the decisions made at the last council meeting, the following are particularly relevant to ESSAC :

- All the nominations proposed by ESSAC were approved
- The Council is willing to continue funding ESSAC activities such as summer schools, distinguished lecture series... For FY08, the support budget proposed by G. Camoin, as well as 25 000 € to support summer schools in 2008 have been approved. The additional budget for other activities will be discussed at the next council meeting.
- The ECORD council has set up a « vision group » to develop a strategy for the future of ocean drilling in Europe, after the end of IODP. This group is composed of : R. Schorno, B. Goffé, S. Winkler-Nees, C. Mével, C. Franklin and U. Høeberg (ECORD executive), D. Evans (ESO) and G. Camoin (ESSAC). Input from the science community, through ESSAC, will be of great importance.

2) ECORD funding situation

The major challenge for ECORD during this past year was to meet the 60% increase of the participation unit (P.U.), starting in FY08. The P.U. increases from 3.5 to 5.6 M\$. The funding situation for FY08 and beyond is not yet completely sorted out, but is encouraging. Five countries have indicated that they will not be able to increase their contribution in FY08 : Denmark, Ireland, Finland, Belgium and Canada. However, Canada is working on increasing its contribution beyond FY08. A proposal has been submitted to NSERC, to raise the contribution to 500 000 \$ from FY09. Denmark is conducting an evaluation of its participation to ECORD/IODP to make a decision on its level of contribution. The raise is still pending in Iceland, Italy, Portugal. All the remaining countries will meet the increase in FY08. This is excellent news because it includes in particular the three major contributors. Moreover, Spain will increase more than 60%, to better reflect the size and involvement of the scientific community. At this stage, ECORD will be able to pool at least 21 M\$ in FY08. This level does not yet meet with the requirement in the Memorandum signed with the Lead Agencies, however : 22.4 M\$, 3 in SOC's and 1 in POC's.

The cost of operating MSPs is more expensive than initially envisioned, as a result of the high demand for all activities related to oil industry. Therefore, given the projected ECORD POC budget, it seems unlikely that ECORD will be able to fund one MSP operation per year. Moreover, due to fiscal realities, very expensive operations will be out of reach.

3) Relations between ECORD and the Lead Agencies

A delegation of ECORD (C. Mével, B. Goffé and M. Kullin) met with the Lead Agencies on May 15th, to discuss various problems, in particular the flow of information within IODP.

The meeting was very open and useful. There are still a number of uncertainties in the way the programme will be run in the future because of the necessity for the two drillship to do commercial work.

4) Perspectives within the European Commission 7th Framework Programme

The **ECORDnet** project, initially scheduled to end on Nov 30, 2007, has been extended to August 31st 2008. The question on what happens next is still pending. The EC has made the strategic decision to issue no call for ERAnets in Environment in 2008. The ECORD council hopes that there will be a possibility to apply for an ERAnet + in 2009, but the decision is not yet made.

Following the workshop in Naples in June 2006, a foresight paper « **The Deep Sea Frontier : science challenges for a sustainable future** » has been published by the European Commission. It can be downloaded from the ECORD website :

<http://www.ecord.org/enet/ecord-net.html#dsf>

As a result of this initiative, a « coordination action » proposal lead by Phil Weaver (NOC) was submitted. To the EC. Unfortunately it was not funded. A meeting of the DSF steering committee is being organized to discuss about future actions.

The Aurora Borealis project (multidisciplinary research vessel for the polar regions, with drilling capabilities), initiated by the Alfred Wegener Institute (Germany) is moving ahead. It is now listed in the European Strategy Forum for Research Infrastructures (ESFRI) roadmap for environmental sciences. The proposal to support the preparatory phase submitted to the EC last May by the ESF Polar Board will be funded. Negotiations are ongoing. ECORD is involved in this proposal. The Aurora Borealis could be contracted as an MSP in polar areas.

ECORD was involved in the « Aberdeen declaration » signed at the EuroOCEAN 07 meeting in Aberdeen last June in support of an « integrated European Marine and Maritime science, research, technology and innovation strategy.

<http://ec.europa.eu/maritimeaffairs/eurocean2007.html>

Although science is only a small part of it, it is important to be visible there.

ECORD will be also represented at the the conference “**The Role of Marine Sciences in Ocean Sustainability and Global Change**” to be held in Lisbon (Portugal) on 8 October 2007 in the frame of the Portuguese EU Presidency.

5) Outreach Activities

ECORD will be present at the the **IODP booth at the Fall AGU** meeting in San Francisco, Dec 2007. There will be also an **IODP booth at the IUGC meeting** in Oslo, Aug 9-14th 2008.

ECORD Newsletter #9 will be published mid-October.

NWO, as part of its ECORDnet deliverable, is preparing a brochure on the role of ESSAC.

We are also considering publishing a « glossy brochure » on the achievements of ECORD during the first phase of IODP and on future perspectives. Input from ESSAC will be very important.

Catherine Mével, 24/7/2007

ESO Report for ESSAC

Granada, Spain, October 2007

Tahiti Sea Level – Expedition 310

The post-expedition meeting is to be held in Tahiti in November 2007, and tracking of post-expedition research output is ongoing.

New Jersey Shallow Shelf - Expedition 313

Planning had been continuing for this expedition with the expectation of a 2007 start. Originally the start was to be in mid-May, but there was gradual and continued slippage of the start date. A satisfactory geotechnical survey was completed by Alpine Ocean Seismic Survey Inc in early May after lengthy weather delays, and a permit was obtained from the National Marine Fisheries Service (NMFS) to carry out VSP work. Outreach and offshore staffing plans were also well advanced.

Regrettably, after the start date slipped to mid-August it was decided that continuing the expedition into the late autumn/early winter was not a viable option. Key factors were the potential loss of drilling time, platform supply risks, safety issues and the open-ended financial risk associated with a return transit to the Gulf of Mexico at that time of year. The Co-chiefs were immediately informed of the decision, followed by the Science Party and PMOs, before the information was more-widely distributed.

At the time of writing ESO is in discussion with DOSECC to prepare plans for 2008.

Future expeditions

Planning is proceeding for the Great Barrier Reef Expedition with a view to implementation in Sept-Nov 2008 or 2009. This is subject to satisfactory site survey work in September-October 2007, and SSP and EPSP approval. A drilling permit application has been made to the Great Barrier Reef Marine Park Authority, and ESO are presently in discussion with the Authority regarding aspects of the permit. A tender notice for a platform has been placed in the Official Journal of the European Union.

Following the August SPC meeting, there are no other MSP proposals residing with the Operations Task Force, so there is a need for high-quality MSP proposals to rise through the SAS system.

Dan Evans
ESO Science Manager
21 September 2007

3.3 National Office reports

Following Menchu Comas' suggestion at the 7th ESSAC meeting in Naples regarding a general discussion on ESSAC matters in an informal – and unminuted – manner, it was agreed that it would be useful to be able to share experiences of, for example, how best to get information effectively to countries' scientific communities, or of difficulties encountered, and so on.

Such a session will be scheduled during the meeting.

4.1.1 NanTroSEIZE/Equatorial Pacific staffing update

Since the ESSAC #8 meeting in Iceland in May 2007 a substantial number of changes to the NanTroSEIZE and Equatorial Pacific expedition staffing have had to be made. A couple of vacancies remaining at that time were filled on the basis of recommendations given by the ESSAC committee to MacLeod. Other changes were necessitated by the cancellation of the SODV NanTroSEIZE Kumano Basin/Subduction Inputs expedition, and still more because a number of applicants declined the invitation to participate or (in one or two cases) had their support withdrawn by their national offices.

MacLeod consulted extensively with the operators (Shin'ichi Kuramoto at CDEX and Adam Klaus at the USIO) over the period since the last ESSAC meeting to assist them in trying to fill vacant ECORD berths. In all of these cases the need to find applicants with very specific areas of expertise was paramount.

As far as possible scientists were reassigned from the cancelled Kumano Basin/Subduction Inputs expedition. This proved possible in four instances: Kopf [Ger] to #315; and Strasser [Switz, now Ger], Claesson [Swe] and Riedinger [Ger] to #316. For other berths, replacements were chosen from the original applicant lists whenever the appropriate expertise was available, mostly following specific requests for individuals identified by the co-chiefs or project management team. Only in a couple of instances was MacLeod asked to go outside the applicant pool and solicit entirely new applications from the ECORD science community; once again the new nominees were suggested by the co-chiefs.

In all of the above activities the nationality of the replacement scientist had very much to be a secondary consideration. This has skewed the resultant ECORD internal quotas to some extent, but is an inevitable consequence of the need to fill the final berths on the expeditions with people having very specific expertise. For this reason delegates need to be aware that it is unlikely (nor is it their prerogative to insist) that a replacement for a withdrawn candidate will come from the same country. The need to retain flexibility with respect to quotas is particularly important for the later stages of the staffing process, the goal being to even them out over the longer term. Note that this imbalance can be irksome both ways round: both for those under-quota countries, whose scientists have either withdrawn or do not have applicants of the required expertise; and for those over-quota, who have been asked to support applicants who are not a high national priority yet will count against their tally.

Final science party, Expedition 314:

Tudge [UK]
Bourlange [Fr]
Conin [Fr]
McNeill [UK]
Jurado [Sp] (*filled vacant slot*)

Final science party, Expedition 315:

Lallemant [Fr]
Calves [UK]
Famin [Fr]
Behrmann [Ger]
Henry [Fr]

Schmidt-Schierhorn [Ger]
Kaksonen [Fin]
Boeckel [Ger] (*replacing Kandilarov [Nor] who withdrew*)
Kopf [Ger] (*replacement for Géli [Fr] who withdrew*)

Final science party, Expedition 316:

Nicholson [UK]
Strasser [Ger, ex-Switz] (*replacing Stegmann, who was required to withdraw by IODP Germany*)
Fabbri [Fr]
Louis [Fr]
Girault [Switz]
Claesson [Swe] (*replacing Hensen [Ger] who withdrew*)
Riedinger [Ger]

Final science party, Equatorial Pacific II, now Expedition 317:

Raffi [It]
Sluijs [Neth]
Dezileau [Fr] (not yet confirmed) (*replacing Sabatier [Fr]*)
Lear [UK]
Backman [Swe]
Holbourn [Ger]
Romero [Sp]

Final science party, Equatorial Pacific I, now Expedition 319:

Pälike [UK]
Wilson [UK]
Westerhold [Ger]
Jackett [Switz] (*replacing Dezileau [Fr]*)
Gussone [Ger]
Bown [UK] (*replacing Agnini [It]*)
Dunkley-Jones [UK]
Edgar [UK] (*replacing Anthonissen [Nor] who withdrew*)
Fitch [UK] (*replacing Schmidt-Schierhorn [Ger] who withdrew*)

4.1.2 Bering Sea staffing

Fifty-eight applications for Expedition 318 (Bering Sea) were received on-line via the ESSAC web site. Five of these were ineligible: one each from India, Ecuador and Colombia, and two from Poland. This left fifty-three applications for the eight ECORD berths, which makes it the most competitive IODP expedition so far. Although ESSAC has previously been asked by ECORD Council and EMA to consider applications from non-ECORD European countries, the (Cardiff) ESSAC Office decided it was not appropriate to give up an ECORD berth for one of the Polish applications. Nevertheless, MacLeod forwarded on the application of Rafal Szianawski – by far the best of the applications – to IODP-MI president Manik Talwani. Talwani has been keen to implement an IODP-MI level initiative to put non-member country scientists on some expeditions, and has asked the USIO to consider this for Expedition 318.

The CVs and application forms for each of the ECORD applicants, together with reference/support letters as and when they were received, were posted in the protected area of the ESSAC web site. ESSAC delegates were asked to review the applications and send their prioritisations of the candidates (from zero- (lowest) to three-star (highest)) to the ESSAC Office. Twelve of the seventeen ESSAC delegates responded to the request.

The applications and the compiled prioritisations were considered by the ESSAC Staffing & Nominations sub-committee. The deadline for sending an agreed list to the USIO was 15th October 2007. An oral report of the prioritisation will be given at the meeting.

4.1.3 Canterbury Basin and Wilkes Land staffing

On 30th September 2007 IODP-MI issued a call for applications to sail on riserless (*JOIDES Resolution*) Expeditions 321 (Canterbury Basin, New Zealand) and 323 (Wilkes Land, Antarctica). The deadline for receipt of applications (via the ESSAC web site) for both expeditions is 30th November 2007. Applications plus prioritised lists of nominations are to be forwarded to the USIO by 1st February 2008 for Expedition 321 and 1st March 2008 for Expedition 323. Delegates are urged to make every effort to publicise these expeditions in their own countries and encourage applications.

INTEGRATED OCEAN DRILLING PROGRAM

CALL FOR APPLICANTS:

Canterbury Basin Sea Level Expedition Wilkes Land Paleoceanography Expedition

The Integrated Ocean Drilling Program is currently accepting applications for scientific participants on two drilling expeditions in the Southwest Pacific and Southern Oceans: Canterbury Basin Sea Level and Wilkes Land Paleoceanography.

Canterbury Basin Sea Level Exp. (Nov. 2008-Jan. 2009): Based on IODP Proposal 600-Full, this expedition aims to understand the relative importance of global sea level (eustasy) versus local tectonic and sedimentary processes in controlling continental-margin deposits since the Oligocene.

Wilkes Land Paleoceanography Exp. (Jan.-March 2009): Based on IODP Proposals 482-Full3 and 638-APL2, this expedition will investigate the long-term record of Antarctic glaciation and its relationship with global sea level, paleoclimate and paleoceanographic changes.

Summaries of the planned drilling programs and the current expedition schedule are available at **<http://iodp.tamu.edu/scienceops>**. The expedition schedules, dependent on the completion date of the conversion of the drillship, *JOIDES Resolution*, are subject to change.

Prospective participants should apply to their respective IODP Program Member Office (see **www.iodp.org/program-member-offices**) by the APPLICATION DEADLINE, **Nov. 30, 2007**. IODP Program Member Offices will forward applications of nominated scientists to the United States Implementing Organization (USIO), which is responsible for staffing these expeditions. The USIO will work closely with the co-chief scientists and Program Member Offices to maximize the scientific output while balancing member country staffing quotas. For more information, visit **www.iodp.org**.



IODP
INTEGRATED OCEAN
DRILLING PROGRAM

4.2 Sub-committee report

The Staffing & Nominations sub-committee is made up of MacLeod (coordinator), Camoin, Wolff-Boenisch, Abrantes, Brinkhuis, McKenzie and Swennen. A brief report of their activities to date will be presented.

ECORD Representatives on IODP Committees and Panels

Science Advisory Structure Executive Committee (SASEC)

Gerold Wefer	Germany	gwefer@marum.de	Jul 06 - Jul 09
Michael Bickle	UK	mb72@esc.cam.ac.uk	Jul 06 - Jul 09

Alternates :

Edouard Bard	France
Helmut Weissert	Switzerland

Science Planning Committee (SPC)

Jan Behrmann	Germany	jbehrmann@ifm-geomar.de	Mar 07 - Aug 10
Gilbert Camoin	France	gcamoin@cerege.fr	Mar 07 - Aug 10
Chris MacLeod	UK	macleod@cardiff.ac.uk	Mar 03 - Aug 07
Rolf Pedersen	Norway	rolf.pedersen@geo.uib.no	Oct 05 - Mar 08

Alternates :

Kathy Gillis	Canada
Jose Monteiro	Portugal
Julian Pearce	UK

Science Steering and Evaluation Panel (SSEP)

Jan Backman	Sweden	backman@geo.su.se	May 05 - Nov 07
Timothy Elliott	UK	tim.elliott@bris.ac.uk	Nov 06 - May 09
Achim Kopf	Germany	akopf@uni-bremen.de	Nov 06 - Nov 09
Frédérique Eynaud	France	f.eynaud@epoc.u-bordeaux1.fr	Nov 05 - May 08
Benedicte Menez	France	menez@ipgp.jussieu.fr	May 06 - Nov 08
Jens Konnerup-Madsen	Denmark	jenskm@geol.ku.dk	Nov 05 - May 08
Rüdiger Stein (co-chair)	Germany	rstein@awi-bremerhaven.de	May 04 - May 07
Heiko Palike	UK	heiko@noc.soton.ac.uk	May 07 - May 09

Alternates :

Ulrich Bleil	Germany
Jon Blundy	UK
Elisabetta Erba	Italy
Nalan Koç	Norway
Luis Menezes Pinheiro	Portugal

Scientific Technology Panel (STP)

Nathalie Vigier	France	nvigier@crpg.cnrs-nancy.fr	Feb 08 - Jul 11
Georges Gorin	Switzerland	Georges.gorin@terre.unige.ch	Jul 07 - Dec 09
Mike Lovell (Chair)	UK	mike.lovell@le.ac.uk	Jan 06 - Jul 08
Warner Brueckmann	Germany	w.brueckmann@ifm-geomar.de	Jul 07 - Dec 09

Alternates :

Douglas Schmitt	Canada
Silvia Spezzaferri	Switzerland

Site Survey Panel (SSP)

Gilles Lericolais	France	gilles.lericolais@ifremer.fr	Feb 07 - Jul 09
Christoph Gaedicke	Germany	gaedicke@bgr.de	Feb 07 - Jul 09
Roger Searle	UK	r.c.searle@durham.ac.uk	Feb 04 - Jul 07
Holger Lykke-Andersen	Denmark	hla@geo.au.dk	Feb 07 - Jul 09

Alternates :

Luca Gasperini	Italy
Michele Rebesco	Italy
Daniel Ariztegui	Switzerland

Environmental Protection and Safety Panel (EPSP)

Michael Enachescu	Canada	michaele@mun.ca	Dec 06 - Jun 09
Philippe Lapointe	France	philippe.lapointe@total.com	Dec 06 - Jun 09
Bramley Murton	UK	bjm@soc.soton.ac.uk	Jun 04 - ?
Dieter Strack	Germany	ddhstrack@aol.com	Dec 03 - ?

Alternate :

Jean Mascle	France
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Engineering Development Panel (EDP)

Roland Person	France	roland.person@ifremer.fr	Jan 06 - Jun 08
Maria Ask	Sweden	maria.ask@gfz.postdam.de	Jun 07 - Jan 10
Lothar Wohlgemuth	Germany	wohlgem@gfz-potsdam.de	Jun 07 - Jan 10
John Thorogood	UK	john.thorogood@uk.bp.com	Jun 06 - Jan 09

Alternate :

Daniel Ask	Sweden
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THE 2007 IODP-ECORD URBINO SUMMER SCHOOL IN PALEOCLIMATOLOGY (USSP)

To promote the integration of field data and modeling results in the next generation of paleoclimatologists, the USSP Consortium and teacher pool (Table 1a, b) organized the 4th annual IODP-ECORD Urbino Summer School in Paleoclimatology during July 18 through August 3 in Urbino, Italy. The USSP brought together 25 world experts in paleontology, palaeoceanography, palaeoclimatology, and geochemistry, including many past and future ODP/IODP participants, to lecture and mentor 55 typically first-year graduate students from 25 nations (Table 2). This report summarizes the USSP in terms of structure and impact, support and financing, and ongoing planning for its next offering.

USSP 2007 Structure and Impact – The USSP 2007 provided an integrated student-centered program comprised of (1) integrated topical lectures by internationally recognized scientists; (2) student-centered data-rich exercises, investigations, and presentations on field data and modeling results; (3) a regional field excursion to classic Cretaceous and Cenozoic sections, and (4) intensive discussions of specific palaeoclimate topics in small student working groups facilitated by dedicated instructors. The USSP 2007 schedule is presented in Table 3. In addition, many instructors gave informal presentations on their latest, often unpublished, field and modeling results, providing students with an excellent opportunity to experience the cutting edge of scientific progress (including some vigorous dissenting responses by colleagues!). Student 2007 course evaluations assessed USSP 2007 as extremely positive.

USSP Support and Financing – As in past years, the Faculty of Sciences of the Università degli Studi di Urbino hosted the program, providing a large hall for lectures, smaller rooms for student working groups, and computer and library access to support student-centered investigations. Student tuition was set at an economical 550e, due in large part due to generous sponsorship by (1) the Netherlands Darwin Center for Geobiology, (2) the Institute for Marine and Atmospheric Sciences Utrecht (IMAU), (3) the Netherlands Research School for Sedimentary Geology (NSG), (4) the International Marine Past Global Change Study Group (IMAGES), (5) the European Consortium for Ocean Research Drilling (ECORD), (6) the universities of Urbino and Utrecht, and (7) the Province of Pesaro and Urbino. Additional generous support allowed the USSP to offer 14 student fellowships (i.e., five ECORD, two IMAGES, five IODP-UK, three USSP; Table 2). The collective support of these institutions is gratefully acknowledged. All institutional support and student tuition is used to fund travel and lodging for the USSP instructors, who freely donate their valuable time and effort to organize and produce the USSP program. Frugal budgeting to minimize student costs and maximize instructor support has led to a small standing deficit of ~6K euros (Table 4).

USSP 2008 Ongoing Planning – For our 2008 offering, we have received, and gratefully acknowledge similar levels of financial support from the above institutions. We are currently revising the program structure to include more IODP/JOI elements, including incorporation of the ‘School of Rock’ by Mark Leckie (UMass. Amherst, USA) and others at the start of the program and an integration of student-centered investigations within the broader structure of a “virtual IODP leg”. We are also seeking additional financial sponsorship, notably from non-European IODP sources, to reduce tuition levels, increase student enrollment, and maintain our low instructor to student ratio.

obo USSP consortium: Henk Brinkhuis & Simone Galeotti, directors USSP

Table 1a. *Members of the USSP Consortium. The Consortium was established in November 2005 to support and give continuity to the USSP programme.*

Member	Institution	Country
Henk Brinkhuis (Lead Organizer)	Utrecht University	Netherlands
Ken Caldeira	Stanford University	USA
Margaret Collinson	Royal Holloway University	United Kingdom
Jerry Dickens	Rice University	USA
Simone Galeotti (Lead Organizer)	Urbino University	Italy
Matthew Huber	Purdue University	USA
Mike Kaminski	University College London	United Kingdom
Luca Lanci	Urbino University	Italy
Mark Pagani	Yale University	USA
Paul Pearson	University of Cardiff	UK
Isabella Premoli-Silva	Milano University	Italy
Isabella Raffi	Chieti University	Italy
Mike Rampino	New York University	USA
Ursula Röhl	University of Bremen	Germany
Stephen Schellenberg	San Diego State University	USA
Ellen Thomas	Yale University	USA
Jim Zachos	University of California, Santa Cruz	USA
Patrizia Ziveri	Free University of Amsterdam	Netherlands

Table 1b. Members of the USSP teacher pool and their academic institution. USSP lecturers are recognized scholars in paleoclimatology, and related disciplines, and frequently contribute to the field through publications in peer-reviewed journals (e.g., *Science*, *Nature*, *Geology*, *Paleoceanography*, etc.). Nearly all teach university courses and mentor student research from the undergraduate and graduate level.

USSP Teachers		
Gabriel Bowen	Purdue University	USA
Henk Brinkhuis (<i>Lead Organizer</i>)	Utrecht University	The Netherlands
Hans Brumsack	Oldenburg University	Germany
Ken Caldeira	Stanford University	USA
Margaret Collinson	Royal Holloway University	United Kingdom
Giuseppe Cortese	Alfred Wegener Institute	Germany
Robert DeConto	Massachusetts University	USA
Jerry Dickens	Rice University	USA
Jochen Erbacher	University of Hannover	Germany
Simone Galeotti (<i>Lead Organizer</i>)	Urbino University	Italy
Matthew Huber	Purdue University	USA
Mike Kaminski	University College London	United Kingdom
Paul Koch	University of California Santa Cruz	USA
Lee Kump	Peen State University	USA
Wolfram Kuerschner	Utrecht University	The Netherlands
Luca Lanci	Urbino University	Italy
Lucas Lourens	Utrecht University	The Netherlands
Dick Kroon	Vrije Univ. Amsterdam	The Netherlands
Simonetta Monechi	Firenze University	Italy
Mark Pagani	Yale University	USA
Heiko Pälike	University of Southampton	UK
Paul Pearson	University of Cardiff	UK
Isabella Premoli-Silva	Milano University	Italy
Isabella Raffi	Chieti University	Italy
Gert-Jan Reichart	Utrecht University	The Netherlands
Ursula Röhl	University of Bremen	Germany
Eelco Rohling	University of Southampton	UK
Francesca Sangiorgi	Utrecht University	The Netherlands
Stephen Schellenberg	San Diego State University	USA
Appy Sluijs	Utrecht University	The Netherlands
Howard Spero	University of California Davis	USA
Mario Sprovieri	CNR-IAMC Napoli	Italy
Catherine Stickley	Norwegian Polar Institute	Norway
Ellen Thomas	Yale University	USA
Scott Wing	Smithsonian Institution Washington DC	
Roderik van de Wal	IMAU Utrecht	The Netherlands
Anna von der Heydt	IMAU Utrecht	The Netherlands
Jim Zachos	University of California, Santa Cruz	USA
Patrizia Ziveri	Free University of Amsterdam	The Netherlands
Karin Zonneveld	University of Bremen	Germany

Table 2. Participants to USSP2007 and their academic institutions. USSP received more than 80 applications this year and was able to accept 55 participants, several of them receiving a scholarship from different institutions.

Name	Nat.	Address	Scholarship
Abbot, Dorian	USA	Division of Engineering & Applied Sciences, Harvard University, UK	
Abell, Richard	British	Department of Earth Sciences University of Bristol, UK	IODP-UK
Afzal, Jawad	Pakistani	Department of Geology, University of Leicester, UK	IODP-UK
Barke, Judith	German	Laboratory of Palaeobotany and Palynology, Utrecht University, The Netherlands	
Bijl, Peter	Dutch	Laboratory of Palaeobotany and Palynology, Utrecht University, The Netherlands	
Bonis, Nina	Dutch	Laboratory of Palaeobotany and Palynology, Utrecht University, The Netherlands	
Bugler, Melanie	British	School of Earth, Ocean & Environmental Sciences University of Plymouth, UK	IODP-UK
Carter, Paul	British	Earth Science Department, University of Bristol, UK	
Cunha, Armando	Brazilian	CENPES-PETROBRAS S.A. Rio de Janeiro, Brazil	
Dail, Holly	USA	Department of Earth, Atmospheric, and Planetary Sciences Massachusetts Institute of Technology, USA	
de Leeuw, Vera	Dutch	Laboratory of Palaeobotany and Palynology, Utrecht University, The Netherlands	
Douglas, Peter	USA	Department of Geology and Geophysics, Yale University, USA	
Evans, Mary	South African	School of Geosciences University of the Witwatersrand, Johannesburg, South Africa	
Exarchou, Eleftheria	Greek	Grote Trekdreef 87, k815, 3564BP, Utrecht IMAU, The Netherlands	
Gallego-Torres, David	Spanish	Instituto Andaluz de Ciencias de la Tierra-CSIC, Universidad de Granada, Spain	USSP
Gil, Isabelle	Portugues	Portuguese Foundation for Science and Tecnology, Portugal	ECORD
Heldt, Matthias	German	Department of Geosciences, University of Bremen, Germany	
Henrot, Alexandra-Jane	Belgian	Laboratoire de Physique Atmosphérique et Planétaire (LPAP), Université de Liège, Belgium	
Hernandez Sanchez, M. Teresa	Spanish	Bristol Biogeochemistry Research Centre, University of Bristol, UK	IMAGES
Karami, Pasha	Iranian	Department of Earth Science, Utrecht University, The Netherlands	
Keller, Christina	Swiss	ETH - Geologisches Institut, Zurich, Switzerland	
Kelsey, Dyck	USA	Ocean Sciences Department, University of California Santa Cruz, USA	

Name	Nationality	Address	Scholarship
Klapp, Stephen	German	Research Center Ocean Margin - MARUM, University of Bremen, Germany	
Kohn, Marion	German	Department of Geosciences, University of Bremen, Germany	
Kraal, Peter	Dutch	Department of Earth Sciences, Utrecht University, The Netherlands	
Krishnan, Srinath	Indian	Department of Geology and Geophysics, Yale University, USA	
Lauderdale, Jonathan Maitland	British	National Oceanography Centre, University of Southampton, UK	
Leon-Rodriguez, Lizette	Colombian	Department of Earth Science Rice University, USA	
Lima, Francisco Henrique	Brazilian	CENPES-PETROBRAS S.A. Rio de Janeiro, Brazil	
Magens, Diana	German	Alfred Wegener Institute for Polar and Marine Research, Germany	ECORD
Mejía-Molina, Alejandra	Colombian	Departamento de Geología, Universidad de Salamanca, Spain	ECORD
Mueller, Antje	German	Royal NIOZ, Dept. MBT, Den Burg, The Netherlands	
Nieto Moreno, Vanesa	Spanish	Andalusian Institute of Earth Sciences - University of Granada, Spain	USSP
O'Halloran, Aoife	Irish	Department of Geology - Trinity College, Dublin, Ireland.	ECORD
Osborne, Anne	British	Department of Earth Sciences, University of Bristol, UK	
Pallavi, Anand	Indian	Department of Earth Sciences, The Open University, UK	
Paquay, Francois	Belgian	University of Hawaii, Honolulu, USA	
Paris, Guillaume	French	Institut de Physique du Globe de Paris, France	
Payne, Verity	British	School of Earth & Environment, University of Leeds, UK	ECORD
Penaud, Aurelie	French	Université Bordeaux 1, France	IMAGES
Perrotta, Sonia	Italian	Istituto di Scienze della Terra, Università di Urbino, Italy	
Perkins, Jennifer	UK	Department of Earth Sciences, The Open University, UK	
Ponton, Camilo	Colombian	Woods Hole Oceanographic Institution, Woods Hole, USA	
Ribeiro, Sofia Isabel	Portuguese	Geological survey of Portugal DGM-INETI, Portugal	
Ruhl, Micha	Dutch	Laboratory of Palaeobotany and Palynology, Utrecht Univ., The Netherlands	
Russon, Tom	British	Sir John Murray Labs, Grant Institute, Edinburgh University, UK	
Sliwinska, Katarzyna	Polish	Geologisk Institut, Aarhus Universitet, Denmark	USSP
Slotnick, Benjamin	Caucasian	Department of Geological Sciences, San Diego State University, USA	
Spalluto, Luigi	Italian	Dipartimento di Scienze della Terra, Università di Bari, Italy	
Stefanelli, Simona	Italian	Dipartimento di Scienze della Terra, Università di Bari, Italy	
Tsandev, Iana	Canadian	Department of Earth Sciences, Utrecht University, The Netherlands	ECORD
van Kempen, Monique	Dutch	Department of Ecology, University of Nijmegen, The Netherlands	
White, Clare	British	Department of Geology, Royal Holloway University of London, UK	IODP-UK
Yi, Sangheon	Korean	Korea Institute of Geoscience and Mineral Resources, Daejeon, Korea	
Zhang, Xiaoyu	Chinese	Department of Earth Sciences, Zhejiang University, China	

lecture sessions
workshop sessions
student exercises
student research presentations
student sub-groups
case histories (tortorina)
evening socials at tortorina
special events

	Tuesday July 17th	Wednesday July 18th	Thursday July 19th	Friday July 20th	Saturday July 21st
am-1 (08.30-09.00)	ARRIVAL	welcome + who-is-who	info	info	info
am-1 (09.00-10.30)		cenozoic climates zachos	age models lanci, lourens, palike	O,C,H stable isotopes zachos, rohling	student presentations
am-2 (11.00-12.30)		cretaceous climates deconto	age models lourens, palike	O,C,H stable isotopes zachos, rohling	student presentations
		LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK
pm-1 (13.30-15.00)		past global gchange : modeling huber	exercises - age models lourens, palike, schellenberg, lanci	exercises - stable isotopes zachos, rohling	break out groups & assignments/reading
pm-2 (15.30-17.00)		age models (bio) schellenberg	exercises - age models lourens, palike, schellenberg, lanci	exercises - stable isotopes zachos, rohling	working groups : reading discussion
b4 dinner (18.00-19.00)	USSP icebreaker	social by the pool	social by the pool	social by the pool	social by the pool
Hotel : end 22.30)		The Carbon Cycle & PETM dickens		The K/T boundary smit	

	Sun. July 22nd	Monday July 23rd	Tuesday July 24th	Wednesday July 25th	Thursday July 26th	Friday July 27th	Saturday July 28th
am-1 (08.30-09.00)		info	info	info		info	info
am-1 (09.00-10.30)	USSP excursion (half day)	Geochemical proxies 1 reichart	GCM Exercises huber, de conto	Biotic Proxies 3 stickley, sangiorgi	Biotic Proxies 7 wing	Geochemical Modelling dickens, caldeira	working groups : reading discussion
am-2 (11.00-12.30)		Geochemical proxies 2 frank	GCM Exercises huber, de conto	Biotic Proxies 4 schellenberg, galeotti	Biotic Proxies 8 wing, kuerschner	Geochemical Modelling dickens, caldeira	working groups : reading discussion
	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	
pm-1 (13.30-15.00)	NO PROGRAM	Geochemical proxies 3 pagani	Biotic Proxies 1 premoli-silva	Workshop sluijs coordinator	Biotic Proxies 9 koch	Geochemical Modelling dickens, caldeira	working groups : reading discussion
pm-2 (15.30-17.00)		Geochemical proxies 4 pagani	Biotic Proxies 2 raffi, ziveri	Workshop sluijs coordinator	Biotic Proxies 10 koch	Geochemical Modelling dickens, caldeira	working groups : reading discussion
b4 dinner (18.00-19.00)		social by the pool	social by the pool	social by the pool	social by the pool	social by the pool	social by the pool
Hotel : end 22.30)			Palaeotemperature reconstruction kroon		The Arctic Drilling brinkhuis, sluijs, sangiorgi cs	Palaeo-PR caldeira	

	Sun. July 29th	Monday July 30th	Tuesday July 31st	Wednesday August 1st	Thursday August 2nd	Friday August 3rd
am-1 (08.30-09.00)		info	info	info	info	info
am-1 (09.00-10.30)		Cretaceous-Palaeogene GCMs huber, de conto	PETM Geochemical models dickens, caldeira, pagani	Neogene icehouse & GCM vd Heydt, Dijkstra	working groups : presentation preparation	Group presentations
am-2 (11.00-12.30)		Cretaceous-Palaeogene GCMs huber, de conto	EO Geochemical models palike, pearson	Neogene icehouse & GCM vd Heydt, vd Berg	Ice sheet dynamics vd Heydt, vd Berg	Group presentations
		LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK
pm-1 (13.30-15.00)	NO PROGRAM	GCM Exercises huber, de conto	PETM GCM simulations huber, de conto	EO boundary GCM simulations huber, de conto	Quaternary climate change Rohling	
pm-2 (15.30-17.00)		Workshop dickens coordinator	GCM Exercises huber, de conto	GCM Exercises huber, de conto	Quaternary climate change Rohling	
b4 dinner (18.00-19.00)		social by the pool	social by the pool		social by the pool	
Hotel : end 22.30)			The EO boundary pearson, palike	USSP 2007 DINNER	working groups : presentation preparation	

Table 4. Budget of the 4th USSP course.

4th USSP - Urbino July 18 - August 3, 2007 (costs; as per Sept 07)	
Cost for travel and lodging of USSP teachers	36,000 Euro
Administration (Utrecht, Urbino Universities)	4,500 Euro
Facilities (Lecture room, computer room etc..)	8,000 Euro
Excursion	3,500 Euro
Social Dinner	2,850 Euro
Lecture notes (hard copies and CDs)	4,000 Euro
Daily transportation to/from the campus	3,500 Euro
Coffee breaks	3,500 Euro
Advertising, T-Shirt production	3,000 Euro
TOTAL (sept 07)	68,850 Euro

INCOME:

registration fees	30,500 euro
Province Pesaro and Urbino	3,000 euro
NSG Netherlands	1,500 euro
DARWIN centre Netherlands	10,000 euro
IMAU Netherlands	10,000 euro
ECORD	7,500 euro

Subtotal **62,500 euro**

Balance **-6,350 euro**

The *Urbino Summer School in Paleoclimatology* presents

Past Global Change Reconstruction and Modelling Techniques



USSP
2007

an advanced course co-sponsored by *ECORD*, the *Darwin Center for Biogeology*, the *Institute for Marine & Atmospheric research Utrecht (IMAU)*, *IMAGES*, and the *Netherlands Research School of Sedimentary Geology*

University of Urbino July 18-August 3, 2007

The 4th Summer School of the USSP consortium will be focused on the evolution and dynamics of Cretaceous and Cenozoic climates. Experts will give lectures in the areas of stratigraphy, biogeochemical cycling, paleoceanography, climate models and integration of results. Interactive discussions of case-studies (e.g. black shale deposition and carbon cycling including Cretaceous Oceanic Anoxic Events, Paleocene-Eocene hyperthermals and the Eocene-Oligocene transition) in classes, practicals and in the field will provide participants with an advanced working knowledge on the paleobiological and geochemical proxy data and their use in the reconstruction and modelling of past climates.

Early-registration fee (before April 1st, 2007) : Students: 550 Euros - Academic/industrial staff: 900 Euros
USSP can accept a maximum of 50 participants

For detailed information visit www.uniurb.it/ussp

For ECORD scholarships see the ESSAC web site at www.essac.ecord.org

USSP Instructor Pool

Gabriel Bowen Purdue University
Ken Caldeira Carnegie Institution
Margaret Collinson Royal Holloway University
Giuseppe Cortese AWI Bremerhaven
Robert DeConto Massachusetts University
Gerald Dickens Rice University
Henk Dijkstra IMAU Utrecht
Elisabetta Erba University of Milan
Jochen Erbacher BRG Hannover
Martin Frank IFM-GEOMAR Kiel
Matthew Huber Purdue University
Paul Koch UC Santa Cruz

Dick Kroon University of Edinburgh
Wolfram Kuerschner Utrecht University
Lee Kump Penn State University
Luca Lanci University of Urbino
Lucas Lourens Utrecht University
Mark Pagani Yale University
Heiko Pälike University of Southampton
Paul Pearson Cardiff University
Isabella Premoli-Silva University of Milan
Isabella Raffi University of Chieti
Gert-Jan Reichart Utrecht University
Ursula Röhl University of Bremen

Eelco Rohling University of Southampton
Francesca Sangiorgi Utrecht University
Appy Sluijs Utrecht University
Howard Spero UC Davis
Catherine Stickley Norwegian Polar Institute
Ellen Thomas Yale University
Anna von der Heydt IMAU Utrecht
Tim White Pennsylvania State University
Scott Wing Smithsonian Inst. Washington DC
James Zachos UC Santa Cruz
Patrizia Ziveri Univ. Autònoma de Barcelona
Karin Zonneveld University of Bremen

Organization and coordination

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Università di Urbino



Report

ECORD Summer School on Paleoceanography 2007

August 13 – 24, University of Bremen, Germany

1 Aims

The major goal was to bring PhD students and young PostDocs in touch with IODP at an early stage of their career, inform them about the actual research within this international scientific program, and to prepare them for future participations in IODP expeditions. Such training will be achieved by taking the summer school participants on a “virtual ship” where they get familiarized with a wide spectrum of state-of-the-art analytical technologies and core description methods including core logging/scanning according to the high standards on IODP expeditions. Therefore the course was equally balanced, with half the time dedicated to lectures and discussions and the other half to laboratory exercises.

2 Location and Organisation

The ECORD Summer School on Paleoceanography 2007 was held from 13 – 24 August 2007 at the MARUM_Research Center Ocean Margins (RCOM), Bremen University, Germany. It has been organized by Prof. Gerold Wefer, Director of the Research MARUM_Research Center Ocean Margins and Prof. Dierk Hebbeln, Director of the Bremen International Graduate School for Marine Sciences „Global Change in the Marine Realm“ (GLOMAR). Besides MARUM_RCOM and GLOMAR the MARUM-building also hosts the IODP Bremen Core Repository (BCR), which offered unique training possibilities by using the facilities of the IODP Bremen Core Repository. For lectures and exercises the MARUM provided a seminar room equipped with 20 laptops (internet access, MatLab etc.).

3 Program

The two-week course combined lectures and interactive discussions on the paleoceanography of the Cretaceous to Cenozoic oceans with practical exercises, as well as core-logging practice with the application of time-series analysis techniques, using the facilities of the IODP Bremen Core Repository (BCR). The scientific lectures and exercises have been confined mostly to the first week, whereas the “virtual ship” related practicals took part during the second week. During the weekend in the middle of the summer school an excursion was offered.

In the first week the program (see attachment) focused on lectures by and discussions with leading researchers on key topics related to, e.g., ocean heat transport, nutrient cycles, rapid climate change and recent developments in integrated stratigraphy. In addition to the lecture program the IODP Topical Symposium on “North Atlantic and Arctic Climate Variability” was held at the MARUM institute during the first week of the ECORD Summer School. This provided the PhD students and young PostDocs with first-hand exposure to current research results from the world's leading scientists, and the chance to discuss their work directly with the experts. Several of the summer school participants used the possibility to present posters

about their own projects to an international community. The integration of the Topical Symposium with the ECORD Summer School also allowed that speakers of the Topical Symposium contributed with lectures to the summer school program.

The weekend between the first and the second week gave the participants the possibility to explore the city of Bremen at the free Saturday. On Sunday the whole group visited the ice-core repository at the Alfred Wegener Institute for Polar and Marine Research in Bremerhaven and joined an introductory lecture on ice-core research.

The second week of the Summer School took advantage of the unique facilities of the Bremen IODP core repository and labs and aimed at introducing PhD students and young PostDocs to a full range of IODP related topics from general introduction to the program to compiling of IODP proposals and to get an insight into “shipboard” methodologies applied on the drilling vessels. The focus was on group-based practicals applying logging instruments, such as Multisensor Core Logger (MSCL), XRF Scanners, Linescan Imaging, and Color Scanner.

Within the second week of the summer school, the participants were given the opportunity to present their own projects in 15-minute talks. Mrs Maite Hernandez Sanchez, University of Bristol and Mr Ulrich Kotthoff, University of Frankfurt, received awards for best oral presentations.

4 Participants

A total of 24 PhD students and young post-docs from several European countries, the US and China participated in the ECORD Summer School.

Name	University/ Institution	Country
Diana Magens	AWI Bremerhaven	Germany
Jörg Lipphold	University of Heidelberg	Germany
Daniel Rincon-Martinez	AWI Bremerhaven	Germany
Henna Valppu	University of Oulu	Finland
Kristin Grasmø	University of Bergen	Norway
Heidi Kjennbakken	University of Bergen	Norway
Sandra Herrmann	ETH Zurich	Switzerland
Thomas Schmid	ETH Zurich	Switzerland
Beatriz González Mora	University of Salamanca	Spain
Nick Owen	Trinity College	Ireland
Maite Hernandez Sanchez	University of Bristol	United Kingdom
Nikesh Narayan	University of Bremen	Germany
Feng Ding	University of Bremen	Germany
Annika Förster	University of Bremen	Germany
Cornelia Saukel	University of Bremen	Germany

Zhang Xiaoyu	Zhejiang University	China
Matthias Forwick	University of Tromsø	Norway
Julio Sepulveda	University of Bremen	Germany
Ulrich Kotthoff	Frankfurt University	Germany
Stijn De Schepper	University of Bremen	Germany
Christian März	University of Bremen	Germany
Joanne Tudge	University of Leicester	United Kingdom
Stephanie Kusch	AWI Bremerhaven	Germany
Bob Lyons	Syracuse University	USA

5 Outcomes and Evaluation

Anonymous evaluation forms filled out by the participants revealed a very positive feedback. The statements demonstrate how useful the discussions with the leading experts for their on-going projects have been and that a lot of problems or questions related to their projects have been solved and answered by the scientist involved in the summer school. In particular the participants highly appreciated the combination of the ECORD Summer School with the IODP Topical Symposium. Nevertheless the participants gave hints for improvements as well, e.g. the 15-minute talks by the participants about their own projects should take place in the first rather than in the second week of the summer school.

6 Outlook and ECORD Summer School 2008

The comprehensive approach of the ECORD Summer School on Paleoceanography 2007—combining scientific lectures with practicals on IODP-style “shipboard” measurements – will be the blueprint for a proposed series of summer schools to be held once per year within the ECORD summer school program at the MARUM in Bremen. It is planned to address the three major topics of the IODP Initial Science Plan in a recurring three year cycle, thereby exploiting the unique facilities in Bremen where about 50 scientists work on the whole width of IODP-related topics. Following an “Earth History” topic in 2007 (ECORD Summer School on Paleoceanography) ECORD has already agreed to provide funds for an “Deep Biosphere” topic in 2008: the ECORD Summer School on “The Deep Subseafloor Biosphere”. The probable time frame is early September 2008.

ECORD Summer School on Paleoceanography 2007

August 13 - 24, University of Bremen

"Lectures and interactive discussions on the paleoceanography of the Cretaceous to Cenozoic Oceans are combined with practicals on core logging and time-series analysis techniques using the facilities of the [IODP Bremen Core Repository \(BCR\)](#). A focus of both lectures and discussions will be on key topics of ocean heat transport and nutrient cycles, on recent developments in integrated stratigraphy, and on recent studies of North Atlantic and Arctic Ocean climate variability."

Venue: University of Bremen, MARUM building, room 2070, www.rcom.marum.de

Programme

Monday August 13

09:00 – 09:15 **Welcome and opening of the Summer School**

Prof. Dr. Gerold Wefer, University of Bremen

Introduction to Paleoclimate Research – lectures and exercises

09:15 – 12:30 **Ocean heat transport and paleocirculation**

*Prof. Dr. Ralf Tiedemann, Alfred Wegener Institute for Polar and
Marine Research, Bremerhaven*

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

13:30 – 17:00 **Cretaceous and Paleogene deep-ocean circulation**

Prof. Dr. Debbie Thomas, Texas A & M University

15:00 – 15:30 Coffee break

17:30 **Ice breaker party with buffet**

(MARUM building, area next to room 2070)

Tuesday August 14

Introduction to Paleoclimate Research – lectures and exercises

09:00 – 12:30 **Rapid climate changes**

Dr. Stefan Mulitza and Dr. André Paul, University of Bremen

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

13:30 – 16:30 **Ocean anoxia**

Prof. Dr. Wolfgang Kuhnt, University of Kiel

15:00 – 15:30 Coffee break

16:30 – 17:15 The Integrated Ocean Drilling Program

*Dr. Hans Christian Larsen, Vice President of Science Planning,
Head, IODP Management International Sapporo Office*

Wednesday and Thursday August 15 - 16**IODP TOPIC Symposium: North Atlantic and Arctic climate variability**

Participation in the symposium.

The registration desk and the poster sessions will be found in the MARUM building, lectures will be held in the NW2 building, room C0290.

More information is available under www.iodp.org/topical-symposium/2/

Friday August 17**Integrated stratigraphy – lectures and exercises****09:00 – 10:30 The use of magnetic field records in stratigraphy**

Prof. Dr. Jim Channell, University of Florida

10:30 – 11:00 Coffee break

11:00 – 12:30 From composite depth scales to time series analysis

Dr. Heiko Pälike, National Oceanographic Centre, Southampton

12:30 – 13:30 Lunch

13:30 – 17:00 Biostratigraphy – exercises

Dr. Barbara Donner, University of Bremen

15:00 – 15:30 Coffee break

Saturday August 18

Free time to explore Bremen

Sunday August 19**Trip to Bremerhaven**

Bus departure 09:45 MARUM building, University of Bremen

11:00 – 12:30 Visit of the German Maritime Museum (guided tour)

12:30 – 14:00 Lunch

14:00 – 15:00 Introduction to ice cores

*Dr. Sepp Kipfstuhl, Alfred Wegener Institute for Polar and
Marine Research, Bremerhaven*

15:00 – 17:00 Visit of the Alfred-Wegener-Institute for Polar and Marine Research

Arrival 18:00 MARUM building, University of Bremen

Monday August 20**Practical – Core logging and time-series analysis**

09:00 – 10:30 **Introduction to core logging: Physical properties of sediments**

Dr. Jens Gruetzner, University of Bremen

10:30 – 11:00 Coffee break

11:00 – 11:45 **XRyFluorescence Scanning: Method and Application**

Dr. Rik Tjalingii, University of Kiel

11:45 – 12:30 **Composite records and time-series analysis: Some basics**

Dr. Thomas Westerhold, University of Bremen

12:30 – 13:30 Lunch

13:30 – 17:00 **Practical: Core logging and time-series analysis**

(three groups of 10 students)

Group I: MultiSensor Core Logging, Digital Imaging (Dr. J. Gruetzner)

Group II: XRF-Scanning, core description (Dr. R. Tjalingii)

Group III: Composite record splicing and time-series analysis

(Dr. T. Westerhold)

15:00 – 15:30 Coffee break

Tuesday August 21**Practical - Core logging and time-series analysis**

09:00 – 12:30 Practical continued – exchange of groups

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

13:30 – 17:00 Practical continued – exchange of groups

15:00 – 15:30 Coffee break

Wednesday August 22**Presentations by Summer School participants****Talks with discussion**

Moderated by Dr. Stephan Steinke and Dr. Henning Kuhnert, University of Bremen

09:00 – 9.15 **Physical properties of the ANDRILL-MIS core**

Diana Magens, AWI Bremerhaven

09:15 – 9:30 **Atlantic ²³¹Pa/²³⁰Th profiles - applying AMS and ICPMS**

Jörg Lipphold, University of Heidelberg

09:30 – 9:45 **Pleistocene record of terrigenous input in the Eastern Equatorial Pacific inferred from XRF**

Daniel Rincon-Martinez, AWI Bremerhaven

09:45 – 10:00 **Climatic variability of MIS 7 on the Vøring Plateau with emphasis on the benthic foraminifera and oxygen isotopes**

Kristin Grasmø, University of Bergen

10:00 – 10:15 **Submillennial climate variability in mid-Holocene - Evidence from foraminiferal oxygen isotopes from Voldafjorden, western Norway**

Heidi Kjennbakken, University of Bergen

10:15 – 10:30 **Macroecological patterns in Holocene coccolith sizes**

Sandra Herrmann, ETH Zurich

10:30 – 11:00 Coffee break

11:00 – 11:15 **Automation of the measurement of ^{13}C - ^{18}O abundance in carbonates for “clumped isotope thermometry” - a new approach in paleothermometry**

Thomas Schmid, ETH Zurich

11:15 – 11:30 **Paleoceanographic changes in the Alboran Sea (western Mediterranean) during MIS 6 and 7**

Beatriz González Mora, University of Salamanca

11:30 – 11:45 **Deposits of thermohaline currents on slopes west of Ireland - a micropalaeontological study**

Nick Owen, Trinity College

11:45 – 12:00 **Trace metal cycling and productivity variations during Southern Ocean algal blooms**

Maria Teresa Hernandez Sanchez, University of Bristol

12:00 – 12:15 **Recent trends of Upwelling Intensities in various global datasets**

Nikesh Narayan, University of Bremen

12:15 – 12:30 **Looking into the subsurface of fluid seeps, using high resolution seismics to interpretate their geological nature**

Feng Ding, University of Bremen

12:30 – 13:30 Lunch

Talks with discussion

Moderated by Dr. André Paul and Dr. Stefan Mulitza, University of Bremen

13:30 – 13:45 **Geotechnical measurements to characterise and identify slope sediments and landslide mechanisms**

Annika Förster, University of Bremen

13:45 – 14:00 ***Paleoenvironmental evolution in the SE-Pacific during the Pliocene - Preliminary results from XRF-scanning***

Cornelia Saukel, University of Bremen

14:00 – 14:15 **Characteristics and geological significance of $^{87}\text{Sr}/^{86}\text{Sr}$ ratio in core sediments in eastern South China Sea**

Zhang Xiaoyu, Zhejiang University

14:15 – 14:30 **Sedimentary processes and palaeoenvironments in Spitsbergen fjords**

Matthias Forwick, University of Tromsø

14:30 – 14:45 **Recovery of marine productivity after the K-T Boundary: Molecular evidence from Stevns Klint, Denmark**

Julio Sepulveda, University of Bremen

15:45 – 15:00 **Terrestrial Vegetation Change in the Mediterranean Region associated with the Sapropel S1: Timing and Characteristics**

Ulrich Kotthoff, Frankfurt University

15:00 – 15:30 Coffee break

15:30 – 15:45 **The Plio-Pleistocene of the Eastern North Atlantic: a dinoflagellate cyst viewpoint**

Stijn De Schepper, University of Bremen

15:45 – 16:00 **Rapid redox changes during Late Cretaceous black shale formation - A high-resolution geochemical study of OAE 3**

Christian März, AWI Bremerhaven

16:00 – 16:15 **Low resistivity pay: the role of chlorite in controlling resistivity responses**

Joanne Tudge, University of Leicester

16:15 – 16:30 **Compound-specific ^{14}C -analysis of lipid biomarkers**

Stephanie Kusch, University of Bremen

16:30 – 16:45 **East African continental climate change: results from the Lake Malawi Drilling Project and seismic reflection surveys**

Bob Lyons, Syracuse University

Thursday August 23

IODP: Structure and Objectives

09:00 – 10:30 **IODP long range plan, organisation and panel work**

*Dr. Jochen Erbacher, Federal Institute for Geosciences and
Natural Resources (BGR) in Hannover
and Dr. Ursula Röhl, University of Bremen*

10:30 – 11:00 Coffee break

11:00 – 12:30 **Exercise: Writing of a proposal**

Dr. Ursula Röhl and Dr. Jochen Erbacher

12:30 – 13:30 Lunch

13:30 – 17:00 **Exercise: Writing of a proposal** (continued)

15:00 – 15:30 Coffee break

Friday August 24

Interpretating data from IODP-cores

09:00 – 12:00 **Case studies from the SE-Pacific**

*Dr. Frank Lamy, Alfred Wegener Institute for Polar and
Marine Research, Bremerhaven*

10:30 – 11:00 Coffee break

12:00 – 12:30 **Awards for best oral presentations and farewell**

Prof. Dr. Gerold Wefer, University of Bremen

ECORD Newsletter #9 (October 2007)

The 9th issue of the ECORD Newsletter, released by mid October 2007 and distributed during the ESSAC (#9) and Council (#12) meetings, presents all updated informations of the ECORD bodies from April 2007 until October 2007. Now counting four additional pages, it comprises the following contributions:

- regular topics
 - Message from the outgoing Council chair,
 - ESO News including In Memoriam Tim Brewer and Reports on curatorial meetings at BCR (4 pages),
 - News from EMA,
 - ECORD E & O activities in particular during EGU 2007 and reports on the ECORD Summer Schools (2,5 pages),
 - ESSAC updates of the ESSAC Office in Cardiff, including Reports on Magellan Workshop Series and IODP Topical Symposium,
 - ECORD-net updates with a presentation of the ECORD databases.
- new topics
 - Highlights of proposals recently sent to the OTF with Bengal Fan-552 & Mediterranean Outflow (GUCADRILL)-644
 - Scientific outcomes from a mission-specific platform expedition (MSP) - Search for signs of active life in the Tahiti reef framework (Tahiti Sea-Level expedition).

Paper copies of the Newsletter #9 will be distributed to each IODP partners (IODP-MI, IOs and PMO), national offices and SAS delegates and will be available at the IODP booth during the AGU 2007 Fall meeting (10-14/12/2007). The electronic version will be posted at:

<http://www.ecord.org/pub/nl.html>

Next Newsletter #10 - April 2008

- Call for contributions - February 2008,
- Author's deadline: 3rd March 2008,
- Date of publication: early April 2008 (to be distributed at EGU (13-18 April 2008))

n°9

October, 2007

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Entering a New Phase !

On the first of October IODP is celebrating its first phase of 4 years. During this first phase it has been a privilege to act as chair both at the start and closure. The timing is appropriate for some reflection to see if our vision of 4 years ago has come true and where we would like to go for the next period.

Sadly, I have to start by paying tribute to the contribution of Tim Brewer to ECORD. Looking back over the last 4 years we can see that ECORD has been successful in establishing mission-specific platforms (MSPs) as part of IODP. Tim was instrumental in setting up the ECORD Science Operator consortium, which managed the ACEX and Tahiti expeditions. Tim's contribution to ECORD is recognised in this newsletter and he will be dearly missed by his friends and colleagues in ESO in future MSP operations.

The ACEX and Tahiti expeditions were not only great scientific successes, but also received a lot of media attention, demonstrating the important role that ECORD plays in IODP. The core repository in Bremen also underlines this role. Furthermore ECORD expanded its membership with Austria, Belgium, Canada and Ireland and under the ECORD-Net initiated a number of new joint initiatives. In collaboration with the European Science Foundation the EuroMARC pre- and post-cruise science programme and the Magellan workshop series were launched. These will undoubtedly contribute to a number of high ranking European led IODP proposals. Through joint activities such as the Teachers' Workshop, Distinguished Lecturer Programme and Summer School initiatives, the European visibility was strengthened. It was therefore

not a big surprise that the review report published earlier this year was very favourable to ECORD.

Now looking ahead it is useful to see where we can learn from the past for further improvement. Rotation of the ESSAC Office was questioned for reasons of continuity and efficiency. But Council agreed that rotation also offers opportunities to share responsibilities among member organisations and bring new élan and creativity. Lessons were learned to ensure a smooth handover from Cardiff to Aix-en-Provence. It was a pity that, for reasons explained by ESO (*page 4*), the next expedition, New Jersey Shallow Shelf, had to be postponed but the good news is that ECORD will continue to act as MSP operator for IODP. From a financial perspective it appears that ECORD will be able to meet the contribution level increase for 2008. ECORD is now more actively lobbying the European Commission to secure follow-up ERA-Net funding in the 7th framework programme as demonstrated by active participation in the Aberdeen declaration for marine science and partnerships for the Deep Sea Floor and Aurora Borealis activities.

In my first editorial I stated that *"it was decided that ECORD could not join as the third Lead Agency. Nevertheless ECORD still strives to raise considerable additional funding from the EU and the door has been left open to join as Lead Agency at a later stage."* This was the vision we had 4 years ago. Given the strong euro and difficulties in the USA and Japan, as Catherine Mével will comment on (*page 6*), it is still possible to make it happen in the new second phase of IODP.

Raymond Schorno, Council Chair, September 2007

Timothy Brewer (1959-2007), Coordinator of the European Petrophysics Consortium

Dr Tim Brewer collapsed and died on 14th July, while attending a conference in Barcelona. This was obviously shocking and very sad news and came as a complete surprise to everyone.

Tim was initially appointed as a lecturer at Nottingham University prior to moving to a Lectureship in Applied Geology at the University of Leicester in 1994. Since then Tim had developed a strong portfolio of interest, centering on geochemistry, but more recently including diverse interests such as petrophysics, Precambrian geology and lake sediments. This wide range of expertise made him a very valuable contributor to a diverse range of projects, and he was much appreciated for his ability to provide new insights. Tim also ran a wide range of analytical services in the department and through this work developed links with a broad network of people in both academia and industry. In 2007 Tim was promoted to a Personal Chair as a full Professor at the University of Leicester.

(to continue on page 2)



(continued from page 1)

As a senior member of staff in the Department of Geology at the University of Leicester he played a full and active part in the university's activities, but most will know him for his work with the Integrated Ocean Drilling Program. Tim initially worked with Peter Harvey before taking the lead in the European Petrophysics Consortium, part of the ECORD Science Operator for the Integrated Ocean Drilling Program. He contributed to the successful MSP Expeditions to the Arctic and Tahiti and was very much involved in planning for IODP Expeditions to New Jersey and the Great Barrier Reef, as well as supporting the other Implementing Organizations within IODP.

Tim was a much loved colleague and friend, but as a true family man he loved his wife and sons and talked about them often. He had the ability to find humour in almost any situation and that humour could become infectious, as many who sat near him, or opposite him, in meetings found out to their cost! Tim is survived by his wife Lesley and two sons Daniel (17) and Andrew (15). Together they have been genuinely surprised by the compassion and sympathy they have received from researchers around the world; Tim rarely spoke of his role in scientific research and kept his importance to the community very much hidden.

Mike Lovell, Professor at the University of Leicester

In Memoriam Tim Brewer

Since the very beginning of ECORD in 2001, Tim was deeply involved in the European Petrophysics group as part of IODP. In order to illustrate Tim's contribution in the scientific drilling community and as a talented professor, we have assembled the following contributions and quotes written by his colleagues, students and friends from ECORD-IODP and the University of Leicester.

I was stunned and saddened by Tim's demise; I knew him as a good colleague, particularly in the latter days, and as a close friend, in total for some 25 years, from the time he turned up at the University of Nottingham as a raw research student. There is not a lot to say now; he will be missed greatly, and my wish is that the work he was doing for the geoscience community should continue with enthusiasm to help provide some lasting memory of which he was a part.

from Peter Harvey, University of Leicester

I first met Tim when he was a PhD student at the University of Nottingham in the mid 1980s. As a new lecturer in geophysics I unexpectedly had to take on some supplementary teaching of mineralogy. I turned to Tim for help and his willingness and knowledge in providing me with support were matched in equal measure with his dry wit and humour, always extracting a laugh and a smile.

Tim developed considerable acting skills and regularly scared new students, only for them to eventually discover the soft hearted, jovial and caring personality that was the real Tim. They have talked repeatedly about his wicked but inoffensive sense of humour, his ability to find time to help and support students, and of his professionalism and skills as a lecturer and researcher.

Tim was a quiet and modest colleague who will be missed by so many more people than he could ever have imagined. While we respect his academic professionalism in both his research and teaching, and especially his work for ECORD and IODP, many of us will miss him simply for his ability to make us laugh and smile each and every day, thus making our lives all the richer and all the more enjoyable.

from Mike Lovell, University of Leicester

Tim left us all on July the 14th, 2007. This by itself rings like the last joke he left some of us with, collapsing on French national day! But this needs to be explained a little. I really got to know Tim in 1993, while sailing with him on the *JOIDES Resolution* in the equatorial Pacific, for Ocean Drilling Program Leg 148. Both on the morning shift, we decided with Damon Teagle from New Zealand and Andy McNeill from Australia, to play cards every day after lunch. During a couple of months, much was said about rugby national teams, each defending his national squad, Tim contributing to maintain a very high spirit and exerting on a frequent basis his unique dry sense of humour. After that, jokes concerning a countless number of topics including rugby and national teams continued while writing on several papers and, more recently, building with him the European Petrophysics Consortium (EPC) for ocean scientific drilling. Working with Tim as part of EPC was always easy and pleasant, which makes his loss even more difficult to accept.

from Philippe Pezard, European Petrophysics Consortium

I would like express my personal sadness at Tim's death and to acknowledge Tim's huge contribution to ESO and IODP; I know that we shall all miss his experience, expertise, humour and friendship.

from Dan Evans, ECORD Science Operator

Tim was an exceptional character, a lovely bloke and someone I shall miss enormously. We are all the richer for having known him.

from Chris MacLeod, ECORD Science Support & Advisory Committee

What a great guy and what a great loss.

Good old Brewer..... when one day we turned up in the field with big fat moustaches drawn on our faces he didn't bat an eyelid! There was a tweak of a smile under his own famous moustache and a cheeky twinkle in his eye!

One of the truly inspirational people at Leicester U. With a cracking sense of humour and kind nature, Tim was always happy to lend an ear when needed and generally the life and soul of many a field trip.

He really was a genuinely nice guy. He had a fantastic sense of humour, I'll never forget the way he'd sit in his office with the lights off if he was avoiding someone. But he always had time for students with difficulties and was understanding about personal problems.

Best project supervisor ever! I'm really going to miss him.

All who knew Tim knew he was such a good laugh and a brilliant Geo!

I will always remember going up to tutorials wondering how many black eyes he would have from his rugby at the weekend.

The guy was an absolute legend. Not only an awesome lecturer, but a caring project supervisor.

Going to miss him, was one of the real characters of the world, always very funny but under the abrasive character was a real softy, someone who would always try to help and a very friendly character. Not to mention a very knowledgeable and talented geologist.

I loved his dry and wicked sense of humour.

Tim, thanks for all the help with the work, and more importantly, thanks for the laughs. You'll be greatly missed.

from his students at the University of Leicester

Tim was a close colleague, but also a very good friend. His special strength was his steady and perpetual enthusiasm for the scientific projects that we jointly worked on for IODP and in particular, ESO. He was always generous in offering his help, and his special human touch and great humour always kept us cheerful, even in very busy times. Tim emailed me from the conference in Barcelona only a day before he passed away: "Well Barcelona is hot and sunny and I am learning a lot about lakes and the people here liked my presentation so life is good at the moment." It is still hard to imagine that he is not with us anymore. I will think of Tim often, remember him fondly, and surely will miss him very much.

from Ursula Röhl, ECORD Science Operator



Tim Brewer leading a field trip to Cornwall.

Tim took on the responsibilities for the IODP work undertaken by the Borehole Research Group at Leicester on the retirement of Professor Peter Harvey in 2004.

His extensive knowledge of IODP issues and his supportive and caring attitude to his colleagues ensured that the group continued to thrive as a strong and effective team.

We all feel so fortunate that Tim was managing this group and made

it feel so cohesive and friendly. As has been mentioned by so many people Tim was full of fun and had a fantastic sense of humour, as well as being the head of our small group he was our friend. We are all still attempting to come to terms with a future without his support and guidance, he is sadly missed.

from Janette Thompson, Andrew Myers, Marc Reichow, Jenny Inwood and Louise Anderson, Leicester IODP group

I had the chance to work with Tim at the occasion of several SSEP meetings where he was acting as ESO liaison. Then, Tim was the driving force of the development of petrophysical and logging plans for the IODP Expedition #310 with the success that we all know. His exceptional efficiency and his lovely sense of humour will be missed in our community.

from Gilbert Camoin, ECORD Science Support & Advisory Committee



Dan Evans



Alan Stevenson

As is reported elsewhere in this newsletter, ESO have been rocked by the death of Tim Brewer in July, and we also had to postpone the offshore New Jersey Expedition from 2007. Although this summer has not been a good one for ESO, we continue to plan for successful expeditions in the future.

New Jersey Shallow Shelf

It had been planned that ESO would implement the offshore portion of this expedition in the summer of 2007, followed by the Onshore Science Party in January-February 2008. Unfortunately, there were several delays in the availability of the chosen platform, and it was announced in late June that the platform would not be available until August, meaning that the offshore work would extend into November. At that stage it was too late to obtain another platform, and given the safety and financial risks associated with such a late finish, it was decided to postpone. This was an intense disappointment to ESO, the Science Party, and many others, but we are now working towards offshore implementation in 2008.

Great Barrier Reef

ESO has submitted to IODP-MI a provisional plan to drill the Great Barrier Reef in the September–November period of 2008, but depending on progress with New Jersey, this may be implemented during the same weather window in 2009.

The last edition of this newsletter reported on the ESO visit to the Great Barrier Reef Marine Park Authority as the first step in obtaining a permit to drill on the Great Barrier Reef. Since then, an official application has been submitted and we are currently in discussion with the Authority regarding some aspects of the application. We hope that our application will ultimately be successful, and I am pleased to say that we are receiving great support from the Australian geoscience community in our efforts towards this goal. We really hope that Australia will soon join IODP.

European Petrophysics Consortium

Following Tim Brewer's sudden death, Mike Lovell, the Head of the Geology Department at the University of Leicester took over leadership of EPC as a short-term measure. Since that time it has been announced that the long-term EPC Manager will be Sarah Davies at Leicester, but with Mike helping during the early stages of the transition.

Dr Sarah Davies is the new manager of the European Petrophysics Consortium. Sarah obtained her PhD from the University of Leicester, and subsequently undertook postdoctoral research at the universities of Liverpool and Edinburgh before joining the department at Leicester as a lecturer in 1999. The overarching theme of her research has been unravelling the influence of tectonic, climatic and eustatic controls on the development of sedimentary systems. Most recently she has worked on industry-funded projects combining petrophysics and sedimentology.



More MSP proposals needed

During recent SAS re-appraisals of proposals, it has become apparent that we need more high-quality MSP proposals to reach ranking at SPC. At present, only the New Jersey and the Great Barrier Reef proposals lie with the Operations Task Force for implementation, and no expedition is pencilled in for 2010. So if you have some good ideas, this may well be an opportunity to get some drilling done through IODP.

Please remember that ESO is available if you want to discuss any aspects of MSP drilling in your proposal.

ACEX session at AGU Fall Meeting

In 2004, the first scientific drilling expedition to the central Arctic Ocean, the Arctic Coring Expedition (ACEX), recovered sediment cores to 428 meters below seafloor. The ACEX co-chiefs Jan Backman and Kate Moran have now convened a special session on the expedition results (IODP Expedition 302) at this year's AGU Fall Meeting in San Francisco in December entitled "The Cenozoic



photo ECORD/IODP

Arctic Ocean Revealed". Prior to ACEX, the Cenozoic history (0 to 65 Ma) of the Arctic Ocean was largely unknown. Initial results following the expedition revealed a continuous paleo-record to ~18 Ma; a long hiatus from ~44 to ~18 Ma; a first occurrence of ice-rafted debris in the middle Eocene (~45 Ma); fresh surface waters at ~49 Ma; and warm surface waters during the Paleocene Eocene Thermal Maximum. Since then, over 40 scientists have further analyzed this unique paleoclimate record using petrophysical, chemical, paleontological, stratigraphic, and geophysical techniques. Other studies have integrated ACEX results to develop pan-Arctic reconstructions and interpretations. This session presents these follow-on results that elucidate the paleo-environment of the central Arctic Ocean over much of the Cenozoic.

If you are attending the AGU, the convenors hope you will add the ACEX session to your schedule. Further information can be found at: <http://www.agu.org/meetings/fm07/?content=search&show=detail&sessid=201>

Dan Evans, ESO Science Manager and Alan Stevenson, ESO Outreach Manager



Ursula Röhl

Curatorial Meetings at the Bremen Core Repository

Training programme for CDEX curatorial staff at IODP Bremen Core Repository

The Bremen Core Repository (BCR) hosted a two-day training programme (26-27 February 2007) for CDEX* staff to acquaint them with procedures and policies they will need to be familiar with in the operation of the Kochi Core Center (KCC).

The sessions included a balance of practical and theoretical topics and were very successful in terms of the information covered and communication among the staff members from the



Discussion of sampling techniques during the training session at BCR (Photo IODP-BCR).

two repositories. The agenda was very flexible, allowing for more or less time for specific topics depending on time needed for questions and additional discussion. The CDEX visitors proved to be inquisitive and eager in their desire for information. The topics covered were numerous and included:

Introduction and tour of the facility. Overview of curation process. Review of basic core orientation and handling procedures. Practical sampling of a sediment core. Discussion of ideal sample sizes. Hard rock curation/sampling techniques. U-channel sampling, thin-sections, smear slides. Shipping of samples/cores. Education & Outreach examples. Receiving and racking of cores (core redistribution project; ECR* to BCR). Securing and packing of cores (core redistribution project; BCR to GCR*). Introduction to sampling program, databases: JANUS*, offshore DIS*. Sample request process (pre-cruise, moratorium, post-moratorium), Sample Allocation Committee (SAC) planning, pre site sample planning, planning for a post-cruise sample party, approval process.

Sampling of a composite record ("splice"). Sampling a recent request. Review of curator's role and IODP sample, data and obligations policy including loan agreements.

First Annual IODP Curatorial Meeting, held at MARUM in Bremen

Bremen Core Repository (BCR) hosted a three-day event (28 February to 2 March 2007) with 28 participants from CDEX (7), USIO* including WCR* and ECR (12), ESO-BGS* (2), IODP-MI* (1), Curatorial Task Force (CTF, formerly Curatorial Advisory Board, CAB) (1), and ESO-BCR (5), held in the MARUM building at Bremen University, Germany.

As this was the first meeting of all IODP curatorial staff, the agenda was flexible to allow time for questions and discussion. The topics covered were numerous and included:

General repository reports, discussion on communication channels, status of core redistribution project, specific curatorial issues, including quality assurance/quality control (QAQC) questions related to sampling, core wrapping issues, tracking of thin sections and smear-slide residues in the new Sample Material Curation System (SMCS), curation of cuttings, preservation conditions for cores loaned for short term (academic/scientific meetings) and long term (museum, educational institutes), sharing and administration of property and facilities among the repositories, and the role of university administration. Special operation related issues: incl. NanTroSEIZE curation (SODV, Chikyu), multirepository requests, non-performer requests, museum loans; discussion of IODP sample, data and obligation policy, inter-IO* training.

The meeting included a good balance of presentations and discussion topics, and was very successful both in terms of the information covered and in promoting communication between the staff members from all repositories.

The last day of the 1st Annual IODP Curatorial Meeting (with guest participants from the IODP Data Management Coordination Group (DMCG), who met at MARUM later that week) was dedicated to the databases the IOs are using, the new Sample Material Curation System (SMCS), and the new USIO Laboratory Information Management System (LIMS). Brief presentations/updates were given on J-CORES*, Offshore DIS, SEDIS*, JANUS, and LIMS/SMCS, with introductions, background, and sampling information. In addition, a demo and test of the Sample Material Curation System (SMCS) was performed online by most participants.

Ursula Röhl, ESO Curation and Laboratory Manager

* CDEX: Center for Deep Earth Exploration; ECR: East Coast Repository; GCR: Gulf Coast Repository; JANUS: USIO Database System; Offshore DIS: ESO Database System, Offshore Drilling Information System; USIO: US Implementing Organisation; WCR: West Coast Repository; BGS: British Geological Survey; IODP-MI: Integrated Ocean Drilling Program Management International, Inc.; IO: Implementing Organization; J-CORES: Japanese Database System; SEDIS: Scientific Earth Drilling Information System.



Catherine Mével

IODP faces new challenges

We are entering a new phase of IODP, with the three types of drilling platforms operating simultaneously. For the first time, new areas of research are now accessible to the scientific community.

At the same time, however, IODP is facing significant funding challenges. Due to the oil price, there is a high demand for all equipment related to ocean drilling which has resulted in increased costs that strongly impact on the program. This is also why ESO has not been able to contract a drilling platform during the weather window suitable to implement the New Jersey Shallow Shelf Expedition in 2007. Moreover, in many member countries, the funding level is not as high as we would like.

As a result, IODP will not have enough funds to run the platforms all year round. It is expected that the *JOIDES Resolution* will operate 7-8 months a year within IODP. The *Chikyu* is planning to devote 5 months of riser drilling plus 2 months of non riser drilling every year to IODP. During the remaining time, both NSF/USIO and MEXT/JAMSTEC will look for other funding sources, either from other governmental agencies or from commercial companies, to operate outside

of IODP. The program is also open to partnership that could contribute significantly to specific expeditions.

For mission-specific platforms, the challenge is also there. ECORD is not likely to have enough funds to operate one expedition per year. The ECORD Council is keen, however, to maintain at least one every two years, to keep the momentum in the ECORD Science Operator. This may keep very expensive expeditions out of reach for the present time, unless we are able to raise additional money. We are discussing possible funding opportunities with the European Commission within FP7.

How this will work is not yet fully appreciated. All IODP entities are presently working on the implementation of this new mode of operation. However, the good news is that the *Chikyu* is ready to go this September, and that a completely refitted *JOIDES Resolution* will start next spring. A number of exciting programmes are coming up, and opportunities are still there.

Catherine Mével, EMA Director

The ECORD member countries are Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.



Albert Gerdes



Alan Stevenson

ECORD Education and Outreach Activities



Patricia Maruéjols

News from the Outreach Team

Since the last Newsletter was published, the main event for the Outreach team was the EGU 2007 meeting in Vienna (*see below*), where we organised the ECORD-IODP booth and Townhall meeting and presented a talk on "Mission-specific platforms" at the ECORD Teachers' Workshop.

In June, Alan Stevenson and Albert Gerdes travelled to Washington DC to meet with representatives from the Lead Agencies, IODP-MI colleagues and outreach specialists from the US and Japanese Implementing Organizations. As well as our annual review of progress in our joint outreach activities we also discussed input to the forthcoming NanTroSEIZE Expedition and the AGU Fall Meeting in San Francisco in December 2007. During the trip to the USA, we also visited the Rutgers University campus at New Brunswick to discuss outreach with New Jersey Shallow Shelf Expedition co-chief scientist, Greg Mountain, and Carl Blesch of the Rutgers Media Relations Department.

Plans are already underway to organise the ECORD-IODP booth at EGU 2008 in Vienna next April and the Outreach team also plan to present ECORD-IODP information at the Oceanology International Conference in London, UK in March 2008. Preliminary plans are being made to have a booth at the 33rd International Geological Congress in Oslo, Norway from 6th to 14th August 2008.

In collaboration with our IODP-MI colleagues, we submitted an article describing IODP science to be included in "Responding to Climate Change 2007", which will be distributed at the United Nations Framework Convention on Climate Change Conference of the Parties (serving as the meeting of the Parties to the Kyoto Protocol) in Bali, Indonesia, 3rd-14th December 2007. The article will be included in the delegate packs for up to 10,000 people and will be distributed to a further 25,000 people/organisations. The article will also be featured on the RTCC website for 1 year - www.rtcc.org/2007/.

We continue to receive regular requests from both print and TV media to contribute information and pictures from the Arctic Coring and Tahiti Sea Level expeditions demonstrating the great interest that IODP drilling generates worldwide.

ECORD and IODP Activities at EGU 2007

Almost 8,000 people attended the European Geosciences Union General Assembly 2007 in Vienna from 16th to 20th April, one of the major Earth Sciences conferences in Europe. The ECORD-IODP booth was busy throughout the conference as a focal point for people interested in the program. It featured a wide range of information including replica cores from the Arctic and Tahiti Expeditions and the most recent publications related to the program. The ECORD scientific drilling community was involved in

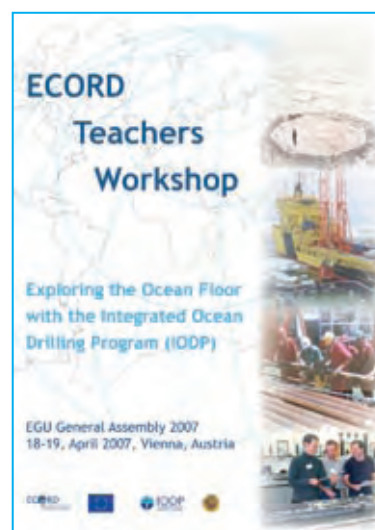
(to continue on page 7)

a number of activities such as scientific sessions on IODP science, press conferences and interviews, a joint ICDP-IODP Townhall meeting and the ECORD Teachers' Workshop.

ECORD Teachers' Workshop

Eve Arnold (Swedish ESSAC delegate) organised the ECORD Teachers' Workshop «Exploring the ocean floor with the Integrated Ocean Drilling Program» during the EGU 2007. Seventy teachers from 22 different countries registered for the ECORD workshop, which was organized in partnership with the annual EGU Geophysical Information For Teachers (GIFT) symposium. The GIFT theme for 2007 «Geoscience in the City», focussed on natural hazards, and the following ECORD-IODP workshop continued on that theme by presenting current ocean drilling scientific results and future science plans concerning sea-level change, slope stability, earthquakes, volcanoes and life in extreme environments in addition to presenting the IODP drilling fleet. The teachers also received an ECORD «goodie bag» including posters and CDs for use in their class rooms as well as IODP literature for future reference.

ECORD Outreach team: Albert Gerdes & Alan Stevenson, ESO, and Patricia Maruéjol, EMA



ECORD Summer Schools 2007

In 2007 ECORD provided support to co-sponsor summer schools in Urbino, Italy (18th July-3rd August) and Bremen, Germany (13th-24th August). Support has also been provided to participants by awarding 10 ECORD Scholarships to cover the expenses of the successful applicants (*see page 9*).

The IODP-ECORD Urbino Summer School in Palaeoclimatology USSP 2007 (18th July-3rd August 2007)

To promote a “total integration approach” of field data and GCM experiments to the next generation of paleoclimatologists and IODP drillers, the Urbino Summer School on Paleoclimatology (USSP) Consortium organized the 4th annual USSP, generously hosted by the Faculty of Sciences of the Università degli Studi di Urbino, in Urbino, Italy. Since 2003, the USSP has provided



graduate students and professionals from around the world with an intensive educational experience in reconstructing the history and dynamics of palaeoclimate. World experts in paleontology, sedimentology, geochemistry, climatology, and many related fields converge to provide a balance of lecturing on palaeoclimate-related topics and mentoring of student-centered exploration, integration, and synthesis. The USSP has been extremely successful since its inception and continues to evolve and expand through each annual offering.

And ECORD - USSP 2007 was a blast indeed! More than 55 participants representing over 20 nations, and more than 25 teachers/instructors met to enjoy the intensive two and a half weeks of USSP 2007 18th July – 3rd August. The renowned winning combination of integrated in-depth lectures and exercises, by internationally recognized geoscientists, including former and future IODP co-chiefs, (palaeo)climatologists, including both editors of

Palaeoceanography, student-centred data investigations and presentations on the latest, often yet unpublished, field data and modelling results, field excursions to classic Italian stratigraphic sections (*see photo*), and intensive small-group discussions among students and instructors on various paleoclimate topics and methods, did it again. For 2007, the 4th USSP was generously sponsored by the Netherlands Darwin Center for Geobiology, the Institute for Marine and Atmospheric Sciences Utrecht (IMAU), the Netherlands Research School for Sedimentary Geology (NSG), the International Marine Past Global Change Study Group (IMAGES), the European Consortium for Ocean Research Drilling (ECORD), the universities of Urbino and Utrecht, and the Province of Pesaro e Urbino. The collective support of these institutions is gratefully acknowledged.

Some comments from the students who attended the summer school:

“Awesome!”, “superb!”, “intense plus!”, “Steep learning curve but thumbs up”, and “a never-to-be forgotten, totally positive experience”.

“The summer school was fantastic! Really, really intense learning (a slight shock to the system) but because all 50 of us were in the same boat the experience was really heightened. We helped each other learn a lot, not only did it give me excellent top-of-the-range feedback on my own research BUT it also awakened me to other areas of research that my work will feed into or form collaborations with. I’ve also gained fifty research colleagues who I can turn to for advice, information, feedback and who I can continue to work with, and even plan new research with! The school was invaluable to me for learning, confidence and making contacts! If only I could go again.”

Henk Brinkhuis, Professor at Utrecht University and Dutch ESSAC delegate - H.Brinkhuis@uu.nl

The ECORD Bremen Summer School on Paleoceanography (August 13th-24th 2007)

The ECORD Summer School on Paleoceanography 2007 was held from 13th-24th August 2007 at the MARUM Research Center Ocean Margins, Bremen University, Germany. A total of 24 PhD students and young post-docs participated from several European countries, the USA and China.

The course combined lectures and interactive discussions on the paleoceanography of the Cretaceous to Cenozoic ocean with practical exercises, as well as core-logging practice with the application of time-series analysis techniques, using the facilities of the IODP Bremen Core Repository (*see photo below*).



The focus of the lectures and discussions was key topics related to, e.g., ocean heat transport and nutrient cycles, recent developments in integrated stratigraphy, and recent studies of North Atlantic and Arctic Ocean climate variability.

The course was equally balanced, with half the time dedicated to lectures and discussions and the other half to laboratory exercises. The major goal was to inform the students about IODP and to train them for possible drilling expeditions.

The participants were also given the opportunity to present their own projects in 15-minute talks. Maite Hernandez Sanchez, University of Bristol and Ulrich Kotthoff, University of Frankfurt received awards for the best oral presentation.

Combined with the ECORD Summer School, the first IODP Topical Symposium on "North Atlantic and Arctic Climate Variability" was held at the MARUM institute (*see page 15*). This provided the students

with first-hand exposure to current research results from the world's leading scientists, and the chance to discuss their work directly with the experts. The integration of the Topical Symposium with the ECORD course, more easily allowed speakers at the symposium to give lectures at the summer school.

In addition to using the IODP Bremen Core Repository facilities, the group also visited the ice-core repository at the Alfred Wegener Institute for Polar and Marine Research in Bremerhaven, to get a direct insight into the ice-core research.

ECORD has already provided funds for next year to carry out another ECORD Summer School with the theme "Deep Biosphere and Carbon Cycle" in the MARUM at Bremen University. The probable time frame is early September 2008.

Dierk Hebbeln, Professor at the Bremen International Graduate School for Marine Sciences "Global Change in the Marine Realm" and Gerold Wefer, Director of MARUM Research Center Ocean Margin

ECORD Paleoclimatologists take IODP science to the schools

On the 6th of June, a team from Utrecht University won a prestigious award out of 21 competing proposals from other universities. The winning project "Paleoclimatologists on expedition to the past to discover the climate of the future" was led by Tine Beneker with central contributions from Lucas Lourens, Appy Sluijs and Henk Brinkhuis. The project aims to bring new understanding and insights to Dutch high schools (4-6th grades), focussing on the Paleocene-Eocene Thermal Maximum (PETM) greenhouse world, which is directly relevant to the current CO₂ debate. This will be achieved through developing a "greenhouse world" package of DVDs featuring lots of IODP drilling, a web site, and a national contest producing short films (You-Tube style, produced by the kids) on the theme 'Holland in 2508'. The winners of the school competition will go on a real expedition to Svalbard, in association with the Climate Change College, (www.climatechangecollege.org/) in Summer 2008. This package will serve as part of the obligatory programme for kids following the 'sciences' track on high schools for the next years.



Henk Brinkhuis, Professor at Utrecht University and Dutch ESSAC delegate - H.Brinkhuis@uu.nl

How to find materials and contacts for Outreach and Education

• Promotional materials - www.ecord.org/pi/promo

Publications - brochures/flyers and posters, core replicas and Arctic photo exhibition are available upon request.

• Education - www.ecord.org/edu/education

Educational materials, ECORD Teachers' Workshop, ECORD Summer Schools, ECORD Distinguished Lecturer Programme.

• Contacts: Alan Stevenson (agst@bgs.ac.uk), Albert Gerdes (agerdes@marum.de) and Patricia Maruéjol (maruejol@crpg.cnrs-nancy.fr)

Other IODP contacts: Nancy Light - nlight@iodp.org (IODP-MI); Tadashi Yoshizawa - yoshizawat@jamstec.go.jp (Chikyu expeditions) and Jon Corsiglia - jcorsiglia@joiscience.org (SODV / JOIDES Resolution expeditions).



Chris MacLeod

ECORD Science Support & Advisory Committee Updates



Elspeth Urquhart

Behind the scenes, the main news from ESSAC is the handover of the chairmanship of the committee from me, Chris MacLeod, to Gilbert Camoin and consequent relocation of the ESSAC Office from Cardiff to Aix-en-Provence on 1st October 2007. The new ESSAC Science Coordinator will be Dr Bonnie Wolff-Boenisch, whom we have poached from ICDP, the International Continental scientific Drilling Programme (*see photo*). We hope that relations between IODP and ICDP don't suffer as a result!

From 1st October 2007 all e-mail communications with ESSAC should be addressed to essac@cerege.fr. The web site (www.essac.ecord.org) will remain unchanged, except for the replacement of the ESSAC@Cardiff Welsh dragon logo with a snappy new one designed by Gilbert.

To the scientific community of ECORD little should change following the ESSAC Office handover. Staffing of the first three expeditions of the Nankai Trough Seismogenic Zone Experiment on *Chikyu*, which was complicated by a number of behind-the-scenes operational changes, has finally been completed. The same is true for the two Equatorial Pacific Transect expeditions on *JOIDES Resolution*. Following recent news of further delays to the completion of the refit of *JOIDES Resolution*, the Science Planning Committee and Operations Task Force have been forced to reschedule what had been Equatorial Pacific Transect I (with co-chiefs Pálke and Ahagon) from March-May 2008 to September-November 2008. The other Equatorial Pacific Transect expedition (formerly expedition II, with co-chiefs Raffi and Lyle) will remain May-July 2008 (*see table*). Precise dates and official notification can be found in the table above and on the IODP web site:

iodp.tamu.edu/scienceops/expeditions/equatorial_pacific

ESSAC is currently engaged in staffing the Bering Sea expedition, currently scheduled for July-September 2008 (*see table*). With a record 56 eligible applications for the 8 ECORD berths competition for places has never been fiercer. Evidence for the ever-growing enthusiasm and vibrancy of the ECORD scientific community in IODP is everywhere and pervades the entire program; for example, 38% of the 135 active drilling proposals under consideration by the

IODP Science Advisory Structure are led by European or Canadian scientists. At a time of unprecedented financial pressure on IODP in the USA and Japan, the importance of ECORD's scientific and (relative!) financial solidity should not be underestimated.

Reflecting upon my time in the helm as ESSAC Chair, I look with some satisfaction at the expansion of ESSAC's activities over the past couple of years, and the maturing and growth of its role within ECORD. As is usual in such circumstances, this less to do with me than it is a reflection of the hard work of a very great number of people who have worked selflessly for the common cause. I would particularly like to acknowledge the contributions of: Elspeth Urquhart, Federica Lenci and Julian Pearce in the Cardiff ESSAC Office, and former ESSAC chair Jeroen Kenter; Catherine Mével and the EMA office; Chris Franklin and team at the UK Natural Environment Research Council, and Sir Geoffrey Allen, Mike Bickle and Heather Stewart from UKIODP;

and of course the ESSAC delegates and alternates. Many of the new initiatives we have put in place have only been possible because of ECORD Council's decision to 'empower' ESSAC by, for the first time, giving us a budget to work with. Council's backing for our suggested schemes is gratefully acknowledged.

With this financial support we have been able to sponsor the wonderfully successful summer schools in Urbino and Bremen in 2007 (*see reports pages 7-8*), and award what have already become prestigious ECORD Scholarships for up to 10 young scientists to attend. Council have generously agreed to sponsor Urbino and Bremen again to run summer schools in 2008, and to support the

Scholarship scheme once more. The Bremen Summer School in 2008 will be focused on the theme of the deep sub-seafloor biosphere, and Urbino once again on palaeoclimatology. Details of the 2008 summer school schedules will be posted on the ESSAC web site in due course.

Through the efforts of Swedish ESSAC delegate Eve Arnold and the ECORD Outreach team ECORD and IODP science has been presented to the wider public via the ECORD Teachers' Workshop held at the European Geosciences Union meeting in Vienna in



The new ESSAC team, from left to right : Myrthyse Joanides (CEREGE) in charge of the ESSAC budget, Gilbert Camoin (ESSAC Chair) and Bonnie Wolff-Boenisch (ESSAC Science Coordinator).

Riserless drilling vessel planning schedule

Expedition	Dates
317 - Equatorial Pacific / Juan de Fuca*	18 May-18 July 08
318 - Bering Sea	18 July-17 September
319 - Equatorial Pacific	17 September-17 November
321 - Canterbury	17 November-17 January 09
323 - Wilkes Land	17 January-22 March
Mariana	22 March-22 May

* the expedition will consist of operations both in Equatorial Pacific (30 days) and 5 days in Juan de Fuca.

April 2007. This and other related activities are described in more detail on pages 6-7 of this newsletter.

The ECORD Distinguished Lecturer Programme is just getting under way. We received a very large number of applications from institutions to host the 2007-08 lecturers Judy McKenzie, Paul Wilson and Benoît Ildefonse. We are attempting to schedule as many lectures as our budget will allow through to spring 2008, and are posting their times and venues on the ESSAC web site as soon as they are arranged. A conscious effort is being made to give lectures in institutions that have not previously had much involvement with IODP, and also to visit non-ECORD European countries to evangelise about the exciting science of IODP.

The ESSAC Office has worked hard in conjunction with IODP-MI, the European Science Foundation Magellan steering committee and the national offices of ECORD countries to help support the attendance of ECORD scientists at IODP-MI sponsored workshops in summer 2007. These were the Large Igneous Provinces and Geohazards workshops, held in

Coleraine (Northern Ireland) and Portland (Oregon) respectively (www.iodp.org/workshops). Together we have been able to ensure the attendance of a much larger number of ECORD scientists than at previous IODP-MI workshops because of our joint attempts to coordinate funding avenues. ECORD influence in the planning of future directions in IODP should be proportionately greater as a result.

Forward planning of IODP-related science in Europe is also going ahead via the ESF Magellan workshop series, as it has with great success for the past two years. A report from the recent Magellan-funded workshop on mud-mounds is included elsewhere in this newsletter (*see page 15*). A new call for workshop proposals has just been issued by ESF (www.esf.org/magellan) with deadline of 15 November 2007 (*see below*).

In conclusion, as I hand over the reins of ESSAC to Gilbert and Bonnie in Aix-en-Provence I am confident you will see a bigger, better and even shinier ESSAC working for you over the coming two years! Bon courage!!

Chris MacLeod, Outgoing ESSAC chair

Meeting Announcements

- ◆ *ESF-Magellan Workshop Series:* <http://www.esf.org/magellan>
- ◆ *IODP-MI Workshops:* <http://www.iodp.org/workshops>

INTERNATIONAL CONFERENCES:

- ◆ AGU Fall 2007, 10-14 December 2007, San Francisco, USA - <http://www.agu.org/meetings/fm07/>
- ◆ 28th Nordic Geological Winter Meeting, 7-10 January 2008, Aalborg, Denmark - <http://www.civil.aau.dk/ngwm/>
- ◆ Oceanology International, 11-13 March 2008, London, UK - <http://www.oceanologyinternational.com/>
- ◆ EGU 2008, 13-18 April 2008, Vienna, Austria - <http://meetings.copernicus.org/egu2008/>
- ◆ EuroFORUM 2008 - Achievements and perspectives in ocean and continental drilling, EGU 2008 in Vienna (Co-conveners: Gilbert Camoin - ECORD and Ulrich Harms - ICDP)
- ◆ 33rd International Geological Conference (IGC), 6-14 August 2008, Oslo, Norway - <http://www.33igc.org/>

Call for Proposals for Magellan Workshops Series to be held in 2008

Magellan Workshop Series invites proposals from potential organisers of workshops to be held in 2008. Proposals following these special themes: **Carbon Dioxide Sequestration beneath the Seafloor**, **Transient Climate Events**, **Climate Tectonic Links** Proposals focusing on the Atlantic Ocean are encouraged.

On-line Submission: www.esf.org/magellan and www.essac.ecord.org/workshops

Deadline for applications: **15 November 2007**

Contact: Eilen Degott - edegott@esf.org

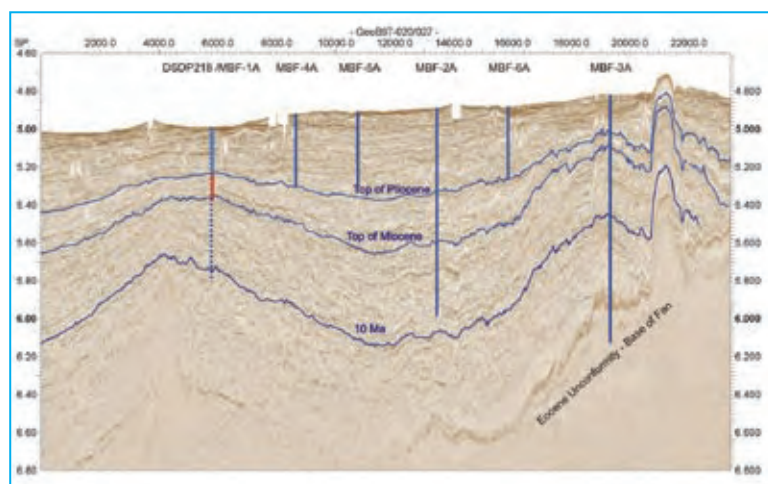
**How to Submit an
IODP Drilling Proposal ?**
next submission deadline: April 1, 2008
Further information on ESSAC at:
www.ecord.org

Highlights of IODP Proposals recently sent to the Operation Task Force

Neogene and late Paleogene record of Himalayan orogeny and climate: a transect accross the Middle Bengal Fan
Christian France-Lanord, Volkhard Spiess, Tilmann Schwenk, Peter Molnard and John Curray.

IODP Proposal 552

Proposal 552 addresses the general objective to understand how the Himalayan-Tibet orogenesis interacts with the Earth's climate. This includes forcing of the climate due to paleogeographic evolution and atmospheric CO₂ uptake as well as retroaction of the monsoon climate on tectonics via erosion. Because the Bengal Fan has accumulated most of the Himalayan erosion flux since the continental collision, it represents the most complete record of both the uplift and erosion history of the Himalaya and of the monsoon climate. Sediments will document (1) uplift



history through erosional flux and deposition patterns and detailed geochronology of minerals, (2) Himalayan evolution from isotopic tracing of particle origin and age, and (3) environmental and climate conditions through sediment granulometry, mineralogy and geochemistry, organic matter composition and $\delta^{18}\text{O}$ of microfossils. A reliable quantification of erosional fluxes over the Neogene is essential to assess the role of the Himalayan erosion on the global carbon cycle. Leg 116 in the distal fan has shown major variations of these proxies over the Neogene and the proposed Leg should allow us to test if they are representative regionally. The proposed transect at 8°N will allow a complete record of the Neogene Himalayan erosion and monsoon to be constructed and will complete the present record of Himalayan erosion since the Miocene.

Interpreted seismic data and age horizons with IODP drillsite locations (MBF-1A to 6A) and DSDP site 218, Leg 22 - www.deepseadrilling.org/ - Seismic data are GI Gun data, collected during the first site survey with R/V Sonne (cruise SO125, 1997).

Environmental significance of the Mediterranean outflow water and its global implications

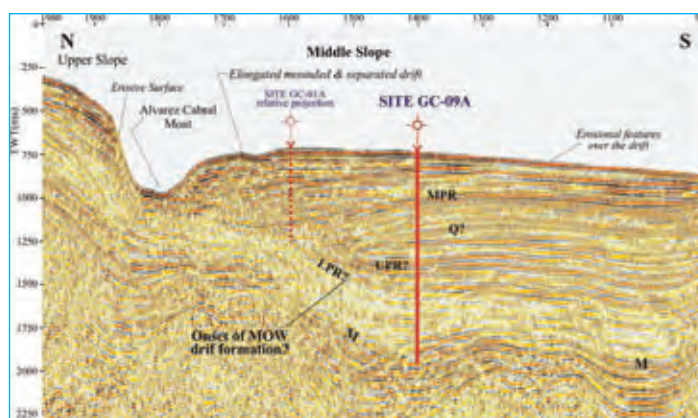
Dorrik Stow, F^o Javier Hernández-Molina et al.

IODP Proposal 644 (GUCADRILL)

An extensive Contourite Depositional System (CDS) has been developing within the Gulf and the West Iberian Margin over the past 5 million years as the direct result of the Mediterranean Outflow Water (MOW). The high rates of accumulation and expanded sedimentary records of drift deposits permit high-resolution examination of past environmental change. The CDS deposits, therefore, hold the very best signal of MOW flow through the Gibraltar gateway, and a clear record of its influence on the oceanography and climate of the North Atlantic Ocean and on North Atlantic Deep Water (NADW) variability. The importance of the Gulf of Cadiz is clearly reflected in the large number of regional studies and multinational interest shown over the past 30 years. Despite such extensive surveying, the region has not yet been drilled for scientific purposes, even though the Gibraltar gateway clearly has major implications for global climate and oceanography. We have identified the following four broad scientific objectives, which require a total of seven drill sites through the Pliocene to Quaternary sedimentary record: (1) Influence of the Gibraltar Gateway, (2) MOW paleoceanography and global climate significance, (3) Sea-level changes and sediment architecture of the Cadiz CDS and Iberian margin, and (4) Synsedimentary neotectonic control on architecture and evolution of the CDS. To achieve these major scientific objectives, it is essential to integrate the results of the proposed drill sites with a dense network of existing high-resolution seismic reflection profiles. Interpretation of this seismic network is already well established, although the inferred ages require drilling confirmation.

The GUCADRILL proposal involves, directly or indirectly, 44 researchers from nine different countries.

Uninterpreted Multichannel seismic-reflection (MCS) profile across the Faro-Albufeira drift on the middle slope (Line P74-75 provided by REPSOL-YPF Oil Company for the IODP proposal. Site GC-01A and GC-09A location is shown. Four major low-resolution depositional sequences have been recognised by MCS profiles in the Pliocene and Quaternary sedimentary record (Llave et al., 2001; Hernández-Molina et al., 2002; 2006). They are separated by four relevant discontinuities: M (Late Messinian), LPR (early Pliocene?), UPR (late Pliocene?) and MPR (Mid Pleistocene?). LPR erosive discontinuity could represent the onset of drift formation.



Search for signs of active life in the Tahiti reef framework

As a component of IODP Expedition 310 (Tahiti Sea-Level), microbiological investigations were carried out in a reef framework based on the occurrence of authigenic grey carbonates representing microbialite structures, which are frequently associated with microbial activity, within the coral-reef framework. This was the first time that microbiological processes inside the reef framework have been studied, in situ, in order to understand the biological mechanisms linked with the formation of massive microbialites.

Microbialites are laminated or thrombolitic carbonate crusts, which grow in the coral-reef framework, reducing the pore spaces and, thereby, stabilizing the overall structure (Figure 1). As a new aspect for reef studies, the geo-microbiological approach and methods had to be introduced to the shipboard research program. It was a novel idea to consider that living microorganisms could be involved in mineral precipitation inside the reef.

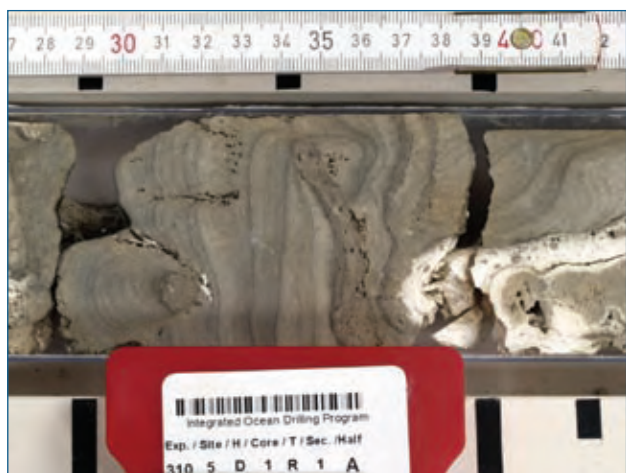


Figure 1. Laminated and thrombolitic carbonate crusts in the Tahiti reef, referred to as microbialites (photo ECORD/IODP).

During IODP Expedition 310, an innovative method using ATP measurements was applied to detect microbial activity. As direct cell counts were not possible, due to the porous nature of the cored material, an ATP analyzing instrument was tested to determine if living biofilms could be detected in the reef framework and for microbial contamination assessment of drill waters, equipment, etc. (Figure 2).

Method

Adenosine 5'-triphosphate (ATP) is the universal energy-transferring intermediate molecule in all organisms. Thus, the presence of ATP is a marker molecule for the presence of living cells. This is affirmed by the fact that ATP is not known to form abiotically. ATP can be easily detected with high sensitivity and high specificity using an enzymatic assay.

Luciferase enzyme

$\text{ATP} + \text{Luciferin} + \text{O}_2 \rightarrow \text{AMP} + \text{Oxyluciferin} + \text{PPi} + \text{CO}_2 + \text{Light}$
Light is emitted as a result of the reaction, which is detected by a photomultiplier. Typical sensitivity (significant above background) of commercially available instruments is 0.01 attomoles/ml water, corresponding to about 5 *Escherichia coli* cells.

Using the handheld ATP device along a freshly retrieved core allowed for fast and accurate measurement of activities, as well as enabling the detection of life in lithified sediments, such as reef cores.



Figure 2. The new, handheld ATP analyzing instrument, manufactured by UNILITE, which was used to detect the presence of life with a swab-test during shipboard analysis of core surfaces (photo R. Warthmann).

ATP was measured routinely on drillcores recovered from the submerged reef. Due to the delicate and easily damaged nature of living biofilms, the core-handling protocol was not adequate to avoid contamination. As a result, the ATP measurement took first priority when the core came on deck (Figure 3), and biofilm sampling was made directly on the freshly retrieved drill core prior to further handling. Furthermore, using this new ATP detection method, it was possible to control the degree of microbial contamination by seawater, drill fluids, and, of course, the drill operator's gloves which showed the highest ATP values (Figure 4).



Figure 3. Shipboard geomicrobiologists, Drs. Crisogono Vasconcelos and Rolf Warthmann, making ATP measurements as the first step during core handling on Expedition 310 (photo ECORD/IODP).

The results of hundreds of measurements showed that the Tahiti reef is a patchy environment with respect to ATP and microbial activity. Most of the activity is located near the surface from 0 to 6 mbsf (metres below sea floor). A truly deep subseafloor biosphere seems not to exist in this nutrient-poor reef environment. This implies that the carbonate microbialite, which is a major component of the reef framework (up to 70 %), was formed concurrently or a short time after the encompassing coral deposit.



Figure 4. Possible sources of microbial contamination: contact with the operator's gloves, drill water and/or drill pipe (photo ECORD/IODP).

Geomicrobiology sampling recovered biofilms, which line the open pore spaces in the reef framework and comprise living microbial communities ensconced in an organic matrix, commonly known as exopolymer substance or EPS (Figure 5). Microbial processes mediate the precipitation of carbonate minerals (Figure 6), which, in turn, leads to the formation of layer upon layer of thin microbialite laminae.

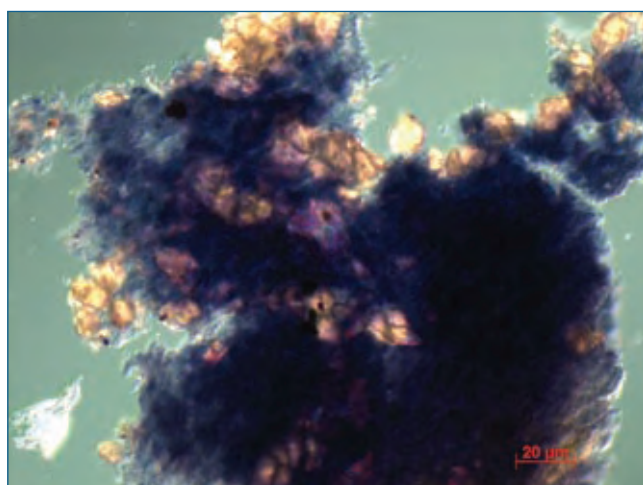


Figure 5. Living biofilms recovered from the Tahiti reef showing carbonate minerals encompassed by an organic exopolymer matrix (EPS) (photo R. Warthmann & C. Vasconcelos).

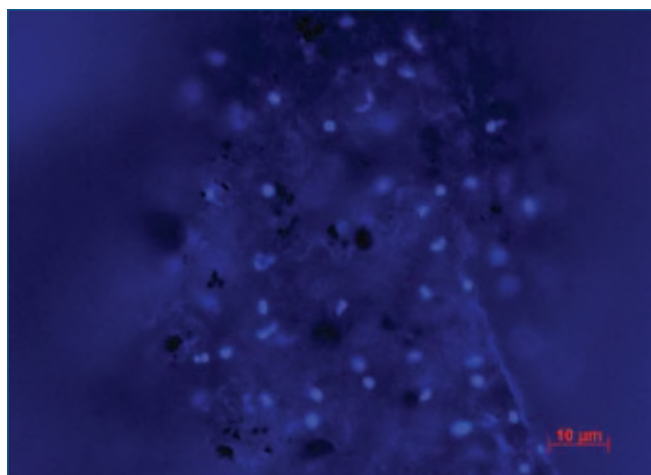


Figure 6. This microscopic view of a microbial community (bright blue dots) detects in situ carbonate precipitation (black dots), which is probably the process responsible for the microbialite formation in the Tahiti reef (photo R. Warthmann & C. Vasconcelos).

SEM photomicrographs of the collected biofilm show the diversity of the microbial community detected in the samples, which provides clues to interpret the role of microbes in reef formation (Figure 7). Furthermore, SEM evidence of the merging and coalescing of the microbial carbonate precipitate within the EPS indicates the first step in the formation of microbialite laminae (Figure 8).



Figure 7. SEM photomicrograph showing rod-shaped microbes embedded in an EPS matrix (photo R. Warthmann).

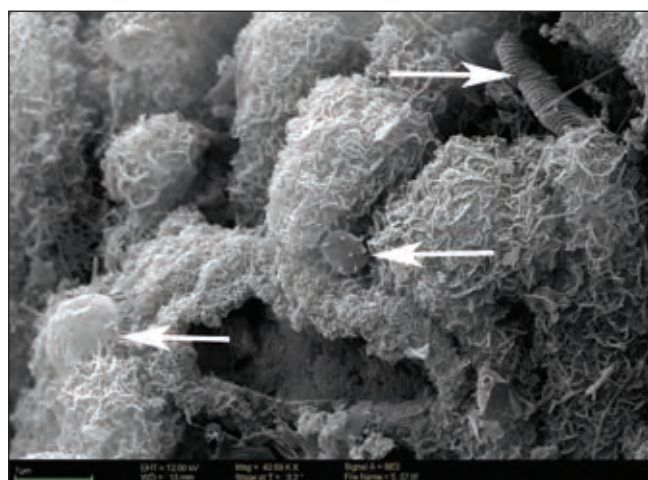


Figure 8. SEM photomicrograph showing a close-up view of the microbialite formed in association with the biofilm surface. Globular carbonate precipitate covered by an EPS matrix produced the wrinkled texture of the surface. Three different microbes are visible, as indicated by arrows (photo R. Warthmann).

Together, the ATP detection of distinct levels of microbial activity and the exciting recovery of living biofilms in the pore spaces of the Tahiti coral reef during IODP Expedition 310 is an important discovery adding a new dimension to our understanding of the evolution of a carbonate reefal structure and its early diagenesis.

Rolf Warthmann¹, Crisógono Vasconcelos¹, Judith A. McKenzie¹ and Gilbert Camoin²

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More information at www.essac.ecord.org

Workshop & Symposium Reports

◆ Exploring Escarpment Mud Mound Systems and Mud Volcanoes with New European Strategies for Sustainable Mid-Depth Coring - Magellan Workshop Series, 26th-29th April 2007, Murten, Switzerland

(Convener: Sylvia Spezzaferri, sylvia.spezzaferri@unifr.ch).

The geological setting of mound systems and mud volcanoes provides an exceptional natural laboratory for studying and understanding the exciting and constructive interplay between the hydrosphere, geosphere and biosphere. The nature and shallow migration patterns of geofluids, the precipitation modes of authigenic carbonates, the diversity of the microbial and benthic biosphere in these provinces, where mounds and mud volcanoes frequently co-occur, develop into unique research topics.



As part of the ESF Magellan Workshop Series on Marine Research Drilling, a workshop, entitled "Exploring Escarpment Mud Mound Systems and Mud Volcanoes with New European Strategies for Sustainable Mid-depth Coring", was held in Murten, Switzerland on 26th -29th April 2007. The workshop gathered together 19 scientists, some of whom are involved with two IODP Proposals 689 and 673 on related topics, as well as ESF EUROCORES and EU-FP6 projects. The participants, representing a wide spectrum of disciplines, e.g., geophysics, sedimentology, paleoceanography, biogeochemistry and geomicrobiology, joined with the aim to discuss the best strategies to study mud-mound systems and

mud volcanoes. The two workshop thematics, Mud Mounds and Mud Volcanoes, were discussed separately. However, common features were analysed in detail and the participants agreed that a parallel research strategy was most rewarding.

Of relevant interest was the contribution (with a short film) presented by T. Freudenthal of the capability of Europe's most promising and innovative tool for ocean margin exploratory drilling: the Remotely Controlled Sea-Floor Drill Rig "MeBo" (Meeresboden-Bohrgerät) developed at the Marum Center for Marine Environmental Sciences at the University of Bremen (MARUM) to address the target objectives, in the absence of high-performance drilling tools such as IODP drilling platforms. The unique sea-floor sampling capabilities of the MeBo have been demonstrated during four expeditions with 26 deployments between August 2005 and March 2007. Crystalline and sedimentary rocks were sampled down to a depth of >40 m by rotary drilling, as well as recovering soft sediments by push coring. The possibility to switch between push coring and rotary drilling and vice versa during the same deployment makes the MeBo the ideal dedicated tool for coring mound sites containing hardgrounds and carbonate crusts intercalated within soft sediment. The meeting summarized recent research advances in the field and recommended addressing carbonate-mound and mud-volcano investigations with MeBo drilling to provide the preliminary framework for future IODP expeditions.

Sylvia Spezzaferri, Stephan Margreth, and Giordana Gennari, University of Fribourg, Switzerland; Jean-Pierre Henriët, Davy Depreiter, Anneleen Foubert and Hans Pirlet, RCMG, Ghent University, Belgium; Christian Dullo and Andres Rüggeberg, Kiel University (IFM-GEOMAR), Germany; Tim Freudenthal and Dierk Hebbeln, MARUM, University of Bremen, Germany; Kai Mangeldorf, GeoForschungsZentrum (GFZ) Potsdam, Germany; Mieke Thierens, Rory O'Donnell and Andy Wheeler, University College Cork, Ireland; Luis Menezes Pinheiro, Universidade de Aveiro, Portugal; Menchu Comas, CSIC and University of Granada, Spain; Judith A. McKenzie and Crisogono Vasconcelos, ETH, Zurich, Switzerland.

◆ IODP Topical Symposium - North Atlantic and Arctic Climate Variability, 15th-16th August 2007, Bremen, Germany

The first topical IODP Topical Symposium was held at the MARUM Research Center Ocean Margins from 15th to 16th August. About 130 researchers discussed "North Atlantic and Arctic Climate Variability". The climatic processes in these regions influence the world climate greatly. The 15 keynote speakers gave an overview of the current state of affairs of this important piece of the climate puzzle.

"The North Atlantic and Arctic are key players in global climate", explains Prof. Dr. Gerold Wefer, Director of the MARUM and host to the symposium. "Through research drilling, the Integrated Ocean Drilling Program aims to unravel the processes in this area. With the won samples we can better understand past and present climate - indispensable basics for predicting climate change".

The four main topics of the Symposium were: Millennial-Scale Climate Dynamics, Milankovitch Scale Climate Variability, Evolution of Northern Hemisphere Glaciation, Extreme Warm Events. Besides the 15 keynote lectures about 70 posters were presented, many of them by junior scientists. The participants came from all over the world and different research areas. Not only scientists working on samples from the IODP program were present, but also scientists with terrestrial, ice and water samples to give an integrated overview.

(to continue on page 16)

"When this many renowned researchers come together, it is always something very special", comments Prof. Gerold Wefer, "Hosting the symposium here at MARUM is a great, great opportunity especially for our young scientists. To meet the foremost minds in the field, discuss ideas with them and even present their own research and thinking is a tremendous advantage and motivation."

Tied with the Symposium a summer school for advanced PhD students and post-docs was taking place from 13th to 24th August, sponsored by ECORD (see page 8).

*Participants attending a poster session of the IODP Topical Symposium in the MARUM building .
(photo A. Gerdes © ECORD/IODP).*



ECORD-Net Updates

ECORD Databases are on-line

The mutual exchange of information is one of the major goals of ECORD-Net and was described by the tasks of the WP1. ECORD has created a highly visible portal of interactive databases related to IODP and ECORD scientific data, publications and information:

<http://www.ecord.org/data>

Posted on this web page are three interactive ECORD databases which allow the ECORD scientists to efficiently exploit all aspects of scientific ocean drilling and managers to evaluate the impact of ocean drilling related science.

1) ECORD Information database

By collecting information from all ECORD members, this database documents and promotes the participation of the ECORD scientists involved in IODP according to:

- ♦ Proposal submitted by ECORD proponents (lead & co-proponents),
- ♦ Participation of ECORD scientists in expeditions (co-chiefs & participants),
- ♦ Participation of ECORD scientists in workshops, summer schools, IODP and ECORD committees.

It also archives and reflects an up-to-date picture of ECORD activity within IODP, in order to inform people (scientists & managers) involved in or joining the program.

2) **GeoMicroBiology database** pools and links all known existing information on drilling-based Geo-microbiology research by European scientists. The availability and exchange of information is intended to promote the writing of geo-microbiology proposals, enabled by ocean drilling, by the European scientific community. This will lead to the submission of quality research proposals in the competitive and exciting field of geo-microbiology

3) **Geological and Geophysical Information database** is a search page of undersea metadata featured by Madsen squares (10°/10° from GEBCO bathymetric atlas). The implementation of the data has been handled by a group of scientists from INETI (Portugal), University of Bergen (Norway) and Italy (OGS, Trieste). The data comprises seismic and acoustic data, seafloor and boreholes samples and provide links to other European databases (EU-SEASED, EUROSEISMIC, DISKOS, SNAP). It is designed to help scientists writing proposals.

ECORD scientists are invited to visit these databases, to register as a member and to enter/modify their data in order to help update and maintain these databases. All comments can be sent to: maruejol@crpg.cnrs-nancy.fr

*ECORD-Net: European Research Area for scientific drilling
Project n° ERAC-CT-2003- 510218, European Consortium
for Ocean Research Drilling Network
Coordinator - Catherine Mével - mevel@ipgp.jussieu.fr
www.ecord.org/enet/ecord-net*

ECORD Contacts

ECORD Council	ESSAC-ECORD Science Support and Advisory Committee
Chair: Bruno Goffé - bruno.goffe@cnrs-dir.fr Vice-Chairs: Raymond Schorno - schorno@nwo.nl & Severino Falcón-Morales - severino.falcon@mec.es	Chair: Gilbert Camoin - camoin@cerege.fr Vice-Chairs: Chris MacLeod - macleod@cf.ac.uk & Rudiger Stein - rstein@awi-bremerhaven.de ESSAC Office: essac@cerege.fr
EMA - ECORD Managing Agency	ESO - ECORD Science Operator
Director: Catherine Mével - mevel@ipgp.jussieu.fr EMA Office: ema@ipgp.jussieu.fr	Science Manager: Dan Evans - devans@bgs.ac.uk Operations Manager: Alister Skinner - acsk@bgs.ac.uk

More information on ECORD web site: <http://www.ecord.org>

ECORD Information database - <http://ecordbase.ecord.org/>

The ECORD Information database is one of tasks defined by the strategic objectives of the ECORD-Net*.

By collecting information from all ECORD members, this database documents and promotes the participation of the ECORD scientists involved in IODP according to:

- Proposal submitted by ECORD proponents (lead & co-proponents),
- Participation of ECORD scientists in expeditions (co-chiefs & participants),
- Participation of ECORD scientists in workshops, summer schools, IODP and ECORD committees.

It also archives and reflects an up-to-date picture of ECORD activity within IODP, in order to inform people (scientists & managers) involved in or joining the program.

All ECORD scientists are invited to visit the database, to register as a member and to enter/modify their data in order to help update and maintain this database. All comments can be sent to maruejol@crpg.cnrs-nancy.fr

In order to help users to browse/search the database and to register, a tutorial has been created: <http://ecordbase.ecord.org/index.php?module=Tutorial>

The ECORD Information database is also accessible via the ECORD web site at: <http://www.ecord.org/data>. Posted on this portal are:

- three interactive ECORD databases - ECORD Information, GeoMicroBiology (see Federica Tamburini's presentation) and Geological and Geophysical databases - which allow the ECORD scientists to efficiently exploit all aspects of scientific ocean drilling and managers to evaluate the impact of ocean drilling related science.
- links to IODP databases (Ocean Drilling Citation database, MSP data portal...)

** ECORD-Net: European Consortium for Ocean Research Drilling Network. ECORD-Net is a European Research Area Network supported financially by the European Commission (fp6) through the ERA-Net scheme. European Research Area for scientific drilling - <http://www.ecord.org/enet/ecord-net>*

5.4 ECORD-net Geomicrobiology database

A geo-microbiology meta-database has been created under ECORD-net's Swiss participation in Work package 1 (T. Bingham-Müller and F. Tamburini).

The goal was to create and compile a database in which information about ESSAC scientists and their research, currently working in the innovative field of geomicrobiology could be searched by members of the scientific community as well as by science managers. In the first stage of development, the database was designed to include also actual numerical data according to the scheme developed at the ESF Magellan Workshop on the Deep Biosphere. Due to the issue of data ownership protection and the absence of necessary funding, a modified version of the design was implemented. In its present form, the database comprises a complete list of scientists (addresses, area of interests), their publications, and ODP and IODP sites investigated for geomicrobiology. Links to existing databases, where the actual data are stored (e.g., JANUS database) are provided.

Education and Outreach Subcommittee Report

1. Recommendations regarding deadlines for Summer Schools

The time frame for soliciting, reviewing and notifying successful proponents should be done as early as possible in order for the successful summer school proponents to have enough time to secure co-financing (if possible), arrange the meeting venue and recruit as broad a student population as possible.

These decisions can likely be made via email, either by the subcommittee on education or the entire ESSAC committee.

Action item: Does subcommittee on education or full ESSAC committee make decision on summer school applications?

Suggested time frame – summer schools

Announcement for applying to host a summer school:

June 1 (or directly after the spring ESSAC meeting)

Deadline for submitting summer school proposals:

1 September

Deadline for reviewing summer school proposals and notifying proponents:

30 September

Suggested time frame – Scholarships

Review of ECORD scholarships (for ESSAC summer schools, EUROFORUM, potentially other relevant IODP meetings)

Action item: Are ESSAC scholarships restricted to ESSAC summer schools?

In order for students to arrange inexpensive travel and housing, it is desirable to have the scholarships awarded at minimum 1 month before the planned scholarship visit.

Thus, the application deadline for scholarships should be 2 months before the summer school start date. This means that summer schools must advertise for students at the beginning of the spring term.

2. New ideas regarding E&O activities (societal relevance of IODP), especially in non-traditional audiences.

Send representatives to various target audiences – national science teacher conferences,?

Advertisements in popular science magazines (or web publications), teacher association publications (with reference to websites with cruise blogs, educational activity, etc).

3. Suggestions regarding new ways to raise funds for E&O activities.

Search for E&O proposal opportunities at ESF, EU and member countries.

Organize teacher's workshops where a fee is charged to cover workshop expenses (this would bias against countries where teacher's do not have access to continuing education funds).

Sell ECORD t-shirts, coffee mugs, trinkets aboard ship and over internet (?)

4. Monitoring ECORD publication database.

The USIO already has a database of DSDP/ODP/IODP publications together with AGI which is continuously updated. A request can be made to extract all publications with author addresses corresponding to ECORD countries. Thus, the ECORD publication list can be updated once or twice a year.

Action item: Should ESSAC office be tasked with updating the database at least once a year?

Large Igneous Provinces

Catastrophic massive volcanism and contemporaneous environmental change have punctuated Earth history since at least 3.5 Ga, and have mystified and motivated Earth scientists for generations. The geodynamic and magmatic processes associated with flood basalt, or large igneous province (LIP) formation interact with certain elements of crustal structure and tectonic setting to produce a variety of expressions of LIPs, the most common of which are oceanic plateaus, magma-dominated divergent continental margins, and continental flood basalt provinces. A myriad of environmental perturbations are coeval with LIP formation, including climate changes, mass extinctions, accelerated evolutionary rates, oceanic anoxic events (OAEs), and variations in ocean chemistry. Exploring these relationships promises exciting scientific challenges.

The Large Igneous Provinces workshop, hosted by Integrated Ocean Drilling Program (IODP) Management International and Joint Oceanographic Institutions, was held at the University of Ulster 22-25 July in Coleraine, Northern Ireland, United Kingdom. Eighty scientists from 16 nations met to discuss strategies for advancing understanding of LIPs and associated environmental changes using a trio of new IODP platforms and related technologies that essentially expose the Earth beneath the sea for investigation. Over four days of plenary and breakout group meetings, including a one-day field trip to the UNESCO World Heritage Giant's Causeway and Causeway Coast exposures of the North Atlantic LIP, scientists who approach LIPs through field, laboratory, and modeling studies educated one another about their understanding of the world's LIPs, discussed the outstanding problems related to LIP origin, emplacement, and environmental consequences, and outlined a global mission to address these problems via drilling in conjunction with complementary geophysical and geological studies.

Studies of LIPs on the ocean floor and on land together with investigations into contemporaneous environmental changes involve a broad spectrum of scientific disciplines. To set the stage for intensive discussions, workshop participants heard global overviews of rift-related and intraplate LIPs as well as environmental consequences of LIPs. The four keynote presentations focused on (1) the most studied rift-related LIP—the conjugate Norway-East Greenland margins, (2) oceanic plateaus—Ontong Java Plateau and Kerguelen Plateau/Broken Ridge, (3) biotic responses and OAEs, and (4) capabilities of the three IODP platforms (riser, riserless, and mission-specific). Practical matters necessary for scientific drilling were the subject of presentations on the IODP proposal process and drill site characterization.

Multidisciplinary, synergistic approaches are required to address outstanding Earth system problems associated with LIP science, so the bulk of the workshop was conducted in plenary session to take advantage of the full diversity and expertise of workshop participants. Following keynote scientific and associated addresses, 49 five-minute presentations by participants spanned the spectrum of contemporary LIP and paleoenvironmental research. Focused thematic plenary and geographic breakout group discussions ensued, during which participants defined key LIP problems and identified drilling targets.

The workshop concluded with participants defining multiple pathways to drilling key LIPs ranging from individual projects to major mission initiatives, including full cooperation between the IODP and the International Continental Scientific Drilling Program (ICDP) for LIP investigations throughout Earth history, as well as joint academia-government-industry collaborations. Overall, the workshop highlighted that understanding the timing and duration of unique LIP magmatism and emplacement processes have significant implications for Earth system evolution, ranging from mantle geodynamics to climate and major global environmental and biotic changes.

A scientific white paper on large igneous provinces is in preparation for publication in *Scientific Drilling*, and the full workshop report is scheduled to be available in 2007 at <http://www.iodp.org>, which is also the source of comprehensive information about the IODP.

—MILLARD F. COFFIN, University of Tokyo, Japan; E-mail: mcoffin@ori.u-tokyo.ac.jp; CLIVE R. NEAL, University of Notre Dame, Lafayette, Ind.; ROBERT A. DUNCAN, Oregon State University, Corvallis, Or.; OLAV ELDHOLM, University of Bergen, Norway; ELISABETTA ERBA, University of Milano, Italy; CINZIA FARNETANI, Institut de Physique du Globe, Paris, France; GODFREY FITTON, University of Edinburgh, Scotland; STEPHANIE P. INGLE, University of Hawaii, Hi.; NAO OHKOUCHI, Japan Agency for Marine-Earth Science and Technology, Yokosuka, Japan; MICHAEL R. RAMPINO, New York University; MARC K. REICHOW, University of Leicester, England; STEPHEN SELF, Open University, England; YOSHIYUKI TATSUMI, Japan Agency for Marine-Earth Science and Technology, Yokosuka, Japan

Workshop “Addressing Geologic Hazards Through Ocean Drilling”

From August 26 to 30, 2007 the workshop “Addressing Geologic Hazards Through Ocean Drilling” was held in Portland, Oregon (USA). The workshop gathered about 80 scientists and engineers from the 5 continents and was sponsored by IODP-MI. The workshop set off from the following premise: “oceans are the sources of some of the most severe geologic hazards, including large tsunami-generating earthquakes, submarine landslides, and explosive volcanic eruptions, which can have devastating impacts on communities and coastlines both near to and far from the source. The preservation of event deposits in marine sediments provides opportunities to extract and read this geologic record through ocean drilling, and also to monitor physical processes and changes in material properties associated with dangerous geologic phenomena.”

The main objectives of the workshop were: (a) review the current state of community knowledge and activity in submarine geologic hazards in a wide variety of geologic settings, (b) define outstanding research questions that can be addressed through scientific ocean drilling, (c) establish scientific priorities, (d) identify potential drilling targets, (e) evaluate existing technologies and scientific approaches, and (d) recommend the development of new instruments and/or new deployment strategies. It was also expected that the workshop will enhance international collaborations and stimulate teams of proponents to develop competitive IODP proposals addressing ocean geologic hazards.

The Workshop Steering Committee Members were Julia Morgan (Rice University), Eli Silver (UC Santa Cruz), Angelo Camerlenghi (University of Barcelona, Spain), Steve Kirby (US Geological Survey), Craig Shipp (Shell, Geohazards Research Group) and Kiyoshi Suyehiro (JAMSTEC),.

Presentations were split in sessions according to four major groups of oceanic geohazards, including (1) great earthquakes in subduction zones, (2) volcano collapses and explosive eruptions, (3) submarine landslides and (4) other geohazards such as those associated with rifted margins and impact structures. The tsunamogenic potential of all these processes was also discussed. A final 5th session was set up to present observatories and mitigation technologies. The second day of the workshop was devoted to a field trip to Mt. Saint Helens where several aspects of volcano collapse processes, risk and mitigation strategies were addressed and analogies to the offshore environment could be drawn.

The workshop allowed to identify several questions related to geohazards that can only be answered through drilling. Some general cross-disciplinary questions amongst the different types of geohazards tackled during the workshop were:

1. What are the sizes and frequency of hazardous events? What factors control them?
2. Can the tsunamogenic potential of past and future events be assessed?
3. Do precursory phenomena exist and be recognized?
4. Can we monitor seafloor movements, e.g., steady creep and aseismic slip?
5. What makes up weak layers that localize slip?
6. What triggers rapid seafloor deformation (preconditioning vs. triggers)

Several additional question regarding specific processes or geologic settings that were identified were:

- For submarine landslides:
 1. Does focusing of fluids cause lateral transfer of stresses, failure and submarine slope failures?
 2. What is the relationship between methane emissions during rapid climatic changes and submarines slides
- For subduction zones:
 1. Why do tsunami earthquakes occur? Is there precursory deformation?
 2. Earthquake triggered landslides (as a special category)
- For volcanic processes
 1. What causes outward volcano flank movement?
 2. Earthquake triggered landslides, tsunamogenic seafloor deformation

During the workshop, it was also recognized that geohazards present further opportunities for new technological developments within IODP. Amongst those existing but not currently implemented in the program are in-situ geotechnical measurements including deployment of CPTU probes. New developments will be needed to address drilling of heterogeneous (chaotic) deposits and sands in overpressured zones, sampling tools that convey to geotechnical sample quality standards, and logging in shallow depths, including logging to the mud-line. Borehole observatories (and cabled arrays) are expected to include a series of tools including seismometers, strain meters, tiltmeters, extensometers, flow meters, pore fluid samplers, pressure sensors. Submarine geodesy was also considered as a tool to monitor seafloor deformation.

Impacts on present and future directions of the field and workshop follow ups where considered to be a revision of IODP's "Initial Science Plan", which currently does not include geohazards, strengthening of international cooperation and developing materials for Outreach and Education. A workshop report is currently being produced, which might result in articles in the journals EoS and Scientific Drilling. During the workshop several new and existing proposals were discussed, and it is expected that the workshop will result in several proposals and new proposal concepts addressing geohazards.

WORKSHOP ANNOUNCEMENT

Drilling to Decipher Long-term Sea-level Changes & Effects

October 8-10, 2007; Salt Lake City, Utah

Co-Convenors: Craig Fulthorpe, Ken Miller, Andre Droxler, Gilbert Camoin, and Stephen Hesselbo

Over the past 15 years, there has been significant progress in reconstructing the history of long-term sea-level changes. In large part, this is due to ocean and onshore drilling providing unparalleled means of sampling Cretaceous through Holocene stratigraphic records. Recent drilling advances, together with new views on the roles of tectonics and sediment dynamics, necessitate re-evaluation of the fundamental assumptions used in sea-level studies. To review past results, re-evaluate strategies and foster new proposals and collaborations, the Joint Oceanographic Institutions, DOSECC, and the Chevron Corporation are sponsoring the workshop Drilling to Decipher Long-term Sea-level Changes and Effects.

To participate in this workshop, visit: www.joiscience.org/sealevel. All interested scientists, researchers, and students are encouraged to apply. Participation will be limited to optimize workshop goals. Partial travel support is available. Applications are due July 13, 2007.

Please contact Craig Fulthorpe (craig@utigig.utexas.edu), Ken Miller (kgm@rci.rutgers.edu), or Andre Droxler (andre@rice.edu) for further information.



Application Deadline: July 13, 2007

**Drilling to Decipher Long-Term Sea-Level Changes and Effects:
A Joint JOI-ICDP-IODP-DOSECC-Chevron Workshop**

**Marriott City Center Hotel, Salt Lake City, Utah, USA
7-10 October 2007**

Conveners: Craig S. Fulthorpe, Kenneth G. Miller,
Andre Droxler, Stephen Hesselbo, Gilbert Camoin

AGENDA

Sunday 7 October

6:00-8:00 PM Registration (pick up name badges, agenda, poster abstracts, list of participants).
Location: outside Olympus rooms.

Monday 8 October

7:30-8:30 Continental breakfast (Room: Olympus A)

Morning Session: 8:30–12:30 (Room: Olympus B)

8:30-8:45 Welcoming Remarks (Fulthorpe)

Logistics, background, schedule.

Scientific Drilling: organizations, proposal submission, drilling technologies.

8:45-9:05 IODP (John)

9:05-9:25 ICDP (Miller)

9:25-9:45 DOSECC (Nielson)

9:45-10:05 PROD (Foley)

10:05-10:30 Coffee Break (Room: Capital A)

Keynote presentations.

10:30-11:00 A 100 million year record of sea-level changes derived from onshore New Jersey drilling (Miller)

11:00-11:30 Sea-level amplitudes and uncertainties; assessing one- and two-dimensional backstripping approaches (Kominz)

11:30-12:00 Carbonate and mixed carbonate sea-level records from millennial to million year time scales (Droxler)

12:00-12:30 Building coast onlap charts and sea-level curves from seismic data: the (Almost...) forgotten methodology (Abreu)

12:30-1:30 Lunch (Olympus A)

Note: Participants who bring posters should set them up during the lunch break in the Capital A room. (Poster boards will be delivered during the morning session.) Poster size is 48" x 48" (120 x 120 cm).

Afternoon Session 1:30-5:30 (Olympus B)

1:30-3:00 Short statements by participants, any topic (e.g., proposal ideas, drilling locations, scientific techniques/approaches)

3 minutes maximum. 2 slides maximum

3:00-4:00 Coffee Break incorporating Poster Session – Capital A

4:00-4:20 Introduction to breakout groups (Conveners)

Breakout Groups:

1) *Eustatic Mechanisms*: Relationship between recorded sea-level cyclicity and eustatic mechanisms through time. The hierarchy of global cyclicity (20 ky to 2.4 my and longer). Geochemical and other proxies. Timing and rates of eustatic change (chronostratigraphy). Eustatic amplitudes (paleobathymetry; backstripping, forward modeling) and what they tell us about mechanisms.

(Co-Chairs: Kominz, Gale)

2) *Deciphering the Stratigraphic Record*: Investigating the stratigraphic response to eustasy through a sedimentary process approach in Icehouse, Transitional and Greenhouse worlds. What do we already know and what do we need to find out about the origins of the stratigraphic record? Influence of sediment supply, tectonism (including active margins).

A) Siliciclastics (Co-Chairs: Hesselbo, Jaeger)

B) Carbonate and Mixed Systems (Co-Chairs: Thompson, Sarg)

All groups should also consider:

Drilling program design to achieve objectives, general characteristics of ideal locations (number and layout of sites, offshore and onshore), pre-drilling data requirements (e.g., is there a need for 3D seismic data?). Identify specific target areas. (Participants with drilling locations in mind should bring maps and figures for possible inclusion in final report.). How many drilling expeditions are needed? Technology requirements (onshore and offshore), funding possibilities and alternative funding sources (industry?)

4:20-5:30 Initial Breakout Group meetings. Groups will meet in the following rooms (all rooms should be equipped with projectors and screens):

Group 1: Sundance

Group 2A: Olympus B

Group 2B: Gallivan

~6:00 Informal icebreaker. Red Rock Brew Pub, 254 South 200 West.

Tuesday 9 October

7:30-8:30 Continental breakfast (Olympus A)

Morning Session 8:30-12:00

8:30-10:15 Breakout Group discussions continue

10:15-10:45 Coffee Break incorporating Poster Session (Capital A)

10:45-12:30 Breakout Group Co-Chairs present preliminary results (Olympus B)

12:30-1:30 Lunch (Olympus A)

Afternoon Session 1:00-5:30:

1:30-5:30 Breakout group discussions continue

Each breakout group reaches consensus and prepares a report and summary statement for presentation in plenary session on Wednesday morning.

3:00-4:00 Coffee Break incorporating Poster Session (Capital A)

6:30 Plenary Dinner, sponsored by DOSECC.

Blue Iguana Restaurant, 165 S West Temple (in the Arrow Press Square shopping center).

Wednesday 10 October

7:30-8:30 Continental breakfast (Olympus A)

Morning Session 8:30-12:00 (Olympus B)

8:30-12:00 Plenary session. Each breakout group to present its report followed by discussion.

10:15-10:45 Coffee Break (Capital A)

12:00 Workshop ends, though participants may stay to help conveners and breakout session co-chairs prepare draft report during afternoon session.

Note: Posters should be taken down by 12:00.

12:00-1:00 Lunch (Olympus A)

Afternoon Session 1:00-5:30 (Sundance)

Conveners, breakout group co-chairs and other interested participants meet to produce a draft workshop report and assign post-meeting tasks.



Magellan Workshops held in 2007:

Southern African Climates, Agulhas Warm Water Transports and Retroflection, and Interocean Exchanges

I. Hall (UK); R. Zahn (ES) and Ralph Schneider (D)
Institut fuer Geowissenschaften Kiel (DE), 19-21/09/2007

Marine Impacts and Environmental Consequences

H. Dypvik (NO)
Svalbard (NO), 10-13/09/2007

Exploring Escarpment Mud Mound Systems and Mud Volcanoes with new European strategies for sustainable mid-depth coring

S. Spezzaferri (IT)
Murten (CH), 10-13/05/2007



Short visit grants in 2007:

Magellan Workshop Series offered funding for persons to attend the following meetings:

The IODP workshop “Large Igneous Provinces”, on July 21 – 26, 2007 in Coleraine, Northern Ireland. The grantees were:

Ichiro Kumagai, Institut de Physique du Globe de Paris (FR)

Pedro Lopes Tavares Ferreira INETI, Instituto Nacional de Engenharia (PT)

Graeme Nicoll Trinity College Dublin (IR)

The IODP workshop addressing Geologic Hazards through Ocean Drilling, on August 26-30, 2007 in Portland, Oregon. The grantees were:

Joana Gafeira, University of Edinburgh (UK)

Satish Singh, Institut de Physique du Globe de Paris (FR)



Forthcoming Workshops:

Title: Ocean Drilling for Seismic Hazard in European Geosystems

Date: August/08/2008

Location: Uleå (Sweden)

Convenor: M. Ask (Sweden) please contact for more information (Maria.Ask@ltu.se)



Next Call for ESF Magellan workshop proposals: 15. 11. 2007

„The Steering Committee would particularly welcome proposals that integrate the different scientific topics such as: *Earth's Surface Environmental Change, Processes and Effects, The Deep Biosphere & Sub-Seafloor Ocean, Solid earth Cycles & Geodynamics*, which are outlined in the proposal of the Programme. **In particular, the Steering Committee encourages the submission of proposals on the following special themes: Carbon Dioxide Sequestration beneath the Seafloor, Transient Climate Events, Climate Tectonic Links. Proposals focusing on the Atlantic Ocean are especially encouraged.**

Priority will be given to workshops taking place in countries that financially support the Programme: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, the Netherlands, Norway, Portugal, Sweden and Switzerland.

The contribution of the **Magellan Workshops Series** will not exceed **20 000 EUR** per workshop.“

6.2.1 EuroFORUM 08

After La Grande Motte (3rd EuroForum, 2000), Tromsø (4th European ODP Forum, 2002), Bremen (ICDP-IODP Joint Euroforum Meeting, 2004) and Cardiff (EuroForum 2006), the next EuroFORUM will be held in 2008.

At the Cardiff ESSAC meeting in May 2006 the EuroForum and its future were discussed and the ESSAC Office emphasized that any further meeting should learn from the Cardiff meeting which was limited in size by financial issues out of the control of the organisers. The establishment of funds well ahead of the meeting to ensure more participants from nations other than the host nation was regarded as the most important issue.

The EuroFORUM 2008 will be held at the EGU in Vienna (April 2008) as an Interdivision Session entitled « SSP28/CL/GMPV/TS - EuroFORUM 2008 : Achievements and perspectives in ocean and continental drilling (co-organised by SSP – Stratigraphy, Sedimentology and Palaeontology, CL - Climate : Past, Present and Future, GMPV – Geochemistry, Mineralogy, Petrology & Volcanology, TS – Tectonics and Structural Geology; co-listed in OS - Ocean Sciences ; Convenor : G. Camoin ; co-convenor : U. Harms). A budget will be requested to the ECORD Council in order to cover travel expenses for invited speakers to present both recent achievements and future opportunities in ocean and continental drilling.

In addition to the main session, more focused sessions could be organized and be related to the activities of the EuroFORUM 2008 (e.g. Interdivision Session OS20/BG1.6/CL46/GMPV/TS « EuroFORUM 2008 - European Collaboration for Implementation of Marine Research on Cores – EuroMARC - », Convenor : G. Camoin ; co-convenor : D. Hauglustaine). That interdivision session invites scientific contributions which illustrate the use of ocean coring data to investigate the ocean climate and dynamics, the ocean biogeochemistry and the carbon cycle, the deep biosphere, gas hydrates, ocean ridge processes, and ocean seismic arrays. This session offers in particular an overview of the EuroMARC scientific activities and aims to illustrate the use of marine coring to perform innovative and societal-relevant science. The session is opened to all EUROMARC participants but also to the participants of related programs and activities on ocean coring. EuroMARC is a EUROCORES programme supported by research funding agencies from Belgium, France, Germany, Ireland, The Netherlands, Norway, Portugal, Switzerland, and the United Kingdom, and by the European Science Foundation (ESF) under contract No. ERAS-CT-2003-980409 of the European Commission, DG Research, FP6.

Gilbert Camoin will present the EuroFORUM 2008 project at the meeting. Inputs from the ESSAC Delegates and observers/guests will be welcome.

6.2.2 New call for proposals for Magellan Series Workshops in 2008

A new call for proposals for Magellan Series Workshops in 2008 workshops has been launched in September 2007. ESSAC Delegates have been contacted to provide ideas concerning new and innovative themes to be incorporated into the call for proposals.

The next annual Magellan Steering Committee Meeting will take place from February 7th to 8th 2008 in Hameln, south of Hannover and will be hosted by Jochen Erbacher.

Call for Proposals for Magellan Workshops Series to be held in 2008

Magellan Workshop Series invites proposals from potential organisers of workshops to be held in 2008. Proposals following these special themes: **Carbon Dioxide Sequestration beneath the Seafloor, Transient Climate Events, Climate Tectonic Links** Proposals focusing on the Atlantic Ocean are encouraged.

On-line Submission: www.esf.org/magellan and www.essac.ecord.org/workshops

Deadline for applications: **15 November 2007**

Contact: Eilen Degott - edegott@esf.org

Call for Proposals for Magellan Series Workshops in 2008

ESF Magellan Workshop Series invites proposals from potential organisers of workshops to be held in 2008 on topics with a clear connection to the Programme. The next deadline for applications is **15 November 2007**.

The Steering Committee would particularly welcome proposals that integrate the different scientific topics such as: *Earth's Surface Environmental Change, processes and Effects, The Deep Biosphere & Sub-Seafloor Ocean, Solid Earth Cycles & Geodynamics*, which are outlined in the proposal of the Programme. In particular, the Steering Committee encourages the submission of proposals on the following special themes: Carbon Dioxide Sequestration Beneath the Seafloor

Priority will be given to workshops which take place in countries that financially support the Programme (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, the Netherlands, Norway, Portugal, Sweden and Switzerland).

The contribution of the **Magellan Workshop Series** will not exceed **20 000 EUR** per workshop.

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Application Procedure

Proposals for workshops should be submitted online: [Application Form](#)

You will be required to upload a document* containing the following:

1. Scientific Summary (max. 1000 words) and Abstract (max. 50-70 words)
2. Meeting Programme
3. Curriculum Vitae of Scientific Organiser including list of five most relevant publications during the last five years
4. Provisional list of proposed speakers/participants

You will also be required to provide information on expected income and expenditure.

 **Guidelines for Proposers and Organisers of Science Meetings** (for information)

* Please note that this document should be in .pdf or .doc format and should not exceed 5MB in size.

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Deadline

The **deadline** for the submission of proposals for workshops to be held in 2008 is **15 Nov 2007**. For further information contact:

Dr. Bernard Avril  [Email](#)
Science Officer

Ms. Ellen Degott  [Email](#)
Administrative assistant

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**IODP Topical Symposium on North Atlantic and Arctic Climate Variability,
(MARUM, Bremen University, August 15-16, 2007)**

Short Report

The first IODP Topical Symposium was held at MARUM, Bremen University, on August 15-16, 2007. It was devoted to “North Atlantic and Arctic Climate Variability”, a major target of the IODP Expeditions 302, 303, and 306. This meeting has been planned and organized by a committee met first during the AGU 2006 Meeting in San Francisco. Meeting of the Organizing Committee were Gerold Wefer (Chair), Jan backman, Jim Channell, Eystein Jansen, Dick Kroon, Maureen Raymo, Ruediger Stein, and Kozo Takahashi.

Main part of the meeting were 18 presentations of invited speakers to four main overall themes:

- (1) Millenial-Scale Climate Dynamics (Speakers: Trond Dokken, Helge Drange, Gerrit Lohman, Jerry McManus, Stefan Mulitza; Session chairs: E. Jansen, G. Wefer)
- (2) Milankovitch-Scale Climate Variability (Speakers: Ayako Abe-Ouchi, David Hodell, Kenji Kawamura, Lorraine Lisiecki, Valerie Masson-Delmotte, Heiko Pälike; Session chairs: M. Raymo, J. Chanell)
- (3) Evolution of Northern Hemisphere Glaciation (Speakers: Rob de Conto, Kristen St. John, Gerald Haug, Jim Wright; Session chairs: J. Backmann, R. Stein)
- (4) Extreme Warm Events (Speakers: Henk Brinkhuis, Ignatius Rigor, Ralf Tiedemann; Session chairs: D. Kroon, K. Takahashi)

In between the blocks of presentations a three-hours break around lunch time was included, which gave plenty of time for intensive poster discussions. In total, more than 60 posters were presented.

At the end of the symposium, short presentations by the session chairs were given, summarizing highlights, open questions etc.

In total, more than 120 persons participated in the symposium, most of them from ECORD countries, 20 from US and 5 from Japan. Furthermore, the symposium was scheduled contemporaneously to the ECORD Summer School. 25 of the symposium’s participants were also participating in the ECORD Summer School.

6.4 ECORD Distinguished Lecturer Programme

6.4.1 FY 07-08

An ECORD Distinguished Lecturer Programme (DLP) for 2007 ; the inaugural ECORD DLP lecture was given by Benoît Ildefonse to the Canadian IODP workshop in Montréal in February 2007. ECORD Council agreed with our suggestion of appointing three Distinguished Lecturers, one for each of the themes of the IODP Initial Science Plan :

Deep biosphere and sub-seafloor ocean – Judy McKenzie (Zürich)

Environmental change, processes and effects – Paul Wilson (Southampton)

Solid Earth cycles and geodynamics – Benoît Ildefonse (Montpellier)

A program has been established for 2007. From september to november 2007, lectures will be given in UK, Canada, Switzerland and Spain. Based on the applications received, the program should continue with the current lecturers until Easter 2008.

6.4.2 FY 08-09 :

For FY 08-09, nominations should be solicited for lecturers. The ESSAC delegates will be asked to suggest names at the ESSAC #9 meeting. The nominations will be reviewed by the Workshops, communication and vision subcommittee to chose the FY08-09 Distinguished Lecturers. Each lecturer would be expected to give about six lectures, more if they are willing and funds permit.

The ESSAC Office will then advertise the DLP via our normal channels and invite and institutions to host the lectures. European institutions outside of the ECORD consortium would be encouraged to apply to host lectures.

Assistance in publicising the scheme by ESSAC delegates and National Offices will be welcomed.

6.5 IODP-MI « Drills » lecturer programme

IODP-MI is rolling out a new international lecture series, called DRILLS - the Distinguished Researcher & International Leadership Lecture Series- , for the first time in 2008 (<http://www.iodp.org/drills/>).

This lecture series is similar to the ECORD Distinguished Lecture Programme.

IODP DRILLS is *the* topical scientific lecture series to feature prominent, internationally known scientists describing scientific results derived from samples retrieved from beneath the ocean floor. DRILLS will actively engage future generations of scientists in ocean drilling, while highlighting scientific ocean drilling's major accomplishments to the scientific community and beyond.

Each DRILLS lecturer will address a primary IODP theme:

- Deep biosphere and seafloor ocean;
- Environmental change, processes, and effects;
- Solid earth cycles and geodynamics

For 2008, DRILLS speakers are Bo Barker Jorgensen, Ted Moore and Yoshiyuki Tatsumi.

Bo Barker Jorgensen will tour North America and present : « The Deep Seafloor Biosphere: Discovering the Largest Living Community on Earth ».

Ted Moore will tour Asia and present « The Warm Earth We Know ».

Yoshiyuki Tatsumi will tour Europe and present « Drilling into the Memory of Earth ».

DRILLS lecturers are fully supported by the Integrated Ocean Drilling Program. Institutional hosts need only organize the speaker's schedule for one day: provide a suitable lecture space and appropriate A/V equipment; promote the lecture locally; and host a social event where students and faculty can mix and meet the guest speaker. IODP staff helps with arrangements.

ESSAC has been asked to help in the organization of Yoshi Tatsumi's tour in Europe. Yoshi Tatsumi would like to visit ten institutions in Europe and a list of institutions (see below) which are candidates to host his lecture has been provided by Nancy Light (Director of Communications, IODP-MI Washington). Specific questions have been asked by Nancy and ESSAC delegates' inputs will be requested at the meeting.

IFREMER	Plouzane, France	Walter Roest
CNRS, CRPG	Nancy, France	Pete Burnard
MARUM	Bremen, Germany	Gerold Wefer
National University of Ireland, University College, Cork	Cork, Ireland	John Gamble
Universita degli Studi G.d Annunzio di Chieti-Pescara	Chieti Scalo, Italy	Isabella Raffi
University of Florence	Florence, Italy	Simonetta Monechi
Instituto Nacional de Engenharia	Alfragide, Portugal	Fatima Abrantes
Stockholm University	Stockholm, Sweden	Barbara Wohlfarth
Lund University	Lund, Sweden	Ian Snowball
University of Southampton	Southampton, UK	Damon H.H. Teagle
Durham University	Durham, England, UK	Yaoling Niu
British Geological Survey (BGS)	Edinburgh, Scotland, UK	Robert Gatliff
University of Leicester	Leicester, UK	Jenny Inwood

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Durham University	Durham, England, UK	Yaoling Niu
British Geological Survey (BGS)	Edinburgh, Scotland, UK	Robert Gatliff
University of Leicester	Leicester, UK	Jenny Inwood

Workshops, Communication and Vision subcommittee

Members :

Rudiger STEIN (Coord.)
Gilbert CAMOIN (ESSAC Chair)
Bonnie WOLFF-BOENISCH (ESSAC Science Coordinator)
Kari STRAND
Bryndís BRANDSDOTTIR
Marco SACCHI
Rolf PEDERSEN
Menchu COMAS

Immediate actions :

1. Review the ECORD database and make recommendations.

Questions/Comments

- What type of databases are needed and emerging from especial needs of the ECORD scientists ?
- The databases should be open and useful to all IODP community.
- Give specific research fields their own forum (Paleoceanography, Solid earth, etc. ?)
- How much efforts can be put to keep databases in function ? Is there ECORD or ECORDNet type of support available in future, too ?

2. Summarize ECORD active proposals by ISP themes.

135 active proposals in total (Date Proposal Submission Deadline April 2007)

Lead proponent	51 ECORD (38%)
	57 US (42%)
	20 Japan (15%)
	1 China (1%)
	1 IAC (1%)
	3 others (2%)

51 ECORD proposals in total

10 Theme « Deep Biosphere and subseafloor ocean » (20%)
25 Theme « Environmental change, processes and effects » (49%)
16 Theme « Solid Earth cycles and geodynamics (31%)

3. Make recommendations regarding stimulation and guidance for the writing of drilling proposals.

- Workshops are an excellent forum to formulate new drilling proposals.
- To include proposal planning training in Summer Schools
- Invite active IODP panel members (SPC, SSEP) to participate in EUROForum 08 or other such meetings and give information on proposal review process and evaluation, etc.

4. Make recommendations regarding the extension of the scientific base of the consortium to non-member countries.

- Active contacting (both researchers and funding agencies) towards those EU-countries that are not yet ECORD-members.
- Is there possibilities to invite representatives from those new prominent countries e.g. to the next EUROForum 08 or other such meetings.

IODP Expedition 311 – New insights into gas hydrate bearing systems

B.M.A. Teichert, G. Bohrmann, M.E. Torres, R. v. Geldern & Expedition 311 Scientific Party

During Integrated Ocean Drilling Program Expedition 311 a transect of four sites (U1325, U1326, U1327, and U1329) across the northern Cascadia margin was drilled to study the occurrences and formation of gas hydrate in accretionary complexes (Fig. 1). In addition to the transect sites, a fifth site (U1328) was established at a cold vent with active fluid and gas flow. The four transect sites represent different stages in the evolution of gas hydrate across the margin from the earliest occurrence on the westernmost first accreted ridge (Site U1326) to its final stage at the eastward limit of gas hydrate occurrence on the margin in shallower water (Site U1329). The objective was to investigate marine gas hydrate occurrences and formation models in subduction zone accretionary complexes.

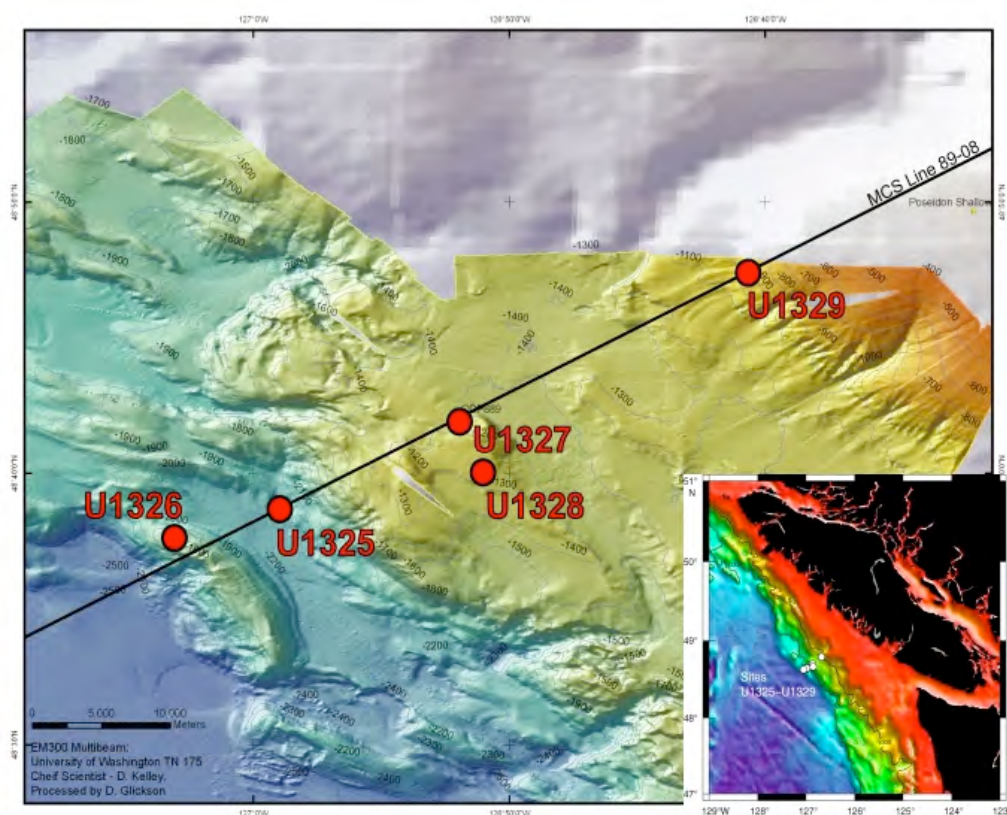


Fig. 1: Multibeam bathymetry map along the transect across the accretionary prism offshore Vancouver Island (courtesy of D. Kelley, J. Delaney, D. Glickson, C. Barnes, C. Katnick). Inset shows the general location of the drilled transect.

The occurrence of the gas hydrates sampled during Exp 311 appears to be controlled by several key factors, and the concentration of gas hydrate changes significantly as those factors vary in the sediments along the margin (Riedel et al., 2006). The key controlling factors are (1) local methane solubility linked with pore water salinity, (2) fluid/gas advection rates, and (3) availability of suitable host material (coarse-grained sediments). In the previous model for gas hydrate formation in an accretionary margin (Hyndman and Davis, 1992), the highest concentrations of gas hydrate were expected to occur near the base of the gas hydrate stability zone above the bottom-simulating reflector (BSR), with concentrations gradually decreasing upward as a result of pervasive fluid advection from overall tectonically driven fluid

expulsion. However, the results of Expedition 311 show that this model is too simple and that there are additional controlling factors (Riedel et al., 2006). Although evidence for widespread gas hydrate-related bottom-simulating reflectors (BSRs) was observed in the data, by far the largest concentrations of gas hydrate were observed at the top of the gas hydrate occurrence zone, at a point where the amount of methane in the pore fluid exceeded the local methane solubility threshold. This condition was most evident at Sites U1326 and U1327, where gas hydrate was observed in sections several tens of meters thick at a shallow depth of ~100 meters below seafloor (mbsf); concentrations exceed 80% of the pore volume. Another site of very high gas hydrate concentrations was the cold vent Site U1328, where beds containing massive forms of gas hydrate occurred within the top ~40 mbsf with concentrations exceeding 80% of the pore space as a result of focused fluid/gas migration from underneath.

During Expedition 311 a wide variety of authigenic carbonates differing in morphology as well as mineralogy and isotopic composition were sampled at all sites. The formation of authigenic precipitates is a well known characteristic of methane seepage sites. Different process may be responsible for their formation. In seep settings authigenic carbonates forms mainly due to the microbially mediated process of anaerobe oxidation of methane and are valuable archives for the history of seepage.

First results will be shown from Sites U1328 and U1329 which represent two very different settings. Site U1328 is an active seafloor cold seep field (Bulls-eye vent) associated with faults. Within the upper part of the sedimentary column of this site, abundant gas hydrates occurred. Interstitial water geochemistry indicated recent and rapid gas hydrate formation between 5 and 20 mbsf based on high-chlorinity fluids and a zone reaching down to 60 mbsf where fluids have chlorinity values slightly higher than seawater. Within these gas hydrate influenced sediments, which had a moussey or soupy appearance due to gas hydrate dissociation during core retrieval, a wide variety of authigenic carbonates were sampled. These carbonates show a distinct mineralogical composition and occur especially within the gas hydrate brine influenced depth intervals at 5 to 10 mbsf, 20 mbsf and 25 to 30 mbsf. The carbonates which are composed of complex mixtures of up to three different carbonate phases, have also been sampled during ODP Leg 204 at the summit of Hydrate Ridge. The observed carbonate phases are aragonite (also occurring as pure phase as clathrites (Teichert et al., 2005) (Fig. 2)), a high magnesium calcite (10-20 Mol% MgCO_3), a probably iron-rich carbonate phase and a dolomitic phase. The authigenic carbonates that were sampled at Site U1329 show in contrast a distinctly different mineralogical and isotopic composition. Site U1329 is located upslope northeast of Site U1328 and is interpreted to be the eastern limit of gas hydrate occurrence on the Northern Cascadia margin. Gas hydrates or moussey and soupy sediments were not described at this site.

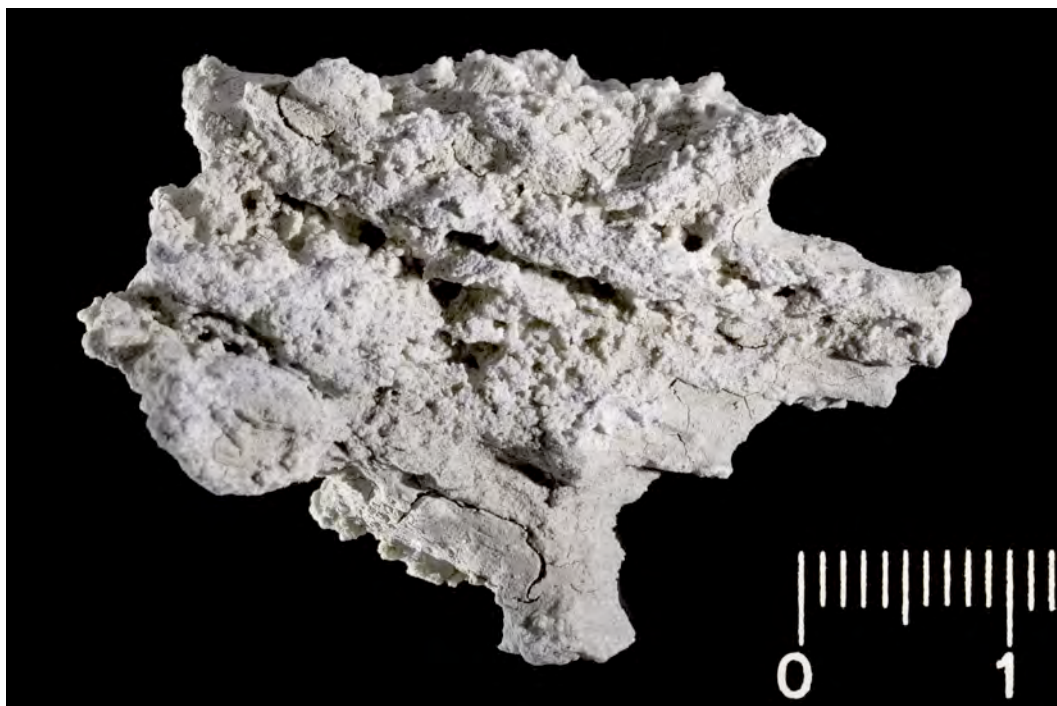


Fig. 2: Photograph showing a clathrite sample from Site U1328, composed of pure aragonite and precipitated attached to gas hydrate.

Another interesting observation on the investigated carbonates at Sites U1328 and U1329 is the sporadic occurrence of barite crystals mostly associated with organic matter. These barite crystals have been found at Site U1328 down to a depth of about 90 mbsf within the sulphate depleted zone where the solubility of barite increases (Castellini et al., 2006). At Site U1329 barite crystals have as well been found but in shallower depth down to only 27 mbsf.

References:

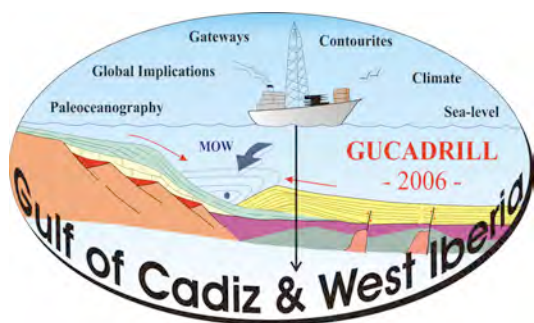
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- Teichert, B.M.A., Gussone, N., Eisenhauer, A., and Bohrmann, G., 2005. Clathrites: Archives of near-seafloor pore-fluid evolution ($\delta^{44/40}\text{Ca}$, $\delta^{13}\text{C}$, $\delta^{18}\text{O}$) in gas hydrate environments. *Geology*, 33: 213-216.

ENVIRONMENTAL SIGNIFICANCE OF THE MEDITERRANEAN OUTFLOW WATER AND ITS GLOBAL IMPLICATIONS

Professor Dr. Dorrik A.V. STOW¹
& Dr. F° Javier HERNÁNDEZ-MOLINA²

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² Facultad de Ciencias del Mar, Univ. Vigo, 36200 Vigo, Spain



Co-proponents:

Dr. Andrew Roberts (NOCS, UK); **Dr. Anjete Voelker** (INETI-DGM, Portugal); **Dr. Carlota Escutia** (CSIC-Univ. Granada, Spain); **Dr. Francisco Sierro** (Univ. Salamanca, Spain); **Dr. Isabel Cacho** (Univ. Barcelona, Spain); **Dr. Joachim Schoenfeld** (IFM-GEOMAR., Germany); **Dr. Joan Gardner** (NRL, USA); **Dr. Luis Somoza** (IGME, Spain); **Dr. Makoto Ito** (Chiba University, Japan); **Dr. Michele Rebesco** (OGS, Italy); **Dr. Pamela Martin** (Univ. Chicago, USA); **Dr. Pedro Terrinha** (INETI-DGM, Portugal); **Dr. Phil Weaver** (NOCS, UK); **Dr. Susana Lebreiro** (INETI-DGM, Portugal); **Dr. Thierry Mulder** (Univ. Bordeaux; France).

This is a paleoceanographic proposal focussing on the broader significance of Mediterranean Outflow Water (MOW) on North Atlantic circulation and climate. It addresses important questions highlighted in the IODP Initial Science Plan related to paleocirculation and climate, the influence of oceanic gateways, and sea-level control on sediment architecture along continental margins. In order to answer these questions, we propose targeted drilling of a Neogene continental margin sequence in the Gulf of Cadiz and off West Iberia. The high rates of accumulation associated with Contourite Depositional System (CDS) deposits in this region provide an expanded sedimentary record that permits detailed examination of paleocirculation patterns linked to past environmental change. This proposal offers a unique opportunity to understand the global link between paleoceanographic, climatic and sea-level changes from Messinian to recent time. The Gulf of Cadiz and off West Iberia CDS is an extensive compound sedimentary body, which has been developing along the mid-slope over the past 5 million years, under the direct influence of MOW. It therefore holds an unmistakable signal of MOW through the Gibraltar Gateway, re-opened following tectonic adjustments at the end of the Messinian Salinity Crisis, and hence a clear record of Mediterranean Sea and MOW influence on the North Atlantic Ocean.

An extensive array of high quality data exists for the region and a detailed seismic stratigraphic framework has recently been proposed, which can only be confirmed by drilling. Seven primary sites have therefore been identified that will allow us to identify and calibrate the third and fourth order depositional units and associated widespread erosive discontinuities across the CDS. This is of great significance, both regionally and globally, for: (1) monitoring the long-term variability of MOW and its global climatic significance; (2) constraining the main paleoceanographic events through late Miocene to Recent time, including high-resolution focus on late Pleistocene and Holocene rapid climate events; (3) evaluating the influence of opening of the Gibraltar gateway on North Atlantic oceanography and climate, and monitoring the effects of sea-level change on MOW flux; (4) understanding the architecture of a complex contourite depositional system, and the nature of its unit stacking pattern related to allogenic and autogenic controls and (5) investigating the dramatic large-scale asymmetric cycles of seismic character evident on high-resolution records, thereby identifying their occurrence onto Quaternary-Pliocene climate/sea-level and paleoceanographic changes.

An extensive *Contourite Depositional System* (CDS) has been developing within the Gulf and the West Iberian Margin over the past 5 million years as the direct result of the Mediterranean Outflow Water (MOW). The high rates of accumulation and expanded sedimentary records of drift deposits permit high-resolution examination of past environmental change. The CDS deposits, therefore, hold the very best signal of MOW flow through the *Gibraltar gateway*, and a clear record of its influence on the oceanography and climate of the North Atlantic Ocean and on North Atlantic Deep Water (NADW) variability. The importance of the Gulf of Cadiz is clearly reflected in the large number of regional studies and multinational interest shown over the past 30 years. But, despite such extensive surveying, the region has not yet been drilled for

scientific purposes, even though the *Gibraltar gateway* clearly has major implications for global climate and oceanography. We have identified the following four broad scientific objectives, which require a total of seven drill sites through the Pliocene to Quaternary sedimentary record: 1) *Influence of the Gibraltar Gateway*; 2) *MOW paleoceanography and global climate significance*; 3) *Sea-level changes and sediment architecture of the Cadiz CDS and Iberian margin*; and 4) *Synsedimentary neotectonic control on architecture and evolution of the CDS*. To achieve these major scientific objective, it is essential to integrate the results of the proposed drill sites with a dense network of existing high-resolution seismic reflection profiles. Interpretation of this seismic network is already well established, although the inferred ages require drilling confirmation.

Cenozoic East Antarctic Ice Sheet History From Wilkes Land Sediments (#482-Full3)

C. Escutia, A.K. Cooper, S.L. Eittreim, M. Tanahashi, T. Ishihara, P. O'Brien, E. Domack

Drilling the Wilkes Land margin is designed to provide a long-term record of Antarctic glaciation and its relationship with global sea level, paleoclimate and paleoceanographic changes.

The primary goals are: 1) to obtain the nature and the timing of the Cenozoic onset of grounded ice from the continental shelf and rise deposits (shelf Sites WLSHE-07A, WLSHE-09A and rise Site WLRIS-02A), and 2) to obtain a high-resolution late Neogene-Quaternary glacial/interglacial record of glaciation from the rise deposits (Sites WLRIS-01A and WLRIS—03A). An additional objective is to identify and date large fluctuations in the extent of the East Antarctic Ice Sheet possibly throughout much of the Miocene (shelf Site WLSHE-08A).

Drilling the Wilkes Land margin has the unique advantage that is the only known margin around Antarctica where the unconformity (referred to as WL2), inferred to separate pre-glacial strata below from glacial strata above in the continental shelf, can be traced to the continental rise deposits, allowing sequences to be linked from shelf to rise. Because strata below and above the "glacial onset" unconformity can be sampled at relatively shallow depths, the record of the onset of glaciation can be obtained during a single drilling leg from two depositional environments, the shelf foreset (Sites WLSHE-07A and WLSHE—09A) and the rise hemipelagic (Site WLRIS-02A) strata. The shelf foreset section provides a direct record of first occurrence of grounded ice but one that is less continuous and harder to date. The rise hemipelagic section provides an indirect record of glaciation but one that is more continuous and easier to date.

The proposed 37 day drilling program will constrain the age, nature and paleoenvironment of deposition of the Wilkes Land sedimentary sequences. The chronostratigraphy from drilling the Wilkes Land margin, at present non-existent, is necessary to ground-truth the existing glacial- stratigraphic and ice-sheet volume models. Ice sheet models show that the Wilkes Land margin became glaciated in the later stages of East Antarctic glaciation, after Prydz Bay and the Weddell Sea and is thus more sensitive to future temperature changes. The results from drilling the Wilkes Land can be compared with results from the Antarctic Peninsula (Leg 178), Prydz Bay (Leg 188), and Cape Roberts Project drilling (1997-1999) to determine Antarctic Ice Sheet history, glacial processes and facies.

We propose to core sediments deposited on the Wilkes Land margin with the following objectives:

1. to obtain the onset of glaciation (Eocene or older) by drilling strata across the glacial onset reflector (regional unconformity WL2) in two depositional environments, shelf progradational wedge foreset (Sites WLSHE-07A or alternate WLSHE-09A) and lower continental rise/abyssal plain hemipelagic strata (Sites WLRIS-02A);
2. to obtain a high-resolution Neogene-Quaternary record of glacial/interglacial cycles from continental rise mounded deposits (Sites WLRIS-01A);
3. to date major changes in shelf prograded wedge geometry (below and above the

SCIENTIFIC OBJECITVE	SITE NAME	LOCATION	PRIORITY
Onset of glaciation from continental shelf sediments	WLSHE-09A	66° 20′ 142° 40′	Primary site First Priority
Onset of glaciation from continental shelf sediments	WLSHE-07A	66° 8′ 143° 8′	Alternate site First Priority
Onset of glaciation from abyssal plain sediments	WLRIS-02A	64° 00′ 139° 49′	Primary site First Priority
High-resolution late Neogene-Quaternary glacial/interglacial record	WLRIS-03A	64° 40′ 144° 00′	Primary site First Priority
High-resolution late Neogene-Quaternary glacial/interglacial record	WLRIS-04A	64° 50′ 144° 03′	Alternate site First Priority
Age and nature of large fluctuations in the glacial regime during Miocene	WLSHE-08A	66° 00′ 143° 18′	Primary site First Priority

Table 1: Scientific objectives at each of the proposed sites and their prioritization

Wilkes Land Depositional Units and Tentative Ages: East Antarctic Ice Sheet Onset and Evolution

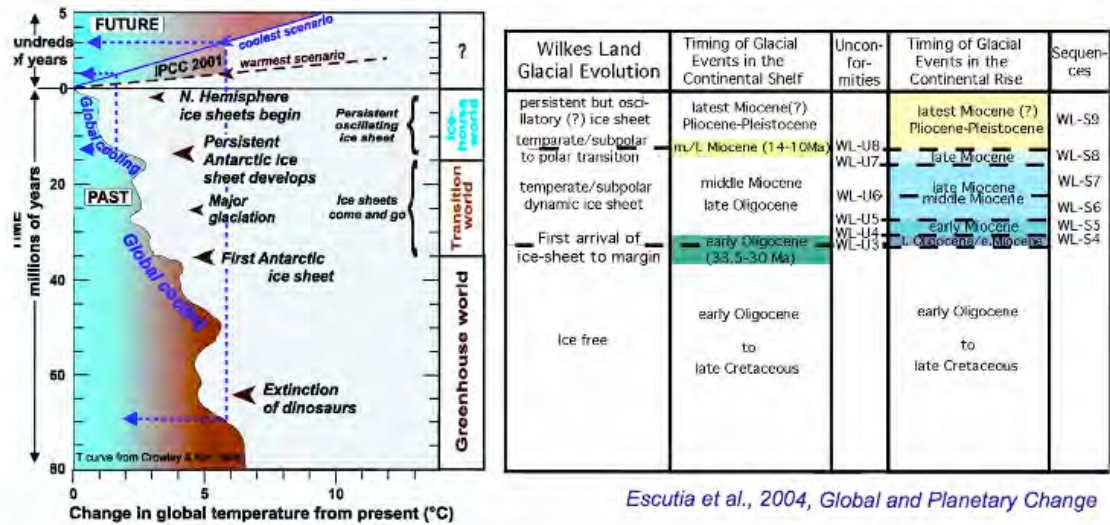


Figure 2. Proposed sites are designed to test the present stratigraphic model for this margin and to provide constraints for the inferred ages for the first arrival of the ice sheet to the continental margin the so called “onset” of glaciation, and its evolution since.

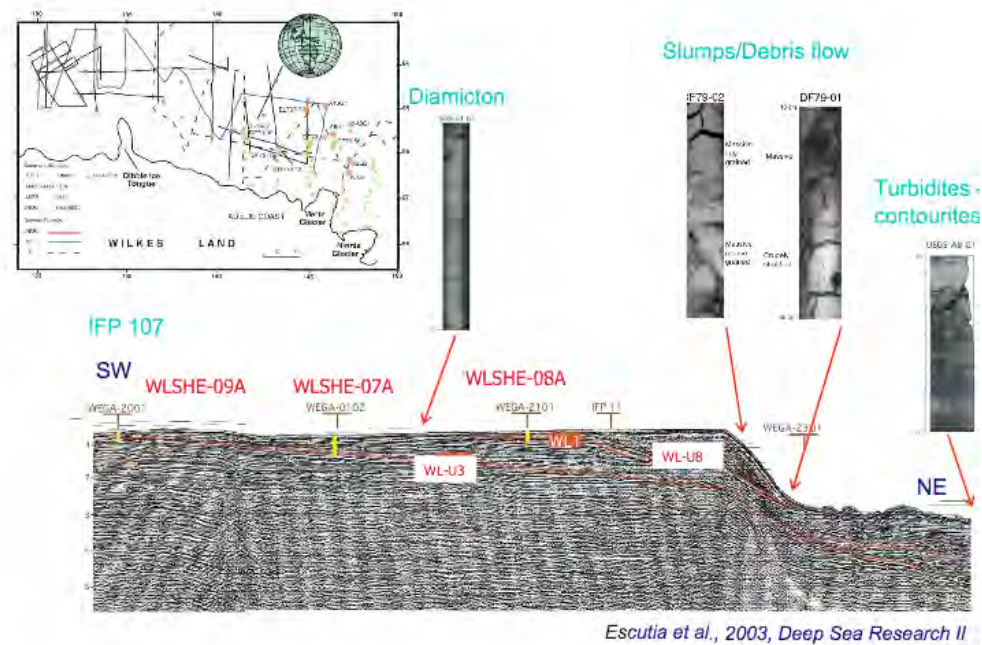


Figure 3. Continental shelf sites aim at obtaining the record of the onset of glaciation across the WL-U3 unconformity, interpreted to separate pre-glacial from glacial strata, and the transition from a wet-based to a cold-based ice sheet across unconformity WL-U8.

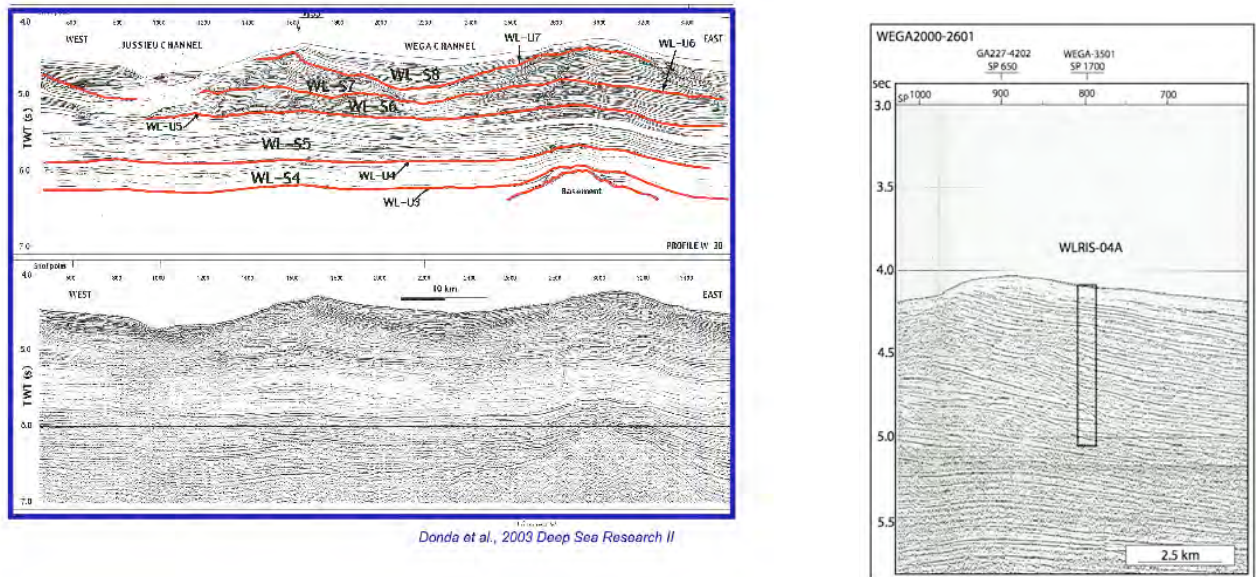


Figure 4. Mixed turbidite and contourite systems on the continental rise targeted by Sites WLRIS-03A and WLRIS-04A with the objective of obtaining a high-resolution Neogene record of glacial-interglacial cycles.

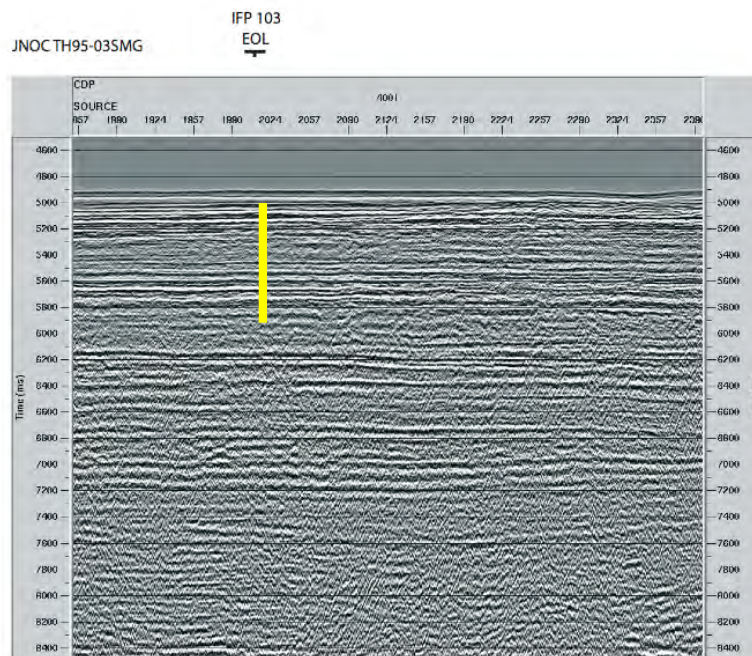


Figure 5. Site WLRIS-02A targets abyssal plain strata below and above the WL-U3 unconformity. Correlation between this site and shelf sites WISHE-09A and 07A should allow to tie the distal and the proximal record of the “onset” of glaciation in this segment of the East Antarctic margin.

The 10th Science Planning Committee
27-30 August 2007

MEXT report

1. The Basic Law of the Sea in Japan

The National Diet of Japan enacted the Basic Law of the Sea on April 27, 2007, and it is in effect on July 20, 2007. The law provides a national framework for taking unified, comprehensive measures to promote development of maritime research and resources, to preserve the ocean environment, and to ensure maritime safety and so on.

The Japanese Government sets up a comprehensive ocean policy headquarters in the Cabinet based on this law. The Prime Minister will serve as its head, with the Chief Cabinet Secretary and a new Cabinet Minister in charge of ocean policy as deputy heads. The Minister of Land, Infrastructure and Transport, Mr. Tetsuzo Fuyushiba, is appointed the Minister for Ocean Policy as an additional post. The Japanese government will work out a basic ocean policy program that will be reviewed and renewed every five years in principle. The Law also stipulates that the government should make promotion of ocean research and sea-related science and technology. MEXT begins to consider moving ahead on our marine science program more strongly.

2. IODP Campaign in Japan

JAMSTEC and J-DESC have held the “IODP Campaign in Universities & Museums” to introduce the IODP activities especially to graduate and undergraduate students since 2004. The 15th campaign was held in July, 2007 at the Chiba University and the Natural History Museum and Institute which were located in Chiba prefecture. It lectured the aim of IODP, the summary of Chikyu, the work of technician in Chikyu, the contribution to the science, and so on.

The 10th Science Planning Committee Meeting

27-30 August 2007

NSF report

Conversion activities of the *JOIDES Resolution* to the riserless Scientific Ocean Drilling Vessel (SODV) have dramatically accelerated, and include reinstallation of the refurbished drilling rig, extensive drydock work on the hull, gutting of the forward portion of the hull (including removal of the labstack, bridge, and hotel), and construction of the new science labs, living quarters, and bridge. A complete Baseline Review was conducted July 10-12 in College Station by an NSF panel that included members of JOI's Independent Oversight Committee, as well as other naval architects, rig specialists, and science project management specialists. The Panel was quite positive in its assessment of the conversion project management. The Chair of the Panel was Dr. Tom Kirk, formerly Associate Director of Brookhaven National Laboratory.

A revised draft Environmental Impact Statement (EIS) for IODP SODV operations was delivered to NSF in July, and will be available to the public for comment shortly. Meetings for public comment will occur at NOAA Headquarters in Silver Spring, MD and at JOI headquarters in Washington, DC in September, 2007. The EIS will be available for FTP download at http://joiserver.joiscience.org/Downloads/draft_peis. Comments from SPC members are welcome and should be given to Jamie Allan (jallan@nsf.gov).

It has recently been announced that Dr. Mark Abbott, currently Dean of the College of Oceanic and Atmospheric Sciences at Oregon State University and a member of the NSF's National Science Board, will become the new NSF Assistant Director for Geosciences. He is expected to arrive in October, and is a renowned Biological Oceanographer. Dr. Debbie Smith (WHOI) will be starting in late August 2007 as a rotator (IPA) in the ODP Program at NSF. She will succeed Rodey Batiza as a Program Manager in the ODP Program, who remains as Marine Geosciences Section Head and the NSF IODP Principal Official.

Since the report at the Osaka SPC meeting, the future of NSF funding for IODP activities has clarified. In order to balance Maintenance and Operations funding of oceanographic facilities with that of Core Science grant support, NSF funding for IODP activities will be only about 70% of what has been planned for, or approximately \$65M/year with increase only due to inflation. This reduced funding scenario is envisioned through the year 2013. It is clear that all areas of support will be heavily impacted. NSF is working closely with the JOI Alliance to deeply reduce operational costs for the SODV, which unfortunately will result in some reduction of planned services. It is becoming clearer that additional outside funds and/or periodic removal of the SODV from the international IODP for purposes of off-contract commercial work will be required for the SODV to remain a viable IODP platform in 2009 and beyond.

The U.S. Science Support Program (USSSP), which funds the participation of U.S. scientists in all aspects of IODP planning and at sea expeditions, has been re-competed by NSF, with JOI selected to provide services through a Cooperative Agreement through 2013.

The ODP grants program is recommending support for the following programs, following the May 2007 MGS review panel:

- 1) participation by a US scientist in a Meteor cruise to the Maldives
- 2) Participation by US scientists in a German cruise to North Pond hydrothermal area, MAR
- 3) Modeling study of fluid flow and migration in the Nankai trough area
- 4) Collaborative studies of South Chamorro Seamount, Marianas
- 5) Collaborative studies of subseafloor fluid flow at the Juan de Fuca Ridge

SPC#10, Santa Cruz, 27-30/8/2007
ECORD Managing Agency report

1) ECORD council

Raymond Schorno (Netherlands) is the current ECORD Council chair. Soeren Dürr (Germany) rotated off on April 1st, 2007, and became vice-chair. Bruno Goffé (France) was designated as the incoming vice-chair, to become the chair on October 1st, 2007.

The Council met in Brussels, February 27, for an « extraordinary » meeting.

The aim was to discuss the financial situation, the ECORD evaluation report, the strategy for funding, and the first draft of the Green Paper « Towards a future Maritime Policy for the Union: A European vision for the oceans and seas » published by the EC.

The next, regular, meeting was held in Den Haag, June 7-8.

Summaries of the meetings are available on the ECORD website

(<http://www.ecord.org/rep/council10-rep.html>)

2) ECORD funding situation

In FY07, the ECORD council had allocated the ECORD Science Operator the POC funds necessary to implement the New Jersey Shallow Shelf expedition. Unfortunately, this expedition had to be delayed, due to the unavailability of the drilling platform. This new development will impact what happens in FY08 and FY09.

The major challenge for ECORD during this past year was to meet the 60% increase of the participation unit, starting in FY08. To be able to raise their contribution, most ECORD member countries evaluated their participation during the first phase of the programme. To assist them, the Council decided to ask an committee of independent experts to conduct an evaluation of ECORD. The committee worked during the summer and the fall of 2006, and met with key individuals/entities of ECORD and IODP. The report, « A review of the Science, Management and Value for Money of the European Consortium for Ocean Research Drilling », was published in January 2007. The outcome is very positive, and was very useful to ECORD partners. The report also made some recommendations for improvement, and the Council is working on their implementation. A written response to the report has been finalized by the council and distributed.

The funding situation for FY08 and beyond is not yet completely sorted out, but is encouraging. Although a few smaller countries have indicated that they will not increase their contribution, a large number of ECORD members will be able to meet the increase in FY08. For three countries only, the decision is not yet made. At this stage, ECORD is already in the position of contributing 3 participation units in SOCs in FY08, as planned. What happens beyond FY08 is still unclear. Moreover, as already indicated, the cost of operating MSPs is more expensive than initially envisioned, as a result of the high demand for all activities related to oil industry. Therefore, given the projected ECORD POC budget, it seems unlikely that ECORD will be able to fund one MSP operation per year. Moreover, due to fiscal realities, very expensive operations will be out of reach.

3) Perspectives within the European Commission 7th Framework Programme

ECORD is also investigating other possible funding schemes within 7th Framework Programme of the European Commission.

Following the workshop in Naples in June 2006, a foresight paper « The Deep Sea Frontier : science challenges for a sustainable future » has been published by the European Commission.

It can be downloaded from the ECORD website :

<http://www.ecord.org/enet/ecord-net.html#dsf>

As a result of this initiative, this theme is part of the first 7th Framework Program call for 2007. However, at this stage, the call is only for a coordination action. A proposal has been submitted and is currently being evaluated. If funded, it will only support workshops. Funding for science may be available later during FP7 (post 2010).

The Aurora Borealis project (multidisciplinary research vessel for the polar regions, with drilling capabilities), initiated by the Alfred Wegener Institute (Germany) is moving ahead. It is now listed in the European Strategy Forum for Research Infrastructures (ESFRI) roadmap for environmental sciences. A proposal to support the preparatory phase has been submitted to the EC last May by the ESF Polar Board. The timing envisioned aims to have the ship ready by 2012. However, the funding is not yet secured. ECORD is involved in this proposal. The Aurora Borealis could be contracted as an MSP in polar areas.

The European Commission is finalizing a Green Paper « Towards a future Maritime Policy for the Union: A European vision for the oceans and seas »

http://ec.europa.eu/maritimeaffairs/policy_en.html#com.

A consultation of the interested entities was conducted last spring. ECORD was involved in this process, via the European Science Foundation Marine Board. This was an opportunity to convey some messages about the scientific goals of IODP/ECORD, and their societal impacts.

At the EuroOCEAN 07 meeting in Aberdeen last June, the « Aberdeen declaration » was launched by the science community, in support of an « integrated European Marine and Maritime science, research, technology and innovation strategy.

<http://ec.europa.eu/maritimeaffairs/eurocean2007.html>

4) ESSAC

ESSAC met in Iceland, May 11-12.

The ESSAC office will move to Aix en Provence (France) in Oct 2007.

Gilbert Camoin (France) will be the new chair, and Rudiger Stein (Germany) the new vice-chair. The ESSAC science coordinator is still TBN.

To increase the visibility of the drilling programme in Europe and encourage new countries to join ECORD, the ECORD council recommends ESSAC to consider applications to ESSAC activities (summer schools, distinguished lecturer series...) and to IODP cruises from scientists from all European countries and Canada, even if not members of ECORD. On a case by case basis, it opens the possibility to involve scientists from non-ECORD member countries.

- The Summer Schools are now organized for the summer of 2007

<http://www.ecord.org/edu/summerschool.html>

Urbino Summer School in Palaeoclimatology (USSP), Urbino 18/7-3/8/2007

Past Global Change Reconstruction and Modelling Techniques

cosponsored by ECORD, the Darwin Center for Biogeology, the Institute for Marine and Atmospheric research Utrecht, and the Netherlands Research School of Sedimentary Geology

ECORD Summer School on Paleooceanography, Bremen 13-24/8/2007

Co-sponsored by ECORD, the Graduate School GLOMAR, and the Research Center Ocean Margins RCOM

This ECORD summer school is combined with the IODP Topic Symposium "North Atlantic and Arctic Climate Variability", University Campus Bremen, Germany, 15 - 16 August, 2007.

ESSAC received 48 applications from 11 ECORD member countries for the 10 scholarships supported by ECORD for outstanding young scientists to attend a summer school.

- Workshops

<http://www.essac.ecord.org/workshops.php>

As the result of the last call (deadline in november 2006), three workshops are funded in 2007 under the frame of the Magellan workshop series, run by the European Science Foundation. .

Exploring Escarpment Mud Mount Systems and Mud Volcanoes with New European Strategies for Sustainable Mid-depth Coring.

Convener : Silvia Spezzaferri (Switzerland)

This workshop was held in Roma, Italy, 10-13 May 2007.

Marine Impacts and Environmental Consequences.

Convener : Henning Dypvik (Norway)

10-13 September 2007, Svalbard, Norway

co-sponsored by ICDP

Southern African Climates, Agulhas Warm Water Transports and Retroflection and Interocean Water Exchanges.

Convener : Ian Hall (Cardif, UK)

19-21 September 2007

The Magellan workshop series also allowed to support participation of ECORD scientists to IODP workshops.

5) Outreach Activites

ECORD organized the **IODP booth** at the EGU meeting, Vienna, April 16-20, 2006, in coordination with IODP MI (Nancy Light) and the IOs.

A joint **IODP-ICDP Townhall meeting** was held on Tuesday 17th. This meeting was very successful and was attended by around 150 persons.

The first **ECORD Teachers' workshop**, was held in conjunction with the GIFT (Geophysical Information For Teachers) workshop, at the European Geosciences Union General Assembly 2007 in Vienna, Austria.

<http://www.ecord.org/edu/ecord-gift.html>

Convener : Eve Arnold, Stockholm University. emarnold@geo.su.se

Seventy science teachers from 22 countries attended the 1-day IODP workshop . It consisted of a series a scientific talks relating to specific IODP expeditions and scientific results, as well as an introduction to the history of deep ocean drilling and the types of research vessels and equipment used to study the sea floor. The purpose of the workshop was to give teachers current research results based on deep sea drilling for their personal continuing education and hopefully to inspire them to share this information with their students during science education classes. The workshop volume, distributed to the teachers, can be downloaded at: www.ecord.org/education.

This experience, supported by the EC funded project ECORDnet, was very successful. We are planning to continue this activity but we need to find new funding sources.

ECORD Newsletter #8 was published in April and distributed at EGU.

It can be downloaded from the ECORD website

<http://www.ecord.org/pub/newsletter8-rev.pdf>

Printed copies can be requested from EMA (ema@ipgp.jussieu.fr)

Catherine Mével, 24/7/2007

**SPC#10, Santa Cruz, 27-30/8/2007
K-IODP Report**

Introduction

Korea joined ODP in 1996 with Canada and Australia as a consortium. With the participation of Chinese Taipei in 1997, the consortium was named the PacRim Consortium. The Korean IODP (K-IODP) was established in 2004 to oversee the ODP- and IODP-related activities during the transitional period from ODP to IODP. After feasibility study, Korea joined IODP in June 2006 as the leading organization member of the newly formed Interim Asian Consortium. The Korea Institute of Geosciences and Mineral Resources (KIGAM) manages K-IODP, and has a close relationship between other geoscience institutions, universities, and private companies in Korea. The funding agency of the K-IODP is Ministry of Maritime Affairs and Fisheries (MOMAF).

Activities & plans

1. Support of ODP/IODP related researches

The K-IODP supports not only sailing and scientific sampling party, but also ODP/IODP related researches. Almost all the post cruise researches and some of the researches using previous ODP/IODP samples are supported from the K-IODP.

2. Drilling Proposals

K-IODP is now preparing new drilling proposals with different scientific goals, such as gas hydrates and deep biosphere. K-IODP society is especially interested in preparing new proposal targeting gas hydrate in the East Sea, because KIGAM found out natural gas hydrates in the East Sea quite recently.

K-IODP members are actively involved in other international proposals as strong proponents.

3. K-IODP Promotion booth in Domestic Academic Meetings

K-IODP had a promotion booth at the recent domestic geoscience society meetings such as GSK (Geological Society of Korea), KEEG (Korea Society of Economic and environmental Geology) , and KSO (Korea Society of Oceanography).

4. Promotion at AOGS

K-IODP have participated the promotion activities with IODP-MI and J-DESC at the 4th AOGS (Asia Oceania Geosciences Society) meeting at Bangkok. The AOGS is an international society which was founded in 2003, to promote cooperation and discussion among scientists in Asia and Oceania on the Earth, its environment, and planetary and space sciences. K-IODP will have several meetings with scientists from Asian Countries to discuss on joining Interim Asian Consortium.

5. Korea Japan Ocean Drilling Workshop

K-IODP has a plan to convene Korea Japan Ocean Drilling Workshop 2007 in Korea. This is a second workshop between Korea and Japan to encourage drilling proposals especially in the East Sea/Japan Sea areas. The first Ocean drilling workshop was held at Niigata University last year.

6. Asian Consortium

KIGAM is the only member for Interim Asian Consortium at the moment. K-IODP expects more Asian Countries such as Australia, New Zealand, Taiwan, India, and Vietnam join the Interim Asian Consortium in a near future.

K-IODP will promote Interim Asian Consortium during the coming CCOP (Coordinating Committee for Geoscience Programmes in East and Southeast Asia) and SOPAC (South Pacific Applied Geoscience Commission) annual meetings. CCOP is an intergovernmental organization whose mission is to facilitate and coordinate the implementation of applied geoscience programmes in East and Southeast Asia in order to contribute to economic development and the improvement of the quality of life in the region.


CENTER FOR DEEP EARTH EXPLORATION

Japan Agency for Marine-Earth Science and Technology

3173-25 Showa-machi, Kanazawa-ku, Yokohama Kanagawa 236-0001 Japan

<http://www.jamstec.go.jp/chikyu/> cdex@jamstec.go.jp

CDEX Report for SPC, August 27 – 30, 2007

1 D/V *Chikyu* Status

The D/V *Chikyu* completed the overseas drilling shakedown (ODS) cruise on July 17. Based on the ODS, we have gained excellent experience on deep-sea drilling and technologies, such as;

1. Accumulated riser drilling skills and techniques. Verified installation and operation of the BOP.
2. Carried out riser drilling under strong currents (average = 2.5 knot) and confirmed stability.
3. Performed drilling angle control (slant hole) required for deep ocean drilling.
4. Carried out drilling in complicated layers, including alternate layers of sandstone, mudstone and limestone.
5. Improved crews' skills and techniques. Increased equipment availability via tune ups.

Drilling operations performed:

Riser/Non-Riser	Water depth	Drilling depth
Riser	2,200 m	2,700 mbsf
	500 m	3,700 mbfs
	1,000 m	2,200 mbfs
Non-Riser	1,340 m	1,200 mbfs
	1,440 m	1,860 mbfs
	1,400 m	560 mbfs
	830 m	700 mbfs
	470 m	3,200 mbfs
	640 m	1,000 mbfs

During the ODS, the Riser Tensioners were partly damaged. These will be fixed after the damage-investigation is complete. Since the NanTroSEIZE Stage 1 expeditions are all non-riser operations, these expeditions will go forward as planned.

2 Status of Expeditions 314, 315, and 316

1. Prospectus:
 - a. Prospectuses for 314 and 316 are on-line and linked to the DOI system.
 - b. The prospectus for 315 is waiting for the DOI link.
2. Boarding applications and Sample Request
 - a. Boarding application submission due: July 31
 - b. Sample Request Window: July 1 to August 15
 - c. Sample Request Evaluation: By September 15
3. Expedition 314 schedule:
 - a. Port call at Shingu Port on September 14 (tentative)
 - b. Boarding on September 19
 - c. Pre-Spud Meeting on the D/V *Chikyu* on September 20
 - d. Sail to Drilling Area on September 21
 - e. Spud-in on September 21 or 22 depending on the drilling site arrival time.
4. Stage 1 Land Bases
 - a. Supply Base: Shingu Port, Shingu City, Wakayama Prefecture
 - b. Helicopter Base: Minami-Ise-Cho, Mie Prefecture

IODP-USIO REPORT TO SPC AUGUST 2007 MEETING

The organization of this report reflects activities and deliverables that are outlined in the Integrated Ocean Drilling Program U.S. Implementing Organization (IODP-USIO) FY07 Annual Program Plan as implemented during the second quarter of FY07 by the USIO, which is composed of Joint Oceanographic Institutions, Inc. (JOI), and its partners, Texas A&M University (TAMU) and Lamont-Doherty Earth Observatory (LDEO) of Columbia University.¹

EXPEDITION OPERATIONS

EXPEDITION PLANNING AND IMPLEMENTATION ACTIVITIES

FY08 budget constraints resulted in major revisions to the USIO expedition schedule during this quarter. On 12 March 2007, the USIO issued a draft revised schedule to be used for internal FY08 budget preparation and planning of FY07 spending related to FY08 expeditions. Changes from the previous planning schedule that was issued on 6 September 2006 included the following:

- The Phase 2 operational start date was changed from 1 November 2007 to 1 January 2008;
- Transit from Singapore to Yokohama, Japan, was scheduled for 1–18 January 2008;
- Operations from the original two IODP-USIO Nankai Trough Seismogenic Zone Experiment (NanTroSEIZE) expeditions were merged into one expedition, without circulation obviation retrofit kits (CORKs), scheduled for 18 January–19 March 2008;
- The Pacific Equatorial Age Transect (PEAT) expeditions were shifted to new positions in the schedule, 19 March–19 May 2008 and 19 May–19 July 2008;
- The full Juan de Fuca Hydrogeology expedition was eliminated and replaced with an estimated four operation days for remedial cementing added to the end of PEAT Expedition 2; and
- The Bering Sea expedition was moved to 19 July–18 September 2008.

IODP-USIO PACIFIC EQUATORIAL AGE TRANSECT EXPEDITIONS 1 AND 2

Expedition Planning: A pre-expedition meeting was held 8–9 February 2007 in College Station, Texas, to finalize expedition operational plans and complete a draft of the Scientific Prospectus for the PEAT expeditions. The operations plans and prospectus were subsequently revised according to the revision of the USIO expedition planning schedule.

Expedition Staffing: The second Co-Chief Scientist accepted an invitation to sail on PEAT Expedition 2, completing Co-Chief Scientist staffing for the PEAT program. An initial review of 114 applications began, with a first round of invitations to be issued early in the next quarter.

NANTROSEIZE PROJECT STAGE 1 EXPEDITIONS

Expedition Planning: The two previously scheduled IODP-USIO NanTroSEIZE expeditions (Subduction Inputs and Kumano Basin Observatory) were merged into a single expedition with nearly identical science objectives. The Kumano Basin Observatory was removed from the plan, as well as significant use of casing. The merged plan will focus mainly on obtaining the coring

¹ In this document, references to USIO-TAMU include Texas A&M Research Foundation (TAMRF).

objectives from the Subduction Inputs and Kumano Basin sites. The two original Scientific Prospectuses were merged and submitted as a single report for review, and the clearance request was submitted.

Expedition Staffing: All invitations for Co-Chief Scientists and scientists were cancelled. A complete reassessment of science staffing has commenced among the USIO, Program Member Offices (PMOs), and NanTroSEIZE Project Management Team (PMT). The Center for Deep Earth Exploration (CDEX) has delayed issuing the second round of invitations for the CDEX Stage 1 expeditions because the science staffing reassessment will likely impact their staffing strategies.

IODP-USIO JUAN DE FUCA HYDROGEOLOGY 2 EXPEDITION

Expedition Planning: With the exception of one four-day operational activity, the Juan de Fuca Hydrogeology 2 expedition was removed from the FY08 schedule because of budget constraints. At the end of PEAT Expedition 2, the ship will transit to the Juan de Fuca operating area to conduct remedial cementing of the observatories installed in Holes U1301A and U1302B in 2004.

Engineering Design/Technology: An engineering meeting was held in College Station, Texas, on 22 February 2007, where a Juan de Fuca Co-Chief Scientist and the proponent engineer reviewed the status of design work on the CORK IIs. It was determined that the third-party engineering/design effort will continue and design drawings will be delivered the USIO when completed.

IODP-USIO BERING SEA EXPEDITION

Expedition Staffing: Both Co-Chief Scientists accepted invitations to sail. USIO staff began working with the Co-Chief Scientists to produce an expedition summary to accompany a call for applications.

Expedition Planning: The pre-expedition meeting was scheduled for 18–19 June 2007.

IODP-USIO JOIDES RESOLUTION PHASE 1 DEMOBILIZATION

The Wireline Heave Compensator completed its transit from Singapore to the United States, arriving on 13 April 2007 at the Schlumberger offices in Houston, Texas, where initial inspection will be conducted before shipping the unit to USIO-LDEO.

ENGINEERING AND TECHNOLOGY DEVELOPMENT

PROJECTS AND OTHER ACTIVITIES

USIO-TAMU ENGINEERING SERVICES

Simulated Borehole Test Facility: A new 20V three-phase electrical outlet was added to the clay mixer in the Simulated Borehole Test Facility (SBTF). The mixer was used to mix clay, sand, and water into sediment samples that were subsequently compressed to simulate the formation, and then evaluated for their grain size distribution and porosity (moisture content).

Common Downhole Data Logger: Work continued on the data logger schematic diagram, which is near completion. Several software routines were written for controlling onboard intelligent devices.

Calibration Laboratory: Pressure transducers from the temperature/dual pressure (T2P) downhole temperature and pressure tool were calibrated using the dead weight tester and the temperature bath.

Downhole Sensor Sub: Both Downhole Sensor Sub (DSS) tools were tested at Schlumberger's Genesis test facility on 31 March 2007. The tools were run in tandem, with the first tool positioned ~3 m from the bit and the second tool ~7 m above the bit. Preliminary results indicated that weight on bit (WOB) and torque on bit (TOB) were successfully measured and recorded during the tests. Further analysis of the test results began.

Test Facility: The 3-ton hoist in the Test Facility (TFAC) derrick was removed for servicing, during which the hook on the hoist was deemed unsafe for operations. The hoist was sent to an outside vendor for evaluation for repair.

Instrumented Water Sampler: Work resumed on Instrumented Water Sampler (IWS) development. The AutoCAD-based design was converted to SolidWorks format. Design recommendations from Leg 208 as well as the implementation of the new Common Data Acquisition (CDAQ) electronics are being incorporated.

Instrumented Load Pins: Instrumented load pins, which are mounted at the pivot joint of the hook, are used to measure drill string hook load. The four IODP-USIO load pins were sent to the manufacturer for calibration and upgraded electronics. The rig instrumentation vendor, Epoch Well Services, was approached to supply the wireless interface for the load pin data, which will be transmitted to the rig instrumentation via a wireless link.

Advanced Piston Corer Temperature Tool 3 Implementation: USIO-TAMU Engineering Services staff members and a CDEX staff member visited Antares Datensysteme GmbH in Bremen, Germany, on 5 March 2007 to launch the joint USIO/CDEX implementation of the Advanced Piston Corer Temperature Tool 3 (APCT-3). Work began on procurement, loans, calibration, and testing plans.

USIO-TAMU ANALYTICAL SERVICES

IODP Sample Material Curation System—Central Inventory: The Central Inventory system plans and developments were discussed on 2 March 2007 with the curators at the IODP Curators and Data Management Coordination Group (DMCG) joint meeting in Bremen, Germany. Personnel from each implementing organization (IO) were designated as contact points for developing the interfaces from the various sample databases to the Central Inventory.

USIO-LDEO ENGINEERING AND TECHNICAL SERVICES

Environmental Qualification Facility: USIO-LDEO received an M-RAD shock machine, which will provide mechanical shock testing in line with industry standards. Two USIO-LDEO engineers visited M-RAD Corporation in Woburn, Massachusetts, for operational training on the machine. Design of the test fixture used for securing logging tools to the shock machine was completed, and manufacture and delivery of the fixture was scheduled for the next quarter.

Modular High-Temperature Tool: Meetings were held between USIO-LDEO and Schlumberger electronic technicians to discuss telemetry and inclusion of the modular high-temperature tool (MTT) in the Schlumberger tool string.

Logging-While-Coring Project: USIO-LDEO and USIO-TAMU engineers began initial review of the specifications and documents for currently used USIO coring tools. A survey of

commercially available coring tools was initiated, after which a decision will be made whether to complete the project through an off-the-shelf commercial purchase or an in-house development strategy.

USIO-LDEO SCIENCE SERVICES

Core-Log Integration Platform Software: The new Core-Log Integration Platform (NCLIP), the successor to Splicer and Sagan, was hosted at the Electronic Visualization Laboratory of the University of Illinois, Chicago, to expedite the next stage of development (www.evl.uic.edu/cavern/corewall/NCLIP/).

INFORMATION TECHNOLOGY

PROJECTS AND OTHER ACTIVITIES

USIO-TAMU INFORMATION TECHNOLOGY AND DATA SERVICES

Storage Area Network: Most of the UNIX data/services were relocated to a storage area network (SAN)-hosted volume, leaving only a small amount of data remaining that will be migrated later this fiscal year.

CommVault Server: The CommVault Galaxy Server is a comprehensive multiplatform data backup solution that replaces the ineffective Computer Associates Arcserve data backup software. All the purchased CommVault software was installed and configured and additional client licenses were requested due to additional hardware purchases.

Virtualization: A new virtual server was added (dropship) on physical server dropstone.iodp.tamu.edu for Raja Consultancy Incorporated (RCI) to test synchronization between onshore and shipboard materials-handling databases.

Web Services: Testing was initiated in a project to migrate from the SUN IPlanet Web server to Apache and Tomcat.

Operational Support: Air conditioning was temporarily augmented in the computer room with the introduction of building air. Integrated Lights Out Management (iLo) was added to a total of nine servers as a first step toward providing more complete manageability. Daylight Savings Time software patches were applied to all servers. The e-mail client GroupWise was upgraded to version 7 and the new client was installed on a limited number of desktops as a test.

Cumulus Digital Asset Management Installation: The shore component of the Cumulus Digital Asset Management (DAM) installation was extensively planned and installation, configuration, and user training was scheduled to take place during the next quarter.

Network Infrastructure: Planning began for network infrastructure additions for the new laboratory being built in the Gulf Coast Repository (GCR).

USIO-LDEO INFORMATION SERVICES

Log Database Replacement: The new relational database model was demonstrated at the March 2007 DMCG meeting in Bremen, Germany. Feedback obtained from DMCG and the Scientific Earth Drilling Information Service (SEDIS) Phase I developer was incorporated into a revised model that was implemented to allow links from the metadata directly to each log data file. Development of Web services began, with basic Representational State Transfer (REST) queries available for testing.

Operations Database: Work continued on the development of a new operations database schema. The system will be deployed on the ship as a stand-alone system to capture details of logging operations to enable data to be transmitted to shore and stored in a master Operations Database. The Operations Database will be for internal use; however, relevant information will be exported and included within the new Logging Database to enable more complicated searches.

HEALTH, SAFETY, AND ENVIRONMENT

PROJECTS AND OTHER ACTIVITIES

USIO-TAMU HEADQUARTERS

Crisis Management Plan: A draft of the revised Crisis Management Plan was prepared for review by USIO-TAMU management. Once finalized, the revised plan will be shared with the other USIO partners to review shared applicability.

Building Security: Development of a card access system was completed and installation began, with final implementation expected during the third quarter of FY07.

REPORTS/PUBLICATIONS

IODP-USIO REPORTS

FY07 IODP QUARTERLY REPORT

The IODP-USIO report for the first quarter of FY07 (October–December 2006) was submitted to National Science Foundation (NSF) and IODP Management International, Inc. (IODP-MI), on 14 February 2007.

FY06 ANNUAL REPORT

The IODP-USIO FY06 Annual Report was completed and submitted to NSF and IODP-MI on 24 January 2007.

IODP SCIENTIFIC PUBLICATIONS

PROCEEDINGS OF THE INTEGRATED OCEAN DRILLING PROGRAM

Volume 310 (Tahiti Sea Level): Published on 4 March 2007 (see “Appendix H”).

PROJECTS AND OTHER ACTIVITIES

IODP PUBLICATIONS SERVER HOSTED BY THE USIO

On 20 February 2007, IODP-MI, Sapporo, approved the design of Web banners for the new IODP server for scientific reports and publications. USIO staff members then began incorporating the new *Scientific Prospectus* and *Preliminary Report* series banners and migrating existing files to the new server (publications.iodp.org). At the end of the quarter, almost all IODP Phase 1 scientific reports and publications had been transferred.

COPYRIGHT FORMS

On 23 March 2007, in an effort to streamline the collection of copyright assignment forms from all authors of articles published in IODP’s journal *Scientific Drilling* or chapters published in the *Proceedings of the Integrated Ocean Drilling Program*, the IODP-MI Sapporo office sent the USIO a revision of a waiver that would grant Staff Scientists assigned to IODP expeditions the

right to sign copyright statements for IODP publications on behalf of expedition participants. The waiver was under review by the USIO at the end of the quarter.

EDUCATION AND OUTREACH

PUBLIC AFFAIRS

USIO Communications and outreach activities this quarter focused on opportunities to publicize scientific ocean drilling through related publications and events with the goal of raising public and media awareness.

In support of USIO outreach, J. Corsiglia (Communications Associate, JOI) gave an introductory public and media outreach presentation to expedition Co-Chief Scientists, Staff Scientist, and key operations staff at the PEAT Pre-expedition Meeting held 8 and 9 February 2007 in College Station, Texas.

PUBLIC RELATIONS MATERIALS

USIO MEDIA ADVISORIES/NEWS RELEASES

The following media advisories were distributed this quarter:

- Climate Change Expert Lectures at University of South Florida, St. Petersburg (17 January 2007).
- Climate Change Expert Lectures at Florida A&M University (19 January 2007).

ARTICLES AUTHORED BY USIO STAFF

Science and other articles authored by USIO staff published during this quarter include the following. Other Program-related science articles are available online through the ocean drilling citation database (iodp.tamu.edu/publications/citations/database.html) and the IODP Expedition-related bibliography (iodp.tamu.edu/publications/citations.html).

- Peart, L., and Klaus, Ann, 2007. Retooling ocean drilling science into earth science educational resources. *Sci. Drill.*, 4:35–37.
- Prouhet, T., and Sharoff, J., 2007. An expedition to the seafloor: using Google Earth and ocean cores to analyze seafloor spreading. *Flotsam & Jetsam: A Newsletter for Massachusetts Marine Educators*, Spring 2007.

NEWS ARTICLES, PROGRAMS, MEDIA CITATIONS, OR PUBLIC COMMENTARY

News articles, programs, media citations, or public commentary published during this quarter resulting from IODP media and public awareness efforts included the following. See the “IODP in the news” Web page (www.iodp-usio.org/Newsroom/news.html) for other articles that raise the profile of the Program.

- *Discover*, 2007. The top 100 science stories of 2006—90. Drillers tap into foundation of Earth’s crust. *Discover*, January 2007. <http://discovermagazine.com/2007/jan/cover>
- Krajick, K., 2007. Race to plumb the frigid depths. *Science*, 315(5818):1525–1528. doi:10.1126/science.315.5818.1525
- *La Recherche*, 2007. 1 an de science: la croûte océanique de part en part. *La Recherche*, 404. <http://www.larecherche.fr/arch/07/01> (membership required)

- Lankes, C., 2007. Global warming debate heats up: experts discuss level of effects on Earth's atmosphere. *The [Texas A&M University] Battalion*, 21 March 2007. <http://media.www.thebatt.com/media/storage/paper657/news/2007/03/21/News/Global.Warming.Debate.Heats.Up-2783614.shtml>
- MacPherson, K., 2007. He warned of warming long before it was cool. *The [Newark, NJ] Star-Ledger*, 4 February 2007.
- *Sea Technology*, 2007. Annual review & forecast: new opportunities and challenges for ocean science research. *Sea Technol.*, 48(1). http://www.sea-technology.com/2007/2007AnnualIndex/Jan2007_annual_index.html
- *The Eagle*, 2007. Chinese educators to visit A&M. *The Eagle* [Bryan-College Station, Texas], 28 March 2007. http://www.theeagle.com/stories/032807/am_20070328051.php
- Tobin, H., 2007. Research highlights: A geophysicist wonders how and why faults behave in so many different ways. *Nature (London, U. K.)*, 445(7130):798–799. doi:10.1038/445798a
- University of Arkansas, 2007. Geosciences lecture: probing the microbiology of deeply buried marine sediments. *Univ. Arkansas Daily Headlines*, 23 January 2007. <http://dailyheadlines.uark.edu/9884.htm>

MUSEUM PARTNERSHIPS

M. Leckie (Professor of Geosciences, University of Massachusetts, Amherst) and D. Thomas (Assistant Professor of Oceanography and member of Ocean Drilling and Sustainable Earth Science [ODASES], TAMU) conducted a teacher workshop called “Hot Times on Planet Earth” for 24 local teachers at the Denver Museum of Nature and Science. The day-long Saturday workshop was designed to prepare teachers for “Rapid Rise in Greenhouse Gas Concentrations 55 Million Years Ago: A Deep Sea Perspective on the Causes and Consequences,” a U.S. Science Support Program (USSSP)-sponsored Distinguished Lecture Series talk by J. Zachos (Professor of Earth and Planetary Sciences, University of California, Santa Cruz).

EDUCATION OUTREACH/CONFERENCES

National Science Teachers Association Annual Conference: *JOI Learning* was well represented and well received at the National Science Teachers Association (NSTA) Annual Conference held 28 March–1 April 2007 in St. Louis, Missouri. The *JOI Learning* booth, representing both USIO and USSSP educational efforts, was manned by USIO staff, technicians, scientists, and Teacher-at-Sea and School of Rock teacher participants. Conference attendees were invited to view microfossil slides; examine Cretaceous/Paleogene (K/P) boundary and Paleocene/Eocene thermal maximum (PETM) cores; chat with educators, scientists and technicians; and enter a drawing for a mini-PETM core fabricated by P. Weiss (Marine Laboratory Specialist, USIO-TAMU). *JOI Learning* also sponsored the Informal Science Share-a-thon, presented a workshop based on School of Rock materials and posters, and performed Google Earth and plate tectonics demonstrations at two share-a-thons sponsored by the National Earth Science Teachers Association (NESTA). Approximately 900 science educators visited the booth or participated in a *JOI Learning* activity, and significant contacts were established with informal science providers and educators from across the United States, South America, Singapore, Europe, and the United Kingdom.

IODP-USIO WEB SITE

Main activities during this quarter included migration of the *Scientific Prospectus*, *Preliminary Report*, and *Proceedings* documents to the IODP publications server (publications.iodp.org) and production and posting of educational materials to the *JOI Learning* Web site (www.joilearning.org). See “Appendix I” for new Web content and access statistics.

PUBLICATIONS

This quarter saw publication of the Expedition 310 volume of the *Proceedings of the Integrated Ocean Drilling Program* (see “Appendix H” for dates and URLs).

USIO INTERACTIONS WITH IODP-MI AND OTHER IMPLEMENTING ORGANIZATIONS

INTERACTIONS

APCT-3 IMPLEMENTATION

USIO and CDEX commenced activities on the joint implementation of the APCT-3. See “Projects and Other Activities, USIO-TAMU Engineering Services” in the “Engineering and Technology Development” section for more information.

VISUAL CORE DESCRIPTIONS

USIO representatives communicated with the IODP-MI Sapporo office in January 2007 about minimum presentation requirements for visual core descriptions (VCDs) in preparation for the 5–7 February 2007 VCD/Lithology Meeting at CDEX. IODP-MI’s goal was to ensure that VCDs and other graphical plots use a common look and layout throughout Program publications. During January, discussion focused on existing publication standards and the USIO’s desire to find a replacement for the core description program AppleCORE. There was also discussion on whether the USIO should send a Publication Services representative on an early *CHIKYU* expedition to help, coach, and educate CDEX’s staff about requirements for shipboard-produced reports that will be submitted to the USIO for editing and production and whether the USIO should host a technical editor from CDEX for an orientation on publications requirements and style in advance of Phase 2 operations. IODP-MI was supportive of both trips if the USIO has the necessary personnel and if CDEX agrees.

MEETINGS

ENVIRONMENTAL PROTECTION AND SAFETY PANEL

The Environmental Protection and Safety Panel (EPSP) meeting was held 9–11 January 2007 in Yokohama, Japan (see “Appendix E” for list of USIO attendees). J. Baldauf (Deputy Director of Science Services, USIO-TAMU) presented the USIO review and noted key operational issues.

ENGINEERING DEVELOPMENT PANEL

The Engineering Development Panel (EDP) meeting was held 17–19 January 2007 in New York City, New York (see “Appendix E” for list of USIO attendees). USIO representatives presented updates on current projects and participated in discussions of the emerging Technology Roadmap content and priorities and the new IODP-MI engineering project proposal process. The EDP meeting was preceded by an informal IO/IODP-MI meeting to discuss relevant issues.

VCD/LITHOLOGY

A VCD/Lithology Meeting was held 5–7 February 2007 at CDEX in Yokohama, Japan (see “Appendix E” for list of USIO attendees). The purpose of the meeting was to develop a consensus among IOs and Program management on how to present data in standard IODP publications and reports. The USIO was assigned to develop templates with the PC-based software application Strater that could be used by all IOs to generate VCDs and other types of data plots. Review of the templates began in preparation for submission to IODP-MI.

SITE SURVEY PANEL

The Site Survey Panel (SSP) meeting was held 20–22 February 2007 in San Diego, California (see “Appendix E” for list of USIO attendees). SSP conducted its normal review of the site survey status of active proposals and discussed expedition “safety” packages, what triggers SSP proposal review, and whether IOs can put IO site survey or hazard evaluations into the Site Survey Databank. Adam Klaus (Supervisor of Science Support, USIO-TAMU) gave a presentation covering major current USIO operational and planning activities and issues.

OPERATIONS TASK FORCE

A preliminary Operations Task Force (OTF) meeting was held at IODP-MI on 22 February 2007 in Washington, D.C. (see “Appendix E” for list of USIO attendees). The primary focus of the meeting was a discussion of revisions to the USIO FY08 operational schedule needed in light of budget guidance and other factors. A preliminary schedule was developed, which was presented to the Science Planning Committee (SPC) for approval at their March 2007 meeting. An OTF meeting was held on 2 March 2007 in Osaka, Japan, to approve a revised draft USIO operations schedule, which was issued 12 March 2007 (see “Expedition Planning and Implementing Activities” in the “Expedition Operations” section for details).

IODP CURATORS

The first IODP Curators Meeting was held 28 February–2 March 2007 in Bremen, Germany (see “Appendix E” for list of USIO attendees). This meeting included further exchange of information and training to arrange core shipments from the Bremen Core Repository (BCR) to the GCR and to help prepare CDEX curatorial staff for receipt of legacy cores as well as review and discussion of standardized curatorial procedures and policies for IODP.

DATA MANAGEMENT COORDINATION GROUP

An IODP DMCG meeting was held 2–4 March 2007 in Bremen, Germany (see “Appendix E” for list of USIO attendees). USIO attendees participated in discussions related to the IODP-MI portal, SEDIS, which is currently under development at Bremen, Germany, and the Sample Request Management system currently under development at USIO-TAMU.

SCIENCE PLANNING COMMITTEE

The SPC meeting was held 4–7 March 2007 in Osaka, Japan (see “Appendix E” for list of USIO attendees). J. Baldauf (Deputy Director of Science Services, USIO-TAMU) presented the USIO report.

IODP QUALITY ASSURANCE/QUALITY CONTROL TASK FORCE

An IODP Quality Assurance/Quality Control (QA/QC) Task Force meeting was held 19–21 March 2007 at Leicester, U.K. (see “Appendix E” for list of USIO attendees). The purpose of this meeting was to develop a framework for QA/QC for measurements across IODP. A draft quality assurance plan for the Program was established, inter-IO calibration and quality checks were discussed, and a list of subject matter experts was nominated to act as a forum for QA/QC issues that will arise during Phase 2 operations. The Task Force was in consensus that its existence should be short lived, and that the Science Advisory Structure (SAS), specifically the Scientific Technology Panel (STP), should take on the responsibility of coordinating QA/QC activities throughout the life of IODP.

ESO Report for 10th SPC Meeting

Santa Cruz, California, August 2007

Tahiti Sea Level – Expedition 310

The post-expedition meeting is to be held in Tahiti in November 2007, and tracking of post-expedition research output is ongoing.

New Jersey Shallow Shelf - Expedition 313

Planning has been continuing for this expedition with the expectation of a 2007 start. Originally the start was to be in mid-May, but there was gradual and continued slippage of the start date. A satisfactory geotechnical survey was completed by Alpine Ocean Seismic Survey Inc in early May after lengthy weather delays, and a permit was obtained from the National Marine Fisheries Service (NMFS) to carry out VSP work. Outreach and offshore staffing plans were also well advanced.

Regrettably, after the start date slipped to mid-August it was decided that continuing the expedition into the late autumn/early winter was not a viable option. Key factors were the potential loss of drilling time, platform supply risks, safety issues and the open-ended financial risk associated with a return transit to the Gulf of Mexico at that time of year. The Co-chiefs were immediately informed of the decision, followed by the Science Party and PMOs, before the information was more-widely distributed.

At the time of writing ESO is in discussion with DOSECC to try to establish with a platform owner a contract that includes a defined start date for 2008.

Future expeditions

Planning is proceeding for the Great Barrier Reef Expedition with a view to implementation in Sept-Nov 2008 or 2009. This is subject to satisfactory site survey work in September-October 2007, and SSP and EPSP approval. A drilling permit application has been made to the Great Barrier Reef Marine Park Authority, and a tender notice for a platform has been placed in the Official Journal of the European Union.

A useful meeting was held at IODP-MI with the proponents of the New England Hydrogeology proposal.

Dan Evans
ESO Science Manager, 11-07-07

IODP Science Advisory Structure Executive Committee

4th Meeting, 25-26 June 2007
Bremerhaven, Germany

DRAFT EXECUTIVE SUMMARY (v1.0)

2. Approval of the Minutes from the March 2007 SASEC Meeting.

SASEC Motion 0706-01: SASEC approves the minutes, with the revision suggested by Hans Christian Larsen, of its third meeting on 22-23 March 2007 conducted via videoconference.

Miller moved. Kono seconded. 8 in favor, 2 abstained, 0 against.

3. Approval of the Agenda

SASEC Motion 0706-02: SASEC approves the agenda, with the addition of one item by Susan Humphris, for its fourth meeting on 25-26 June 2007 in Bremerhaven, Germany.

Wefer moved. Tatsumi seconded. 10 in favor, 0 abstained, 0 against.

7. Approval of the FY'08 Annual Program Plan

SASEC Consensus 0706-03: SASEC recommends that IODP-MI includes funds in the FY'08 Annual Program Plan to conduct the second in its series of long-term evaluations of IODP science, the subject of which will be ocean crustal structure and formation.

SASEC Consensus 0706-04: SASEC endorses the revised FY'08 schedule as presented at the meeting. Due to the substantial changes required for the FY'08 Program Plan, SASEC postpones a vote on approving the plan until it can review the revised version. IODP-MI will forward the revised APP to SASEC for a vote by e-mail as close to the end of July as possible.

8. Implications of FY'08 APP Budget for Planned Activities

SASEC Consensus 0706-05: SASEC recognizes the potential that the study of sedimentary records with high to ultra-high resolution holds for achieving several important goals of the IODP Initial Science Plan, particularly paleoclimatological and paleoenvironmental reconstructions. SASEC has recommended to IODP-MI that a workshop on **High to Ultra-high Resolution Sedimentary Records** be funded in 2008 (SASEC Consensus 0703-15).

SASEC recommends that a steering committee of 5-7 individuals be formed to organize and run the meeting, headed by 1-2 conveners. The steering committee will decide how best to structure the workshop to:

(i) define the key scientific objectives that can be achieved by drilling high to ultra-high sedimentary records, and how they might be integrated with land records

(ii) identify a global, long-term strategy (including scientific, technical, engineering and operational components, and integration with other scientific programs), to address those

objectives.

IODP-MI will provide logistical support for the workshop.

Deliverables: We anticipate that publishable documents will be produced, including a short workshop report, and a longer comprehensive workshop report, that describe the scientific objectives, present a drilling strategy for addressing those objectives, and explain how the results might be integrated with land records and efforts by other scientific programs to address those objectives.

9. Report of the SAS Working Group

SASEC Consensus 0607-06: SASEC accepts the report of the SASEC Working Group on the Science Advisory Structure and recommends implementation of the proposed reduction in size of committees and the proposed reduction in the numbers of meetings of some committees. SASEC thanks the Working Group for their production of a very useful and comprehensive study of the SAS. SASEC disbands the Working Group now that their task is accomplished.

12. IODP and Industry

SASEC Consensus 0706-07: The Lead Agencies have urged IODP-MI, working in concert with SASEC, “to exert leadership in the reduction of IODP costs which may involve difficult restructuring of the program”. One mechanism of reducing program costs, and/or redistributing them to allow some other more expensive drilling legs, is to use drilling platforms for non-IODP activities for some periods.

In that context, SASEC recommends that IODP-MI work with the Implementing Organizations (who are the science operators of the platforms and therefore control the opportunities to be pursued) and the scientific community to develop/facilitate non-IODP work with industry consortia and/or governments.

Ideally, it would be beneficial for cores and data to become part of IODP after the appropriate moratorium period. Ideally, the projects will be of high societal relevance including:

Carbon sequestration

Gas hydrates

Frontier stratigraphic test/reference sites

Hydrogeology and geotechnical drilling.

Enabling these issues to be addressed, even as non-IODP projects, would be a major benefit and legacy of the IODP.

SASEC Consensus 0706-08: SASEC endorses the concept of the Complementary Project Proposal for hybrid IODP projects with substantial external funding, and the evaluation criteria as set out in the June 5, 2007 concept description. In light of the current IODP budget situation, SASEC urges SPC to formally adopt Complementary Project Proposals as an IODP planning mechanism, and to refine the SAS evaluation process for such proposals as appropriate. Ideally, such proposals could be accepted as soon as the October 1, 2007 IODP proposal deadline.

13. Prioritization of IODP Science

SASEC Consensus 0706-09: SASEC reaffirms the science priorities espoused in the Initial Science Plan. However, in light of the changed budget realities since that plan was written, SASEC, in cooperation with SPC and SSEP, will develop an IODP Implementation Plan: 2008-2013 that will provide guiding principles and foci for the remainder of the current program. Final approval will occur at the next SASEC meeting in January.

15. Advice to SPC Regarding Prioritization of OTF proposals

Consensus 0706-10: Given current and projected financial restrictions and environmental issues associated with the Monterey Bay test borehole facility proposal, SASEC overrides SPPOC consensus 0605-05 and can no longer support the establishment of a test borehole facility in Monterey Bay.

16. IODP-ICDP Relations

Consensus 0706-11: In an initial step towards integration with ICDP, SASEC recommends that an *ad hoc* implementation group be formed with 2-3 representatives from both programs, plus specific curatorial expertise.

SASEC nominates Greg Mountain (US), Jan Behrmann (Europe) and Tetsuro Hirono (Japan) as the IODP representatives to the *ad hoc* committee.

The *ad hoc* implementation group is charged with: 1) developing an implementation plans that includes financial implications for common core storage and metadata integration; 2) fostering cross-program evaluation of proposals. We envision that the latter will be initially accomplished with liaisons between the ICDP Science Advisory Group (SAG) and the IODP SPC, but charge the committee to consider a broader view.

SASEC requests a report for its June 2008 meeting.

20. Closing Remarks

Consensus 0706-12: SASEC thanks Ken Miller and Yoshi Tatsumi for their service over the last year. They have both been outstanding committee members, and have provided invaluable help and advice as we have established the role of SASEC in the overall SAS structure. Although we will miss them both, we look forward to the return of Yoshi as the IODP-MI BoG representative and to Ken's continued involvement in the program.

Consensus 0706-13: SASEC recognizes Toshi Nagao and Eli Silver for their contributions to SASEC as the IODP-MI BoG members of SASEC. We have very much appreciated their inputs, and look forward to their continuing in IODP in other capacities.

Consensus 0706-14: SASEC would like to recognize the leadership that Keir Becker has demonstrated as Chair of SPC and his contributions as a member of SASEC. Keir's incredible thoroughness, thoughtfulness, and deep knowledge of the program have been invaluable to SASEC over the past year.

Consensus 0706-15: SASEC thanks Kelly Krys for her service to this committee over the past year. Kelly has been the one who has taken our creations and brought them to fruition. She has worked tirelessly to provide us with the best support that a committee could wish for. We all wish her well in her future endeavors, and look forward to seeing her again – somewhere, sometime.

Consensus 0706-16: SASEC thanks Jorn Thiede and his colleagues at AWI for hosting SASEC for its spring meeting. Apart from the weather, the meeting place was first-class, and the hospitality most appreciated.

SASEC Working Group on SAS – Summary Report, June 2007

Purpose: At its July 2006 initial meeting, SASEC formed a small working group (SAS WG) to review the IODP Science Advisory Structure (SAS) and recommend “any changes to optimally configure its activities as IODP enters Phase II” and “any changes in structure necessary to integrate mission planning into the IODP proposal review process.” After FY08/09 budget shortfalls came to light in January 2007, in March of 2007 SASEC added a request that the SAS WG also investigate scenarios for a reduced SAS if required by budget projections.

Timeline: The SAS WG met twice, once immediately before the November SASEC meeting and again immediately before the March 2007 SPC meeting. The first meeting was held after the separate mission implementation working group developed the approved plan to integrate mission planning without requiring structural changes to SAS. At its November 2006 meeting, SASEC confirmed that this was to be considered an “internal” review, but asked that the SAS WG poll the IODP community with a questionnaire for their views on the SAS. That questionnaire was issued in December 2006, with responses received through February 2007. The second SAS WG meeting considered the responses and was followed by a session with SAS panel chairs for their immediate feedback. Interim reports were then made at the March 2007 SPC and SASEC meetings, and this draft final report reflects feedback from those meetings.

Recommendations and implementation timelines for integrating mission planning into the IODP proposal review process: The SAS WG concurred with the plan developed by the mission implementation working group to utilize the core SAS proposal review committees for review of mission proposals and mission progress, and to enlist volunteer SAS panel members on mission teams on an as-needed basis. Thus, no structural changes to SAS are recommended in order to integrate mission planning into the IODP proposal review process. (It should be noted that the mission proposal review will include an independent, external review panel already approved by SASEC.) In fact, mission planning under the current SAS began as of the May 2007 SSEP meeting, when the mission proposals from the April 1 deadline were reviewed.

Recommendations and implementation timelines for optimally configuring SAS activities as IODP enters Phase II:

- Overall SAS structure: The basic SAS structure is based largely on the JOIDES and interim SAS structures that served the program well during ODP and IODP Phase I, with some refinements introduced in 2005 after a SPPOC review of SAS. Under SASEC executive authority, SAS includes three primary core functions: (1) proposal review and IODP science plan selection (SSEP/SPC), (2) technical advice (EDP/STP/SPC), and (3) assessment of site survey and drilling readiness (SSP/EPSP/SPC). In addition, there is a provision for SASEC and SPC to form short-term specific planning groups as needed (WG’s, DPG’s, and PPG’s). The SAS WG recommends that such an integrated structure should be retained for full multi-platform operations in Phase II, as opposed to introducing any platform-specific structuring. The SAS WG does not recommend any major structural changes at present, although it suggests various refinements to SAS panel mandates and procedures (below). Most of these refinements are already under way under the authority of either the program member offices or the SPC Chair and IODP-MI vice-chair in approving meeting agendas. If major changes are contemplated or required in the future, the SAS WG consensus is that it would be better if

they were designed after the program has developed (a) at least a year or two of actual experience with full multi-platform operations and (b) a clearer understanding of the impact of budgetary limitations.

- Panel sizes: Half-way through the SAS WG term, it became clear that IODP Phase II would be marked by budget projections insufficient for full-time IODP operations of the two primary drillships. Thus, even before SASEC added its request for investigation of “reduced SAS” scenarios, the SAS WG was including cost efficiencies in SAS functions among its recommendations for optimally configuring SAS. Most important, the program member offices agreed shortly after the March SPC with the SAS WG suggestion that most SAS panel memberships (and travel costs) could be reduced. In particular, we understand that the US and Japan agreed to reduce their membership levels to 5/5 on SPC and each panel, down from the original levels of 7/7; ECORD and IODP Associate Members will hold to their current membership levels as specified in their Memoranda, helping to maintain a range of expertise on the panels. The US and Japanese membership level reductions are expected to be implemented by the end of FY08, coordinated by IODP-MI, USAC, and JDESC.
- Proposal Review Function (SSEP/SPC): The core functions of proposal review and annual science plan selection are handled well on an integrated basis by SSEP and SPC, using time-tested procedures. As long as IODP proposal pressure remains strong and the IODP Memoranda specify a proposal-responsive planning process, the SAS WG recommends retaining the core SSEP/SPC structure. The review process will be tested given the new budgetary realities and limits on IODP operations time, so the SAS WG recommends that the SSEP and SPC modify their procedures for a franker assessment of scientific relevance of each proposal and likelihood of scheduling, if possible at earlier stages in the proposal review process. This is for the sake of proponents primarily but also the IO’s and IODP-MI in attempting early planning. Suggestions include (a) earlier SSEP rejection of proposals deemed unlikely to succeed, e.g., unlikely to ever reach SSEP status of 3 stars or higher, (b) more careful SPC assessment of programs that repeatedly rank too low to forward to OTF for potential scheduling, and (c) periodic SPC review of any backlogs of approved proposals forwarded to OTF but remaining unscheduled. Suggestions for applying firm guidelines or rules for all three have met with resistance, so a more flexible approach should be attempted. SSEP has started applying stricter standards as of its May 2007 meeting, where 7 of 31 reviewed proposals were recommended for deactivation. SPC plans a major review of all programs remaining at OTF at its August 2007 meeting, bringing in assessments of drilling readiness and cost information to be provided by OTF.
- Coordination of proposal reviews with ICDP: The SAS WG did not devote significant attention to this issue, being unfamiliar with ICDP proposal review procedures in any detail. Questions were raised about the differences in IODP and ICDP member representation rights in the review process, but there was agreement that a coordinated review process should be explored at least for “amphibious” projects that involve both onshore (ICDP) and offshore (IODP) components. The WG chair attended the April 2007 meeting of the ICDP Science Advisory Group (SAG) to participate in their proposal review process, and there was subsequent agreement by the ICDP Executive Committee to form an ad-hoc IODP-ICDP working group to explore coordinated review of amphibious proposals as well as joint core curation when appropriate. This is to be considered at the June 2007 SASEC meeting.

- Survey and drilling readiness assessment (SSP/EPSP): The SSP and EPSP review drill site survey data in different ways: SSP reviews survey data for all active proposals primarily to advise SPC (and SSEP to a lesser degree) as to survey data readiness in the proposal review process, whereas EPSP conducts more detailed reviews of site data mostly for those highly-ranked proposals approved for scheduling, primarily to advise SPC, OTF, and the IO's about safety and environmental protection matters. The SAS WG reaffirmed the need for separate SAS panels for these two functions, despite various alternative suggestions. The SAS WG did note the need for earlier EPSP "previews" of an increasing number of proposals, and EPSP is already accommodating this need as of its June 2007 meeting. Partly in recognition of the reduced platform operating time to be expected under the realistic budget predictions, the SAS WG suggests that both SSP and EPSP can work toward meeting frequencies of less than twice per year. It appears that EPSP can increase the meeting-to-meeting interval from every 6 mos to every 9-12 mos after its June 2007 meeting. Given the electronic availability of site survey data, SSP should consider at its July 2007 meeting whether it can conduct its business thereafter by one main physical meeting per year and an intervening electronic review process. They and IODP-MI should also consider whether their meeting schedule could/should be coordinated better with SSEP meeting schedules, if IODP-MI can coordinate proposal and data-submission deadlines more closely.
- Technical advice function (EDP/STP): A major change resulting from the 2004-2005 SPPOC review of SAS was replacing TAP with EDP and renaming/refocusing SciMP to STP. EDP and STP both were given more focused mandates and an added direct advisory pathway to IODP-MI and IO's when appropriate. EDP was more carefully focused on engineering development, minimizing operational advice, and it has developed a very effective annual cycle for its two meetings to provide both SPC and IODP-MI advice on engineering development priorities and review of IODP-MI engineering development proposals. The STP mandate is broader, and the SAS WG endorsed the effort already underway as of Dec 2006 for STP to develop a similar annual meeting cycle to focus its delivery of advice to SPC and IODP-MI. There is some overlap in the EDP and STP mandates, but sufficient differences in focus to justify keeping separate panels unless required by budgetary realities. Partly because of STP's broader mandate, but also for potential cost-savings, the SAS WG suggests it may function more effectively with one main annual meeting as a whole, and more specialized working groups as needed in place of its traditional second annual meeting. This should be carefully considered by STP, SPC, and IODP-MI starting at the June 2007 STP meeting.
- Ad-hoc planning groups (DPG's/PPG's): SAS should retain these possible planning elements but continue to utilize DPGs and PPGs sparingly, particularly in light of the budget situation. To date, SAS has had one of each, and the Hotspot Geodynamics DPG provides a great model in issuing a draft final report after only one meeting and less than a year in existence. Similar performance should be the expectation for future DPG's and PPG's. The Industry-IODP Science PPG is a special case, having been formed with a renewable 3-year mandate as a result of the 2004-2005 SPPOC review of SAS. It is about to enter its second year of existence and is making progress on its main task of promoting IODP proposals of joint industry-IODP interest. When it enters its third year, SPC should begin evaluating its performance very carefully, particularly in light of the imperative to develop IODP-industry collaborations that may contribute resources to IODP that help to overcome budget shortfalls.

Experience in the next year or so may or may not dictate a different model than the PPG for fostering such collaborations. (Note that the SPC chair has drafted a potential modification to the IODP proposal process for “Complementary Project Proposals” that would actually bring outside resources to the program for projects of mutual interest to both IODP and other entities when IODP budgets cannot support full operation of primary IODP drillships. This is appended to the SAS WG report and may be considered independently at the June 2007 SASEC meeting.)

Recommendations for reduced SAS scenarios if required by budget projections: The planned reductions in US and Japanese panel memberships should save those national programs ~25% in their SAS travel costs. Additional savings in direct SAS costs would accrue from the potential changes in meeting frequencies and styles outlined above for the 4 service panels, and from minimizing use of DPG’s and PPG’s in the near-term. Even more savings in indirect SAS costs would accrue from proportional reductions in numbers and travel costs of liaisons and observers at panel meetings. When initially presented at SPC, that idea met with objections, but perhaps future budget realities at IO’s, CMO, and IODP agencies will dictate some such reductions. All told, the adjustments described above should result in ~40 % savings in SAS costs but preserve what the SAS WG views as a truly critical function provided by the SAS: allowing the IODP user/client community strong representation in the IODP process, especially at a time of budget shortfalls when difficult decisions are to be made.

If budget reductions require even further reductions in SAS, then SAS should be carefully consulted to ensure IODP user participation in designing the necessary reductions. The process that SASEC has set up to update the Initial Science Plan might result in justification for changes in SAS structure and procedures, especially if the updated ISP refines or prioritizes IODP goals. As expressed in SASEC consensus statements, the updating process is planned to include strong consultation with SAS, so it should also allow for SAS input on further reductions in SAS if dictated by budget realities. Formal adoption of the updated ISP would then be the appropriate trigger for implementing any further changes in SAS outlined in the updated ISP.

Several potential ideas for more serious reduction in SAS, and their implications, are explored in the addendum but not recommended at present. When the full impact of budget reductions on the whole IODP program can be accurately projected, then these or other ideas developed in consultation with SAS should be carefully considered.

Addendum: Possible Reductions in SAS if Dictated by Budget Realities

It is not clear yet whether budget realities will dictate further reductions in SAS beyond those recommended above by the SAS WG. Because there are different national and consortium funding models to support their participation in SAS, it needs to be clarified to what extent reductions in SAS would translate to cost savings that can actually be applied to formal IODP program costs. If it becomes clear that further reductions in SAS are required and justified, e.g., in the process of updating the ISP, then SAS itself or a new SAS working group can attempt an informed cost-benefit analysis of the elements of SAS to meet the goal. Any cost-benefit analysis needs to take into account the value of the thousands of man-hours of volunteered expertise provided annually by SAS members and the larger value of their participation as user representatives in IODP decision-making processes. For now, the SAS WG presents in this brief addendum some pros and cons of several ideas that came up in its discussions. The scope of these ideas reflect the SAS WG consensus that the core proposal review process by SSEP and SPC is handled well, so those structural elements should be preserved through any potential further reductions in SAS. But note again that the SAS WG was not in favor of proceeding immediately on any of the thoughts below.

1. SASEC and SPC: As suggested by SASEC itself (a bit facetiously), is there really a need for both a SASEC and an SPC? If the Annual Program Plan is essentially an implementation plan for the science plan approved by SPC, why is a separate SAS body from SPC needed for approval of the APP? If SPC is now given increased authority for IODP policy-making, as verified at the last SASEC meeting, is it not coming closer to being assigned the role of the “Executive Authority” as described in the IODP memoranda: “...to formulate scientific and policy recommendations with respect to IODP planning and operations”?
2. EDP and STP: If budget reductions are such that IODP can support only limited engineering development and/or improvements of shipboard technologies, then the roles of EDP and STP can probably be reduced appropriately. The level of reduction might be such that a consolidated panel can integrate the functions. The form of such a consolidated panel might include a core group supplemented by added expertise as needed for advice required at a given time. If such an EDP/STP consolidation is considered, there should also be a careful assessment whether it will lead to a need for more IODP-MI task forces (with potential offsetting added costs) like those closely associated with the current EDP and STP. Note that input from both EDP and STP will be essential in providing SAS feedback over the coming year on the extent to which IODP services could/should be reduced to meet budget projections. Thus, potential consolidation of their functions should probably not be implemented until this feedback is provided.
3. SSP: There have been suggestions to phase out the Site Survey Panel, somehow consolidating its review of survey data with the SSEP and/or SPC proposal review. If this is considered, SSP, SPC, and SSEP should be consulted to determine how best to implement the latter. Attempting to join the SSP review too closely with the SSEP review may not improve the process, given that the timing and nature of the reviews are

quite distinct: e.g., there are many past examples of site survey funding being provided by national agencies after proponents report positive SSEP review of conceptual drilling science, or even later, after SPC ranking of proposals forwarded by SSEP. Currently, SSP advice is directly mainly at SPC and the proponents. If budget realities dictate phasing out a separate SSP, one potential mechanism for keeping the functionality might be to ensure that a certain proportion of the SPC members (and SSEP?) is qualified in this regard; this might justify or require bringing US and Japanese SPC (and SSEP?) memberships back up to 7/7 levels. The rather technical assessment that SSP currently makes whether or not submitted data satisfy the data guidelines for the type of proposed drilling could probably be done initially by the IODP-MI Science Coordinators, but this might require additional resources at IODP-MI and offset some of the apparent cost savings.

4. EPSP: In questionnaire responses, it was asked why there is a need for an EPSP safety assessment in SAS along with the final safety assessments by the operators required for liability reasons. Should the entire safety assessment be an IO expense or is it a legitimate activity for SAS to approach on an integrated basis? The SAS WG thinks the latter is the case, and it is not clear whether shifting the burden to IOs would result in any cost savings to the overall program.

Note: A further disadvantage shared by the last three ideas is that the four service panels include the majority of the industry participation within SAS, other than the finite-term IIS-PPG (currently 17 industry reps on the 4 service panels, 7 on the PPG).

Site Survey Panel (SSP)

1. General Purpose. The Site Survey Panel (SSP) reports to the Science Planning Committee (SPC). The panel shall advise drilling proponents, the Science Steering and Evaluation Panel (SSEP), and the SPC on the degree of completeness of the drill site characterization data package, and on its assessment of whether or not the scientific objectives of each drill site can be effectively achieved on the basis of the proposal and data package.

2. Mandate. The SSP shall:

- Review site survey data packages submitted by proponents to the IODP Site Survey Data Bank.
- Verify data quality and identify data gaps for each proposal's site survey data package.
- Provide early guidance to proponents and the SSEP regarding necessary site characterization data.
- Make recommendations regarding the degree of completeness of each drill site characterization data package to the proponents, the SSEP, and the SPC.
- Assess, on the basis of the proposal and data package, whether or not the scientific objectives of each drill site can be effectively achieved.
- Examine and encourage opportunities for use of new site survey technologies.
- Foster cooperation and coordination for site survey data acquisition.

3. Classification Decisions. The site characterization completeness for each proposed drill site shall be evaluated by two or three SSP members serving as watchdogs and classified by general consensus of the SSP members during SSP meetings. Modifications of the site classification shall be by consensus of the SSP at a meeting or by e-mail. Site classifications shall be recorded in the meeting minutes. The site characterization completeness for each proposed drill site is assessed by the SSP only on a scientific basis. The SSP's site classification does not preclude drilling.

4. Meetings. The SSP shall convene biannually, generally four to six weeks after IODP Site Survey Data Bank submission deadlines, and additional electronic meetings may be held as appropriate. Robert's Rules of Order shall govern its meetings. Conflicts of interest shall be declared at each meeting, and treatment thereof shall be recorded in the meeting minutes. The SPC chair shall approve meeting agendas, dates, and locations, and the IODP-MI Vice-President for Science Planning and Deliverables shall authorize the meetings.

5. Membership. National and consortia membership entitlements for SAS panels are stated in the Memoranda among the IODP funding agencies. The SSP chair shall work with IODP-MI and the national and consortia committees to maintain scientific balance and breadth of expertise in the panel's membership, and to ensure regular rotation of its membership. SSP members shall normally serve for terms of three years. If an SSP member misses two meetings in succession, the SSP chair or vice-chair shall discuss the problem of SAS representation with the SPC chair or vice-chair.

6. Chair and Vice-Chair. The SSP chair and vice-chair shall be nominated by the SSP membership and approved by the SPC. Their terms are two years. The SSP chair shall be responsible for providing the IODP-MI Sapporo Office with meeting minutes within one month of each meeting.

7. Liaisons. The SSP chair shall be liaison to the SPC, with the vice-chair as alternate. The SSP shall have liaisons from the SPC. The IODP Site Survey Data Bank Manager and a liaison from the EPSP shall attend each SSP meeting. A science coordinator from the IODP-MI Sapporo Office shall attend each SSP meeting. The SSP shall send liaisons to SSEP meetings. Representatives from the implementing organizations (IOs) shall also be invited to attend the meetings.

Site Survey Panel (SSP) February 20-22, 2007
Martin Johnson House, Scripps Institution of Oceanography
La Jolla, California, USA

Final Minutes

Attendees

Name	Affiliation	Comments
Acton, Gary	SSP	
Bangs, Nathan	SSP	
Corthay, James E.	SSP	
Doyle, Earl	SSP	
Gaedicke, Christoph	SSP	
Gulick, Sean	SSP	
Hino, Ryota	SSP-alt.	Alt. for Tanaka
Kanamatsu, Toshiya	SSP	
Lee, Gwang Hoon	SSP	Non-voting
Lericolais, Gilles	SSP	
Locker, Stanley	SSP	
Lykke-Andersen, Holger	SSP	
Matsuda, Hiroki	SSP	
Miura, Seiichi	SSP	
Park, Jin-Oh	SSP	
Qiu, Xuelin	SSP	
Sawyer, Dale	SSP	Chair
Searle, Roger C.	SSP	
Shirai, Masaaki	SSP	
Yaguchi, Yoshikazu	SSP	Vice-chair
Graham, Colin	ESO	
Klaus, Adam	USIO	
Clark, Dru	SIO/SSDB	Host
Moore, Gregory	CDEX	
Mountain, Greg	SPC	
Tanahashi, Manabu	EPSP	
Zelt, Barry	IODP-MI	

SSP member Akiko Tanaka sent her regrets that she could not attend.

Tuesday 20 February afternoon (1300)**1. Welcome and Introduction**

1.1 Introduction of participants (Sawyer)

1.2 Welcome and Meeting logistics (Caryn Neiswender)

1.3 Site Survey Databank (SSDB) Update (John Weatherford)

- Metadata upgrades are now possible via a new java script input.
- SSDBviewer improvements were demonstrated to the panel.
- SSDBquery admin tools demonstrated for panel.
- Expedition packages will be created for upcoming expedition. These will include complete SSDB datasets for use on the vessel and for post-cruise science.
- SSDB will soon be open to public access.
- INTviewer was demonstrated for new panel members.

2. Last meeting minutes approval (Sawyer)

- The minutes for July 2006 were approved by consensus

3. Conduct of business (Sawyer)

3.1 Adoption of agenda

- Sawyer reviewed the draft agenda
- Agenda accepted by consensus

3.2 Reminder of SSP mandate

- Sawyer reviewed the SSP mandate
- Corthay raised question on what is the flow of reporting for Panels within Integrated Ocean Drilling Program (IODP).
- Sawyer - SSP and Science Steering and Evaluation Panel (SSEP) report to Science Planning Committee (SPC)
- Mountain, SPC rep – re SPC point of view. Explained it is important that SSP should include advice on the appropriateness of the data to address scientific questions.
- Sawyer said we should give good, clear, info regarding the data presented so that SSEP and SPC can use it to make good decisions.
- Mountain – we can assess readiness, but should also add comments on usefulness related to scientific objectives.
- Conclusion: SSP is mandated to consider the science as well as the datasets in our reviews.

3.3 Reminder of data requirements matrix

- Sawyer reviewed the Data Matrix.
- The Matrix chart is a starting point – we can recommend additional data acquisition or accept less depending on site objectives.
- Zelt – the matrix is now recast as a new doc – avail on the web site.
- Searle – is the new web version pub avail?
- Zelt – no, not yet

- Searle – discussed types of data needed, Example, Proposal 535 is to drill into crust. An objective is to drill near a magnetic boundary. The location of the magnetic boundary is based on a paper of published magnetic data. Roger Suggest that the published paper should be put in SSDB.

3.4 Reminder of SSP “completeness” classification

- Sawyer reviewed the SSP completeness classifications
- Corthay – suggests that before each SSP meeting the current version of the matrix and the classification descriptions be circulated to all SSP members.
- Sawyer committed to do that from now on.

3.5 Reminder of IODP Conflict of Interest Policy

- Sawyer described IODP guidelines relating to conflict-of-interest (COI).
- Sawyer considered possible institutional relationships – no such conflicts of significance were identified.
- All attendees at the meeting were asked to identify COI’s
- All members with COI were asked to leave the room when these proposals were discussed.
- Panel members with personal COI’s with particular proposals are listed below:
 Gulick - 548
 Bangs – 537
 Kanamatsu – 612, 605, 698, 697
 Gaedicke – 537
 Miura – 697, 698, 707
 Lericolais – 685
 Qiu – 618
 Sharai – 605

4. Reports

4.1 IODP-MI Office

(Zelt)

- Reviewed proposal flow through system, meeting schedules, proposal statistics, misc. info
- FY07 funding cuts likely – could impact panels, may be last year for major development of SSDB.
- Updates for watchdogs-
 - New addendum, 535-Add2
 - New proponent response letter, 644-PRL2
 - 707 proponents wish to drop sites SAG-1A and SAG-2b

4.2 SPC

(Mountain)

- Solicited comments to take back to SPC.
- National Science Foundation (NSF) happenings.
 - Scientific Ocean Drilling Vessel (SODV) contract in the works still.
 - Funding not yet formally approved, may be reduced to FY06 level or below which could impact US science support program.
 - Proposal system is vigorous although funding is uncertain.
- Japan’s Ministry of Education, Culture, Sports, Science and Technology (MEXT) – encouraging reports, 4% increase to Diet
- Discussions underway with Australia and India.

- European Consortium for Ocean Research Drilling (ECORD) –
 - Funding: FY08 60% increase in participants costs – some concern meeting that. Deep Sea Frontier effort not yet funded.
 - Looking for 3 MSP ops in 4 yr
 - Magellan workshops(microbiology) underway
 - Education and outreach programs welcome participants
- Science Advisory Structure Executive Committee (SASEC)-
 - SASEC replaces Science Planning and Policy Oversight Committee (SPPOC)
 - Working groups planning mission implementation
 - Science Advisory Structure (SAS) evaluation
 - Ongoing task to update Initial Science Plan based on workshop reports.
 - SASEC will annually review one of the Initial Science Plan (ISP) science themes – this year they will review the theme “climate variability.”
- Reviewed FY08 expedition scheduling
 - Some if’s, but non-riser drilling on DV Chikyu to begin Sep’07, with riser drilling in June’08
 - If SODV starts Jan’08, Equatorial Pacific delay seems likely. Schedule is a draft so far and likely to change.
- FY09 Expedition Scheduling
 - Canterbury Basin now has drillable targets. Will pursue an unspecified clockwise Pacific route
- SAS reports
 - Environmental Protection and Safety Panel (EPSP) notes hi-res bathy is critical for reef targets.
 - Science Technology Panel (STP) recommends Impelmenting Organizations (IO’s) put post-Expedition results in a database. Who or where this will be done is in the works.
 - Engineering Development Panel (EDP) is developing a thorough technology roadmap for IODP
 - IIS Program Planning Group white papers planned to stimulate drilling proposals.
 - Detailed Planning Groups (DPGs) – SPC formed a Large Igneous Province DPG, Bob Duncan chair.
- On SSP
 - At its last meeting SSP asked for a review of the New England Shelf Hydrology proposal.
 - SPC feels EDP and STP have already advised proponents adequately. Greg asked for any further comment from SSP. This topic was table until later in this meeting.
 - At its last meeting SSP had concern for survey readiness vs ranking at SPC – should SPC consider ranking proposals classified by SSP as lacking in data? An example of this was the CORK proposal at site 1200(693-APL) – It was classified 2 by SSP but SPC approved it anyway. Dale said there are other better examples than this one. Mountain states we should be in good communication so opinions are heard. Searle said SPC should consider such proposals. Mountain - some cases can be considered but not ranked.

BREAK**4.3 SSEP**

(Yaguchi)

- Yaguchi and Akiko attended the meeting
- Stats on SSEP reviews from last meeting.
- Discussed Mission implementation
- Next SSEP meeting at Rice University in Houston TX 29 May to 1 June
- SSEP will meet in France in November
- SSP liaisons to SSEP learn a lot about the IODP proposal evaluation process.
- 3 liaisons to SSEP are recommended because the SSEP use 3 breakout groups.

4.4 EPSP

(Tanahashi)

- EPSP met 9-10 January 2007
- Guidelines for safety review-safety package and drill site selection and near surf hazards were posted on IODP web site.
- ESO – reef drilling guidelines being updated; look to finalize by June 07.
- New Jersey Shelf probable 2008 using a MSP
- Great Barrier Reef drilling probable 2008 using a MSP
- Reviewed Canterbury basin proposal
- Discussed 595 Indus Fan-Murray Ridge proposal
- Reviewed 537a Costa Rica Seismogenesis CRISP Part A proposal.
- Reviewed NanTroSEIZE stage 1 proposal
- Discussed CDEX safety review and communication protocol.
- Next EPSP 18-19 June in Houston

4.6 CEDEX

(Moore)

- Chikyu had shake down cruise. Everything seemed to work reasonably well. Mud logging and returning drill cuttings to surface were tried for the first time..
- Also drilled off Kenya – with riser and BOP. Confidential exploration site location.
- Now drilling off NW shelf Australia, confidential exploration site location
- Starts IODP operation in Sep'07 –NanTroSEIZE, Nankai Trough
- A variety of data acquisition still ongoing
- Question from SSP - Did riser ops go OK? Moore reported they had a heave incident on shakedown – otherwise drilling went well in Kenya.

4.7 USIO

(Klaus)

- Reviewed personnel changes.
- SODV not going to have stretch - Looking to refit in existing hull.
- Final shipyard contract not finalized, hope for March.
- Anticipated Jan 2008 start date target for Equ Pac I. Budgets are a problem causing uncertainties but planning continues.
- All old ODP/DSDP Results Volumes will be digitized and become available online.

4.8 ESO

(Graham)

- New Jersey Shallow Shelf – Start in May 07, no contracts yet.
- Great Barrier Reef (519) update – surveys continuing – looking to Start Fall

2008.

- New England Hydrogeology (637) - in 2009?
- Discussion of Tahiti; need for bathy came up again. Need high resolution, we (SSP) should define a grid size, 5 m?
 - Searle – should we upgrade the matrix doc? Roger will look into recommendation on this issue.
 - Mountain – SPC can use this info.
 - Sawyer – this issue on agenda to discuss later.

5. Discussion of SSP issues related to proposal review (Doyle)

- After attendance at EPSP Jan 07 meeting, Doyle raised a number of issues for SSP. They are related to the proposal review process.
- Currently new data triggers a review.
- What should we say is required to trigger a review?
- Should we add an approved or not approved stamp?
 - Searle noted that in past it was determined that this was not our mandate.
- Should a SSP re-review be required if EPSP moves sites? EPSP has a rule that moving a site >50 m requires re-approval by EPSP. SSP has no similar criteria.
- If sites move – should SSP re-review?
- Should SSP request that geohazard reports be submitted to data bank for our review?
- Klaus noted that sometimes new data are presented at EPSP. He also pointed out that Mission Teams are likely to consider new data for Missions and that SSP might not see them.
- Sawyer suggested that we consider these questions again alter in the meeting

Meeting adjourned for the day

Social Dinner at La Jolla Shores Hotel

Wednesday 21 February, morning**6. Watchdog Preparation of Proposal Reviews in Databank****LUNCH****Wednesday 21 February, afternoon****7. Review of Proposals****A. Proposals on Seismogenic Drilling**

Proposal	Short Title	Proponent	Prev. SSP Review	Watchdogs		
707-Full	Sagami Bay Seismic Monitoring	Kobayashi, Curewitz	2006-07	Bangs	Qiu	Searle
537A-Full5	Costa Rica Seismogenesis Project Phase A	Vannucchi	2006-07	Miura	Lykke-Andersen	Acton

B. Proposals on Tectonic Drilling

Proposal	Short Title	Proponent	Prev. SSP Review	Watchdogs		
685-Full	Ligurian Margin Borehole Observatory	Henry	2006-02	Gulick	Doyle	Miura
618-Full3	East Asia Margin	Clift	2006-07	Yaguchi	Park	Bangs

548-Full2	Chixculub K-T Impact Crater	Morgan	2006-07	Corthay	Shirai	Lericolais
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8. 3D Seismic Discussion: Including NantroSeize 3D seismic data

(Moore and Bangs)

- Moore presented example using INTViewer to view a 3D dataset.
- Discussion: How, or do we, need to use 3D at future SSP meetings? File format issues would need to be considered. What is our potential need to do this?
- Bangs - suggest that proponents should carry the weight to prepare visualizations because the 3D datasets are time consuming to browse through. Those on the panel knowledgeable in 3D would be able to advise on what type of data display would be appropriate.
- Sawyer raises question on bringing in proponents (to SSP meeting) to present some of these complex data sets. Sawyer also suggested that SSP might possibly meet at a visualization center to really look over data in depth.
- Zelt. reminded of the conflict of interest rule for no proponents to be involved in

review.

- Moore – this could raise issues of equal requirements for proponents.
- Corthay – Joint review with EPSP could be warranted. But we want to look at data well before EPSP.
- Zelt – another added cost for meeting.
- Mountain – what about video conference? Responders – some people use video conf effectively.
- Consensus? We should think about this. So at this point we can use INTViewer to look at a 3D Volume, size of volume would be issues. The Operators and their safety concerns are what initiates some 3D survey requirements.
- Lericolais – different scale and cost to 3D surveys science vs safety.
- Sawyer invited panel to discuss future 3D use via email.
- We thank Moore and Bangs for leading the discussion.

Meeting adjourned for the day

Thursday 22 February, morning**7. Continue Review of Proposals**

552-Full_	Himalayan orogeny Bengal Fan	France-Lanord	2006-07	Lericolais	Yaguchi	Locker
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C. Proposals on Paleoclimate and Environmental Drilling

Proposal	Short Title	Proponent	Prev. SSP Review	Watchdo gs		
612-Full3	Geodynamo	Yamazaki	2005-02	Qiu	Gulick	Gaedicke
605-Full2	Asian monsoon	Tada	2006-07	Sawyer	Lee	Hino
644-Full2	Mediterranean Outflow	Hernandez-Molina	2006-07	Locker	Hino	Corthay

D. Proposals on Ocean Crust Drilling

Proposal	Short Title	Proponent	Prev. SSP Review	Watchdo gs		
522-Full5	Superfast Spreading Crust	Teagle	2004-02	Park	Acton	Matsuda
535-Full5	Atlantis Bank Deep	Dick	2006-07	Searle	Miura	Gulick

LUNCH**E. Pre Proposals**

Proposal	Short Title	Proponent	Prev. SSP Review	Watchdo gs		
640-Pre	Godzilla Mullion	Ohara	2004-02	Acton	Searle	Kanamatsu
702-Pre	Southern African Climates	Zahn	2006-07	Lee	Corthay	Shirai
698-Pre2	Izu-Bonin-Mariana Arc Middle Crust	Tatsumi	N/A	Shirai	Locker	Park
697-Pre2	Izu-Bonin-Mariana Reararc Crust	Tamura	N/A	Matsuda	Bangs	Lykke-Andersen
705-Pre2	Santa Barbara Basin Climate Change	Kennett	2006-07	Doyle	Lericolais	Lee
708-Pre	Central Arctic Paleoceanography	Stein	N/A	Gaedicke	Kanamatsu	Qiu
711-Pre	Tanzania Margin Paleoclimate Transect	Wade	N/A	Lykke-Andersen	Gaedicke	Doyle

Thursday 22 February, afternoon**8. Final discussions****Response to SPC regarding New England Shelf Hydrogeology recommendation**

- Should SSP respond to SPC regarding New England Shelf Hydrogeology proposal?
- Doyle – sands are a serious problem and many tools listed in the proposal were proprietary. SPC suggested forming a task group to look into these and other issues.. IODP-MI has been asked to set up scoping group. Apparently, Tom Janacek will chair this group.
- Our options-
 - Let it go
 - Doyle work w Zelt
 - Pause and wait for scoping group
- Searle suggests that we should send statement to SPC indicating that we look forward to a report from the scoping group. This would be a way to keep things moving and discussion happening.
- Doyle – will contact Tom Janacek to set up communication of SSP concerns.

SSP0702-01 Consensus statement – SSP is pleased to learn that SPC has recommended the formation of a scoping group to investigate the technological issues involved in drilling 637-Full2 New England Shelf, and looks forward to learning its outcomes.

Return to Doyle's Questions from Day 1

- What triggers a SSP review? Should trivial additions be filtered if not worthy of re-review?
- Zelt – can be up to chair to make decision on this, whether to do full review.
- Searle concerned about short corporate memory, should we review active proposals not up for review at some interval so we collectively maintain awareness?
- Doyle notes we do more of a technical audit rather than a real assessment whether data fully support scientific objectives.
- Should an SSP review be required if EPSP moves the sites?
- Possibilities: SSP Chair makes the call? Or to EPSP Liaison plus chair (2 persons) make the call?.
- SSP Consensus is to have SSP Chair and EPSP liaison do initial review of such cases to see if there is a real need to take the proposal back to the panel.
- Should independent geohazard survey/safety reports be submitted to SSDB?
 - They can enhance the science review.
 - Are there proprietary issues?

SSP0702-02 Consensus statement: SSP recommends that the data and results acquired by (or for) the IO's as part of hazard or safety surveys be submitted to the SSDB with open access for the scientific community. These data will often contain useful information that will benefit the science results of the program.

Review of interactions with SSDB

- Large file size still an issue to some panellists.
- Otherwise, SSDB seems to be a smooth operation. We appreciate their efforts to support the panels activities.

Liaisons to Other IODP Meetings

- Liaison to SPC – Osaka, Japan, 4-7 March -- Sawyer
- Liaison to SSEP – Houston, TX, USA, 29 May to 1 June – Sawyer (because it is at his institution!) and possibly other US SSP members. No members volunteered.
- Liaison to EPSP - Doyle

9. Date and venue selection for next meeting

- Three days during week of 16-20 July
- Tentative location – Edinburgh, UK
- Tentative Host – Colin Graham, British Antarctic Survey at Univ. of Edinburgh

10. Thanks

- To members rotating off the panel: Jin-Oh Park and Xuelin Qiu.
- To our hosts at the SSDB and Scripps.

11. Adjourn

Appendix – Site Characterization Classifications

Proposal No. 522-Full5
Short Title Superfast Spreading Crust
Lead Proponent Damon Teagle
SSP Watchdogs Jin-Oh Park, Gary Acton, Hiroki Matsuda
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
GUATB-3C	1Aa	6° 44.2'	-91° 56.1'
GUATB-3F	1Aa	6° 38.52'	-91° 58.3'
GUATB-3G	2Cc	6° 40.38'	-91° 48.92'
GUATB-3H	1Aa	6° 42.22'	-91° 54.28'

Proposal No. 535-Full5 / Add2
Short Title Atlantis Bank Deep
Lead Proponent Henry Dick
SSP Watchdogs Roger Searle, Seiichi Miura, Sean Gulick
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
ATBK-1A	2Cc	-32° 42.75'	57° 17.11'
ATBK-2A	1Ba	-32° 41'	57° 20.35'
ATBK-3A	1Ba	-32° 40.3'	57° 17.5'

Proposal No. 537A-Full5
Short Title Costa Rica Seismogenesis Project Phase A
Lead Proponent Paola Vannucchi
SSP Watchdogs Seiichi Miura, Holger Lykke-Andersen, Gary Acton
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
CRIS-1A	1Bb	8° 25.71474'	-84° 9.47028'
CRIS-2B	1Bd	8° 29.02044'	-84° 7.8405'
CRIS-3B	2Cb	8° 35.54136'	-84° 4.63062'
CRIS-4A	1Bd	8° 40.84962'	-84° 2.0169'

CRIS-5A	1Bb	8° 27.633'	-84° 7.482'
CRIS-7A	2Cb	8° 25.38186'	-84° 9.63408'
CRIS-8A	2Cb	8° 25.35666'	-84° 8.60154'
CRIS-9A	2Cb	8° 29.3274'	-84° 7.69308'
CRIS-10A	2Cb	8° 35.99802'	-84° 4.4037'
CRIS-11A	2Cb	8° 39.94296'	-84° 2.46624'

Proposal No. 548-Full2 / Add3
Short Title Chicxulub K-T Impact Crater
Lead Proponent Joanna Morgan
SSP Watchdogs Jim Corthay, Masaaki Shirai, and Gilles Lericolais
SSP Proponent(s) Sean Gulick
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
CHICX-1A	2Cb	21° 17.72'	-90° 41.93'
CHICX-2A	1Aa	21° 27.33'	-89° 57.09'
CHICX-3A	1Aa	21° 27.0846'	-89° 57.0648'
CHICX-4A	1Aa	21° 28.6578'	-89° 57.4404'

Proposal No. 552-Full3
Short Title Bengal Fan
Lead Proponent Christian France-Lanord
SSP Watchdogs Gilles Lericolais, Yoshikazu Yaguchi, Stanley Locker
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
MBF-1A	1Aa	8° .42'	86° 17'
MBF-2A	1Aa	8° .42'	87° 40.25'
MBF-3A	1Aa	8° .42'	88° 44.5'
MBF-4A	1Aa	8° .42'	86° 47.9'
MBF-5A	1Aa	8° .42'	87° 10.9'
MBF-6A	1Aa	8° .42'	88° 6.6'

Proposal No. 605-Full2
Short Title Asian monsoon
Lead Proponent Ryuji Tada
SSP Watchdogs Dale Sawyer, Gwang Hoon Lee, and Ryota Hino
SSP Proponent(s) Toshiya Kanamatsu, Masaaki Shirai

Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
ECS-1A	3A	31° 38'	128° 57'
JS-1A	2A	37° 2'	134° 48'
JS-3A	1Aa	40° 7'	134° 0'
JS-4A	1Aa	41° 42'	139° 5'
JS-5B	1Aa	43° 46'	138° 50'
JS-7B	2A	40° 11'	138° 14'
JS-9A	2A	38° 37'	134° 32'
JS-10B	3A	35° 57.6'	134° 26'
JS-11A	3A	37° 31'	130° 20'

Proposal No. 612-Full3 / Add
Short Title Geodynamo
Lead Proponent Toshitsugu Yamazaki
SSP Watchdogs Xuelin Qiu, Sean Gulick and Cristoph Gaedicke
SSP Proponent(s) Toshiya Kanamatsu
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
WCB-1B	1Ac	1° 42.7'	135° 50.9'
WCB-3B	2C	1° 52.2'	141° 56.3'
WCB-4A	1Ac	-0° 6.1'	139° 35'
CNP-1B	2C	38° 17.3'	175° .8'
CNP-2A	1Aa	35° 14.6'	175° 0'
CNP-3A	1Aa	37° 25.6'	176° 14.7'
ENP-1A	3A	48° 0'	-155° 0'
MHP-1A	3A	-9° 20'	-162° 50'
NER-1A	3A	1° 11'	89° 24'
SEP-1A	2B	-44° 0'	-122° 0'
SIR-1A	3A	-45° 0'	90° 0'

Proposal No. 618-Full3 / Add2
Short Title East Asia Margin
Lead Proponent Peter Clift
SSP Watchdogs Yoshikazu Yaguchi, Jin-Oh Park, Nathan Bangs
SSP Proponent(s) Xuelin Qiu
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
PA-1B	1Aa* see below	17° 13'	110° 30.5'
VN-1A	1Aa	18° 54'	106° 47'
VN-2B	1Aa	9° 20.2'	108° 54'
VN-3A	1Aa	8° 38'	109° 43'

*Classification was changed to 1Ba after the meeting and an email re-review.

Proposal No. 640-Pre
Short Title Godzilla Mullion
Lead Proponent Yasuhiko Ohara
SSP Watchdogs Gary Acton, Roger Searle, Toshi Kanamatsu
SSP Proponent(s) Masaaki Shirai
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
GM-1A	NA	15° 34'	138° 53'
GM-2A	NA	15° 45'	139° 7'
GM-3A	NA	15° 59.5'	139° 12'
GM-4A	NA	16° 11'	139° 25.5'
GM-5A	NA	16° 25'	139° 27'
GM-6A	NA	16° 27.5'	139° 28.5'

Proposal No. 644-Full2
Short Title Mediterranean Outflow
Lead Proponent Javier Hernández-Molina
SSP Watchdogs Stanley Locker, Ryota Hino, James Corthay
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
GC-1A	1Ca	36° 49.633333'	-7° 44.716667'
GC-2A	1Ba	36° 17.133333'	-7° 48.466667'
GC-4B	1Ba	36° 15.266667'	-6° 48'
GC-5B	1Ca	36° 25.7'	-7° 14.1'
GC-9A	1Ba	36° 48.316667'	-7° 43.15'
WI-1B	2Ca	37° 20.6'	-9° 25.3'
WI-2A	1Ba	37° 48'	-10° 10'

Proposal No. 685-Full

Short Title Ligurian Margin Borehole Observatory
Lead Proponent Pierre Henry
SSP Watchdogs Sean Gulick, Earl Doyle, Seiichi Miura
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
LIMO-1B	1Bc	43° 30'	7° 29.25'
LIMO-2B	1Bb	43° 21.3'	7° 31.17'
LIMO-3B	1Ac	43° 37.62'	7° 23.08'
LIMO-4A	2Ac	43° 38.63'	7° 13.16'
LIMO-5A	2B	43° 38.77'	7° 11.9'
LIMO-6A	1Ba	43° 22'	7° 31.17'

Proposal No. 697-Pre2
Short Title Izu-Bonin-Mariana Reararc Crust
Lead Proponent Yoshihiko Tamura
SSP Watchdogs Hiroki Matsuda, Nathan Bangs, Holger Lykke-Andersen
SSP Proponent(s) Toshiya Kanamatsu, Seiichi Miura
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
IBM-3A	NA	31° 47.05'	139° 5.81'
IBM-5A	NA	32° 16.72'	139° 5.56'

Proposal No. 698-Pre2
Short Title Izu-Bonin-Mariana Arc Middle Crust
Lead Proponent Yoshiyuki Tatsumi
SSP Watchdogs Masaaki Shirai, Stanley Locker, and Jin-Oh Park
SSP Proponent(s) Toshiya Kanamatsu, Seiichi Miura
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
IBM-4A	NA	32° 24'	140° 23'

Proposal No. 702-Pre
Short Title Southern African Climates
Lead Proponent Rainer Zahn

SSP Watchdogs Gwang Lee, James Corthay, Masaaki Shirai
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
APT-1A	NA	-41° 26.03'	25° 15.3'
APT-2A	NA	-40° 52.14'	27° 21.34'
CAPE-1A	NA	-34° 43'	17° 20'
LIM-1A	NA	-25° 27'	33° 47'
LIM-2A	NA	-25° 28'	35° 26'
MZC-1A	NA	-16° 0'	43° 0'
NV-1A	NA	-33° 18'	29° 51'
NV-2A	NA	-31° 11'	32° 9'
ZAM-1A	NA	-19° 14'	37° 0'
ZAM-2A	NA	-18° 56'	37° 30'

Proposal No. 705-Pre2
Short Title Santa Barbara Basin Climate Change
Lead Proponent James Kennett
SSP Watchdogs Earl Doyle, Gilles Lericolais, Gwang Hoon Lee
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
SBC-1A	NA	34° 17.15'	-120° 2.13'
SBC-3A	NA	34° 15.47'	-119° 46.9'
SBC-4A	NA	34° 16.32'	-119° 46.755'
SBC-5A	NA	34° 15.9'	-119° 46.82'
SBC-6A	NA	34° 13.89'	-119° 40.74'
SBC-7A	NA	34° 13.46'	-119° 40.805'

Proposal No. 707-Full
Short Title Sagami Bay Seismic Monitoring
Lead Proponent Reiji Kobayashi
SSP Watchdogs Nathan Bangs, Xuelin Qiu, Roger Searle
SSP Proponent(s) Seiichi Miura
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
BOS-1B	2Cc	34° 50'	140° 7.5'

BOS-2B	2Cc	34° 46'	140° 21'
BOS-3A	2Cc	34° 20'	140° 5'
BOS-4A	2Cc	35° 1.25'	140° 47.5'
BOS-5A	2Cc	34° 58.5'	140° 35.5'
BOS-6A	2Cc	35° 17'	141° 4'
BOS-7A	2Cc	35° 13'	141° 0'
SAG-1B	Not reviewed*	35° 4.8'	139° 30'
SAG-2A	Not reviewed*	35° 2'	139° 28.5'
SAG-3A	2Cb	34° 55'	139° 18'

* Proposed site not reviewed at request of proponents

Proposal No. 708-Pre
Short Title Central Arctic Paleoceanography
Lead Proponent Rüdiger Stein
SSP Watchdogs Christoph Gaedicke, Toshiya Kanamatsu, Xuelin Qiu
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
LORI-15A	NA	84° 34.1'	149° 49.7'
LORI-16A	NA	80° 46.6'	142° 46.9'
LORI-5B	NA	83° 48.03'	146° 28.5'

Proposal No. 711-Pre
Short Title Tanzania Margin Paleoclimate Transect
Lead Proponent Bridget Wade
SSP Watchdogs Holger Lykke-Andersen, Christoph Gaedicke, Earl Doyle
SSP Proponent(s) None
Review date 22 February 2007

Site Characterization Completeness and Data Adequacy Classification:

Site	Classification	Latitude	Longitude
TOPS-1A	NA	-8° 59'	39° 27'
TOPS-2A	NA	-9° 9'	39° 33'
TOPS-3A	NA	-9° 10'	39° 44'
TOPS-4A	NA	-8° 38'	39° 37'
TOPS-5A	NA	-9° 26'	40° 26'
TOPS-6A	NA	-9° 24'	41° 30'
TOPS-7A	NA	-12° 5'	41° 23'
TOPS-8A	NA	-15° 50'	41° 23'

Classification Definitions

Completeness:

1A: All required data are in the Data Bank and have been reviewed by SSP

1B: A few required items are missing from the Data Bank but data are readily available.

1C: A few required items are not in the Data Bank and not believed to exist.

2A: Substantial items of required data are not in the Data Bank but are believed to exist.

2B: Substantial items of required data are not in the Data Bank and not believed to exist, but site survey is scheduled.

2C: Substantial items of required data are not in the Data Bank and not believed to exist

3A: No data are in the Data Bank but are believed to exist.

3B: No data are in the Data Bank

NA = Not applicable: classifications are not given to preliminary proposals.

Data Adequacy:

a: Data image the target adequately and there are no scientific concerns of drill site location and penetration

b: Data image the target adequately but there are scientific concerns of drill site location or penetration.

c: Data do not image target adequately

d: Data are not properly annotated and/or well-enough organized to review.

Environmental Protection and Safety Panel (EPSP)

1. General Purpose. The Environmental Protection and Safety Panel (EPSP) reports to the Science Planning Committee (SPC). The panel shall provide independent advice to the SPC, IODP Management International (IODP-MI), and the implementing organizations (IOs) with regard to safety and environmental issues that may be associated with general and specific geologic circumstances of proposed drill sites. The EPSP shall also provide advice on appropriate drilling technologies for avoidance of drilling hazards and protecting the environment.

2. Mandate. This panel shall review all prospective drilling in the IODP and advise on safety requirements and appropriate technology needed to meet these requirements. All drilling operations involve safety and environmental issues. The principal geologic safety and a significant environmental hazard in ocean drilling is the possible release of substantial quantities of high-pressure fluids and volatiles including hydrocarbons from subsurface reservoir strata. IODP riser capability will permit the application of blow out prevention (BOP) technology to mitigate this hazard; for non-riser platforms, careful planning and appropriate site surveys reduce or eliminate the risk of hydrocarbon release. IODP proposal proponents are initially responsible to carefully assess proposed drill sites in terms of safety and environmental protection. The EPSP shall independently examine and review each proposed site, including site survey data and operational plans, to determine if and how drilling operations can be conducted to maximize safety and minimize environmental impact.

3. Decisions. The panel shall recommend among the following options:

1. site approval as proposed, for riser/BOP or non-riser drilling,
2. amendment of a proposed site with respect to location and/or depth of penetration,
3. a specific drilling order for an expedition,
4. a specific drilling platform or well program,
5. acquisition of additional data to complete the safety review, or
6. denying approval.

Approval shall be based on the judgment of the EPSP that a proposed site can be safely drilled in light of the available technology, information, and planning. Recommendations of the panel shall be based on consensus or voting, as decided on a case-by-case basis. Votes shall be decided by a majority of all members present and eligible to vote. A quorum shall consist of at least two-thirds of the voting members. Voting records shall be kept and reported in the meeting minutes.

4. Meetings. The EPSP shall convene biannually, generally approximately mid-way between SPC meetings, and additional electronic meetings may be held as appropriate. Robert's Rules of Order shall govern its meetings. Conflicts of interest shall be declared at each meeting, and treatment thereof shall be recorded in the meeting minutes. The SPC chair shall approve meeting agendas, dates, and locations, and the IODP-MI Vice-President for Science Planning and Deliverables shall authorize the meetings.

5. Membership. Members of the EPSP shall be specialists who can provide expert advice on maximizing safety and minimizing environmental impact associated with drilling of proposed sites, including sites in hydrocarbon prone and biologically sensitive areas. Members of the EPSP shall be primarily selected on the basis of this

specific expertise. National and consortia membership entitlements for SAS panels are stated in the Memoranda among the IODP funding agencies. The EPSP chair shall work with IODP-MI and the national and consortia committees to maintain scientific balance and breadth of expertise in the panel's membership, and to ensure regular rotation of its membership. EPSP members shall serve for terms of three years, renewable at the discretion of the EPSP chair/vice-chair and the relevant national/consortia program. If an EPSP member misses two meetings in succession, the EPSP chair or vice-chair shall discuss the problem of SAS representation with the SPC chair or vice-chair.

6. Chair and Vice-Chair. The EPSP chair and vice-chair shall be nominated by the EPSP membership and approved by the SPC. Their terms shall be two years, and may be renewed. The EPSP chair shall be responsible for providing the IODP-MI Sapporo Office with meeting minutes within one month of each meeting.

7. Liaisons. The EPSP chair shall be liaison to the SPC, with the vice-chair as alternate. The SPC chair shall be a liaison to the EPSP, with the SPC vice-chair as alternate. The EPSP vice-chair shall be a liaison to the Site Survey Panel (SSP), and a designated SSP member shall attend its meetings, as does a representative from the IODP Site Survey Databank. A science coordinator from the IODP-MI Sapporo Office shall attend each EPSP meeting. Representatives from the implementing organizations (IOs) shall also be invited to attend the meetings.

**Eighth EPSP Meeting – June 18-19, 2007
Chevron 1500 Building
Houston, TX**

Called to order: The eighth EPSP meeting was called to order by the chair and host for the meeting at 8:15, on June 18, 2007 at the Chevron 1500 Building, Houston, Texas. A brief explanation of the building's safety and emergency procedures was presented. Attendees were reminded of the panel's conflict of interest policy. No conflicts of interest were identified among the panel members.

Self introductions: Self introductions were made by all attendees.

EPSP Members Present: Bob Bruce, Barry Katz (Chair), Toshi Matsuoka (Vice Chair), Sumito Morita, Bramley Murton, Sadao Nagakubo, Donald Potts, Jerome Schubert, Craig Shipp, Dieter Strack, Manabu Tanahashi, Catalin Teodoriu, Toshiki Watanabe, and Bill Winters

Alternates Present: Yoshifumi Nogi, Phillipe Gaillot

EPSP Members Absent: Michael Enachescu, Masami Hato, Philippe Lapointe, and Tadashi Maruyama,

Guests: James Allan (NSF), Jack Baldauf (USIO), Keir Becker (SPC), Gilbert Camoin (Proponent 519), George Claypool (TAMU Safety Panel), Peter Cliff (Proponent 595), Neil DeSilva (TAMU Safety Panel), Earl Doyle (SSP), Dan Evans (ESO), Patty Fryer (Proponent 505), Colin Graham (ESO), Sean Gulick (Proponent 548), Thomas Janecek (IODP-MI), Cedric John (USIO), David Kring (Proponent 548), Shinichi Kuramoto (CDEX and Proponent 603), Hans Christian Larsen (IODP-MI), Jim Mori (SPC), Craig Nicholson (Proponent 705), Moe Kyaw Thu (CDEX), Joel Watkins (TAMU Safety Panel), Jody Webster (Proponent 519), Barry Zelt (IODP-MI)

Agenda Review: The chair noted the minor changes and additions and incorporated them into the final agenda.

Approval of prior meeting minutes: Minutes were approved as presented. It was noted by the chair that the requested latitudes and longitudes and safety sheets for proposal 537A, 600, and 603-Stage 1 were received. As part of the minutes review process Colin Graham presented the safety monitoring approach to be used for the New Jersey margin drilling program. This was an action item from the prior meeting. The approach to be used will be similar to that used for the Arctic Drilling Expedition (i.e., monitoring of the drilling operations and the use of a gas "sniffer"). Site planning and screening represents the primary safety tool. Prior work has suggested that the chosen

sites should lack free gas. Several of the members of EPSP felt uncomfortable with this as a general policy statement and requested that the MSP hydrocarbon monitoring process continue to be reviewed on a case-by-case basis.

Final minutes of the 8th meeting minutes will include a copy of the New Jersey monitoring plan.

Review of SPC activities: Keir Becker reviewed key actions of the SPC and SASEC that may directly or indirectly impact EPSP activities. A possible drilling timeline was presented in light of the current budgetary constraints. USIO funding was less than originally anticipated. This resulted in January 1, 2008 being the earliest start date for SODV operations. It is also unlikely that the program will be able to support 12 months of drilling per year. Minor modifications were also made to the *Chikyu* and MSP operational timelines. EPSP has reviewed all of the proposals currently scheduled for drilling. It was noted that the proposal ranking by SPC was the most even since global ranking began in 1997. Jim Mori was formally approved as the next SPC Chair. It was noted that SASEC has endorsed IODP-MI pursuing collaborative relationships with industry. James Allen noted that there are restrictions to these relationships and that for “off-IODP contract” activities the SAS, including EPSP, cannot be directly involved. It was stated that as a result of the current fiscal limitations the program will need to be flexible but science principals should remain paramount. Rigorous scientific review of proposals is even more important. There will be a need to examine the SAS working structure for cost saving purposes. Panel size should be re-examined. There was also a recommendation for earlier EPSP previews to identify safety concerns. An alternative to reducing panel size could be a reduction in the number of meetings. It was suggested by Earl Doyle that each panel should be asked for input as to how they may best deal with the budget reductions rather than having a single across-the-board approach implemented by all panels.

Review of USIO activities: Jack Baldauf presented the USIO update. This update included a review of the status of the SODV. Financial pressures on the program have been significant as a result of the reductions in NSF monies available as well as the increased costs driven by the petroleum sector. These pressures resulted in a re-scoping of the SODV conversion and a modified timeline. Although the ship was not being stretched the new design will accommodate additional laboratory space and berths and an improved core flow. A working drilling schedule was presented. A number of possible scheduling issues were reported including weather and clearances. The results of the TAMU Safety Panel were reported. The TAMU Safety panel endorsed the recommendations of EPSP for NanTroSEIZE, the Pacific Equatorial Age Transect, the Bering Sea, Canterbury, Wilkes Land and CRISP. The TAMU Safety Panel recommended that an experienced geochemist sail

on the Canterbury cruise. It was noted that planning is continuing for GOM II. The planning involved a joint industry-academia meeting. It was reported that current plans for the SODV do not include real-time seismic capability. The absence of this capability would reduce the ability to relocate sites once the expedition has begun. This suggests a need for the identification and approval of an increased number of contingency sites.

Review of ESO activities: Colin Graham presented a summary of ESO activities which included an update on the New Jersey margin drilling. It was reported that the original drilling vessel was in an accident and it needed to be replaced. The new drilling platform would be more expensive. ECORD approved the needed funds. Drilling will proceed in 2007 but will be delayed, and probably extend into October beyond the optimum weather-window. The change in timing of the expedition has complicated staffing. There was a need to demonstrate suitable ground conditions for the platform. A survey was conducted. Platform owners have expressed satisfaction with the results. There was some discussion among the attendees whether the geotechnical survey was sufficient. It was noted that the owner-operator and insurance company felt that the survey was adequate. ESO also reported a meeting with the Great Barrier Reef Park Authority and that they have begun the permitting process, with a plan to implement in September – November 2008. It was also noted that ESO has trained a number of marine mammal observers.

Review of CDEX activities: Shin'ichi Kuramoto presented a summary of CDEX activities. The *Chikyu* and its crew has been gaining drilling experience through a series of commercial wells from offshore Kenya and Northwest Australia. The ship has worked in water depths of ~2200 meters and has had penetrations in excess of as much as 3400 meters. The *Chikyu* operational schedule was reviewed and the co-chief scientists for the first three expeditions were presented. The first Expedition for the *Chikyu* is scheduled for September 21 – November 16, 2007. Readiness and safety training was also reviewed. As part of this discussion, it was also noted that as a consequence of some of the pre-IODP drilling some riser tensioning issues have developed which will need to be resolved.

Review of SSP activities: Earl Doyle presented a review of SSP activities. He reviewed the SSP ranking system which now addresses both availability of data, the prior focus, and the quality of the data. He presented SSP's rankings of the datasets for the proposals to be previewed and reviewed by EPSP. He noted that SSP will consider reviewing their rankings when EPSP has relocated or deepened sites beyond those requested in the original drilling proposal.

Review of IODP-MI activities: Barry Zelt presented an update on the status of proposals. He noted that there was a rebound in the number of submissions in April when compared with the October 2006 deadline. It was also noted

that there is a growing balance among the lead proponents by IODP membership. Currently there are 128 active proposals in the system. The majority of these proposals are for non-riser drilling (~75%), with MSPs accounting for 9%, riser drilling accounting for 3%, and the remainder involving multiple platforms. Panel members were reminded of the free publication *Scientific Drilling*. It was reported that Nobu Eguchi former liaison to EPSP will be leaving IODP-MI.

Review of Reef Drilling Guidelines: Don Potts reviewed the Reef Drilling Guidelines that were prepared by ESO following their experience with the Tahiti drilling. Minor editorial changes were made by the panel during this review. They have been captured and included in the final document. He also reviewed the Recommendations (now Considerations) for Implementing Reef Drilling Guidelines that was prepared by Bramley Murton and Don Potts and had been included in the January minutes. Several recommendations were made by the panel including the addition of an introductory framework, clarification between operator and proponent issues, and the separation of surface and sub-surface activities. The sub-panel was asked to make the necessary modifications to the document and report back to the panel before adjournment.

The revised Reef Drilling Guidelines and Considerations for Implementing Reef Drilling Guidelines will be included in the final minutes CD.

Preview of Proposal 519-Full2 (South Pacific Sea Level – Part 2 – Australian Great Barrier Reef): Gilbert Camoin and Jody Webster presented the scientific rationale for the proposed program. The drilling program has several goals: 1- an examination of the timing and cause of the last deglaciation as reflected by a rise in sea level. The corals are used as the sea level indicator. Prior work (e.g. Barbados) was performed in active tectonic settings leaving a number of unanswered questions; 2- the defining of sea surface temperatures and salinities; and 3- analyze reef responses to environmental changes. Following the scientific overview a review of some of the anticipated technical challenges was made. These challenges included problems due to the shallow water depth, heterogeneous lithological composition and structure, irregular topography, and environmental issues. The results of the Tahiti drilling (Part 1 of South Pacific Sea Level) were discussed. It was noted that swath bathymetry should be acceptable as a means to locate a drill site. However, the resolution at Tahiti was generally considered unacceptable. With the completion of the Tahiti review, prior drilling on the Great Barrier Reef was discussed and used as the introduction to the current drilling program. About 65 holes were drilled into the Holocene section. ODP Leg 133 was drilled into the peri-platform setting in front of the reef. A jack-up was used in 1995. This operation penetrated over 200 meters and had over 80% recovery. Currently available data include a recently acquired multi-beam dataset (with 5

meter spacing), some Chirp, and submersible observations. The plans for the upcoming site survey include overlapping high-resolution multi-beam using two different systems, Chirp and Sparker data, AUV (Autonomous Underwater Vehicle) stereographic imaging, dredging and sediment collection. A permit for the survey has already been obtained. The general geometry of the four survey areas - HYD-01A, VIP-01A, NGO-01A, and RIB-01A - was presented. The timeline for the survey and site selection was discussed. An early EPSP review, with identified locations, is required before the final permitting can be accomplished.

EPSP requests that the proponents develop a number of contingency sites in order to reduce the need to add sites once the expedition has started. The identified locations will represent the center-point of a circle with a 150 meter radius. This approach will permit the final positioning of drill site in a location not to damage any living reef. A summary montage for each drill site is requested. All maps, cross-sections, and displays should use consistent scales, units, and color scales. A bathymetric slope map is also requested.

ESO has requested a January/February review date. A consensus was obtained that based on the panel's current understanding and the limited drill depths (40 – 50 meters) this review could be conducted via e-mail.

Preview of Proposal 705-Pre2 (Santa Barbara Basin Climate Change): Craig Nicholson presented the scientific justification for the proposal. The drilling is aimed at extending the high resolution global climate record from ~160,000 years to ~1.2 million years. The Santa Barbara Basin is considered an ideal setting for such a study because of its environmentally sensitive location, high and constant sedimentation rate, high biogenic productivity, minimal physical and biological disturbance, the presence of a continuous stratigraphic record, and its prior history of study. As a result of industry and academic interest a significant dataset exists that permits the effective position of the drilling locations. It was noted that drilling was required because composite conventional coring would permit examination only back to ~700,000 years. The proponents were aware of EPSP concerns raised by prior drilling in the basin. Craig Nicholson suggested that there exist a number of misconceptions concerning earlier drilling in the basin (Site 893). A review of the earlier operations was, therefore, presented. It was noted that the first hole (893A) reached 196.5 m without any problems. Recovery exceeded 100% because of gas expansion. The second hole (893B) was terminated prematurely not because of safety reasons but because the APC became stuck and insufficient time was available to reach the target depth. A review of the seismic data from Site 893 does not reveal the presence of any obvious shallow gas. The focus of the proposed drilling program is the Mid-Channel Trend, where

unroofing and folding resulted in compaction and gas loss. Layering in prior cores from the area did not display gas separation. The available database was presented. A large number of commercial wells (up to 5.4 km) and boreholes up to 1 km are present in the basin and provide guidance on velocity and shallow hazards. A number of different drilling scenarios were presented. A discussion by the panel followed to determine their overall comfort level with the proposal. **The panel recommended that the proponents go-forward with their proposal, with an understanding that a suitable safe drilling program could probably be developed.** The panel decided that it would be premature to review the specific drilling locations. The panel also decided not to review the different drilling scenarios because their development requires a detailed understanding of the scientific goals and objectives and could begin to crossover between being a reviewing body and an active proponent. EPSP did provide guidance as to what the panel will need to see prior to final approval. It was also suggested that another preview of the proposal would be required prior to the final review. This review would most probably be conducted following SPC ranking after the proposal has been fully developed.

The panel requests that the safety package include a summary table of all nearby industry wells considered relevant to the proposed drill sites. Structure maps and true amplitude maps should be created and checked for conformance to determine whether any shallow gas accumulations may exist. If structural highs are selected as drilling sites there should be a clear indication that the units to be penetrated are exposed to the sea floor. It was determined that the seismic data will need to be re-processed focusing on the shallow portion of the sequence. It is recommended that a number of contingency sites be developed in case problems develop either during the safety review or the drilling operation. An EPSP watchdog will be assigned when the proposal is ranked by SPC. An independent shallow hazard assessment will be required before the final EPSP review can be conducted. (This assessment is an operator issue.)

Meeting was recessed:

Meeting called back to order: June 19 at 8:00

Safety reminders were presented by the chair.

Preview of Proposal 595-Full3 (Indus Fan and Murray Ridge): Peter Clift presented the second preview of the proposal. This was requested by the chair because of the recent turnover in the EPSP membership and the need to familiarize the new panel members with the proposed program. The proposal was developed to examine the relationship between tectonics, climate, and

erosion. Among the questions raised is whether climate or tectonics dominate the exhumation of mountain belts. The results of the drilling should also help to confirm the timing of the India-Asia collision and will provide dates for the key seismic reflectors. It was noted that no viable onshore drilling options were identified to answer the questions raised by the proposal. There had been prior DSDP and ODP drilling in the Indus Fan. The deepest penetration was at Site 222, with penetration to about 1300 mbsf. There was only spot coring at this site. No stability problems or hydrocarbons were reported. The current drilling program focuses on the Murray Ridge site MU-1C. This site is planned to penetrate 3800 meters of sediment and 50 meters of basement. The current plans do not include LWD/MWD. The available seismic data were reviewed. The site was located within a 3D survey provided by Shell.

The panel requested consistent displays. Seismic data should be presented with and without interpretations. EPSP would like to see a pore pressure prediction. Multiple locations are suggested so that drilling alternatives are available. Structure maps on key reflectors and amplitude extractions should be provided to the panel. A shallow hazards assessment should be performed prior to the final review. (This is an operator action.) The proponents should consider velocity errors and tool string length if LWD/MWD is incorporated into the final drilling program when proposing the target depth. If possible, an attempt should be made to correlate the proposed drilling location with the planned Shell well.

Preview of Proposal 505-Full5 (Mariana Convergent Margin): Patricia Fryer reviewed the scientific objectives of the proposal. The program examines a nonaccretionary convergent margin that provides direct sampling of the slab and forearc rocks/muds and permits the sampling of pristine slab fluids as well as access to microbial populations from a high pH environment. The program will examine variability of fluids within this setting and place them in an appropriate regional framework. The only expected hydrocarbons in the region are thought to be a consequence of serpentinization followed by Fischer-Tropsch. Although sufficient methane is thought to be present for hydrate formation there is no evidence to suggest their presence. The panel did not believe that there was any meaningful hydrocarbon risk. A preview of the three drilling areas – Big Blue, Celestial, and Blue Moon - followed. The penetrated section is thought to be composed of serpentinized mud. Holes are limited to 250 meters. It was noted that the Blue Moon locations were not located on available MSC lines. **Their positioning was based on available sidescan data and are located near to mutli-channel seismic data. Considering the anticipated character of the section and the proposed depth of penetration the positioning off the available seismic was not thought by EPSP to preclude drilling. This assessment should not, however, be considered a change in overall panel policy. EPSP will continue to review and consider each drilling location on case-by-case**

basis. Following discussion it was determined that the final safety review of Proposal 505 can be accomplished by e-mail.

EPSP requested that the proponents add a number of contingency drilling sites prior to final submission. A visual inspection of each site will be required prior to drilling in order to avoid active macro-communities. If an active community is observed drilling cannot proceed at that location and the ship will need to proceed to another approved location. The panel requests that the datasets for each proposed site be displayed as a single montage when the final safety package is assembled.

Preview of Proposal 548-Full2 (Chixculub K-T Impact Crater): Sean Gulick and David Kring reviewed the justification for drilling the Chixculub crater. The justification included: 1- only impact structure known to be clearly associated with an extinction event; 2- only accessible peak ring; and 3- unique opportunity to examine the effect of impacts on evolution. The proponents discussed the K-T event, noting the presence of shock quartz, the iridium anomaly, and spherules at numerous locations worldwide that correlate exactly with the extinction event. The discussion continued noting the availability of geophysical (gravity and seismic) data that can be used to define the subsurface crater structure. The relationship between crater size and morphology/type was also highlighted. Mechanisms of formation were presented as was the estimated amount of energy released during the Chixculub impact, which was estimated to be on the order of 100 million atomic bombs. It was suggested that this impact was particularly lethal because of the sulfur-rich character of the target. The available seismic data were reviewed. It was noted that an onshore drilling location targeting the peak ring could not be selected because of the quality of the available onshore seismic data. Chicx-03A and 2A, the two proposed drilling locations, target the peak ring. These sites will test the mechanism for peak ring formation. The results of drilling by both PEMEX and ICDP were reported. These wells penetrated impact breccias and melts rock. It was noted that most wells lacked any indication of hydrocarbons. The exception was ICDP Site Yaxcopoil-1, which had minor oil shows within a slump block. This lack of commercial success had led PEMEX to the abandon further exploration within the inner ring. Models suggest that this lack of success is largely the result of the elevated temperatures that the sedimentary section has been subjected to. Potential issues associated with fisheries, sea bottom conditions, and tourism were also noted.

EPSP requests that the wells within the region be reviewed and summarized and that additional information on the hydrocarbon show in Yaxcopoli-1 be made available. There are questions whether the reported material was a true show. The panel also would like to know the geochemical character of the organic matter so that they can assess its origin and significance with regard to hydrocarbon risk, if any. The panel also requested that the seismic data be panelized to highlight the section of interest.

Review of Site NT2-03, NT2-03C and Addendum sites: Shin'ichi Kuramoto presented the request to approve the Stage 2 component of NT2-03B. The presentation began with an overview of the science objectives and the Stage 1 plan. EPSP had approved NT2-03B to a depth of 1250 meters at its January 2007 meeting. The request was to deepen this site to 3500 meters as well as to approve NT2-03C to 3600 meters, and two additional contingency sites. Although the bottom hole temperatures would exceed 100°C, the proponents suggest that the hydrocarbon risk is low as a result of low organic carbon contents and poor quality reservoirs. Gas hydrates and shallow free gas concerns were addressed as part of the Stage 1 review. It was noted that weather (typhoons) and the Kuroshio Current could present drilling problems. A significant site survey database exists. It is suggested that there could be between 5 and 10% error in the velocity assignment. Following the general discussion the specific sites were presented. The panel recommendations follow.

Site Identification	Latitude	Longitude	Approved Depth of Penetration (m)	Comments
NT2-03B	33°14.300'N	136°42.650'E	1250	EPSP deferred their decision to permit deepening the site to 3500 meters pending the submission of additional information noted below.
NT2-03C	33°13.9075'N	136°41.811'E	1250	EPSP deferred their decision to permit deepening the site to 3600 meters pending the submission of

Site Identification	Latitude	Longitude	Approved Depth of Penetration (m)	Comments
				additional information noted below.
NT2-05A	33°12.433'N	136°43.867'E	275	Stage 1 contingency location. EPSP reduced the depth of penetration from 300 m to 275 m. Concerns were expressed about penetrating a strong reflector.
NT2-10A	33°12.830'N	136°43.600'E	325	Stage 1 contingency location. EPSP reduced the depth of penetration from 350 m to 325 m. Concerns were expressed about penetrating a strong reflector.

EPSP requested that they be provided with the anticipated pore pressure profile, fracture gradient, and casing design plan. The detailed well plan was also requested. Concerns were expressed about the well design including load and the geotechnical character of the sediment. A contingency plan should be provided that establishes what happens if the drilling window is exceeded. It was requested that this supplemental material be provided to the panel by September 1, 2007. The panel will review this material by October 1 and forward comments, questions, and concerns to the Vice Chair (Toshi Matsuoka), who will organize an EPSP special meeting, in Japan, with the operator (CDEX) to conduct a final review. Although all panel members would be invited to attend the meeting it is anticipated that only the Japanese members will attend and will represent the concerns of the full panel as expressed in the written responses to the revised safety package. If at all possible the final review and report on the two deferred locations should be completed by October 15, 2007.

Final Review of LWD/MWD Operational Template, NanTroSEIZE Stage 1 Operational Protocol and LWD/MWD operational templates: Moe Kyaw Thu presented the “final” LWD/MWD template, which was built on prior program experience where LWD/MWD were used as the primary safety monitoring tool. It was noted that this should be viewed as a living document and that modifications will be made as experience is gained by the program. The panel accepted the document as presented. The draft operational protocol for NanTroSEIZE was also presented. Concerns were expressed concerning the stated chain of command. Among the questions raised were concerns about the roles of the co-chiefs in scientific operations and when decisions will need to go back to the shore. The panel requested that the roles and responsibilities of all decision makers be clearly documented. No specific comments to the MWD/LWD Operational Plan for Drilling Hazard Monitoring in NanTroSEIZE Stage 1 were offered other than the previous concerns concerning the need for more clarity concerning the chain of command.

Status of EPSP Contribution to SEG Hydrates Volume: Craig Shipp reported for the group. There has not been any significant progress on the drafting of an EPSP contribution. The sub-panel (Toshi Matsuoka, Sumito Moria, Bob Bruce, and Craig Shipp) will contact Mike Riedel and determine whether this remains a viable project for the panel and will take the necessary actions.

Other new business: No new additional business was brought forward.

Next Meetings: Noting the fiscal restraints on IODP the panel discussed extending the dates between meetings. A change to a three-day annual meeting was discussed as an option to replace the current two two-day meetings. It was suggested that any change should be driven based on technical needs. Two future meeting options were presented to the panel: a January meeting date (February 18-19, 2008) or a June meeting date (June 16-18, 2008). Tentatively the next meeting host will be Dieter Strack, with the meeting to be held in Germany. Details will be provided once dates are finalized.

Following the EPSP meeting an OTF meeting was held. As a result of their actions it was determined by the chair that the next EPSP meeting will be June 16-18, 2008. The panel may be asked to perform a series of e-reviews. These could include the final review for Proposals 519-Full2 and 505-Full5 prior to the June meeting. The agenda for the next meeting will be built following the next two SPC meetings. A second meeting was not scheduled. The timing of the meeting following the planned June 2008 meeting is contingent on drilling plans.

Acknowledgements: EPSP thanks Barbara Hanlon for her assistance with logistics, Chevron for sponsoring the meeting, and Schlumberger for sponsoring the evening social event.

Adjournment: Meeting was adjourned at 16:00.



Highlights of the Eighth EPSP Meeting

Chevron
Houston, TX
June 18-19, 2007



Agenda

- **Preview 519 South Pacific Sea Level – Part 2-
Australian Great Barrier Reef**
- **Preview 705 Santa Barbara basin – Climate
Change**
- **Preview 595 Indus Fan and Murray Ridge**
- **Preview 505 Mariana Convergent Margin**
- **Preview 548 Chixculub K-T Impact Crater**
- **Review NanTroSEIZE additions**
- **Next Meeting**

Preview 519 South Pacific Sea Level – Part 2- Australian Great Barrier Reef

- **Need additional contingency sites**
- **Permission will be granted for drilling with 150m of center point**
- **No damage to living reef – visual assessment**
- **Proponents will need to respond to specific data requests**
- **ESO has requested Jan/Feb review**
 - **E-review because of limited (40-50m) of penetration**

Preview 705 Santa Barbara basin – Climate Change

- **Recommended to the proponents to go-forward with the development of full proposal**
 - **Belief that safe drilling locations can be identified**
- **Data recommendations developed and provided guidance on positioning**
- **EPSP watchdog to be assigned after ranking**
- **Independent shallow hazard will be required**

Preview 595 Indus Fan and Murray Ridge

- Progress has been made by proponents since last review
- Need additional drilling alternatives
- Panel will need more consistent presentations for final review
- Pore pressure predictions needed
- Proponents were asked to consider velocity errors and LWD/MWD tool string
- Independent shallow hazard survey
- Correlate with Shell well, if possible

Preview 505 Mariana Convergent Margin

- Need contingency sites
- Visual inspection to avoid macro-communities
- Consistent displays
- Accepted approach of positioning based on sidescan data near multi-channel data
 - Limited drilling depth 250m
- **Not change in panel policy for approval**

Preview 548 Chixculub K-T Impact Crater

- **Limited hydrocarbon risk suggested**
 - Thermal history appears to be preclude the presence of significant hydrocarbons
 - Explanation of hydrocarbon show(?) in the Yaxcopoli-1 well
- **Potential issues associated with fisheries, sea bottom conditions, and tourism**
- **Better displays needed with focus on the section to be drilled.**

Review NanTroSEIZE additions (1)

- **NT2-03B and NT-03C**
 - EPSP deferred their decision to permit deepening the site to 3500 meters pending the submission of additional information
 - Anticipated pore pressure profile, fracture gradient, and casing design plan (detailed well plan)
 - Contingency plan
 - Supplemental material be provided to the panel by September 1, 2007. The panel will review this material by October 1 and organize an EPSP special meeting, in Japan, with the operator (CDEX) to conduct a final review

Review NanTroSEIZE additions (2)

- **NT2-05A - Stage 1 contingency location**
 - Reduced the depth of penetration from 300 m to 275 m
 - Concerns were expressed about penetrating a strong reflector
- **NT2-10A - Stage 1 contingency location**
 - Reduced the depth of penetration from 350 m to 325 m
 - Concerns were expressed about penetrating a strong reflector

Next Meeting Date

- **Attempt to shift to annual meeting**
 - 3 day rather than 2 – 2 day meetings
- **Revised next regular meeting date**
 - June 23-25, 2008
 - Hannover, Germany

Scientific Technology Panel (STP)

1. General Purpose. The Scientific Technology Panel (STP) reports to the Science Planning Committee (SPC), and may communicate directly with IODP Management International (IODP-MI). The panel shall contribute information and advice with regard to handling of IODP data and information, methods and techniques of IODP measurements (including factors that impact measurements, such as sample handling, curation, etc.), laboratory design, portable laboratory needs, downhole measurements and experiments, and observatories to the SPC; through the SPC, to the Science Planning and Policy Oversight Committee (SPPOC) and IODP-MI; and, through IODP-MI, to the implementing organizations (IOs).

2. Mandate. STP recommendations shall be sent to the SPC. The STP shall provide advice on scientific measurements made onboard IODP platforms, within and around boreholes, and on samples collected by the IODP and associated programs. The STP shall develop guidelines concerning said measurements and shall furnish advice about scientific measurements, equipment, and on certain policies and procedures in the IODP. Specific responsibilities for the panel shall be advice on databases, sample handling, curation, computers, shipboard equipment usage and needs, as well as borehole and observatory measurements, equipment, usage, and needs. In addition, STP will give advice to the SSEP regarding specific proposals on an as needed basis as part of the proposal nurturing process.

3. Decisions. Decisions shall be made either by consensus or voting, as decided on a case-by-case basis. Votes shall be decided by a majority of all members present and eligible to vote. A quorum shall consist of at least two-thirds of the voting members. Voting records shall be kept and reported in the meeting minutes.

4. Meetings. The panel shall convene biannually, generally approximately mid-way between SPC meetings, and additional electronic meetings may be held as appropriate. Robert's Rules of Order shall govern its meetings. Conflicts of interest shall be declared at each meeting, and treatment thereof shall be recorded in the meeting minutes. The SPC chair shall approve meeting agendas, dates, and locations, and the IODP-MI Vice-President for Science Planning and Deliverables shall authorize the meetings.

5. Membership. Members shall have expertise representing the four core areas of the panel mandate covering information handling, downhole measurements, scientific measurements, and observatories. National and consortia membership entitlements for SAS panels are stated in the Memoranda among the IODP funding agencies. The STP chairs shall work with IODP-MI and the national and consortia committees to maintain scientific balance and breadth of expertise in the panel's membership, and to ensure regular rotation of its membership. With SPC approval, the panel may augment the expertise required to address its mandate by setting up *ad hoc* advisory committees whose lifetimes are mandated by the SPC. STP members shall normally serve for terms of three years. If a STP member misses two meetings in succession, the STP chair or vice-chair shall discuss the problem of SAS representation with the SPC chair or vice-chair.

6. Chair and Vice-Chair. The STP chair and vice-chair shall be nominated by the STP membership and approved by the SPC. Their terms shall be two years. The STP chair shall be responsible for providing the IODP-MI Sapporo Office with meeting minutes within one month of each meeting.

7. Liaisons. The STP chair shall be liaison to the SPC, with the vice-chair as alternate. The STP shall have liaison(s) from the SPC. Liaisons to SAS panels and working groups may be

requested by the SPC. A science coordinator from the IODP-MI Sapporo Office shall attend each STP meeting. Representatives from the IOs shall also be invited to attend the meetings.

**4th Meeting of the
IODP Scientific Technology Panel (STP)**

7th - 9th December 2006

**Hilton San Francisco,
San Francisco, California, U.S.A.**

DRAFT MINUTES

Meeting participants:

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EXECUTIVE SUMMARY

The STP forwards the following recommendations, consensus statements, and action items to the SPC or the IODP-MI as appropriate, and for distribution to the IOs as required. STP suggestions for whether items should be forwarded to SPC and/or IODP-MI are indicated, as are priorities for action items. Brief overviews/background are provided where appropriate in italics.

Recommendations

STP Recommendation 0612-01: VCD/Lithology

The STP wishes to thank members of the VCD/Lithology working group for their efforts to develop a common solution for a VCD process and common lithologic classification, and Bernard Miville for presenting the results of the meeting. The STP supports the working group's recommendations, and in order to avoid a proliferation of lithologic classifications and to maintain some link with lithologic representations STP recommends the following:

- All IOs should agree on a limited set of common lithologic classifications; science parties can then select from this restricted set of classification schemes, which they can modify if they desire to do so, in order to fit their respective expedition objectives.
- The selection of a limited number of lithologic classification schemes is a complex issue and advice from experts from existing petrologic databases (e.g., IUGS, GEOROC, PetDB) should be sought.
- Lithologic names must be distinguished as either descriptive or interpretative in the database. The STP requests feedback prior to the start of NantroSEIZE.

3 abstentions (Neal, Villinger, Lovell); 2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to IODP-MI

Background to STP Recommendation 0612-01: The IODP-MI working group, including Clive Neal as STP liaison, recommends the following: (1) Observable parameters (texture, grain size, etc.) need to have the same name, units and definition for all IOs. (2) Lithology name always needs to be collected with the lithologic classification it came from. (3) The choice of lithologic classification should be expedition specific and driven by science and not IO specific. (4) All VCD data needs to be collected electronically. (5) VCD data needs an XML-based exchange format, (6) All IOs need to agree on a basic set of graphic representations for the lithology names, (7) Lithology names should never be deduced automatically but be entered by the scientist.

Consensus Statements

STP Consensus 0612-02: Report from CDEX on feasibility study of Measurements at High Pressure and Temperature.

STP welcomed the Report by Dr. Philippe Gaillot on Measurements at High Temperature and Pressure. STP also welcomed the presentation by Junzo Kasahara on measurements of shear wave velocities at high temperatures and pressures. There were several questions raised and STP urges further discussion of these issues, as listed below, by the IOs and IODP-MI, as

appropriate, and that CDEX report back to the next STP meeting.

2 absent (Korja, Sakurai)

Priority: Medium

STP suggests this be forwarded to IODP-MI

Background to STP Consensus 0612-02:

1. We recognize the need to have the capability to measure the in situ seismic properties of returned core samples in order to compare with downhole logging data. There was discussion of whether the ultimate high temperature/pressure measurements must be done at sea or in shore-based laboratories.

2. One option discussed was if there is need for at-sea seismic property data, could this be satisfied by a small low temperature/pressure system (to close cracks in samples), with high temperature/pressure measurements being made ashore.

3. These issues raise a possible broader question; i.e., should there be an established criteria for distinguishing at-sea versus ashore measurements. Possible criteria include.

- a. time-dependent samples*
- b. need for real-time feedback of data that would impact operations during expeditions.*
- c. safety for shipboard party.*

Further background is provided in a previous STP Consensus 0606-08.

STP Consensus 0612-03: ESO Temperature Tool

STP recommends that ESO upgrades its currently used downhole push-in temperature tool to an absolute accuracy of 0.01°C and a resolution of 0.001°C. This must be accomplished before the New Jersey Expedition.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Consensus 0612-3: A previous STP Consensus (0606-11: ESO Temperature Tools) was forwarded to IODP-MI requesting ESO to consider the draft T and P accuracy document when deciding which temperature tool to lease for drilling the NJ Transect. STP encourages ESO to explore existing downhole tools used in the program in order to improve resolution and accuracy of its previously used push-in BGS temperature tool. The panel asked ESO to report back on this issue at the next meeting as the platform for the New Jersey Margin will be determined by then. ESO reported to STP in San Francisco requesting advice on accuracy and resolution and this new Consensus Statement addresses these requirements specifically. The present tool is unacceptable given the 0.1°C resolution and absolute accuracy of 0.5 °C because normal geothermal gradients are such that data from this tool may provide ambiguous result and small temperature data loggers with much higher resolution (e.g. 0.001°C) and accuracy (up to 0.01°C depending on calibration) are readily available as off-the-shelf items at moderate cost.. In addition the planned holes will be in close vicinity of the ODP Leg 150 where downhole temperature data analysis of holes at site 903 show a dramatic warming of bottom water temperatures between 6 and 10°C within the

last 50 to 150 years (Fisher, A., Von Herzen, R. P., Blum, P., Hoppie, B., Wang, K., Evidence may indicate recent warming of shallow slope bottom water off New Jersey shore, EOS, Trans. Am. Geophys. Union, 80: 165, 172-173, 1999). High quality downhole temperature measurements in the planned holes off New Jersey will help to support or refute the hypothesis of Fisher et al.

STP Consensus 0612-04: Uniform depth scale

STP receives the report from the Uniform Depth Models Meeting (Sept., 2006), and acknowledges the participants to this meeting for their work and B. Miville for his presentation. The STP appreciated the effort in clarifying depths definitions and implementation. The STP supports the main principles and definitions of depth scales. Discussion of the report and presentation led to comments and suggestions for continued investigation. The STP requests feedback on these comments (see Background for details) and suggestions prior to the start of NantroSEIZE.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to IODP-MI

Background to STP Consensus 0612-04: uniform depth scale

Discussion on the report and presentation generated the following comments and suggestions:

- 1) Travel time of seismic waves data (such as MCS, 3D-seismic, VSP and check shots use time in ms for profiles) can be used as a depth scale, if a relevant depth model of seismic velocities is available. Recent data show quite good consistency between meter and ms for crustal structure. Considering those, it is necessary to use time in depth scale with meter, though there is necessity of some interpretation for the relation between reflection records and drilling data.*
- 2) Track the evolution of apparent depth scales and depth maps (i.e., to include post-cruise data).*
- 3) Define a vertical depth scale below sea floor which includes and uses hole deviation measurements (that includes dip (deviation from vertical) and azimuth) to calculate true depths. .*
- 4) Encourage the working group not only to define a system for tracking errors sources, but also for quantifying errors such as wire elongation, pipe dilation, water depth measurements*
- 5) For core depths and logging depths, to indicate the locus of measurement on the side of or centered in the core/hole*
- 6) Curation depth in ODP was not regarded as depth scale in the meeting. The depth of discrete samples and shipboard measurements, because length and intervals in the section often changes during core-processing (sectioning, splitting, sampling, and archiving), are necessary to record intervals of shipboard measurements and samples taken in the section with depth.*

STP Consensus 0612-05: Depth scale as a minimum measurement

The STP recommends that depth is a minimum measurement. This includes any measurement used to define depth. The STP requests feedback prior to the start of NantroSEIZE.

2 absent (Korja, Sakurai)

Priority: High**STP suggests this be forwarded to IODP-MI**

Background to STP Recommendation 0612-05: The only referred depth measurement in the IODP measurement document is drilling depth as a standard measurement. Other depth scales include water depth measurements, length of wireline, hole deviation, logging tool acceleration (when applicable), and more generally any measurement used to define any depth scale used during a given expedition.

(see http://www.iodp.org/index.php?option=com_docman&task=doc_download&gid=1195 for reference to IODP Measurements Document)

STP Consensus 0612-06: Digital taxonomic dictionary

STP supports the formation of the IODP ad hoc Paleontology Coordination Group. STP participation should be included in this group, as its mission is distinct from the STP Paleontology Working Group.

2 absent (Korja, Sakurai)**Priority: High****STP suggests this be forwarded to IODP-MI**

Background to STP Consensus 0612-06: From Paleontology WG 2004 Report Recommendation PALEO-3: Taxonomic Dictionaries with stratigraphic databases IODP must coordinate their efforts regarding digital taxonomic dictionaries and cyber atlases and related issues with other national and international initiatives such as CHRONOS, NEPTUNE and et. al. The Paleontology Working Group recognizes the importance of international cooperation and interaction among the IOs and the micropaleontologists community and encourages collaborations with IMRC curators to develop these dictionaries to be used on the IODP drilling platforms The microfossil groups to be covered should include calcareous nanofossils, planktic foraminifera, benthic foraminifera, diatoms, silicoflagellates, radiolarians, and palynomorphs (dinoflagellates and pollen). The taxonomic dictionaries for the Cenozoic and Mesozoic should be updated and expanded on a regular basis (e.g., at least once per year).

STP Consensus 0612-07: Temperature and pressure resolution, accuracy and calibration

STP asks IODP-MI to circulate the draft report on resolution, accuracy and calibration of temperature and pressure measurements (STP Consensus 0606-13) among the IOs and asks the IOs to report back to STP at the next meeting.

2 absent (Korja, Sakurai)**Priority: High****STP suggests this be forwarded to IODP-MI**

Background to STP Consensus 0612-07 This is a follow up request to STP Consensus 0606-13 to IODP-MI to circulate a draft report to the IOs for comment and feedback at the next STP meeting.

STP Consensus 0612-08: LA-ICP-MS

The STP wishes to thank Philippe Gaillot for presenting the results of the evaluation of *in situ* analysis using the LA-ICP-MS system onboard the *Chikyu*. The STP notes that the laser ablation unit (New Wave 213 nm) performed on the ship (while in transit) as well as it did while on shore, but recognizes that more tests of the ICP-MS are needed to ensure the successful interface with the laser ablation unit. The STP requests that CDEX report further LA-ICP-MS test results at future STP meetings.

2 absent (Korja, Sakurai)

Priority: Medium

STP suggests this be forwarded to IODP-MI

Background to STP Consensus 0612-08: This is a continuing item and the presentation is in response to STP Consensus 0606-15 requesting CDEX for ICP-MS test results. Prior to that, SPC Consensus 0603-12 received STP Consensus 0601-2 regarding installation of laser-ablation inductively-coupled plasma mass spectrometers (LA-ICP-MS) on IODP platforms.

STP Consensus 0612-09: STP Mandate.

STP discussed the panel mandate at the December 2006 STP meeting and agreed that it did not need any modification at this time. The current mandate allows STP to restructure its two meetings per year to address immediate issues at one of its yearly meetings, while dealing with future issues and planning at the other (STP Consensus Statement 0612-12). Any specific changes will be addressed after the SASEC working group on SAS Review reports its findings.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to SPC

Background to STP Consensus 0612-09: In order to better serve the community, STP discussed if its mandate should be revised.

STP Consensus 0612-10: STP Working Group Reports

STP will continue to have three working groups within its structure: Chemistry & Microbiology (CMWG); Petrophysics (including Physical Properties, logging, downhole measurements, paleomagnetism, and underway geophysics); Core Description (including Micropaleontology).

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to SPC

Background to STP Consensus 0612-10: In order to better serve the community, STP also discussed if its internal working group structure should be revised.

STP Consensus 0612-11: Operations Review Task Force

STP welcomes the presentation by Thomas Janecek on how the Operations Review Task Force may proceed in future, together with the opportunity for STP to become more involved in considering Expeditions in terms of Scientific Technology. STP agrees with the proposal that the VP Science Operations will report annually on expeditions reviewed in that time frame (in line with the proposed STP Roadmap agenda), and that where appropriate IODP-MI should request specific advice from STP and participation in individual reviews.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Consensus 0612-11: Thomas Janeczek (IODP-MI-VP) presented how the Operations Review Task Force has worked in the past, how it will probably work in the future and suggested some possible mechanisms for STP to get involved. Discussion took place and the Panel explored the most effective role for STP in the process, such that STP is able to monitor the scientific measurements and technological aspects of Expeditions and provide advice and input to both IODP-MI and IOs in a timely and efficient manner.

STP Consensus 0612-12: STP Meeting Format

STP agrees to change the format of its twice-yearly meetings in the following way: both meetings will deal with immediate issues, while one meeting will deal with regular reports (IO, IODP-MI, etc.) and the other will consider future issues and planning allowing STP to be more proactive.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to SPC

Background to STP Consensus 0612-12: Discussion was held regarding changing the STP meeting format to be similar to that adopted by EDP. In essence, this would give a formal structure to what STP has been doing, to some extent, but it will allow a greater emphasis on planning ahead for future IODP expeditions, developments, and policies. The current STP mandate allows for this change in emphasis at the twice-yearly meetings.

STP Consensus 0612-13: Larger Drill Pipe

STP welcomes the adoption of a plan to implement larger diameter drill pipe on the SODV. STP offers its support for the full implementation of this plan since larger diameter pipe will allow the use of state-of-the-art well-logging tools during IODP. The IOs should provide the scientific community with information about these additional downhole logging capabilities.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Consensus 0612-13: A previous STP Consensus (0606-14: SODV - Larger Drill Pipe for Enhanced Well Logging) proposed support for larger diameter drill pipe for the SODV. After reviewing revised plans for a tapered drill string on the SODV at this (San Francisco) meeting, the STP reiterates its support for larger diameter pipe that will allow the use of state-of-the-art well-logging tools during IODP. The STP believes the tapered drill string will considerably enhance the potential of IODP borehole geophysical science for years to come. Further background is provided in support of the earlier consensus statement (0606-14).

STP Consensus 0612-14: Technical Support

STP expresses concern about levels of technical support staff training for delivering IODP Minimum and Standard Measurements across all platforms. STP encourages IODP-MI and the IOs to work together to ensure delivery of these measurements (e.g., Microbiology)

through appropriate technical support at the start of Phase 2 operations towards achieving expedition-specific scientific objectives.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to IODP-MI

Background to STP Consensus 0612-14: STP revisited previous SciMP/iSciMP Working Group reports and one item of immediate concern for Phase 2 is provision of appropriate technical support for delivering the measurements detailed in the IODP-MI Measurements document. STP reiterates that this is vital for the success of IODP in going beyond ODP and in providing the scientific community with accurate and precise data from which well-formulated research proposals can be crafted to work on expedition/discipline specific issues.

STP Consensus 0612-15: SODV Report

STP wishes to thank Jeff Fox for his presentation on a possible design for a non-extended SODV. STP remains willing and able to give advice and input to this process when called upon by the USIO.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to IODP-MI

Background to STP Consensus 0612-15: STP received a request from the USIO in late November to review a revised set of possible plans for a non-extended version of the non-riser SODV. STP reviewed this electronically and provided input to the USIO prior to the San Francisco meeting. This presentation gave STP members an update of progress. The list of comments, questions, and suggestions given by STP prior to the San Francisco meeting can be found in an appendix to the minutes of the meeting..

STP Consensus 0612-16: Chikyu Shakedown Cruise Report

STP wishes to thank Shin'ichi Kuramoto for his presentation on the *Chikyu* shakedown cruise. STP welcomes the invitation to give input to CDEX on the results of this initial test of the *Chikyu*.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to IODP-MI

Background: STP invited CDEX to present an overview of the shakedown cruise: "The IODP community is very excited by the prospect of using the CHIKYU for scientific ocean drilling and these shakedown cruises form an important part of the overall process from designing and commissioning the CHIKYU through to its first IODP operations. STP has been involved with the design of the CHIKYU throughout, although the panel has been through several name changes (iSciMP, SciMP, STP). While the Shakedown cruises are not strictly an IODP operation, we realise that they do provide CDEX with the first real experience of the ship, its facilities and its capabilities. The Scientific Technology Panel is available and willing to provide you with constructive input to help in assessing the outcomes of these Shakedown cruises, including how best practices identified on the Chikyu can be transferred to other Implementing Organisations. Part of the role of STP is to understand what issues have been identified on all platforms and how to facilitate coordination between the IOs regarding lab changes/improvements in time for Phase 2 operations."

STP Consensus 0612-17: Local Crustal Structure – New Technology.

For VSP, cross-hole tomography, and imaging of local crustal structure, a downhole seismic source is necessary. However, it is extremely difficult to obtain such a source under the deep ocean. New technology called *seismic interferometry* (virtual source, daylight imaging) could be applied for borehole source. In this case, receivers can be virtual seismic sources if any noise such as whale calls, drilling noise, natural earthquakes, or airguns are used for external seismic sources. STP brings this new technology to the attention of the IODP-MI and IOs and recommends monitoring of its development with the potential for future use in IODP.

2 absent (Korja, Sakurai)

Priority: Low

STP suggests this be forwarded to IODP-MI

Background to STP Consensus 0612-17: Dr Junzo Kasahara requested the opportunity to present to STP the application of this new and developing technology, at this meeting prior to rotating off STP as a J-DESC nominated panel member.

STP Consensus 0612-18: Core Splitting Techniques

STP thanks Lee for his presentation on the problems related to core splitting in soft sediment. STP requests IODP-MI together with the IOs investigate solutions to this problem and encourages dialogue with other scientific communities (for example, lake sediments and geology groups). STP requests IODP-MI to report on their findings at the next STP meeting.

2 absent (Korja, Sakurai)

Priority: High

STP suggests this be forwarded to IODP-MI

Background to STP Consensus 0612-18: this is recommendation number 1 in the Core Description Working Group report available on the STP web page of the IODP web site.

STP Consensus 0612-19 Junzo Kasahara

STP thanks Junzo Kasahara for his contributions to our discussions on all things seismic. His passion has given us all a new appreciation for “Vs-Vp”, “CLSI”, and many other acronyms. Thank you, Junzo for all your help, comments and dedication, and good luck in your post-STP life.

STP Consensus 0612-20: Annakaisa Korja

STP gratefully thanks Annakaisa Korja for her work and dedication to the IODP over the last 3 years she has served on this panel. Her sharp and appropriate comments have been a great help in making difficult discussions. We all will miss her kind eyes as they often appeared through the bottom of a glass, as well as discussions with her and her sparkling wit.

STP Consensus 0612-21: Tatsushiko Sakamoto

STP wishes to thank Tatsushiko Sakamoto for his tireless service to IODP and this panel. His command of the English language and knowledge of sedimentology has allowed him to make significant contributions to STP during his three years on the panel, although his language skills appear to fail him when it is time for another beer! Despite that, his presence will be missed, although we are sure that he will contribute again to this panel in the near future in a new role.

Consensus Statement 0612-22: Heinrich Villinger

The STP gratefully thanks Heinrich Villinger for his great work and dedication to the IODP over the years he has served on this panel. His strong comments on logging tools, high pressure Vp measurements, and petrophysics were so valuable although his choice of post-meeting beverages has been a cause for concern! As a result he will give us 0.000001°C absolute precision with the Temperature tool and 0.0000001 Pa with the Pressure tool under 500°C circumstances. These tools may progress to IODP as the critical measurements package. We hope his contribution to STP will continue from outside the panel.

STP Consensus 0612-23: Sean Higgins

STP wishes to thank Sean Higgins for his tireless service to STP and the IODP. His encyclopedic knowledge of downhole tools, logging, and good beer will be sorely missed by the panel. In addition, Sean's ability to wear many hats is a talent that few others possess, or would want to. STP wishes him well in his new appointment.

STP Consensus 0612-24: Jeff Schuffert

STP thanks the service of Jeff Schuffert to this panel. While his relentless devotion to detail and the intricacies of IODP policy drove most people to drink, it is now recognized that he kept STP on track thus allowing it to play an effective role in the SAS structure.

STP Consensus 0612-25: Geoff Wheat

STP wishes to thank their Alaskan representative for the excellent organization and hospitality offered by the City of San Francisco. The smooth operation and efficient organization by our host made our meeting enjoyable and productive. But we could expect nothing less from a Panel Member who manages to work at Moss Landing while supposedly being in Alaska... but then as Geoff says, it's only a matter of (geological) time before the spatial geography brings Moss Landing north...

Action Items

STP Action Item 0612-26: Third Party Tools.

STP members are requested to provide feedback on the TPT implementation guide from IODP-MI. These should be sent to the STP chair no later than January 24, 2007.

Priority: High

Leads: STP Chair, STP Panel.

Deadline: 31st Jan 2007 to IODP-MI.

Background to STP Action Item 0612-26: this follows on from Agenda item 24 and the discussion that ensued.

STP Action Item 0612-27: Time stamp for measurements & procedures.

The timing of measurement is important for ephemeral properties such as microbiology, fluid, gas, measurements on soft sediments (e.g. core length, color...). There is currently no requirement to record the time of measurement in the IODP measurement document. Basile will investigate if and how the time of measurement may be a minimum/standard measurement in IODP and whether this issue may be resolved by QA/QC procedures.

Priority: Medium

Date/Timeline: Next meeting

Lead: Basile

Background to STP Action Item 0612-27: this follows on from discussion of measurements

under several agenda items.

STP Action Item 0612-28: STP Geochemistry and Microbiology WG report

Geochemistry and Microbiology WG members Rick Colwell and Takuro Nunoura will study the minutes of the SPC and IODP-MI meetings to find out why some of their previous recommendations were not implemented. They will report their findings at the STP's next meeting.

Priority: High

Date/Timeline: Next meeting

Lead: Colwell and Nunoura

Background to STP Action Item 0612-28: The STP reevaluates its WG structure in response to SPC's request to charter its long-term vision or future roadmap. The Geochemistry and Microbiology WG has determined that some of its recommendations have not been implemented. These recommendations are essential to the routine collection, analysis and characterization of the microbiological contents of seafloor sediments. This action item is to ensure a corporate memory of the efforts of the panel and to ensure efficient use of discussion time.

STP Action Item 0612-29: STP will investigate whether the effects of riser drilling on microbiology and chemistry of cores is significant.

Priority: High

Date/Timeline: Next meeting

Lead: Neal and CMWG

Background to STP Action Item 0612-29: riser drilling is a new venture in scientific ocean drilling and STP is concerned that there may be consequences of riser drilling that have not been considered.

STP Action Item 0612-30: Core Description WG

The core description working group is satisfied with the size and expertise of the working group, although we recognize that additional ad hoc membership may be warranted. Watchdog pairs are nominated to follow progress on each of the two laboratory working groups: Paleontology (Suzuki, Christensen) and Core Description (Ahagon, Basile). The watchdogs should be present their findings in a report for the next STP meeting.

Priority: Medium

Date/Timeline: Next meeting

Lead: Suzuki, Christensen, Ahagon, Basile

Background to STP Action Item 0612-30: this follows on from discussions under agenda items 23 and 26.

STP Action Item 0612-31: Legacy Samples

STP will report at the next meeting on the scientific reasons and potential approaches for collecting and storing legacy samples for future Microbiology investigations.

Priority: Medium

Date/Timeline: Next meeting

Lead: Colwell, Nunoura

Background to STP Action Item 0612-31: Legacy sampling has been proposed previously but it is not clear what the scientific rationale is, or what the logistical and practical considerations are.

STP Action Item 0612-32: Stable Isotope Measurements

STP will investigate new technology for on-board stable isotope analysis of rock, sediment, and water samples.

Priority: Medium

Date/Timeline: Next meeting

Lead: Nunoura, Neal

Background to STP Action Item 0612-32: New technology may allow a relatively cheap, accurate, and effective way for shipboard stable isotope measurements to be made on the CHIKYU and SODV. See Appendix 2 for details. Further investigation of the specific application of this technology to IODP is required.

STP Action Item 0612-33: Major element rock analysis problems on the CHIKYU.

STP requests IODP to consult with the IOs and to request the IOs, for the CHIKYU and the SODV (as appropriate), provide a report on their methods for whole-rock major-element analysis by ICP-AES. These reports are requested by March 31st, 2007, for evaluation by STP so we can work together to find the cause(s) of the problems with the ICP-AES major element analyses on the CHIKYU and identify solution(s). A report of our findings will be given at the next STP meeting by Pat Castillo, who will be the STP watchdog.

Priority: Medium

Date/Timeline: Next meeting

Lead: Castillo

Background to STP Action Item 0612-33: Ahagon presented problems with the major element analytical results, particularly with SiO₂, of the ICP-AES at CHIKYU. A reliable instrument to routinely analyze major elements onboard is essential for CHIKYU to carry out its IODP science objectives. Such problems have been resolved on the JOIDES Resolution prior to demobilization for some expeditions, although problems during Phase 1 operations were anecdotally mentioned during the meeting. STP feels this may be an issue of inconsistent sample preparation procedures, instrument set-up and calibration, and inadequate technician training. The request for information from the IOs will allow us to evaluate the current methods of analysis employed for whole-rock major-element analysis by ICP-AES.

STP Action Item 0612-34: Laser Granulometer

STP will investigate the use of a laser granulometer or other granulometer in routinely measuring grain size and shape in soft sediment.

Priority: High

Date/Timeline: Next meeting

Leads: Basile, Sakamoto

Background to STP Action Item 0612-34: New technology may benefit future IODP Expeditions and STP requests appropriate further information to enable discussion by the appropriate STP Working Group.

Proposed next STP meeting: June 3rd – 6th 2007

Location Beijing, China

Host: Hongkui Ge

APPENDICES:

A total of 26 appendices are attached and numbered in ascending order relating to agenda items. The agenda item number is included in the appendix filename.

Additional notes to Executive Summary of the 4th IODP STP Meeting, San Francisco

Thursday 7th December

Numbering refers to original agenda order; notes follow the order of discussion.

The meeting started at 08:30 a.m., Lovell presiding.

1. Lovell welcomed everyone and Wheat provided some logistics of the meeting.
2. Continuing and new members, guests, liaisons introduced themselves. Korja and Sakura are absent and Christiansen will arrive Thursday evening.
3. Proposed agenda was presented; Wheat proposed it to be approved and Castillo seconded the proposal.
4. Minutes from July meeting was reviewed; Neal proposed it to be approved and Villinger seconded the proposal.
5. Conflict of interest policy was discussed, as required by IODP-MI. It was stressed that any COI on any topic must be stated right away during the meeting; there were no COIs noted or stated at the outset of the meeting. The aim of COI to maintain the best knowledge available for decision-making but maintaining that as a fair procedure.

Everyone was also reminded that the STP meeting follows the principles according to the Robert's (Millard's) Rule of Order. Electronic copies of all of the presentations were to be given to Wheat and Neal.

6. STP mandate was reviewed, and will be revisited in tomorrow's discussion. Copy available on IODP-MI website; should be reviewed because the STP must advise planning for IODP; diverse issues are handled by STP therefore members must be willing to speak up and contribute to discussions on these topics; may need to invite non-STP members to attend certain meetings in order to provide the required expert opinion.
7. Status of STP's previous recommendations and action items, etc. was discussed (see copy of Lovell's previous e-mail). The only action item was Action Item 0606-28: STP members are invited to discuss through electronic means the short- and long-term strategic aims of the STP as IODP enters a new phase of ocean drilling. Then there are the questions such as: SODV update? how is STP advice considered and implemented? WG report updates? There is some discussion regarding the availability of some of these; Microbiology Report of 2003 (Rhode Island meeting) was used as an example; feedback may not be requested in a specific period of time and therefore the WG reports can languish; fundamentally how can communication be improved for the benefit of the program?

Becker presented a report on most recent SPC meeting (see ppt presentation for details). Some of the highlights are: Approval of science plans from FY08-09; approval of NanTroSEIZE for FY08-09; approval of the mission-specific platforms for the Great Barrier Reef with certain contingencies; approval of science plans and

operations for FY08-09 for SODV - recommendations are consistent with previous suggestions.

Neal questioned the difference between slight and long delays – up to Jan. '08 is considered slight, but beyond that is long; the aim is to preserve NanTroSEIZE schedule; longer delays may require reconvening of the group to reconsider the schedule; New Jersey sea level drilling needs to be inserted into the 07-09 SODV schedule; schedules also estimated out to FY10; however, these are still being developed; refer to graphic representation of the schedule.

SSPOC replaced by SASEC. Initial meeting was in July 06; small (10) voting members; this new group appeared to be more energetic than the previous SPPOC group. Becker highlighted the progress of SASEC in the July 06 and Nov 06 meetings and then detailed the SASEC WG on SAS (see details in Becker's presentation) and reviewed the IODP proposal process.

All STP members requested to respond to SASWG questionnaire in Dec-Jan 07, with primary questions related to questions posed earlier by Lovell, i.e., how can open dialog be developed? how can STP interactions with IODP be enhanced? should STP have a regular annual cycle for its two meetings leading to input to the August SPC on technical priorities; also summer and winter STP meetings would be structured to address issues in a timely manner (e.g., long-term roadmap for scientific technology improvements [summer] and IODP-MI and IO technological projects [winter])

8. Lovell presented a brief report from EDP (see presentation ppt for details). EDP focuses on technological roadmap. It also established an appropriate sequencing and topical consideration in its meetings that is similar to what has been recommended by Becker. The EDP has established the following structure at its bi-annual meetings. In its June/July meeting, EDP will provide SPC with a prioritized plan for FY+2 engineering developments for the Program Plan; EDP will also examine and define long-term ED needs (FY>2). At its January meeting, EDP will provide guidance to IODP-MI and the Implementing Organizations (IO's) by reviewing the engineering development plan within the Program Plan (FY+1); EDP will also preview long term ED needs.

Break and reconvened _at_ 10:10 – Neal presiding.

9. Allan reminded everyone that a NSF report has previously been circulated by e-mail; Wheat questioned how the continuing resolution affecting NSF budget? Ans. - Previous funding _at_ \$42 M (?) is being used. Villinger questioned how the new environmental impact (EI) requirements affect drilling projects? Ans. - Additional requirements have to be met and projects have to follow environmental guidelines, but in general on a “need basis”. Key areas of concern are likely to be “marine sanctuaries” - Monterey Bay as an example was discussed. EI must be considered if new drilling activities are proposed and most problematic is the visual impact – i.e., simply the view of the drilling ship from the shore (it is believed that this would be a real problem in a location like Monterey Bay). EI issues do not relate to IODP, only to SODV, but individual IO's must be responsible for each area of operation – e.g., the Great Barrier Reef.

10. Eguchi replaced Schuffert as the IODP-MI liaison officer to STP and presented a report from IODP-MI (see ppt presentation for details). Some of the items discussed include STP members rotating off; post-expedition results will be more integrated in the future; and there are 14 new proposal submissions: 7 solid earth-related and 7 environmental-related. Lovell asked to see full representation of the CAB membership so that members can be referenced for possible review duties. Villinger asked why IOs never received STP recommendation 0606-13. Ans. - Janecek said it “fell through the cracks”, but will be followed up on. Roehr also mentioned that new memberships of the Curatorial Board have not been updated.

11. Gaillot presented a report from CDEX (see ppt presentation for details). Some of the items discussed include system integration test graphically represented as a plan; summary of the achievements on drilling offshore Shimokita; several problems during testing which include BOP support, mechanical failure of drilling systems (now fixed), leak of BOP, DPS downtime; bad weather, and bending of riser pipes. Chikyu is now offshore Kenya and planned for offshore Australia. LABSIT - core flow plan is being discussed and participants are expected to present their results on Dec. 8. NantroSEIZE 1 & 2 site selection, pre-cruise meeting and progress on prospectus were discussed. QA/QC task force report is due early in 2007. Engineering development, such as long-term borehole monitoring laid out. Summaries of recent workshops and training sessions were presented.

Neal asked for the reason for the bending of the riser pipe. Ans. - vertical displacement caused by moderate seas (i.e., heave compensation locked) was the cause. Wheat also revisited the BOP leak (the problem has been fixed), but would have not been a problem if there was a back up; no core from riser drilling but that was not a part of the goal (goal was to reach 2 km depth). Gaillot asked for minimum measurements done. Ans. – Technical tests for 2 km core were compromised because of the scientific plan.

12. Blum presented a report from USIO (see ppt presentation for details). TAMU director (Fox) will make presentation tomorrow about SODV. JOIDES Resolution currently in Singapore shipyard and completion planned for Dec 07 is still on schedule. DSDP/ODP core redistribution project also occurring. FY08 program plan for riserless vessel schedule was presented – the NantroSEIZE project in the Kumano Basin observatory installation was discussed and considered most complex yet installed by IODP – merging seismic observatory and Cork II. FY09-10 schedule presented with qualification – not included are the LDEO borehole facilities, which is being upgraded. Key personnel updates and changes were presented. Neal asked there are no development projects for FY08? Ans. - Plan presented was generic because preliminary funds provided by NSF are for expedition operation costs only - the plan was developed accordingly. Allan commented that NSF gives fiscal guidance in January for next fiscal year.

13. Rohl presented a report from ESO (see ppt presentation for details). Some of the items presented were summary of recent, current, pending cruises; New Jersey shallow shelf platform drilling permit being sought; technical considerations and constraints will be listed; jointly supported by IODP-ICDP; future drillings in the Great Barrier Reef, New England hydrogeology. Allan commented that according to SASEC, timing for

drilling not scheduled, yet. Neal also commented that EI not completed yet for Great Barrier Reef drilling because site survey still incomplete. Gaillot asked if the absence of LWD affect science objective? Ans. – No, it is too expensive for relatively small scientific return; slim line drilling was selected to maximize science return.

15. Gaillot presented a report from CDEX on feasibility study: STP Consensus 0606-08: Measurements at High Pressure and Temperature (see ppt presentations for details). Among items discussed were wave velocity measurements, targets, conceptual diagrams; results vs. scientific targets; lay outs; results. Items under STP mandate such as tolerance of apparatus, regulation and safety are all OK. Conclusion – measurements at existing high P & T conditions (on land) are feasible. Kasahara asked if P & S wave measurements separate? Ans. – No. Villinger asked if this is a TPT? Ans. – Allan said it could be. Discussion continued - measuring velocities at in situ PT is valuable, especially for coring in NantroSEIZE. This will be reconsider later when discussing 3rd party efforts. RFP might be released by IODP-MI if this seems appropriate and if, for example, SAS recommends it. Discussion also covered consideration of the possibility that the capability could be developed for use on both the ship and on land. Ge expressed concerns regarding how complicated the system might be given the number of samples that must be collected; however, assurances were made that the instrument can achieve this. For example in Japan, 10 samples can be measured simultaneously without any problem. Blum commented that this has been accepted in the past as a useful technology at great depth (high PT) but should we also consider systems that have resolution at low P (2-10-20 MPa) ranges (so that more measurements can be made to compare logs to seismic data); will the system have the resolution to allow making comparisons at lower ranges? Is this a useful thing to consider? Ge commented that such lower P measurements are important. It was confirmed that this is important to measure aboard ship; effective stress implied by pressure not total stress may be the most important. Johnson asked if this will be on board measurement? Ans. Sugihara said it is in Chikyu; Lovell said it was originally designed for on shore study.

Gaillot then proceeded to present a short report from CDEX on LA-ICP-MS (STP Consensus 0606-15; see ppt presentation for details). Bottom-line is that test was not successful because ICP-MS was not calibrated properly to receive ablated samples. The plan is to continue to analyze solids. Allan clarified that the test was done while Chikyu was in transit, and not when thrusters were being used heavily.

16. Inwood presented a report from ESO: STP Consensus 0606-11: ESO Temperature Tools. Basically, asking guidance from STP. STP was concerned about limited resolution of T tools for the New Jersey Margin - are there tools that can get the requested accuracy of 0.001 deg C when the industry standard is 0.5 to 0.1 deg C? Allan asked that given that there is frictional heating, does this obviate the goal of such precision? Ans. – Villinger said that friction issue “depends” but can observe 0.01 deg C; if the instrument resolution is improved then one can see real temperature variation.
18. Reports from IOs on Resolution, accuracy and calibration of temperature and pressure measurements (STP Consensus 0606-13). This issue is still outstanding and will be reported at the next STP meeting.
21. Ahagon presented an update on SSEP proposal review. A brief overview /summary was presented on the 15 pre- and full proposal reviews as considered in Nov 06 meeting; no proposal forwarded to STP at this time for detailed consideration or

advice. The information in the proposals is still confidential and was not discussed. Next SSEP meeting is May 29 to June 1, 2007.

22. Observatories Task Force updated by Janecek (STP liaisons – Wheat/Villinger) (see ppt presentation for details). Industry community asked to participate in the task force; half of the invitees have responded, but other half has not; late winter, early spring will see the first meeting and thus STP may have more report in its June meeting.

A brief executive session was held before lunch.

Lunch break

Meeting resumed at 1:30 p.m. – Lovell presiding:

17. Miville presented reports from IODP-MI recent workshops:
 - a. Uniform Depth Models Meeting (Miville /Sakamoto; see ppt presentations for details). Issues: STP Recommendation 1601-06: IODP Measurements and 0601-01: Common Framework for Depth Scales. There are no clear indication of methods of measurement and relationship of different measurements to each other; STP members should read and check; IO to implement pending STP approval; are the acronyms acceptable? Neal asked why are there too measurements for one reference? Ans. - The method in which the measurement is made may be different and there may be different errors associated with the different methods. Villinger asked who determines the shifts between the different depth scales? Ans. - Most reference depths are rig floor; definition of the depth reference point is essential and considerable discussion followed. Ge commented that oil industry uses rig floor as reference because water depth is constant. However, different methods of measurements come up with values that vary up to ~several meters. Ultimately, clear definition of the values that are used and the assumptions that are made in making them are needed. Also, cores expand at atmospheric pressure. IOs must work out the parameters for how this is resolve.; “mbsf” can still be used as units but it must be stated how the depth was acquired. Basile asked what are the errors associated with the different measurements? How are the differences between depths at the center vs. the sides of the core reconciled? Core expansion and shrinking appear to occur to different degrees in cores and this needs to be accounted for; time is also an important scale. Sakamoto took over and presented acronyms. Villinger commented that vertical depth is problematic. Allan suggested to include both orientation and deviation from vertical in the measurements (this is how industry does it), noting that deviation tends to get worse with greater depth. Blum countered if it is worth to convert to true vertical depth if deviation is only a few degrees, in contrast to directional drilling practiced by the industry. Miville requested constructed comments from STP.
 - b. VCD/Lithology Meeting (Miville /Neal – see ppt presentation for details). The IOs need to provide a unified report, so they need to consider the development of “common” terminology. Lithological classification and description tend to be controlled and adapted by particular expedition goals. Recommendations (summarized in the presentation) include uniformity in measuring observables, but choice of lithologic classification is still expedition specific, driven by science. Allan commented that consideration of nomenclature for databases is

an NSF issue too, and so he asked why some outside experts on databases not consulted? Villinger asked how the USGS or BGS deals with this same issue? or more basically, questioned whether it is a good practice to change nomenclature on a mission-by-mission basis as opposed to assigning a single classification system? Allan described multiple terms used to describe the same material. Castillo commented that it would be better to adopt a common, minimum lithologic nomenclature before new, mission specific nomenclature schemes be adopted.

- c. Digital Taxa Dictionaries Meeting (Miville – see ppt presentation for details). Allan commented that this is an important issue because data should be archived and thus someone must pay for this in the long run. Discussion followed regarding the limitations of budgets (e.g., should STP make recommendations that are unlikely to be followed through because of a lack of funds. Hans Christian commented that should publication policy be changed to add that all publications must include data report?
20. Kryc presented a QA/QC Task Force Update (Kryc & Neal – see ppt presentation for more details). Topics discussed included review of mandate vision statement, Nov. meeting topics, action items, and next meeting on Feb 12 and 13. STP needs to comment on Terms of Reference and Glossaries by Dec 31 2006. Lovell suggested that that we deal with this while we are here at the STP meeting and come to a recommendation.
 23. Neal presented a review of previous STP/SciMP WG and outcomes. These can all be found in the IODP.IO website. Microbiology is also a SAS WG; Chemistry (and Microbiology); Core Description; Database; Paleomag; Physical Properties; Petrophysics; Underway Geophysics. How far have the recommendations/actions progressed? STP must check these; revisit them to determine if they were implemented, obsolete, or need to be re-recommended.
 24. Janecek discussed Third Party Tools (see ppt presentation for details). Items discussed include implementation guides; tools that STP to consider such as off-the-shelf tools category, tool status spreadsheet, oversight role of STP, combine implementation guide with one policy documents. Considerations of off the shelf tools that are already in use elsewhere and their usage protocols. The tool should not already exist within IODP, detailed specs should be provided, lead IO should work with proponent to get it going, SAS/STP should notify that the tool is being used, and that the operator should provide a report after use. Developing a TPT status guide and also guide for tools new to IODP or tools changing status (respective conditions for development tools and for certified tools). Villinger asked where are the safety plans for tools located? Ans. – each operator must develop its own. Villinger also asked who requires interaction between IO and the developer and who makes the final decision when a tool is ready? Ans. - the IO is responsible. Higgins added that data must not only be achievable but it must be retrievable, ready for interrogation.
 25. Janecek presented STP monitoring of IODP expeditions; input to scientific technology issues. Including Operations Review presentation (see ppt presentation for details). Two reviews: operational and science review which is two parts: preliminary report (~2 months) and science advisory structure (long-term). Janecek's report concentrated

on operational review. Review considers confidential reports from operator and co-chief scientists, focuses on “lessons learned” and recommendations are published on-line. Recurring issues are lead time (~70% of the cases), policies & procedures, roles & responsibilities, and lab/drilling equipment issues (STP related). Possible roles for STP include direct participation in task force, report from IODP-MI to STP (after each review, at STP meetings), others? Neal commented that a report from IODP-MI that will highlight the problems would help. A report will come out in Jan. '07. Johnson asked how many reviews have short time frame constant? Ans. – variable.

Lovell gave the panel overnight homework:

QA/QC: TOR, Glossary, Expert list
 WG reports: pick favorites
 STP Mandate
 Temp data precision for NJ
 Depth Scale and VCD report
 STP recs, conc, action items
 STP input to ORTF

END of session

Reception _at_ 6:30 p.m.

Friday 8th December

08:30, Lovell presiding

26. Allan made a presentation on IODP Funding Structure from NSF Perspective (see ppt presentation for details). The presentation started with the chronology of NSF's involvement in the drilling program, starting with Project MOHOLE (1961-), then through DSDP (1964-) and to the present IODP. Slide re: SAS role is explicit in describing the importance of STP, whose role is advisory, not directive. It is crucial for STP to develop good working relationship with IODP-MI as CMO, and through and in association with them, and with IO's. There was a discussion that followed.

Development of a Scientific Technology Roadmap for IODP. Lovell ordered break out sessions for the 3 WGs for about an hour to examine and discuss 3 main items:

- 1) Are the WGs too big and does each have enough expertise?
- 2) Are the WGs' recommendations being implemented?
- 3) Examine STP's mandate and how can a better roadmap be developed?

The spokespersons are Christensen for Core Description WG, Johnson for Petrophysics WG and Castillo for Geochemistry and Microbiology WG. After the break out sessions, the WGs came back and presented the results of their discussions. As a whole, the WGs are content with the size and expertise of each group. Some of the previous recommendations from WGs were not implemented. A long discussion followed about the mandate, but in general, STP is comfortable with it, save for the lack of clear communication with and sometimes frustrations or issues related to implementation of STP's recommendations by SPC and IODP-MI.

Lovell, and then Becker, explained what is SPC's vision on STP's long-term vision or roadmap using EDP's new meeting schedule as a model. EDP has developed

their roadmap and scheduled their meetings so that it provides the best feedback 18 months in advance of the actual implementation (FY+2). Under the new roadmap, STP will prioritize advice according to science that it is trying to achieve. Again, a long discussion followed, but in the end, STP realized that despite the new meeting structure, it would do the same job. In fact, the new meeting structure may prove to be more beneficial because it puts STP more in sync with SPC, IODP-MI, EDP or other IODP committees. For example, during the summer meeting, STP can prioritize items for future directions and examine define long-term plans. During the winter meeting, STP can examine proposals, look backwards and examine previous proposals, updates on current issues and project status. One thing that STP can do is to change the weighting (number of days) of the two different meetings i.e., one is longer than the other because there is more to cover. Or it can work on as needed basis.

The long discussion that followed was generally positive regarding making such a change. Comments related to the bringing on and the length of rotation of new members was discussed. New members will be brought together with the rest of the group by communicating with them the corporate memory of STP. They should receive a primer that describes the responsibilities of STP and an update of the specific issues.

More mandate discussions followed: some suggested making the mandate more specific but others want to make it less specific (i.e., to remove some of the workload such as observatories, which appears to be a big time sink, or data management, which may need a lot of IT). However, the general sense is that the existing mandate is OK and not in need of considerable change. STP is thus contented with its present mandate, and will wait to make some minor modifications after the new roadmap is in place.

Gaillot presented the Database WG report (see ppt presentation for details). A discussion followed. Sugihara asked if all databases would be interpreted? Ans. – Phase 3 of the project will include interpretation. Sugihara also asked if site survey data would be linked with drill hole data? Ans. – Phase 2 includes only IODP data. Hans Christian commented that many site survey data already have a databank at the Scripps Institution of Oceanography. IODP has also identified the problem of linking site survey and drill hole data, and is trying to find solutions.

Lunch break

13:05 Afternoon sessions started: Lovell presiding

27. Fox presented an update of the USIO: SODV status (see ppt presentation for details). The presentation started with a comparison between Joides Resolution and new SODV – despite the same lengths, SODV has gained more science space. There are also some expansion/modification capabilities built in the design – e.g., ROV handling capabilities - so that if that they become available, they can be accommodated in the coming years. Allan asked if handicap access has been improved? Ans. Elevator is handicap accessible, but there are still other areas that need improvements, such as tight bulk heads. Johnson informed that there is a task force working disability access and a report is being prepared. Clive asked if the paleomag concern has been addressed? Ans. – Yes. Villinger asked if the living quarters have been improved? Ans. – Yes. Allan reminded that it the whole presentation is about a plan, which may change depending upon budgetary constraints. Wheat asked if the “continuing resolution” will affect the plan. Fox said that the budget is within the framework of the

continuing resolution and so the plan can move forward because it has access to funds. However, delays in signing the contract creates the risk of cost increases and therefore may cause to change the plan entirely.

Higgins then presented an update on L-DEO-BRG (see ppt presentation for details). There are several on-going projects related to SODV, but INGHP is a big activity outside IODP that is providing great learning experience for the group. Some of the projects for SODV include shipboard logging system changes, logging science and large diameter drill pipe, stress engineering drill pipe study, drill pipe purchase, operational consideration of large diameter pipes, and continuing discussions on open issues.

Blum then followed with an update on USIO Analytical Systems Projects (see ppt presentations for details). Items presented include overview of LIMS and its impact on management process. This is applicable to all IOs. Descriptive and interpretative systems is the most critical issue to be addressed. LIMS architecture is proposed as a way of creating an architecture for data analysis, handling and sharing. Sample request management (web-based, to be beta tested shortly), sample planning, and central inventory are all considered. DESCINFO (Descriptive and Interpretative Information) aims to standardize and automate certain efforts that are routine. The aim is to have a database for all earth materials, ensuring global searchability. Other items discussed were QA/QC (LithoLogik), data visualization, core loggers, petrophysics.

There was a concern raised that when some data are entered, some interpretations will be deduced by the computer – this relevant to a situation when people have too much work to do to enter information. For example, if a scientist enters a rock name then the computer may automatically deduce some observables from the name.

28. Kuramoto presented a report from CDEX on CHIKYU Shakedown cruise. The presentation focused on the experiences encountered during the shakedown runs conducted offshore Shimokita area, Japan. Many of the equipments were working. After the cruise, 28 scientists/participants provided inputs such that improvements on primary sample processing and analysis locations are or will be made to improve workflow. The CHIKYU will be doing Overseas Drilling SIT (ODS) from Nov., 2006 to Aug. 2007. Lab equipments will be maintained and performance tests will be conducted during ODS. The CHIKYU is scheduled to start the IODP NanTro SEIZE drilling in Sept. 2007.

Nonuora asked an important question regarding the effect of circulating mud on the geochemistry of pore fluids and on microbiology during riser drilling.

Lovell revived Janecek's request for input on IODP Operational Review. The basic question is how to interact better with IODP-MI in terms of review. The two choices are: 1) a watchdog, and 2) Janecek presenting a report to STP. Discussion followed, resulting in a consensus statement.

Lee presented a report on problems with the wireline cutting method. Core splitting using the method causes:

1. deformation of soft sediments
2. cutting face deformation

3. non-isotropic behaviour of the soft sediments

Lee is asking for a solution/advice from STP. Core splitter on Chikyu is still being developed (w/ and w/o water). Success seems to vary with the nature of the cores: soupy or non-soupy? Method must be fine-tuned on a case-by-case basis. Diatomaceous oozes are very hard to cut. Thin wires will solve some of the problems, but then they break easily. IOs are aware of the problem, but have not come up with a solution, yet.

Saturday 9th December

08.30

Kasahara presented an ad-hoc brief overview of a Roadmap of borehole seismology describing Seismic Interferometry using a virtual source, and Masuda additional items..

29. Executive session: strategic review of STP aims, workflow, and actions

Reconvene with liaisons and guests

30. Review of Recommendations, Consensus Statements, and Action Items

The various items were presented and recorded.

31. Next meeting location and date

Lovell presented the proposed details; Ge had offered to host the meeting in China.

Proposed next STP meeting: June 3rd – 6th 2007

Location Beijing, China

Host: Hongkui Ge

32. Rotation of panelists & panel expertise (Lovell/Neal)

33. Closure

15.00 Close

IODP Science Planning Committee

10th Meeting, 27–30 August 2007

Coast Hotel, Santa Cruz, USA

DRAFT EXECUTIVE SUMMARY (v1.0)

1.3. Approve SPC meeting agenda – highlight action items

SPC Consensus 0708-02: The SPC approves the agenda of its tenth meeting on 27–30 August 2007 in Santa Cruz, USA.

1.4. Approve last SPC meeting minutes

SPC Consensus 0708-03: The SPC approves the minutes of its ninth meeting on 4-7 March 2007 in Osaka, Japan.

1.5. Items approved since March 2007 meeting

SPC Motion 0706-01: The SPC recognizes the scientific relevance of the two 603-Add2 proposed contingency sites to the NanTroSEIZE program splay-fault drilling objectives. The SPC therefore approves the addition of these sites as contingency options for NanTroSEIZE Stage 1 operations, should time remain available after operations at the primary Stage 1 sites.

SPC Motion 0707-01: The SPC appoints Heiko Pälike as a new co-chair of the Science Steering and Evaluation Panel (SSEP), effective immediately.

SPC Motion 0708-01: Proposal 545-Full3 will be excluded from the review of proposals residing with the Operations Task Force (OTF) to be conducted at the August 2007 SPC meeting.

5. OTF Report: IODP expedition scheduling I

5.2. SPC discussion and potential approval

SPC Consensus 0708-04: The SPC approves the FY2008 and early FY2009 recommended scheduling options presented in the Operations Task Force (OTF) report.

Recommended expeditions for the *JOIDES Resolution* will begin in May 2008 and proceed as follows:

- Pacific Equatorial Age Transect II (Proposal 626-Full2)
- Bering Sea Plio-Pleistocene (Proposal 477-Full4)
- Pacific Equatorial Age Transect I (Proposal 626-Full2)
- Canterbury Basin (Proposal 600-Full)
- Wilkes Land Margin (Proposal 482-Full3)

Recommended expeditions for Chikyu will begin in late September 2007 and proceed as follows:

- NanTroSEIZE LWD
- NanTroSEIZE site NT2-3 riser pilot hole
- NanTroSEIZE sites NT1-3 and NT2-1 (ending in February 2008)
- NanTroSEIZE sites NT3-1, NT1-7, NT1-1 (starting in early October 2008)
- NanTroSEIZE NT2-3 riser drilling

All NanTroSEIZE expeditions are related to proposals 603-CDP3 and component proposals. Inspection and maintenance and non-IODP work is planned for February through September 2008.

MSP operations in FY08 are expected to be at New Jersey Shallow Shelf (Proposal 564-Full2). A possibility remains for Great Barrier Reef (519-Full2) operations starting in late FY2008 and spanning the FY2008/2009 transition.

7. SPC review of OTF proposals I

7.2. 621-Full Monterey – status after OTF + SASEC

SPC Consensus 0708-05: In response to SASEC Consensus 0706-10 and the request from the June 2007 OTF meeting: It is clear to the SPC that it is not realistic to consider scheduling the Monterey Bay test borehole facility under the current IODP budget situation and given the issues and complexities associated with the required environmental impact assessment. Therefore the SPC has no choice but to deactivate Proposal 621-Full.

8. SAS panel reports

8.4. Scientific Technology Panel (STP)

SPC Consensus 0708-06: ???The SPC accepts STP Recommendation 0708-02 on a revised IODP Measurements Document.??? ... Waiting for final recommended consensus statement from Steve D'Hondt ...

SPC Consensus 0708-07: The SPC receives STP Recommendation 0708-04 on including microbiology legacy samples as a part of any IODP sampling plan and tentatively approves the recommendation subject to an investigation of costs by IODP-MI and the Implementing Organizations.

SPC Consensus 0708-08: The SPC accepts STP Recommendation 0708-05 on integrating microbiological sampling into expedition sampling plans.

SPC Consensus 0708-09: The SPC receives STP Consensus 0708-09 concerning final report of the Science Advisory Structure Executive Committee (SASEC) working group report on the Science Advisory Structure (SAS). The SPC notes that the possibility of combining STP and EDP, if warranted by further IODP budget shortfalls, has not actually been formally proposed.

SPC Consensus 0708-10: The SPC receives STP Consensus 0708-10 concerning internet access during STP and other SAS meetings. The SPC notes that the decision to allow or disallow access to internet during SAS meetings resides with each SAS panel and committee.

SPC Consensus 0708-11: ???The SPC accepts STP Consensus 0708-11 time stamps for measurements and procedures. ... Waiting for final recommended consensus statement from Steve D'Hondt ...

SPC Consensus 0708-12: The SPC receives STP Consensus 0708-13 concerning post-expedition data capture, forwards this request to IODP-MI and suggests that IODP-MI provides an update on inclusion of post-expedition generated results at the February 2008 STP meeting.

8.5. Engineering Development Panel EDP

SPC Consensus 0708-13: The SPC accepts the recommended changes to the terms of reference of the Engineering Development Panel (EDP) concerning attendance of an EDP liaison at Science Steering and Evaluation Panel (SSEP) meetings, as presented in EDP Consensus 0707-03.

8.6. Industry-IODP Science Program Planning Group (IIS PPG)

SPC Consensus 0708-14: The SPC commends the IIS PPG for its efforts in developing IODP-industry collaborations, both within and outside of the program. The SPC receives IIS PPG Consensus 0707-01 and Consensus 0707-03 and forwards them to IODP-MI and the Implementing Organizations with SPC encouragement to further develop industry collaborations as described in those consensus statements.

SPC Consensus 0708-15: The SPC receives IIS PPG Consensus 0707-05 regarding travel support for IIS PPG members and forwards their concern to the Program Member Offices, which are responsible for providing travel support.

SPC Consensus 0708-16: The SPC appoints Andrew Bell as a new member of the Industry-IODP Science Program Planning Group (IIS PPG), replacing resigned member Neil Frewin, effective immediately.

8.7. Hotspot Geodynamics Detailed Planning Group (DPG) report

SPC Consensus 0708-17: The SPC accepts the final report of the Hotspot Geodynamics DPG, commends Bob Duncan for his role as chairman, and the DPG for achieving results quickly with only one meeting.

10. FY09/10 engineering development I – EDP recommendations

SPC Consensus 0708-18: The SPC endorses the FY2009 engineering plan for development of borehole measurement tools, and specifically a phased approach (starting with high level system design) for the development of the SCIMPI (Simple Cabled Instrument for Measuring Parameters In-situ) and S-CORK (Sediment-CORK) tools.

11. SPC review of OTF proposals II – categorization of proposals

SPC Motion 0708-19: The SPC leaves proposal 505-Full5 (Mariana Convergent Margin) as a coring program only (without CORKs) as a Group 1 proposal at the Operations Task Force (OTF).

The following motion did not receive the required affirmative vote of at least two-thirds of all members present and eligible to vote; hence proposal 633-Full2 was not considered in subsequent scheduling options by the Operations Task Force during their 29 August 2007 meeting.

SPC Motion 0708-20: The SPC leaves proposal 633-Full2 (Costa Rica Mud Mounds) as a coring program only (without CORKs) at the Operations Task Force (OTF) as Group 2 for FY2009/2010 scheduling.

12. Complementary Project Proposals

SPC Consensus 0708-21: The SPC accepts the concept of complementary project proposals for hybrid IODP projects with substantial external funding as an IODP planning mechanism,

and assigns a working group (Ruppel, Camoin, Mori) to examine the evaluation process for such proposals.

17. SPC recommendations regarding Scientific Technology Panel (STP) service reduction options

SPC Consensus 0708-22: The SPC receives STP Recommendation 0708-01 on IODP budget reduction models and encourages IODP-MI to work with the Implementing Organizations (IOs) and with the Scientific Technology Panel (STP) in developing a recommended model.

SPC Consensus 0708-23: The SPC supports the recommendation by the Scientific Technology Panel (STP) in the background to STP Recommendation 0708-01 that the expedition science party not be reduced in size.

19. Mission proposal review II – SPC recommendations

SPC Consensus 0708-24: The SPC does not designate proposal 720-MP (Birth of Oceans Mission) as an IODP mission. The SPC reaffirms the importance of the Initial Science Plan (ISP) goals related to continental rifting and the initiation of seafloor spreading and encourages the proponents of the individual proposals that were included in 720-MP to pursue appropriate projects through the normal SAS framework.

SPC Consensus 0708-25: The SPC does not designate proposal 713-MP (Mission Monsoon) as an IODP mission. However, the SPC concluded that the deep drilling objectives of four proposals (552-Full3 Bengal Fan, 595-Full3 Murray Ridge, 618-Full3 East Asia Margin and 683-Full East Asia Topography and Monsoon) could benefit from detailed scoping at this stage (see SPC Motion 0708-17).

SPC Motion 0708-26: A detailed planning group (DPG) should be formed as requested by SSEP Recommendation 0705-01 to prioritize components of proposal 713-MP (Mission Monsoon), in particular proposals 552-Full3 (Bengal Fan), 595-Full3 (Murray Ridge), 618-Full3 (East Asia Margin) and 683-Full (East Asia Topography and Monsoon), with terms of reference to be written after the August 2007 SPC meeting by a subgroup of the SPC and approval by e-mail. The DPG should: (1) have a timeline of 1 year; (2) be chaired by a non-proponent; (3) prioritize the drilling programs; (4) address technical issues; (5) include an outreach and education plan; and (6) include a modeling component to help prioritize sites.

The following motion did not receive the required affirmative vote of at least two-thirds of all members present and eligible to vote; hence proposal 719-MP was not designated as an IODP mission.

SPC Motion 0708-27: The SPC designates proposal 719-MP (Mission Moho) as an IODP mission.

SPC Consensus 0708-28: The SPC requests that the Engineering Development Panel (EDP) work with IODP-MI and the Implementing Organizations to assess the technological needs required to achieve the deep penetrations required for a Mohole.

SPC Consensus 0708-29: The SPC accepts the draft mandate for the Asian Monsoon detailed planning group (DPG) as presented by SSEP co-chair/SPC alternate Heiko Pälike. The SPC approves Steve Clemens and Jerry Dickens as candidate chairpersons for the DPG.

The SPC also approves Peter Clift, Douglas Burbank, Christian France-Lanord, Hongbo Zheng, Ryuji Tada, Peter Molnar, Karen Bice, Brian Horton, Matt Huber, John Kutzback and Sidney Hemming as candidate members, and Naohiko Ohkouchi as SPC liaison.

20. IODP FY09/10 scheduling II – SPC recommendations

SPC Consensus 0708-30: The SPC approves the FY2009 recommended scheduling options developed at the 29 August 2007 meeting of the Operations Task Force.

Recommended FY2009 expeditions, , are:

JOIDES Resolution:

- Pacific Equatorial Age Transect I (Proposal 626-Full2) spanning the FY08/09 transition
- Canterbury Basin (Proposal 600-Full)
- Wilkes Land Margin (Proposal 482-Full3)
- Mariana Convergent Margin (Proposal 505-Full5 coring only) and South Chamorro Seamount CORK (Proposal 693-APL)
- Non-IODP work beginning mid-May 2009

Chikyu:

- NanTroSEIZE sites NT3-1, NT1-7, NT1-1
- NanTroSEIZE riser program
- Non-IODP work and Asian Monsoon (Proposal 605-Full2)
- NanTroSEIZE riser and observatory program (beginning 1 Sept. 2009)

MSP:

Great Barrier Reef (Proposal 519-Full2) beginning Sept. 2009

SPC Consensus 0708-31: The SPC affirms that the *Chikyu* FY2010 riser program should be at site NT3-01.

SPC Consensus 0708-32: The SPC approves the Atlantic Ocean as the top priority ocean basin for FY2010 *JOIDES Resolution* operations, with Mid-Atlantic Ridge Microbiology (proposal 677-Full) as the top priority “Tier 1” program.

SPC Consensus 0708-33: The 2007 March SPC (Osaka) rankings should guide expedition priorities for Tier 2 FY2010 *JOIDES Resolution* operations in the Atlantic Ocean.

SPC Consensus 0708-34: Should FY2010 *JOIDES Resolution* operations in the Indian Ocean become necessary, the SPC priorities for expeditions are: (1) 595-Full3 (Murray Ridge); (2) 549-Full6 (Northern Arabian Sea Monsoon); and (3) 552-Full3 (Bengal Fan).

SPC Consensus 0708-35: Juan de Fuca Flank Hydrogeology (Proposal 545-Full3) is the Tier 1 choice for FY2010 *JOIDES Resolution* operations in the Pacific Ocean; Superfast Spreading Crust (Proposal 522-Full5) is the top-ranked Tier 2 choice.

SPC Consensus 0708-36: In addition to any new proposals forwarded by the SSEP for SPC review and ranking at its March 2008 meeting, the SPC will review and rank those proposals that were previously forwarded to OTF with the exception of those that were identified at this meeting as clear Group/Tier 1 proposals or those that might appear in the FY09/10 schedule options to be approved by the SPC after further OTF schedule development this fall.

21. Potential CDP designations

SPC Consensus 0708-37: The SPC designates proposal 707-Full2 (Sagami Bay Seismic Monitoring) as a Complex Drilling Project (CDP) incorporating component proposals 722-Full2 (Sagami Bay Tectonics and Paleoseismology) and 723-Full (Sagami Bay Kanto Asperity Network).

The following motion did not receive the required affirmative vote of at least two-thirds of all members present and eligible to vote; hence proposal 694-Full3, and other related Izu-Bonin-Mariana proposals mentioned below are not designated as a Complex Drilling Project (CDP).

SPC Motion 0708-38: The SPC designates proposal 694-Full3 (Izu-Bonin-Mariana Arc Evolution) as a Complex Drilling Project (CDP) incorporating component proposals 695-Full (Izu-Bonin-Mariana Pre-Arc Crust), 696-Pre (Izu-Bonin-Mariana Deep Forearc Crust), 697-Full (Izu-Bonin-Mariana Reararc Crust) and 698-Full (Izu-Bonin-Mariana Arc Middle Crust).

22. Review of 712-APL (Sediment-CORK Trial Installation)

SPC Consensus 0708-39: In accordance with SPC Consensus 0708-18, the SPC defers forwarding proposal 712-APL (Sediment-CORK Trial Installation) to the Operations Task Force (OTF) because the S-CORK tool is still under development.

25. Review of motions and consensus items

SPC Consensus 0708-40: The SPC thanks Tim Byrne for his dedicated service on the committee, and designates him as a **CDP** – a person who is **Committed, Dedicated, and Passionate** for IODP science.

SPC Consensus 0708-41: The SPC thanks Chris MacLeod for his insightful and dedicated work as a member of this committee. As a marine geologist who studies the development and evolution of the oceanic crust, he has made invaluable contributions to the committee and to the IODP in general through his well thought through actions and contributions, that often anticipated unintended consequences. We are sorry that Chris leaves the SPC in the wake of Missions. Chris' high standards, professionalism, and dedication to all scientific drilling throughout his career serve as a model for all members of the advisory panels. However, we are certain that he will stay active in the IODP community and continuously promote IODP science with his tremendous energy.

SPC Consensus 0708-42: As the only microbiologist among the SPC members, Dr. H. Yamamoto has enlightened the committee on the importance of biological aspect of deep ocean drilling. We will succeed his ideas, and continue collaboration between bio- and geo-sciences.

SPC Consensus 0708-43: The SPC thanks Barbara Bekins for her hard work, dedication, and attention to detail during the initial years of IODP and her term on SPC. Barbara's leadership on marine hydrogeology and observatories and her recognition of IODP mandates related to outreach and societal relevance have provided important direction in shaping SPC decisions. We wish her well in her post-SPC endeavors and hope to see her back in the IODP community soon in some other role.

SPC Consensus 0708-44: Traditionally addressing Nobu Eguchi as either Nobu-san or Eguchi-san, the SPC at Nobu's last meeting as science coordinator uniquely name him, eternally, "Eguchi-SAS" (or Nobu-SAS). Nobu-SAS has served as science coordinator during the ODP-IODP interim phase and through the entire IODP Phase I before finally surrendering to CDEX. His responsiveness, sense of humor, distinct and cross cultural socializing skills (in lieu of saying, excesses) will be sorely missed by the SAS but are, however, not lost for the program. We wish him all the best at CDEX and look forward to his continued engagement in IODP.

SPC Consensus 0708-45: The SPC thanks Barbara Bekins and JOI-USSSP for hosting its 10th meeting in the beautiful beachside location in Santa Cruz, and for a lovely evening reception at Natural Bridges Park. Some of us also thank Barbara and Ivanno Aiello for the geological field trip... even if we didn't make the last stop at the winery.

SPC Consensus 0708-46: The SPC thanks Keir Becker for his outstanding contribution to IODP in his role as chairperson of the committee. The committee affirms Keir's Guiding Principles:

- Have patience with your colleagues
- Do your homework
- Have more patience with your colleagues
- Build a consensus
- Use all of your energy, all of your talents and all of your intellect to have even more patience with your colleagues
- Thank your colleagues

Thoughts on Potential IODP “Complementary Project Proposals”

K. Becker, original draft March 13, 2007, revised March 29, 2007, following discussions at March 2007 SASEC and Management Forum meetings, minor editing June 5, 2007.

This proposition expands the existing APL (Ancillary Project Letter) and third-party funding concepts to provide a framework for SAS evaluation of proposals for “hybrid” IODP projects with significant support from a non-IODP entity such as industry, governments of countries not formally IODP members, or additional agencies from IODP member countries. It is based partly on the 2004-2005 SPC experience in dealing with an APL to the Tahiti Sea Level program of great industry interest in terms of adding casing to the holes and conducting detailed cross-hole geophysical imaging of the reef formations. (See summary appended below of that experience and relevant SPC consensus statements from its meetings of June and October 2004 and March 2005.) Basically this experience set up a precedent that an APL for an MSP operation probably had to provide its own additional funding for the necessary platform time. This model could be expanded to apply to the IODP drillships if future POC/SOC funding does not provide for year-round IODP operations.

In this expanded model, an IODP “Complementary Project Proposal” (CPP) could allow for requests of IODP platform time for projects deemed to be (1) a high priority to an outside entity that offers resources to the program, (2) of interest to the respective IO and the IODP Agencies, (3) in compliance with IODP data/sample access policies, (4) of scientific interest to IODP as determined by SAS (even if not necessarily top-ranked IODP scientific priority), and (5) of minimal negative impact to other high-priority IODP projects as determined by IODP-MI and SAS.

With respect to evaluation of a CPP within SAS: if the initial CPP presentation were strong, a single-pass SSEP/SPC review cycle (as for an APL or any really good IODP full proposal) could be sufficient for a SAS judgment of relevance or interest to IODP. Likelihood of scheduling would depend on the SSEP/SPC evaluation of this interest or relevance to IODP balanced against the benefits of accepting the proffered resources in exchange for keeping the relevant IODP platform(s) operating when IODP budgets don’t allow full-time operation. At SPC, the CPP review would lead not to inclusion in the regular SPC annual proposal ranking on scientific grounds, but to a separate yes-or-no decision to forward to OTF for potential scheduling, much as SPC handles APL’s.

Obviously, the perceived benefit at SPC will depend to large degree on the IODP budget situation, such that projects that bring full or major POC/SOC funding will have greater likelihood of gaining endorsement when IODP budgets are inadequate for full-time operation. In practice, when SPC is evaluating schedule options from OTF, complementary projects that require full or major POC/SOC funding from IODP will probably not fare well against highly-rated regular proposals that are also competing for the same POC/SOC funding. Thus, proponents who cannot provide for a significant contribution of POC/SOC funding should probably apply via the regular IODP proposal process in which the decision is based on evaluation of scientific merit as for all regular IODP proposals.

Engineering Development Panel (EDP)

1. General Purpose. The Engineering Development Panel (EDP) reports to the Science Planning Committee (SPC), and may communicate directly with IODP Management International (IODP-MI). The panel shall provide advice on matters related to the technological needs and engineering developments necessary to meet the scientific objectives of active IODP proposals and the IODP Initial Science Plan (ISP) to the SPC; through the SPC, to the Science Planning and Policy Oversight Committee (SPPOC) and IODP-MI; and, through IODP-MI, to the implementing organizations (IOs).

2. Mandate. The EDP shall identify long-term (two- to five-year lead time) technological needs determined from active IODP proposals and the ISP, and recommend priorities for engineering developments to meet those needs, both for the annual IODP engineering plan and on a longer term. Appropriate topics shall include:

- a. Assessment of commercial, off-the-shelf technology to determine if it can optimally meet identified IODP technological needs or whether research and development is required.
- b. Appropriate modes for pursuing engineering development projects (i.e., through the IODP, universities, industry, or joint ventures).
- c. Performance requirements for specific technological needs.
- d. Procedures to develop and evaluate program contracts in support of technical design and innovation.

As requested by the Science Steering and Evaluation Panel (SSEP) or SPC, the EDP shall review IODP drilling proposals to assess IODP technological readiness to achieve the proposed objectives, and where appropriate, recommend priorities for technological approaches and necessary engineering developments.

3. Decisions. Decisions of EDP shall generally be made by consensus. If voting is required, motions shall be decided by a majority of all members present and eligible to vote. A quorum shall consist of at least two-thirds of the voting members. Voting records shall be kept and reported in the meeting minutes.

4. Meetings. The EDP shall convene biannually, generally approximately mid-way between SPC meetings, and additional electronic meetings may be held as appropriate. Robert's Rules of Order shall govern its meetings. Conflicts of interest shall be declared at each meeting, and treatment thereof shall be recorded in the meeting minutes. The SPC chair shall approve meeting agendas, dates, and locations, and the IODP-MI Vice-President for Science Planning and Deliverables shall authorize the meetings.

5. Membership. The EDP shall consist of members who represent the fields of marine platform operations, downhole logging and instrumentation, drilling technology (including mining technology and drilling under extreme conditions), drilling engineering development, geotechnics and other disciplines as necessary. National and consortia membership entitlements for SAS panels are stated in the Memoranda among the IODP funding agencies. The EDP chair shall work with IODP-MI and the national and consortia committees to maintain breadth of expertise in the panel membership, and to ensure regular rotation of its membership. With SPC approval, the panel augment the expertise required to address its mandate by setting up *ad hoc* advisory committees whose lifetimes are mandated by the SPC. EDP members shall normally serve for terms of three years, with the possibility of renewal. If

an EDP member misses two meetings in succession, the EDP chair or vice-chair shall discuss the problem of SAS representation with the SPC chair or vice-chair.

6. Chair and Vice-Chair. The EDP chair and vice-chair shall be nominated by the EDP membership and approved by the SPC. Their terms shall be two years. The EDP chair shall be responsible for providing the IODP-MI Sapporo Office with meeting minutes within one month of each meeting.

7. Liaisons. The EDP chair shall be liaison to the SPC, with vice-chair as alternate. The SPC chair shall be a liaison to the EDP, with the SPC vice-chair as alternate. A science coordinator from the IODP-MI Sapporo Office shall attend each EDP meeting. Representatives from the IOs shall also be invited to attend the meetings.

Minutes

Fourth Meeting of the Engineering Development Panel (EDP) of the IODP

January 17 – 19, 2007

New York, New York

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**IODP Engineering Development Panel
4th Meeting, 17-19 January 2007
New York City, New York, U.S.A.**

ATTENDEES

Engineering Development Panel – EDP Members

Alberty, Mark	USA
Arai, Yusei*	Japan
Flemings, Peter (Chair)	USA
Fukuhara, Masafumi	Japan
Germaine, Jack	USA
Holloway, Leon	USA
Nakata, Haruya	Japan
Person, Roland	ECORD
Schultheiss, Peter	ECORD
Sears, Stephen	USA
Takemura, Mitsugu	Japan
Tezuka, Kazuhiko	Japan
Thorogood, John L.	ECORD
Ussler, Bill	USA
Von Herzen, Richard	USA
Wohlgemuth, Lothar	ECORD
Ye, Ying	China

* Alternate for Suzuki

Guests, Liasons, and Observers

Becker, Keir	SPC
Blum, Peter	USIO
Chen, Liping	USIO
Eguchi, Nobuhisa	IODP-MI
Goldberg, Dave	LDEO
Grigar, Kevin	USIO
Ito, Hisao	CDEX
Kyo, Masanori	CDEX
Lovell, Mike	STP
Meissner, Eric	LDEO
Mrozewski, Stefan	LDEO
Myers, Gregory J.	IODP-MI
Oshima, Toshiyuki	MEXT
Oskvig, Kelly	IODP-MI
Pheasant, Iain	ESO

**IODP Engineering Development Panel
4th Meeting, 17-19 January 2007
New York City, New York, U.S.A.**

EXECUTIVE SUMMARY

Overview

The Engineering Development Panel of the Integrated Ocean Drilling Program convened their 4th Meeting in New York City at BP's offices. Our meeting followed the structure proposed at our 1st EDP Meeting, where we established that the winter meeting would focus on shorter term issues such as: 1. assessing the outcome of previous fiscal year Engineering Development projects; 2. learning of the status of current fiscal year issues and projects; and 3. making final comments on the engineering development component of next year's Program Plan.

In addition our meeting focused on two additional issues:

1. The IODP-MI Proposal Process: IODP-MI has made tremendous strides to develop a process that uses EDP's Technology Roadmap (<http://www.iodp.org/eng-dev>) as a foundation to implement engineering development (see <http://www.iodp.org/eng/>). EDP reviewed the process proposed, considered how EDP could more effectively contribute to this, and made suggestions for how IODP-MI can more effectively achieve engineering development.
2. EDP Technology Roadmap: EDP reviewed and began to revise the Technology Roadmap. A new version of the road map will be released after the next EDP Meeting.

EDP Recommendations, Consensus Statements and Action Items

The EDP forwards the following recommendations, consensus statements, and action items to the SPC or the IODP-MI as appropriate.

EDP Consensus 0701-01: Proposed New Vice Chairperson of EDP

The EDP nominates Dr. Makoto Miyairi as vice-chairperson of EDP.

EDP Consensus 0701-02: EDP Technology Roadmap

The EDP has made minor revisions in its roadmap. The additions will be edited by the Chair and distributed to panel members prior to EDP Meeting #5. The revised document will not be public. At EDP Meeting #5 we will discuss, modify if necessary, and accept the revised document. EDP will then make the new version of the Roadmap a public document, and use it to establish priorities.

EDP Consensus 0701-03: Approval of EDP Meeting #3 Minutes

The EDP approves the minutes from EDP Meeting #3.

EDP Consensus 0701-04: The Importance of preserving the ability of an ROV Capability on the SODV

1. EDP fully appreciates the constraints and difficulties surrounding the prioritization of options leading to the decision making process for the SODV. However, we strongly feel that one of the most critical engineering developments in the road map which will be crucial to IODP 'transformational science' may have been significantly compromised in the current SODV plans. The presentation from the USIO at the EDP meeting in New York in January 2007 could not definitively conclude that the current SODV Plans could accommodate the deployment of an ROV of the required capabilities. We urgently request that the USIO clarify the capability of an ROV deployment for the 'unstretched' SODV.
2. ROV capability is a critical transformational technology for ocean drilling. ROV applications include, installation and service of subsea science packages (e.g. CORKS), seabed frame installation and use, seabed visualization, facilitating use of large diameter tools, monitoring for environmental impact of flow resulting from the well, safety, improved efficiency of re-entry operations, and seabed surveys. To wellhead work, the ROV is both the opposable thumb and the third eye.
3. The infrastructure for accommodating a full ocean depth ROV should be installed on the SODV now. A clear plan for installation under the new configuration must be developed. Failure to make this provision is an extreme compromise of the technology roadmap that conflicts with feedback from EDP and other committees. Proponents will respond to ROV capability with transformational science proposals but they will not do so until the capability is present or a plan for its deployment is clearly defined.

EDP Consensus 0701-05: Comment on 2008 Eng. Dev. Plan—ESO Down-Pipe Camera

The EDP views visualization as an important tool to deliver the science plan and it is defined in Technology Roadmap 1.0. The EDP did not receive a Concept Proposal and the ESO did not present any results on this project at this EDP meeting. Thus EDP cannot comment on this part of the 2008 Eng. Plan.

EDP Consensus 0701-06: Comment on 2008 Eng. Dev. Plan-USIO Downhole Sensor Sub and Remote Memory Module

EDP supports testing and evaluation of the DSS-RMM tool described as part of the 2008 Engineering Plan. Tests that simulate the field environment in which the tools will be used should be accomplished. Offshore field tests should be accomplished. The results should be documented to ensure that adequate acceptance criteria are satisfied before the tools are deployed in an operational mode.

EDP strongly endorses DSS-type measurements. This project is 7 years old. EDP has concerns whether this specific tool will be successful. EDP recommends that there should be an independent review of the DSS project and the vendor selection to determine if the current delivery path is going to meet IODP needs in an acceptable timeframe.

EDP Consensus 0701-07: USIO Pulsed Telemetry Module

EDP supports the idea that real-time downhole measurements be made and that these measurements be transmitted in real-time to the surface. An approach is to use mud-pulse technology. However, the PTM is linked to the DSS. There currently is no other function for the PTM other than to support the DSS. EDP has recommended an independent review of the DSS (Consensus 0701-06). EDP suggests that PTM should not be progressed ahead of, or in parallel, with the DSS project.

EDP Consensus 0701-08: Comment on 2008 Eng. Dev. Plan-CDEX Monitoring

EDP appreciates the efforts expended in developing the high level design of the LTBMS and the subsequent design review. EDP supports the continued development of this critically important technology. During the next phase of detailed engineering design, EDP recommends specific consideration be given to several important topics. The first topic concerns the operational temperature limits at long timescales. This remains a critical enabling technology barrier to long term deep installations. The 2nd topic should integrate well design details including cement requirements, casing sizes, annulus size constraints, and casing contingencies. There is concern that the actual final casing dimension may not be that originally envisioned due to drilling challenges and that this may compromise the performance of the monitoring plan. Finally, the design should include operational plans for continual monitoring, surveillance, maintenance, and data archival.

EDP Consensus 0701-09: Eng. Dev. Proposal Process

The EDP endorses the Engineering Development Proposal Process developed by IODP-MI as generally in alignment with EDP's proposed project life cycle process. EDP recognizes the efforts of IODP-MI to disseminate information regarding engineering development to the larger community (<http://www.iodp.org/eng/>). EDP will work with IODP-MI to further strengthen this process.

EDP Consensus 0701-10: Weighted Fluid Operations

The EDP requests that IODP identify those techniques and tools unique to the IODP that will be used in weighted fluid operations and assess the impact and then feedback to the EDP identified developments that need to be added to the Roadmap.

EDP Consensus 0701-11: Operational Review Task Force

EDP recommends that IODP-MI monitor the engineering issues that are identified by the Operational Review Task Group after each expedition in the form of a simplified table that relates directly to the 'engineering road map'. This table will enable past engineering issues to be tracked and should be available at EDP meetings in order that engineering issues and priorities can be reviewed and updated as required.

The EDP endorses the Engineering Development Proposal Process developed by IODP-MI. EDP recommends that if unsolicited proposals (Class A & B) are not forthcoming for high priority engineering developments in the EDP Technology Roadmap, then IODP-MI should seek funds from lead agencies for these developments such that they can develop a request for solicited proposals (Class C) in a timely manner.

Furthermore IODP-MI should seek funds annually from lead agencies for engineering developments (unspecified) so that unsolicited proposals for high ranking developments can be funded rapidly as and when appropriate.

EDP Consensus 0701-12: IODP-MI Proposal Process-Concept Phase Review

EDP desires to see proposals at the end of the concept phase. Work described in the Concept Phase in the Class B and Class C Engineering Development Proposal in the IODP Engineering Development Proposal Process should be complete when the proposal is presented to EDP. The proposal should contain a description of how work in the Design, Fabrication and Implementation phases will be executed.

EDP Consensus 0701-13: Prediction and detection of overpressure in drilling operations

The capability of IODP to drill with weighted fluids introduces the probability of conducting ongoing operations in the presence of overpressure. The presence of overpressure introduces a new level of complexity to the operations which requires, for both safety and environmental considerations, techniques to both predict and detect pressure in these drilling environments. Existing IODP pressure detection techniques were designed for use in soft sediments and were not intended for continuous drilling in overpressured environments. Techniques need to be developed or adapted from industry to detect pressure while drilling in weighted fluid drilling environments.

EDP Consensus 0701-14: Thanks to Dr. Peter Schultheiss

The EDP greatly appreciates the dedicated efforts and the effectiveness of outgoing panel member Peter Schultheiss.

EDP Consensus 0701-15: EDP Meeting #5

The EDP recommends holding EDP Meeting #5 in Japan on Monday, July 9, 2007 – Wednesday, July 11, 2007. The location will be decided by our Japanese hosts. Possible location includes Chiba, Tokyo, and Sapporo.

EDP Discussion Item 0701-01: Liaisons to SSEPs, ETF, and STP

The EDP had extensive discussions about the importance of having liaisons to SSEPs, ETF, and STP. There was general support for promoting these interactions.

**IODP Engineering Development Panel
4th Meeting, 17-19, January 2007
New York, New York**

MINUTES

Wednesday, January 17, 2007

In these minutes, the Recommendations, Consensus Statements, and Action Items are not repeated in detail. Please refer to the Executive Summary for the full text of each, as indicated.

1. Welcome, Introductions of Participants (Appendix 1) by Flemings

At 0840 Flemings welcomed the panel, guests, and liaisons. Introductions were made by each attendee. Flemings reviewed Robert's Rules of Order and presented the EDP mandate for the benefit of the new panel members and guests. Ussler was given the responsibility of taking meeting notes and preparing the minutes for the first day. Germaine was assigned taking meeting notes and preparing the minutes for the second day. John-Andrew Morrison (BP) conducted a safety briefing.

2. Review of Meeting Agenda (Appendix 2) by Flemings

Flemings reviewed the meeting agenda. A motion to approve the agenda was made by Germaine, a second by Sears. Flemings asked for discussion. Germaine asked if this agenda was unchanged from the latest one emailed to all panel members. What was being considered for approval was unchanged.

Von Herzen asked if there is a place in the agenda to discuss heave compensation.

Flemings stated this should be discussed in the drilling/vessel working group for the Technology Roadmap.

Myers noted that the ORTF (operational review task force) replaces REVCOM.

Flemings noted that Jeff Fox was stuck in an ice storm and should arrive on Thursday.

Flemings asked for any objections; hearing no objections, the motion was approved by consensus.

3. Formal Acceptance of 3rd EDP Minutes by Flemings

A motion to discuss the minutes for the 3rd EDP meeting held in Windischeschenbach, Germany was made by Germaine; seconded by Sears. Flemings asked for discussion. No discussion occurred or corrections were made. Hearing no objections, the motion was approved by consensus. The minutes can be found on the IODP website (<http://www.iodp.org/edp>).

4. SPC Report (Appendix 3) by Becker

Becker commented that the role of the EDP in the review of scientific drilling proposals within SAS will occur only at the request of the SPC. The EDP will not be asked to review large numbers of proposals. Nor should the EDP be involved in the day-to-day operational issues associated with drilling legs. This was formerly part of the TEDCOM mandate, and now is the responsibility of the ORTF.

The formal presentation by Becker (Appendix 3) included 5 main topics:

- a. an update on the FY07-09 schedule
- b. proposals to be ranked at the March 07 SPC meeting
- c. a SASEC meeting report
- d. an update on mission implementation
- e. the SASEC working group formed to evaluate aspects of the SAS-EDP relationship

Becker reviewed 2 consensus items from SPC Consensus 0608-04 and 0608-05 (see Appendix 3).

The situation with the SODV has become more complicated. He reviewed SPC Consensus 0806-03 shifting the operational start date to November 1, 2007. If operations are delayed slightly, then the entire schedule will shift. However, if more substantial delays occur, then the 1st Equatorial Pacific leg will be dropped because coordination with NanTroSEIZE drilling with the Chikyu is critical for the success of that mission. Becker showed 2 summary slides of potential ship schedules for all 3 platforms. The Canterbury basin gas hazard review was positive and the proposed sequence of drilling legs will be maintained.

Von Herzen asked about the color coding of the ship schedule slides.

Becker stated: blue=operational window; green=optimal weather window; tan=transit

Alberty asked if seawater will be used in the riser drilling in FY08 by the Chikyu. Because of the tectonic conditions it is likely the Chikyu will be drilling into holes with high static pressure heads. Alberty hasn't seen any engineering development (ED) proposals for drilling into deep, high pressure zones. This has implications for the coring tools that are intended for logging the riser holes.

Myers noted engineering development (ED) needs should be identified in the EDP Technology Roadmap. The EDP has to anticipate the ED needs associated with riser drilling.

Flemings reiterated Myers comments. It is the job of the EDP to identify ED needs and to get them into the Technology Roadmap.

Becker moved on to discuss the FY09-10 schedule. SPC Consensus 0608-17 proposed a clockwise ship-track model for the SODV through the Pacific, assuming a start at Wilkes Land. This plan is based on the proposals at the OTF, plus those forwarded at the March 07 SPC meeting. The drilling schedule for the Chikyu is less clear (see PowerPoint slide). The MSP schedule will be determined after the March 07 SPC meeting.

Becker presented a slide of the March 2006 proposal rankings, which have been divided into two groups: red=identified for forwarding to the OTF for FY09-10 scheduling; and green=site survey issues need to be resolved before forwarding. He pointed out that 618-Full3 will require a MSP with riser drilling capability. Many of these proposals have ED issues and needs. Casing design for deep drilling is a particular issue that needs to be addressed.

Becker presented a PowerPoint slide with a list of proposals to be ranked at the March 2007 SPC meeting.

Flemings asked Becker if he was concerned that only 5 proposals have been newly forwarded by the SSEPs (522-Full5 has actually been seen by SPC before)

Becker pointed out that the SSEP deactivated a proposal for the first time. The proponents have been asked to submit a new proposal that will be subject to a new set of external reviews. This is the first time any proposal has been 'deactivated'.

Becker moved on to present highlights from the first SASEC meeting. SASEC has formed a working group to assess the SAS structure and this WG will report at the March 07 SASEC meeting. A new ISP is being developed for the 2nd 10-year phase of the IODP, post-2013. There will be a Geologic Hazards workshop scheduled for mid-July 2007.

Becker noted that the 2nd SASEC meeting addressed MI (Mission Implementation, see <http://www.iodp.org/missions>). SASEC approved the revised LIP workshop agenda. SASEC asked its SAS WG to poll the IODP community about suggestions for how SAS should be structured during Phase II of the IODP. Becker reviewed the PowerPoint slide on the SASEC WG on SAS.

Becker discussed the IODP proposal process (see PowerPoint slide).

Arai asked who or what panel would implement ED for a particular proposal?

Becker answered ED recommendations for ED originate with the EDP and go to the SPC with a request to develop a plan. This plan is submitted to IODP-MI, and RFPs are sent out.

Takemura asked for clarification on how MI proposals would be handled.

Becker answered that the component proposals for a MI are sent to the SSEPs. After review and ranking the SPC approves them for scheduling, which is the same for all other proposals. Mission teams will be given a time-line to develop an integrated proposal.

Von Herzen asked if MI proposals are a top-down type of development.

Becker answered that MIs are intended to be a bottom-up style of proposal development. The call for proposals is the same as for any other proposal.

Von Herzen asked if MIs are being developed to fill-in gaps left by ordinary proposals.

Becker stated, “I’ll come back to the MI proposals later.” He asked the EDP to respond to the SAS WG questionnaire. The WG thinks the EDP is functioning very well and is a good model for other panels. The STP could benefit from a similar approach.

Becker reviewed the 4 key questions from the SAS WG. He requested a response by 1/31/07.

Flemings asked to what degree is the advice given used by IODP-MI. Question 4 is particularly relevant to these concerns.

Flemings asked Becker to go back to the panel structure slide. He reiterated what Becker said—that the EDP is to help IODP-MI to develop an engineering plan and this can be executed if IODP-MI has a budget. But, how can the needed momentum be created to get the resources needed to achieve ED goals as set forth by the EDP, if a budget does not exist or is inadequate?

Becker stated the EDP should take a longer-term view. IODP-MI can incorporate ED needs into its annual program plan.

Flemings pointed out that at the August 06 SPC meeting, the SPC approved FY08 plans, but didn’t discuss the budget needed. The FY08 plans must be prioritized because funds are limited.

Becker noted the more justification for ED that we can provide, the better chance to succeed in getting funds from the lead agencies. For example, at the NSF, Jamie Allan looks for evidence of SAS approval.

Sears noted that in order to come up with a 2-5 year ED plan, we need more detail from the highly-ranked proposals. There are confidentiality issues, but getting sufficient detail is a major consideration. The quality of the EDP’s input is dependent on knowing what’s in the proposal pipeline.

Becker stated SAS did not ask the EDP for review of proposals at this meeting because in their judgment existing engineering capabilities are deemed adequate. The EDP needs to look at the objectives spelled out in the ISP. The weakest part of the ISP is the aspect of

implementation and this is what will be updated in the Phase II ISP by the SASEC. In order to get a sense of the ED needs, the EDP could read all the abstracts posted on the IODP website (<http://www.idop.org/active-proposals>).

Schultheiss asked if there was a need to bridge a gap with technologically risky and mature proposals that are perceived not to have a technology problem in order to achieve the drilling objectives. Should the SSEPs say there isn't ED needed?

Becker suggested sending liaisons to the SSEPs.

Evans noted there is some overlap between the STP and EDP—heave compensation, for example, is outside the domain of the STP, but would improve core quality and recovery, so better heave compensation would revolutionize what the STP can do.

Flemings re-emphasized that the EDP can get more pertinent information concerning drilling proposals by reading the abstracts on the IODP-MI website and by sending liaisons to the SSEPs to report back.

Myers stated that at the last SSEPs meeting, an overview of the EDP TR was presented. Word is getting out and a set of potential ED needs has been identified and the panels are becoming aware of them.

End of formal Becker presentation

5. SAS Activity Report (Appendix 4) by Eguchi

Eguchi reviewed the IODP proposal flow with a PowerPoint slide similar to that presented by Becker. SSEP Consensus 0611-05 indicated that the SSEPs want to have an EDP liaison. There have been 14 new drilling proposals submitted by the October 2006 deadline—7 in solid earth and 7 in environment sub-themes. There are 121 active proposals in the IODP SAS system. He showed pie-charts of the distribution of the active proposals by IODP members and by ISP themes. A Venn diagram showed very clearly the overlap among the platforms for joint operations in active drilling proposals. He mentioned the relatively new Scientific Drilling journal as a medium for providing program and expedition reports, technical developments, project progress reports, and workshop news.

Flemings noted that the EDP cannot hold its next meeting in May—too early—and June is not a possibility because of large numbers of annual board meetings in Japan. He proposed the first or second week of July as the next time period for the summer EDP meeting.

Eguchi stated having the EDP meeting in July poses no conflict with IODP-MI management.

Coffee break at 1007

Meeting resumed at 1028

6. IODP-MI Overview and Reports (Appendix 5) by Myers

Myers outlined the 5 major topics of his series of presentations:

- a. Summary of report to the SPC
- b. FY07 and FY08 projects
- c. Engineering development proposal process
- d. Engineering issues from ORTF
- e. Third party tool implementation guide

Myers listed two SPC Consensus items—borehole tool for deploying seismometers (SPC Consensus 0608-08) and a downpipe camera included in the FY08 engineering development plan (SPC Consensus 0608-19).

Myers described some ‘near-term engineering development foci’ he derived from the TR:

- a. Sampling, Logging, and Coring sub-theme – improving systems fundamental to IODP
- b. Drilling/Vessel sub-theme – understanding factors that control core quantity and quality
- c. Borehole Infrastructure – standardizing equipment, where possible, among platforms, observatories, and procedures

These are relatively straightforward tasks.

Current year projects include—the CDEX Long-Term Borehole Monitoring System (LTBMS), the ESO down-pipe camera feasibility study, the USIO LWC core barrels, and the USIO Pulsed Telemetry Module (PTM) feasibility study.

Myers reviewed the status of the CDEX LTBMS. All elements of the feasibility study were completed in FY06 (FY-1). The IODP-MI task force determined the CDEX LTBMS is feasible and that CDEX should do the work.

The ESO down-pipe camera is just a feasibility study, with no hardware acquisition or development. IODP-MI asked that this study occur quickly and wants the result by Q2 FY07. Two challenges identified so far include—cross-platform capability and 10,000 psi design pressure. Currently there is not a high pressure camera system available.

Flemings asked for clarification. In August 2006 at the SPC meeting, a FY08 engineering plan had to be put forth and a budget had to be developed. What is confusing is that Myers is reviewing the status of FY07 projects, but is also waiting for results from FY06 to fund projects for FY07.

Myers stated right now we're dealing with a cascade effect. I am also trying to build a case for FY08 engineering development projects.

Flemings stated the EDP hasn't seen anything formal on the down-pipe camera system. Funding has been set aside outside of the EDP's discussions.

Myers noted the ESO camera feasibility study will be completed by Q2 FY07 so that EDP can see the report by its July 2007 meeting.

Flemings stated we're still trying to sort out the ED project funding cycle. It is not streamlined yet. At the July 2007 EDP meeting we will forward ED ideas/priorities to IODP-MI for the FY+2 engineering plan. The finalized plan will come back to the EDP at its subsequent winter meeting. The EDP cannot change the plan, but comment on how compatible the ED plan is with EDP vision.

Ussler asked Myers if FY09 ED proposals will be presented to the EDP at its July 2007 meeting.

Myers answered yes.

Flemings stated the intended focus of that meeting will be FY+2 ED proposals.

Myers continued with discussion of the PTM. The PTM builds on the DSS and RMM and produces an integrated system to move data collected at the bit to the rig floor. There are a number of project challenges (summarized in *Appendix 5*). The primary problem is that the DSS and RMM have not acquired primary data from the intended environment of operation. Proposed scope of work extends to FY2010.

Based on the present status of the DSS-RMM, IODP-MI has recommended to the USIO to complete the FY07 feasibility study by Q2, successfully demonstrate operation of the DSS-RMM system at a test facility by end of Q2 FY07, and if successful, the USIO should generate a FY08 funding request for comprehensive testing, etc (see *Appendix 5*).

Nakata asked about the status of the EDP WG report on the PTM compiled by Sears. What was done with the report?

Myers answered the EDP has not made a strong recommendation of what to do. However, the reports provided sufficient information/justification to move forward with the PTM, but not to build right away. The DSS-RMM technologies are not yet proven or ready.

Flemings reiterated what happened during the 2nd EDP in Japan. The PTM proposal went out for electronic review by the EDP. Comments were compiled and presented by Flemings to the SPC. There was tepid support from the EDP. This led IODP-MI to step back and to work on the basic problems with the DSS-RMM.

Blum stated there is no chance that the USIO can generate a proposal for the PTM by the April 15th ED proposal deadline (see <http://www.iodp.org/eng-dev>). If everything falls into place with the testing of the DSS, we may be able to claim the DSS works and we potentially could forward a proposal. This still may not put aside EDP concerns.

Myers noted it is good to know where the USIO stands on the PTM. This indicates that the PTM will become a FY10, not a FY09 ED project.

Germaine stated it is not the EDP's responsibility to review the ED proposal, but the EDP should provide some criteria that should be met by that proposal.

Sears agreed with the tepid endorsement EDP gave for the PTM. The EDP should see the Q2 FY07 DSS test results at the July 2007 meeting, and then provide a recommendation as to proceed or not.

Alberty asked if the FY+2 requirement was perhaps too stringent for the PTM project.

Arai asked if the PTM was similar technology to that provided by Schlumberger?

Myers answered the integrated PTM-DSS-RMM is essentially a MWC system with a mud pulse to the surface. Industry does not have this type of device. The uniqueness is coring while making the measurements. The EDP has weighed in, and IODP-MI feels that the EDP does not need to see the PTM proposal again, unless there is a change in scope.

Alberty stated "No, that is not what the EDP is saying". There is a timing issue. The EDP does want to see the PTM proposal again.

Flemings stated when 3 out of 3 ED proposals (CDEX LTBMS; USIO LWC core barrels; and USIO PTM) are out of sync with the FY+2 planning/budget cycle, we need to think about how to address getting these 3 proposals on track better. Part of the job of the EDP is to weigh into the engineering development plan that goes to the SPC. The EDP needs to be a participant in those decisions and say something about the ED plan that is FY+2; it cannot step away from that responsibility. The IOs may be criticized by the EDP, but they need to make the case for projects and their timing. However, if IODP-MI makes decisions in the absence of EDP comment, then this is not a very functional system.

Von Herzen stated part of the reason for the tepid response is the lack of full participation of EDP members in the email review. These discussions and decisions should be made during a panel meeting, not by email. This does not guarantee a consensus.

Becker noted the EDP did not have a quorum of respondents to the 2 proposals, so the EDP recommendation may be invalid.

Sears stated it wasn't clear that the PTM should go forward. So, the EDP should comment again at its July 2007 meeting when more data is available. This will work for a FY09 ED proposal, but what should be done for FY08?

Myers stated it sounds like the USIO cannot provide a FY08 proposal in time.

Flemings commented that the EDP needs to view this as a process issue, not as a single proposal issue.

Blum stated the USIO can provide a proposal by April 15th, but it cannot meet successful completion of testing of the DSS by that time. The USIO can provide something in parallel, and move forward if Q2 testing is successful.

Flemings stated the USIO should look at FY09 to develop the technical foundation of the PTM. If IODP-MI receives negative comments from the EDP, then FY08 money should not be spent on the PTM. A deliverable from this 4th EDP meeting is comments on the current FY08 spending plan.

Myers pointed out that IODP-MI does not have FY08 money in hand for projects, the FY08 plan is still in the form of a request. IODP-MI will not get hard numbers until June or July 2007.

Becker noted that lead agencies have usually provided budget guidance to IODP-MI by late January of each year.

Oshima stated for NSF, early February is when the total budget is established.

Becker stated the final FY08 program plan is approved by SASEC during its summer (late June) meeting. Then the lead agencies approve the final program plan at the end of summer (~August).

Sears commented that he sees the disconnect in fiscal year funding. The EDP is commenting at this meeting on FY+2 ED projects. It doesn't make sense to shut down a project, but it's not obvious what to do with multiyear projects at this stage.

Myers commented multiyear projects are funded in annual blocks. However, projects need to be kept running smoothly, and it is unclear how to do this right now.

Blum commented from an USIO perspective, the long-term planning cycle is useful, but the shorter, finalizing cycle is more difficult to work with. The EDP should be involved in the process, but it is not clear how to make decisions. If only the FY+2 cycle is being considered, then the EDP is out of the loop; the FY+1 cycle may need to be included too.

Flemings noted that the EDP does not want to get involved in year-to-year monitoring of each ED project. The EDP does want to weigh-in at the feasibility stage, and separate on-going projects from new ED initiatives.

Myers went on to discuss the Engineering Task Force (ETF) model established by IODP-MI. The ETF will take advice from SAS and EDP. It is a small group of engineers who meet biannually and focuses on engineering project implementation. The first ETF had a number of observatory people, but the membership will rotate depending on the engineering needs. The ETF take the TR and put it into action. Becker was present at the first ETF meeting.

Flemings asked what is the difference between the ETF and the EDP?

Myers answered the EDP interprets the ISP and puts together a TR. Project proposals come in that address the ED needs of the TR; the EDP reviews these proposals and makes recommendations concerning implementation. The ETF imposes project controls on those proposals that are funded and functions as a project management group.

Flemings noted that with the CDEX LTBMS project, it ought to be reviewed by a qualified group. Is the ETF that group?

Tezuka stated the ETF addresses specific projects and membership changes according to the projects.

Von Herzen asked if the ETF will be making a yes/no decision.

Myers answered the ETF takes advice from the EDP, so the ETF is after a positive decision to support the ED effort.

Tezuka asked if the ETF is on a volunteer basis.

Myers answered primarily volunteers, but one person on the first ETF was paid to insure sufficient expertise was obtained. The ETF had to be put together quickly. Payment for services will not be a rule.

Schultheiss noted the ETF is a very important part of the ED process and has nicely separated boundaries with the EDP. EDP performs the review, and the ETF assists IODP-MI with the project management.

Myers commented that the ETF looks on a day-to-day time-scale, whereas the EDP looks at the big picture.

Thorogood asked if the composition of the ETF is based on the skills required by the projects.

Myers answered the ETF membership changes as projects come through, but it is not tailored to individual projects.

Goldberg noted that one issue that came up during an IO meeting was conflict of interest (COI).

Myers stated on the ETF, COI is dealt with by asking members to sign a non-disclosure agreement, but each member must make disclosure of their COI and excuse themselves from participation.

Myers continued his presentation by reviewing the IODP Engineering Webpage (<http://www.iodp.org/eng-dev>). This went on-line about 2 months ago, and he solicited comments on:

- a. IODP-MI engineering vision
- b. Engineering development proponents guides
- c. Proposal solicitations/Electronic submission
- d. Links to existing IODP technologies
- e. IODP technology roadmap
- f. Third Party tool page
- g. Monthly highlighted engineering developments

IODP-MI wants to stimulate unsolicited ED proposals. Myers reviewed individual webpages from the eng-dev site.

Flemings asked for comments on the engineering development website. It is clear that EDP members have had a significant impact already; it has established a foundation for IODP-MI to do its job; it is exciting to see this much attention placed on engineering; the next step is to go from vision to funding/implementation.

Thorogood commented that he has explored the website and found that the link to the Technology Roadmap was buried. He suggested moving it up front to the beginning of the eng-dev webpage.

Myers asked for feedback on how to repackage the TR. He plans to include a weblink to the minutes for EDP #3. He wants the EDP to come to a consensus as to the top 30 ED challenges. The TR is a long document that is difficult to navigate, and a condensed version would aid in communicating ED needs to the community.

Myers distributed copies of the Engineering Development brochure to members of the EDP. This was first circulated at Fall AGU in San Francisco.

End of formal presentation

7. Discussion of Technology Roadmap (Appendix 1) by Flemings

Flemings briefly reviewed the EDP #3 consensus items. He summarized the email proposal review of the PTM and CDEX LTBMS proposals. The EDP supported the concepts in both proposals, but the EDP had no proper basis to make any comments.

The first draft of the TR, now published on the IODP website is a work in progress. One challenge before us is identifying the common engineering challenges among the drilling platforms. The method that has been used to identify the ED challenges has been a ‘kitchen sink’ approach—any entries are welcome and it is not our intention to exclude anything. However, there are no funding criteria at this point, which will force prioritization of ED needs.

Flemings reviewed EDP Consensus 0606-07, which lists the top 10 unranked ED needs in each of the 3 sub-groups of the TR. IODP-MI has taken these ED needs as being ‘important’ and would like to receive proposals on these topics. The goal is to develop a portfolio of ED projects that span a range of cost and intensity.

Flemings asked the EDP to re-consider the TR. Are there major entries that need to be re-written? Are there new entries? Should anything be deleted or consolidated? Is there anything that has such a high priority that it needs to be elevated into the top 10 now?

End of formal presentation

Von Herzen noted that there is an equal number of ED challenges in each of the 3 sub-groups of the TR. Is this required? Could there be more than 10 in one sub-group, and less than 10 in another?

Flemings commented that an equal number of high priority items in each category is not required.

Germaine reminded the panel that we had made a conscious effort not to cross-evaluate each of the sub-groups.

Holloway commented that some projects are dependent on other projects and that we need to identify the dependency. We need to develop linkages and parallelism. Inter-dependency does not come out in the way the table is not structured.

Ended morning session at 1205.

Lunch.

Resumed meeting at 1305.

8. Engineering Development Process Implementation (Appendix 5) by Myers

Myers reviewed the draft form of the Engineering Development Process posted on the IODP website (www.iodp.org/eng-dev). Version 2 has been distributed to the EDP members. Myers reviewed the definition of Class A, B, and C projects.

Holloway asked if there was an inconsistency with regard to science support projects versus engineering development projects in the definition of the Class A, B, and C

projects. (editor's note: in version 2, Class A projects are titled 'Unsolicited Engineering Science Support Projects' and Class B projects are titled 'Unsolicited Engineering Development Projects').

Myers noted the distinction among the 3 classes is based only on total costs, not the focus of the projects. He noted that the 'science' terminology that Holloway commented about is a relict of past documentation. 'Science' should be removed from the project description.

Myers noted that Class C projects have not been discussed in SAS so far. The plan is that Class C proposals would be solicited by IODP-MI following consideration by SAS. A multi-page proposal will be required. All Class C proposals will be forwarded to EDP for review and advice. Class C proposals are the only proposals solicited by IODP-MI; Class A and B are un-solicited proposals.

Holloway asked if IODP-MI is going to initiate the call for Class C proposals.

Myers answered IODP-MI will lead the RFP writing process, but would also run the RFP through the EDP first. Is this desired by the EDP?

Myers reviewed his colorful flow diagrams (see *Appendix 5*) illustrating the flow and decision points in the flow of a proposal through the IODP structure.

Schultheiss asked if pre-proposals will be requested.

Myers noted that if a proposal is not aligned with the TR, it will not fly.

Sears asked if it is the intent for projects to be on hold until FY+2. That appears to be the consequence of the proposal flow and decision point timing.

Myers answered yes, a project has to wait until FY+2 funding and an engineering plan is formulated.

Alberty asked, for example, if Class A proposals are coming along that fill ED gaps in the TR, then how are these proposals worked into our TR? Myers comments that if a proposal is not aligned with the TR, it won't fly, but if there is an inadvertent gap in ED need not identified by the TR, then shouldn't the proposal be considered?

Myers commented that the current thinking is that ED proposals coming through would fit with the TR. Every project that comes through should map to the TR.

Thorogood commented that if a new idea comes in, then it redefines the TR.

Myers responded by saying the IODP-MI is trying to create a structure for accommodating ED proposals, but is not trying to inhibit creativity.

Flemings commented that Alberty's suggestion is that the EDP should see the suite (all) of proposals that come in by the April 15th deadline. Then the EDP can update the TR at its summer meeting.

Alberty noted that all the proposals should be available to the EDP. As IODP-MI processes the Class A proposals (these are not ordinarily seen by the EDP), how these match with the TR is of interest to the EDP, especially what doesn't map to the TR. When IODP-MI moves forward with Class A proposals, it is important that the EDP gets this information and compares it with the TR and makes updates as appropriate.

Holloway asked if the proponents will be asked to structure projects on a multi-year basis, or will they hedge? (Editor's note: the implication of Holloway's 'hedge' comment is that proponents may submit a 1 year proposal that does not cover the full development plan or costs, and try to extend the project year-by-year).

Myers commented that the IODP-MI program plan is always decided on a year-to-year basis. But, in reality, funds do get carried forward. IODP-MI will ask that a multi-year project be structured appropriately from the beginning. The ETF will be asked to review progress of projects. Watchdogs will be assigned to each project. It is not clear how multi-year projects will be shepherded through the proposal process. EDP can also assign a watchdog to each proposal that comes through the sorting process outlined in the flow diagrams.

Holloway asked when the second year comes up, who's contractually bound to shut down a project that is floundering. How is the contractor going to be compensated?

Myers responded that the details of contracts will have to be worked out.

Fukuhara asked if there is any requirement for the EDP to put thresholds or conditions on its recommendations at its summer meeting before a proposal is considered by the IODP-MI. If this is a large project, can key items be identified or flagged?

Myers responded by saying it's up to the EDP as to how to handle a proposal.

Schultheiss expressed concern about the inevitable delay unsolicited proposals will have with the proposed FY+2 timing. An ED need may be too important to wait until unsolicited proposals show up, and instead solicitation may be required for some important topics.

Myers agreed with Schultheiss' comments. There are ED needs identified in the TR that will not get proposals right away. This is why the Class C proposal category was developed.

Tezuka commented on an apparent inconsistency. The dollar-amount criteria appear to be based on an annual budget, but for multi-year projects, the total amount is important for making the Class distinction.

Myers noted the classification is based on the total amount of a multi-year project. However, when putting together the annual program plan, the cost for a particular budget-year is what is included and discussed.

Goldberg noted that the documentation says annual.

Myers acknowledged that this may be an error that will be corrected.

Von Herzen commented that it isn't clear how a feasibility study would be classified and would fit into the engineering development proposal structure.

Myers stated IODP-MI would ask for a separate proposal, just for a feasibility study.

Alberty commented that there are two paths for Class A proposals—seen by EDP, or not.

Myers responded by saying the path for Class A proposals depends on the degree of comfort IODP-MI has with making a decision without EDP input. If EDP advice is needed, then it will be requested. The intent is to make EDP aware of all ED proposals. For those that bypass EDP review, IODP-MI will inform EDP.

Sears asked that if a feasibility study is needed, that the EDP should not see it. IODP-MI should make the decision to fund a feasibility study independently. The EDP should see the results of the feasibility study.

Myers noted that the EDP could request a feasibility study at any time.

Sears noted that FY+2 funding recommendations will be made by the EDP at its summer meeting. But, is there some possibility of off-line, discretionary funding?

Myers stated SOC funding is a potential source, but this needs the blessing of the SAS.

Flemings commented, building on the comments of Von Herzen and Sears, there is a danger in migrating away from multi-year projects that can flow forward. It is not possible to predict, but it is conceivable that some multi-year proposals will continue to receive their funding year after year. There is a concern that the proposal flowpath will get locked into the year-by-year budget structure, and multi-year projects will be difficult to foster and allocate/commit future funds.

Thorogood commented that looking at the proposed ED proposal process from an industrial point-of-view, risk reduction is not part of the strategy. The US government funds risk reduction strategies, why shouldn't the IODP do the same? There ought to be a risk reduction phase in a project, otherwise high risk projects will not be proposed and the IODP will only get relatively low risk projects in their portfolio. The proposed proposal process doesn't fit well with my experience in industry. If the IODP is trying to be on the leading edge, then it needs to define mechanisms to make this work.

Sears agreed with Thorogood's comments. The EDP only meets twice a year, thus IODP-MI would have to decide where to put feasibility funding and studies.

Thorogood noted that a project life-cycle is what is important, not the EDP meeting/review cycle.

Alberty commented that the EDP could call for a feasibility study, and the product of the feasibility study is to come up with a proposal.

Myers stated IODP-MI does not have discretionary funds that could support this approach.

Thorogood responded by saying that the proponents would then have to partially fund the feasibility phase of a proposal/project.

Goldberg asked to return to an earlier point of discussion. Myers is trying to avoid the funding issue for good reason. What is more important is to get EDP feedback and update the TR. There could be other sources of funding, such as 'gap projects', and that there seems to be a 'leaky' valve with regard to POC monies. We need to know what the IOs and 3rd parties are doing.

Blum stated his support for IODP-MI to accommodate feasibility studies that take an initial idea and assess it. Then better planning can be made and the idea executed through the proposed proposal process. In many cases, a lot of planning does need to be done 'under the radar', thus it is important to recognize that proponents need funding to develop feasibility studies and proposal development. Background research is essential for developing a sound development plan.

Schultheiss commented that the IODP might benefit from the oil and gas industry experience in many ways. The EDP could encourage joint ventures. When thinking about attracting interest, cost and the time-line are important, but also the likelihood of funding. Is there any way to set aside engineering funds, such as SOC's?

Flemings answered "In answer to your question, it's never going to happen. The only way to get engineering investment is to defend it in the context of the scientific drilling goals."

Becker commented that he cannot speak for IODP-MI directly, because the SPC doesn't control SOC funds. However, it would be a good idea to have a pot of money for engineering development. But, the reality is that the IODP is struggling to meet the basic costs of the program.

Myers responded by saying a pot of funds would be useful. But, without a recommendation from the EDP, IODP-MI cannot go to the lead agencies and request such an accommodation. Support from the SAS is also needed, but fundamentally agree

with the need for creating a source of discretionary funds to support engineering developments.

Thorogood asked if the EDP shouldn't be making this suggestion.

Flemings responded by saying the EDP has to emphasize what ED is important. A portfolio of proposals creates the funding pressure.

Thorogood noted that the TR is the connectivity between the science plan and engineering requirements. If the IODP is looking at high-risk drilling projects, then the EDP needs to endorse support for risk reduction by front-end loading projects with ED support. From an industrial project management point-of-view, this front-end loading and risk mitigation is critical for the success of high-risk ventures.

Holloway asked how the IODP-MI would handle competing proposals.

Myers responded by saying that this was a good question. The ETF would be asked to assist with evaluating competing proposals, but if there is a COI, then that member would be excused. The IODP-MI would use the ETF to implement the proposal, provided the concept was endorsed by the EDP.

Goldberg asked for clarification of the competing proposal discussion. Could both proposals be presented to the SPC, and then on to the ETF?

Myers responded by saying that the IODP-MI plan is for procuring technology, but not from a particular vendor. If the proposals go before the SPC, IODP-MI could act on recommendations from the SPC.

Myers continued with his PowerPoint presentation. He identified 2 Class A projects currently scheduled for FY08 funding—the PTM and the down-pipe camera; Class B includes the LTBMS. There is no intent to solicit any Class C proposals at this time.

Von Herzen asked if all feasibility studies will be one year in duration?

Myers responded that most likely they would be 1 year, or possibly less (e.g., 6 months) because IODP-MI would want feedback fast, and would need to involve the EDP.

Flemings asked how the 3 Classes of proposals can be reconciled with the EDP ED vision. In reality, the two existing Class A projects are feasibility projects, and they may come back as Class A, or multi-year projects. This is an important issue. The intent at this point is for the EDP to review Class B proposals by the EDP only once.

Myers continued his presentation by discussing funding issues and scheduling. He showed a project management timeline (GAANT chart in *Appendix 5*). The black bars are a program plan cycle (1 year duration). Red diamonds are the EDP meetings; colored

bars are projects presently underway or planned. Grey diamonds are proposal submission deadlines (April 15th every year). Myers reviewed the active projects.

Myers noted that IODP-MI has already received 1 proposal for the April 15, 2007 ED proposal deadline (for FY+2 funding).

Ussler asked if salary was a possible line-item in a budget for Class A proposals. It was not explicitly listed on the cover sheet.

Myers responded by saying salary can be included in any proposal by any group of proponents, including the IOs. We want to have an even playing field. There is no restriction on salary and benefits.

Holloway asked if this policy puts industry at a disadvantage regarding salary.

Myers continued by saying the IODP-MI is casting a limited net right now for soliciting ED proposals—no newspaper or magazine ads, yet. The EDP could help spread the word that ED proposals are desired by IODP-MI.

Holloway asked about who will write an RFP for a Class C solicitation.

Myers replied that funding will come from IODP-MI to Myers to write the RFP solicitations. We may need the ETF to help fill-in with their expertise.

Pheasant questioned if IODP-MI does the technical solicitation, how is it linked back to the drilling platform.

Myers replied, for example, are you asking if a platform needs a heave compensator and the IOs aren't involved, how do you get buy-in? This depends on the nature of the technology. My job is to interface with the IOs and get buy-in early. The proponents will be kept in the loop and the IODP-MI will give the proponents feedback.

Holloway asked if there is a mechanism to spread funding across the 3 platforms.

Myers responded that it doesn't matter if an ED project is a single- or multi-platform development.

Flemings noted that the EDP is trying to highlight the important ED needs. There is only a certain amount of money available.

Holloway expressed concern that this may lead to selecting numerous smaller projects, and bias against large ones.

Sears made a few comments regarding Class B projects. If the EDP sees a project, then we have to assume that the concept stage has already been completed. The proposal the EDP sees needs to describe how the future work will be done. Right now it's not clear

how the EDP will be able to decide what's been completed and what is being proposed to be done once funding is in place.

Flemings recommended that Sears' comment be discussed in the breakout sessions.

End of formal presentation.

Flemings outlined five issues for the WGs to address during this meeting:

- a. IODP-MI proposal process—reconcile this with the EDP TR (Thorogood)
- b. Proposal evaluation process (Alberty)
- c. Drilling/Vessel TR sub-group (Takemura/Sears)
- d. Sampling/Coring/Logging TR sub-group (Fukukhara/Germaine)
- e. Borehole Infrastructure TR sub-group (Ussler/Person)

Flemings also asked the EDP to consider the questions regarding the SAS structure outlined by Becker.

Break at 1430

Resumed meeting at 1445, assembled working groups and met until 1730

Meeting was adjourned at 1730

Thursday, January 18, 2007

The meeting was called to order by Flemings at 8:36

10. CDEX Overview of FY 06 Activities (Appendix 6)

The Long Term Borehole Monitoring System overview was presented in considerable detail. The history of the design and review process was reviewed. Conceptual design is basically complete and the schedule is worked out to have the system ready for NanTroSieve installation as per the drilling schedule. Design requirements are basically driven by NanTroSieve scientific requirements for sensors and borehole depth. The design has been completed to the stage of a high level conceptual design for all components up to the interface to the sensors. The system essentially consists of a seafloor unit containing telemetry, communications, power, and storage which interfaces to borehole modules installed at preset elevations to interface to sensors. The modules contain data acquisition and communications necessary to operate the sensors. The panel was reminded that the sensors per se are the responsibility of the scientists and considered a third party component. Important considerations still remain involving the power supply, communications and power to the land based cable network, temperature range tolerance for borehole modules, installation configuration and deployment.

Questions: considerable discussion followed. The schedule was discussed to review the various phases. Availability of funds: The basic system is considered a SOC cost while the sensors will require scientist generated funding. Concerns were expressed relative to the temperature requirements for both the modules and the sensors. A/D conversion seems to be a major obstacle. Field systems are currently operating at about 70 °C but this is a long way from the 125 °C (at 3,500m) and 170 °C (at 6000m). This is especially disconcerting given the fact that life expectancy is log-log linear on a time-temperature plot. Fault tolerance did not appear to be covered in the conceptual design and should be covered in the engineering design phase; ground fault detection being one example. Battery life is an essential part of the system. Questions were discussed concerning the necessary maintenance and replacement cycle, and how this would be affected given the option of having a land based power source. Clearly many of these details will not become final until the communication and sensor configuration is resolved. One of the major design constraints for the downhole cable system comes from the limited penetrations through the Christmas tree. The current design is to make use of one cable for both power and communication and not to use fiber optics. Fiber optics were considered to be too unstable for this environment. Expected operation life is between 5 and 10 years for the system. This should be a long enough time to be useful to the science goals even in the absence of a major earthquake. Since there are no electrical components to date that can survive under the expected temperatures the current plan is to phase these in as available. There is still opportunity for installations in lower temperature environments. At present the 100 °C, 1-year barrier has not been broken. The Japanese have experience with 80 degrees and 5 years. Was consideration ever given to using an analog based system? This was considered but the digital was chosen due to the high frequency requirements of the seismic requirements. It was pointed out that the

design should include a service plan. Some discussion on the various components ensued. A/D conversion is a critical temperature sensitive component and sits in the gray zone between a “sensor” component and a “module” component. This really needs clarification especially given the fact that the sensor side is the scientist’s responsibility. There was concern over what devices would be included in the term telemetry. It seems to cover anything in the communication system between the modules and the seafloor unit. This is generally the case. Relative to this the telemetry system is considered to be a SOC cost and this is the case for all systems, not just this project. Packers, on the other hand, are part of the installation and considered a POC. The single coaxial cable will be encased in tubing for installation. The plan is definitely to have the system prototyped at a land site.

11. DSS and RMM System (Appendix 7) by Grigar

Kevin provided an overview of this year’s activity along with the background of the tool’s historical development. The following provides a summary of the ensuing discussion. The present plans are in place to test the system at the Schlumberger facility. This can provide up to 10,000 psi conditions, but can not simulate the cold temperatures. Other types of stress testing should be considered including shock testing (Lamont will soon have a facility) and drilling simulation (Terratec has a facility). These are especially important because the tools must withstand both the impact and vibration. It is hard to predict failure under these conditions and we want to avoid down time during a leg. Relative to the failures that have occurred in the past there was discussion as to the causes. Two of the causes were associated with design errors relative to o-ring seals. O-ring seals were identified as a perpetual problem for tools. The reason for the cracks in the induction housing has yet to be determined and is under investigation. This led to questions relative to the design process and checking requirements. The process of design needs to have a process in place whereby formal and routine checking is performed at various stages of the design process. It appears that this is not yet in place.

Pulse Telemetry Module (Appendix 8) by Grigar

Kevin presented background on the PTM. This system integrates with the DSS/RMM technology and the goal is to get this moving forward but things are interlocked with problems with the DSS/RMM. The following summarizes the discussion.

The schedule was reviewed in light of the optimistic expectations concerning the next stage of DSS/RMM testing. Basically these tools must work in order to justify the PTM development. Concerns were expressed that there is no contingency plan and more importantly no consideration of expanding the usefulness of the PTM by linking it to other tools. The situation is basically the same as one year ago. Consideration should be given to link the PTM to CDEX operations or the next MSP as a possible test bed. Finally, it was pointed out that the plan presented and request for funding are not compatible. The next reasonable test is to establish proof that the DSS/RMM system is operable and decouple this from the PTM.

Coffee break.

Logging While Coring (Appendix 8) by Grigar

Kevin returned to present the status and history of the LWC subsystem. The following paragraph summarizes the discussion.

The system configuration was chosen because it was a reasonable modification for Schlumberger existing technology. This largely constrained both the ID and OD of the tool. There was the possibility to make this modification and be compatible with the RCB system. The motivation was clearly to test the concept to see if it created a new science opportunity. In the future, this system could be used with other coring systems or redesigned to meet other size constraints. One of the driving factors is the battery pack. This system is different from other logging operations because it uses a different BHA and spaceouts. The tool has memory and is not used with any telemetry. This means the data are only available after tripping the drill string. What is the vision for such a tool? It is considered a special device and with current design will never become routine. A major change in the drilling industry would be required to make such a measurement routine, not because of tool cost but for data interpretation and technical support. Currently, further development of this tool is on hold and no funds are being requested for FY07.

CDEX-07 Borehole monitoring system (Appendix 10) by Kyo

A bit more of the background was covered along with a schematic of the system highlighting the major components and expected source of funding for each. The power needs were discussed for the two major scenarios; the system being connected to the land based network (expected to be on line in 2010) and completely autonomous. Both designs will require battery power but capacity is still unclear. Final system demand is still not fixed (design goals have been set) and land capacity is not yet specified. In any case, sufficient capacity will be needed for backup storage. If the system is land linked the current hope is to make use of the power and two way communication and eliminate the need for routine service visits. Obviously, there will be a need for some servicing over the design life (~ 10 years). The question of long term operation was discussed. Consideration must be given to the cost of daily monitoring if the system is land linked. Will this be JAMSTEC's responsibility? If the system is not linked who will be responsible for collecting the data? This has historically been the scientist's responsibility to secure funds for ROV deployment and service the subsea systems and has been a successful strategy. A related question is ownership of the data. This issue will soon be addressed by SPC. Details of deployment still seem vague. The subsea system will have about a 2400 m depth capacity. Deployment sequencing details have not yet been worked out and these must be integrated into the engineering design. It was widely recognized that this is essential to the design and some of these details may require more specific knowledge of the sensors. Relative to system cost, there seems to be some vagueness relative to responsibility for the telemetry system, the recording system and the batteries. It is not very clear where the boundaries exist between each.

How much redundancy is built into the subsea package? There is battery backup and parallel data storage, not clear about fault detection. Acoustic transmission is being considered and would provide opportunity for status reporting. The design schedule is compatible with the Chikyu schedule. On a side note, EDP is encouraged to comment and provide advice on all topics involving IODP but will only have definite impact on issues related to SOC funding.

Considering the range of pipe diameters available (9.5 to 7.5 inches) for the installation of the monitoring system, there will not be much flexibility in the installation plan. This will place more pressure on pre installation information gathering and interpretation. Given only two reduction steps in pipe diameter, CEDEX is investigating the possibility of using expandable pipe. The maximum distance between sensor modules is 2000m. The land test is planned to take place in an 800 m hole. Future design detailing is required for cement property specifications but this must be matched to rock properties as well as sensor and installation requirements. Parameters of concern are the stiffness, density, viscosity and setup time. Details also need to be worked out for sensor installation in a mudded hole and then cementing in place.

Third Party Tools (Appendix 9) by Grigar

Kevin reported that we currently have two third party tools: the APCT-3 which is the instrumented head for the APC and the new Cork Design for Juan de Fuca. It is clear that the APCT-3 has been a very positive experience and steps are in place to integrate the capability more fully into the system. This will require stocking of replacement parts, routine calibrations, and upgrades to the software. It was noted that this is the third generation of an effort initiated by Dick Von Herzen.

12. FY08 Technology Development Funding Plan (Appendix 5) by Myers

Greg presented one slide showing IODP-MI's perspective on FY08 funding for EDP feedback.

Discussion relative to the LTBMS encouraged moving forward with the engineering design. The panel appreciated the fact that IODP-MI followed suggestions to obtain a review of the high level design and that this review was positive. During the next phase of design, more consideration should be given to the linkage between shallow and deep water technology, especially related to implementation of drilling, casing and cementing. Temperature tolerance still remains an enabling obstacle. Finally, the next level of design should address long-term operation, maintenance, capture and storage of data.

There was discussion relative to the Down Pipe Camera system. EDP has not seen a proposal for this, but it is a Class A (<100K) project and we are only being asked for feedback. The proposal will only address the camera; the deployment system is not being considered. This item is in our road map, but is not part of the priority list. On the other hand, the camera is a high impact operational technology. It has proven value in the past, in particular relative to the MSP operation. Acoustic camera technology is not being

considered; the temperature range is being investigated. The system will operate through the pipe and must have clear water conditions.

Discussion relative to PTM (or rather DSS/RMM)

The DSS/RMM technology is being separated from the PTM development. IODP-MI is proposing to fund at a Class A project level the continued development of the DSS/RMM through further testing. General discussion was in favor of this option. Relative to the PTM, consideration should be given to a more extensive feasibility study including a more “systems wide” application of the PTM. This could provide useful technology for other tools and provide reasons to develop the technology decoupled from the success of the DSS/RMM. In addition, consideration should be given to the temperature range of the technology. Concern was expressed relative to dividing a “B” level project into several level “C” projects. This is not the intent of the system.

Lunch Break

Group Picture

13. Operations Review Task Force Report (Appendix 5) by Myers

Greg gave a summary of the ORTF report findings relative to issues of interest to EDP. Peter provided a short instruction to the panel to focus on possible gaps in the TR. It was noted that this report is biased toward the problems and does not provide the positive feedback that would be used to take items off of our ED needs list. This should be addressed in future reports. It was noted in particular that the active heave compensation worked well with CORK installations. No sea state details were provided. It was also noted that the report did not identify the rumored coring problems that were experienced on the Arctic Expedition. Greg’s report is attached to the minutes as *Appendix 5* and will be reviewed in detail when considering modification to the TR. The items in this report should be summarized in a table and linked to specific road map items. The importance of closing the loop with the advisory panel on road map items was again emphasized. This is true of the successes as well as the problems.

14. SPC Request to Provide Feedback

Bill presented the SPC Consensus 0608-08 that requested the EDP to evaluate a SSEP Recommendation (0605-04) for encouraging immediate development of a borehole tool to deploy seismometers as part of a dedicated subseafloor observatory. In general, the development of downhole deployment and servicing tools has already been identified as a specific goal in the draft IODP Technology Roadmap (C-24: Borehole re-entry and servicing systems). This request from the SPC sparked a long discussion, part of which focused on understanding the request. One perspective was that the request was specifically for development of downhole seismic sensor deployment technology while others felt it was a more general request concerning serviceability of all types of technology used in long term monitoring systems. Relative to serviceability, sentiment

was strong that long-term monitoring systems are expensive investments and should be designed as complete systems from the outset with a clear ability to service the downhole instrumentation and to have a surveillance and repair plan in place when appropriate for the specific experiment. To accomplish such a goal would be a major effort and should be considered a Class C Development Proposal undertaking.

Discussion continued and Germaine motioned to add a new road map item on seismic sensor deployment technology. Motion was seconded by Sears. Discussion followed with arguments both for and against. Clearly we have other specific items in the draft technology roadmap, but we do not want to arbitrarily react to external forces by writing specific development efforts into the technology roadmap. The role of the EDP is to identify long-term technology development needs; it is the responsibility of IODP-MI to use the technology roadmap for guidance in responding to specific needs and requests, and to enable the development of technology in concert with the scientific drilling program. At present the EDP has no knowledge of any drilling proposal, either approved or in review that would utilize the deployment technology identified in the SSEP Recommendation. The EDP was informed that an Ancillary Proposal Letter (APL), that may have utilized borehole seismic sensor deployment technology, had been recently withdrawn by the lead proponent from the proposal pool under consideration by the SSEPs. Discussion continued and Alberty called the question. Motion was defeated 6-8-2. Ussler volunteered to prepare a draft modification to C-24 that broadened and clarified the importance of having deployment and servicing systems developed for borehole observatories.

15. USIO SODV Update (Appendix 11) by Goldberg

The following summarizes the main points of discussion. Peter reviewed a memo that he prepared in early December (*Appendix 14*) with feedback from several EDP members. It is clear external forces have had a severe negative impact on the new vessel design. Given the financial situation, tradeoffs clearly were required. The situation presented to the panel was that two designs are in contention: one for a stretched vessel and one for a repackaged vessel. The stretched design is clearly preferable but may be too expensive. At this point in time, the latter option is more likely. The cost of time is a major driver and the decision to move forward cannot be delayed. Considerable concern was expressed by the panel over the fact that the repackaged option will not provide reasonable space for an ROV. This was a clear preference of the panel which had been expressed in previous meetings, yet was not implemented. Use of two detached van bays will not provide adequate space. The alternative option, which was to modify the ship later, is not considered viable. This will be extremely expensive and there does not appear to be much hope of getting such funding. The possibility of making a more minor modification in the lower deck area was a potential solution but would have to be done in connection with a specific drilling leg.

Discussion then turned to the topic of heave compensation. It has been clear all along that quality heave compensation is a critical technology concern. The current plan for only passive compensation is not ideal. There is an internal group looking at options

(apparently including downhole frames) but again time and cost are key drivers of the process and it is highly unlikely that any other solution will be implemented. That being the case, questions were raised concerning the robustness of the decision making process. It was reiterated that the change in the costs associated with external factors has forced changes and severely constrained the options.

Peter reviewed his 12/1/06 memo focusing on the request to re-evaluate priorities with respect to the repackaged vessel option. It was again pointed out that setting aside space for the ROV would require giving up too much. It was not a routine leg technology and there remains a future option if science has the requirement. It would still require raising a significant amount of money. Reduction or elimination of other items was discussed but the panel was reminded that the NSF proposal required that we keep what we have and add more to the technology. That is a major consideration and requires a broader view of the ship technology. For example, reducing costs in the analytical labs would be preferred as this could be added later. However, if this is done there are many who would argue that there has been no improvement in the ship's technology. Therefore, a balanced approach is necessary.

Regrading the ROV, there was more discussion on the decision making process related to information gathering. The question was asked whether there were any serious discussions with ROV operators so that the design team really understood what would be required for shipboard operation? The panel was assured that there were several face-to-face meetings on the topic. When pressed for details for an implementation plan to upgrade in the future, it was made clear that time simply does not permit this level of detailing. Several members were not pleased with the plan especially given the fact that ROV's have been used to 2,000 m in the past and now this is not a viable option. The question was whether there was any consideration given to an AUV. There was apparently no consideration given to this item. Flemings and Alberty formulated a consensus item (0701-04) on this issue.

Regrading the upgrade to the passive heave compensation, the panel asked what is being done to fine tune the system. The upgrade will include such things as replacement of worn parts, improving air flow during the stroke, re-plating some components to reduce friction. These incremental improvements will improve the system but it is not clear how well it will function in the end. Concern was expressed that a systematic study had not been conducted to provide technical information for decision making. There appears to be many opinions but no real factual data on system capabilities.

The VIT is being modified to upgrade the winch but not provide pan and tilt capability. This might be done at a later date.

Relative to having a future seafloor frame capability, it was stated that this will not be in the current upgrade but it is believed that a frame can be stored on the modified vessel if necessary.

COFFEE BREAK

16. Surveillance and Reliability (Appendix 13) by Sears

Following Steve's presentations there were several follow-up questions. The system as presented was very large, comprehensive and of obvious benefit. Is it possible to start out small and ramp up the effort? It is essential to focus on individual components rather than the entire system. That lends itself to implementing the technology one component at a time. To function effectively for a small scale limited budget operation, it is essential to have the plan in place and then implement on a project by project basis. It needs to be planned carefully so the investment is protected as the system grows. In the system Steve presented, the technology identified several systematic problems which were improved over time. These included design details of control pods, metal brittleness problems due to the cold temperature, and O-ring seal failures. The current system is more of a data base for decision making which is done by people. As the technology improves, it is anticipated that much of this decision making will be done automatically. Implementation is definitely possible within IODP. The first step is to design the measures that will be used to assess functionality of each component in the system. This would focus on engineering rather than science. One attractive feature of such a system is that it could also be used in conjunction with safety concerns.

Separate in two working groups

- a) Peter and John headed a group to work on the proposal process.
- b) Mark and Bill headed a group to work on a process to use in ranking technology development items in the road map.

EDP thanked Mark and BP for the wonderful meeting accommodations. Peter announced that tomorrow's session will be closed session

Meeting adjourned at 1700

Friday, January 19, 2007

The meeting was called to order by Flemings at 0843

Flemings proposed the following modifications to the meeting agenda:

- a. Alberty algorithm – a possible approach to ranking ED needs
- b. Meeting location in Japan
- c. Closed session- review status of the TR and this meeting's consensus items
- d. Open session
- e. Adjourn

Alberty presented the 'Alberty algorithm' which is a weighted ranking scheme that takes into account the priority of an ED need and the expertise of the individual. The test case for this algorithm will be selection of the next meeting location in Japan. There are 3 possible locations.

The algorithm includes: 1. The priority (P), ranked 1 (low), 2, or 3 (high); 2. The expertise (E), ranked (initially assigned 0 (no competency), 1, or 2 (highly competent)). The total score is computed from the sum of the product of P and E, divided by the sum of the E. This weighting allows different ED needs to be compared on an expertise-normalized basis.

A discussion ensued concerning whether the expertise scale should be 0, 1, and 2, or 1, 2, and 3. Peter reminded everyone that this is only one of the many possibilities and he encouraged everyone to propose alternatives. At present, the proposal is to apply the ranking separately in each of the three categories. It adds even more complication if we try to rank across categories, especially when one considers the level of personal expertise. There was also concern about assigning a 0 to low expertise. Other options are definitely possible but this is a personal selection and there is no requirement to ever assign a zero. Another possibility is to use a 3, 2, 1 system. For now we will proceed with the 2, 1, 0 expertise ranking system and test how well it works.

Alberty commented that it really doesn't matter mathematically, the results should be the same.

21. Select Next Meeting Location

Peter introduced the next topic and proposed that we use our new ranking system to provide feedback on the three potential meeting locations. Tezuka-san presented the three options Makuhari (JAPEx research center), Tokyo (JAPEx head office) and Sapporo (IODP-MI office). He provided an overview of the pros and cons. Items of discussion included, transportation, lodging, meeting facilities, dining. It was also agreed that the ultimate decision rests with the host and that we are simply providing some preferences at this point.

The Albery Algorithm was used to rank the three possible meeting locations. The ranking was conducted by having each person write on a piece of paper their expertise and ranking for each of the three sites. Peter collected the slips of paper and Bill and Jack input the data into Excel to do the calculation. This process took about 20 minutes. So one important outcome of the exercise is that we need to find a more efficient way to do the ranking.

The results Makuhari (2.29), Sapporo (2.06) and Tokyo (1.95) Our host will use this information as one of many factors that lead to a final location decision.

Peter thanked everyone for all the hard work and announced that he would like to move to closed session and we would not be conducting any more open business at this meeting. Jack motioned for closed session, Leon seconded, approved by consensus. The EDP went into closed session at 0942

The EDP came out of closed session at 1245.

Motion to adjourn meeting was approved by consensus at 1250.

Appendices Listing

- Appendix 1: Flemings – General; Agendum Item 1
- Appendix 2: Fourth EDP Meeting Agenda; Agendum Item 2
- Appendix 3: Becker – SCP Report; Agendum Item 4
- Appendix 4: Eguchi – Updates from IODP-MI; Agendum Item 5
- Appendix 5: Myers – Status of Engineering Developments; Agendum Item 13
- Appendix 6: Ito – LTBMS FY06 Update; Agendum Item 10
- Appendix 7: Grigar – DSS/PTM Update; Agendum Item 11a
- Appendix 8: Grigar – LWC Update; Agendum Item 11
- Appendix 9: Grigar – Third Party Tools; Agendum Item 11d
- Appendix 10: Kyo – LTBMS FY07 Update; Agendum Item 11
- Appendix 11: Goldberg – USIO/SODV Update; Agendum Item 15
- Appendix 12: Pheasant – ESO Downhole Camera; Agendum Item 11c
- Appendix 13: Sears – Reliability Engineering; Agendum Item 16
- Appendix 14: Flemings – Memo from EDP SODV Committee; Agendum Item 15b

Draft Minutes

Fifth Meeting of the Engineering Development Panel (EDP)
of the IODP

July 9-11, 2007

Tokyo, Japan

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**IODP Engineering Development Panel
5th Meeting, 9-11 July 2007
Tokyo, Japan**

Members and Guests

Engineering Development Panel – EDP Members

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Asanuma, Hiroshi	Japan	asanuma_at_ni2.kankyo.tohoku.ac.jp	observer
Becker, Keir	SPC	kbecker_at_rsmas.miami.edu	attending
Eguchi, Nobuhisa	IODP-MI	science_at_iodp-mi-sapporo.org	attending
Grigar, Kevin	USIO	grigar_at_iodp.tamu.edu	attending
Higuchi, Kazutaka	CDEX		only first day
Ito, Hisao	CDEX	hisaoito_at_jamstec.go.jp	attending
Janecek, Tom	IODP-MI	tjanecek_at_iodp.org	attending
Katou, Kazumasa	CDEX		attending

Kinoshita, Masataka	JAMSTEC		attending
Kyo, Masanori	CDEX	kyom_at_jamstec.go.jp	attending
Meissner, Eric	USIO	meissner_at_ldeo.columbia.edu	attending
Miyazaki, Eigo	CDEX		attending
Myers, Gregory J.	IODP-MI	GMyers_at_iodp.org	attending
Nanba, Yasuhiro	CDEX		attending
Okada, Makoto	STP	okada_at_mx.ibaraki.ac.jp	attending
Oskvig, Kelly	IODP-MI	koskvig_at_iodp.org	attending
Ozaki, Masahiko	CDEX		attending
Totani, Yoko	MEXT		only first day
Wada, Kazuyasu	CDEX		attending
Umezu, Keita	AESTO		Host
Masuda, Yui	AESTO		Host

**IODP Engineering Development Panel
5th Meeting, 9-11 July 2007
Tokyo, Japan**

EXECUTIVE SUMMARY

Overview

EDP Meeting #5 was held in Tokyo, Japan. It was hosted by JAPEx Petroleum and AESTO in JAPEx's offices adjacent to Tokyo Station. It was a superbly organized meeting and we thank the hosts.

During EDP Meeting #5, we completed our two primary goals. First, we revised the EDP Technology Roadmap and second we reviewed four IODP Technology Development Proposals. It was exciting for EDP members to see progress being made toward achieving important technology development for the IODP. EDP and IODP-MI now have a process in place to inspire and nurture technology development to better achieve the science goals of the IODP.

EDP Recommendations, Consensus Statements and Action Items

The EDP forwards the following recommendations, consensus statements, and action items to the SPC or the IODP-MI as appropriate.

EDP Consensus 0707-01: Approval of Agenda

The EDP approves the agenda for EDP Meeting #5.

EDP Consensus 0707-02: Approval of EDP Meeting #4 Minutes

The EDP approves the minutes from EDP Meeting #4.

EDP Consensus 0707-03: EDP SSEPS Liaison

One important way that EDP can learn of engineering development needs is through interaction at the SSEP meetings. In addition, EDP can provide to SSEP important insight regarding the state of engineering development and current engineering capabilities in the IODP. EDP requests SPC modify EDP's Terms of Reference as follows:

Current wording: "The EDP chair shall be liaison to the SPC, with vice-chair as alternate. The SPC chair shall be a liaison to the EDP, with the SPC vice-chair as alternate. A science coordinator from the IODP-MI Sapporo Office shall attend each EDP meeting. Representatives from the IOs shall also be invited to attend the meetings."

Revised wording: "The EDP chair shall be liaison to the SPC, with vice-chair as alternate. The SPC chair shall be a liaison to the EDP, with the SPC vice-chair as alternate. A representative from IODP-MI shall attend each EDP meeting. Representatives from the IOs shall also be invited to attend the meetings. EDP will send a liaison to SSEP meetings."

EDP Consensus 0707-04: High Priority Engineering Developments

EDP, in closed session, discussed and debated the merits of each of the Engineering development items in the Roadmap. The EDP has formulated a list of about 10 unranked items in each of the three sub-groups (1) Sampling, Logging, Coring; 2) Drilling, Vessel Infrastructure, 3) Borehole Infrastructure) that are of high priority (Table 1.0, below). *No effort* has been made to establish relative priorities between sub-groups. EDP will continue to discuss the relative merit of every item in the Roadmap and it is expected that priorities will evolve over time.

Table 1.0: Unranked list of engineering developments that were deemed 'higher priority' by EDP at its July 2007 panel meeting. Refer to Technology Roadmap 2.0 for details of each engineering development. (will be replaced with top 11 from A, top 10 from B and top 10 from C.

A1) Thin Walled Geotechnical Sampler	B3) Heave Compensation	C1) High temperature electronics, sensors, and sensor systems
A2) Cone Penetrometer/Remote Vane	B5) Seabed Frame	C4) Hydrologic Isolation
A4) Hard rock re-entry system (HRRS)	B8) Improved Automatic Driller	C5) Realiable wellhead hanger seals
A11) Rotary sidewall coring	B9) Drilling Parameter Acquisition while coring	C6) Electric, optical fiber and fluid feed-throughs at wellheads and in subsurface casing completions
A12) Provide core orientation on standard coring tools - Structural Orientation of Hard Rock Cores	B10) Real Time Drilling Parameter Acquisition while coring	C9) Physical coupling of acoustic instruments to formations and decoupling from noise sources
A13) Seabed coring devices	B14) Electric/Optical Wireline	C14) Systems reliability for LTMS
A16) Pressure coring systems (PTCS, PCS, FPC, HRC, etc.)	B19) Protocol for Proper Mud Design	C15) ROV-serviceable wellheads and submarine cable connections
A17) Pressurized Sample Transfer (autoclave)	B21) 4000 m class riser system	C17) Design standards for electrical, communications, mechanical, and fluid systems
A21) Anti-contamination system (gell core barrel)	B22) 4000 m class BOP	C18) Deployment procedures/soft-landing for borehole infrastructure and instruments
A23) Fluid samplers, temperature, and pressure measurement tools	B27) Drill pipe for ultra deep ocean drilling	C19) Managing borehole experiments
A24) Transition corers		

EDP Consensus 0707-05: EDP Technology Roadmap 2.0

EDP Technology Roadmap 2.0 will be recorded as an appendix to the EDP Meeting Minutes. This document is released as a public document. It is a second draft and it is a work in progress. EDP will continue to refine the EDP Technology Roadmap in future EDP meetings.

EDP Consensus 0707-06: IODP-MI Coring Study

EDP Supports the IODP-MI proposed coring study.

EDP Consensus 0707-07: Scoping Studies

EDP recognizes that there are many entries in the technology roadmap that address related technology challenges (Table 2). EDP recommends that IODP-MI carry out ‘analysis of options’ studies to prioritize alternative approaches. In future meetings EDP will recommend specific studies.

EDP Consensus 0707-08: Location/Time EDP Meeting #6

EDP proposes EDP Meeting #6 be held in France (Paris and Nice have been proposed as possible locations) from January 9-11, 2008 (Wednesday-Friday). The meeting will be hosted by Roland Person. EDP proposes EDP Meeting #7 be held in the United States July 14-16, 2008 (Monday-Wednesday). Washington D.C. and Monterey have been proposed as possible locations.

**IODP Engineering Development Panel
5th Meeting, 9-11 July 2007
Tokyo, Japan**

MINUTES

Monday, July 9, 2007

In these minutes, the Recommendations, Consensus Statements, and Action Items are not repeated in detail. Please refer to the Executive Summary for the full text of each, as indicated.

The meeting started with an introduction and review of Robert's Rules.

Agendum Item 1: Approve Agenda (by Flemings)

Consensus approval of agenda with no comments or alterations.

Agendum Item 2: Approve EDP Meeting #4 Minutes

Consensus approval of minutes from EDP Meeting Number 4.

Agendum Item 3: Quorum Discussion

Quorum for voting members is eleven. Sixteen members were present. No attendees were planning to leave before 3pm on Wednesday, so a quorum should be maintained.

Agendum Item 4: Next Meeting and Time: preliminary discussion

Meeting No 6 in Europe. Monday 14-16th January. Roland Person proposes a meeting in Paris either Total office, Ifremer Research HQ or else Nice. Possible clash with SASEC meeting.

Meeting No 7 in USA 16-18th June suggested, some concerns. 23rd – 25th June suggested as alternative. Monterey Bay or Washington possible locations, but there may be issues with hotel costs in California. This could clash with some Japanese stock-holder meeting. Probably reconsider for July 2008 instead.

Agendum Item 5: Summary of EDP Meeting #4 (Flemings)

The consensus items from the 4th meeting were reviewed with some items discussed as a reminder to existing and briefing for new members. The roadmap will be released after this meeting as a public document.

There was discussion over the disappointment on lack of ROV on the new SODV. This is a problem of needing external funding due to internal funding constraints. It can be done with minor modifications, either installed on the vessel or else a separate ROV vessel. The installation would require removal of pipe normally stored on the SODV decks reduced from 7-8000m to 4-5000m WD.

The meeting endorsed the EDP technology development process. Highlighted a request for tools unique to weighted mud operations and also overpressure prediction and detection. The meeting supported the CDEX monitoring program proposal. Reviewed the history and future plans for the DSS project and vendor selection and its relationship with the pulsed telemetry module. The lack of information on the ESO down pipe camera was noted.

Agendum Item 6: SPC Report (Becker/Flemings)

This reports on two Science Advisory Structure Executive Committee (SASEC) meetings. Major issues have arisen over budget shortfalls. There have been three meetings of the operations task force (OTF) and two major schedule adjustments. A lot of activities have happened since the January 2007 EDP meeting.

Keir reviewed the summary FY07-09 schedule as of August 2006. During January the budget was reduced and SODV start date postponed to Jan 2008. SPC approved minor changes to Chikyu. The SODV schedule revised in March was reviewed with a couple of the key high-cost operations being dropped. This appeared to be the best compromise of science objectives against budget.

At the June meeting, a combined Japanese fishing ban on NTS operations and shipyard slippage led to a re-alignment of the plan. There was also some swapping of riserless work from SODV to Chikyu. NTS riser work may be deferred and some additional work may be possible during the transit to the southern oceans. Some non-IODP operations might be inserted into the Chikyu program. Neither CDEX nor USIO have funds for full year operation of either vessel so there will be a period with segments of non-IODP funded operations of the vessels: industry, non-IODP countries. The USIO and NSF are looking at the practicalities of how non-IODP entities will access and use the vessel. Quite a lot of administrative hurdles have to be overcome. Future budgets may limit to eight months for simple expeditions or six months of costly ones.

Then, more recently the vessel for the NJ sea level MSP has been slipped into mid-2008 and the Gt Barrier Reef MSP slipped into 2009. The gap between the two MSP operations is a simple matter of organizational capability.

SPC March meeting reviewed 18 proposals. 1 was for a riser, 3 were MSP, the remainder riserless. Three were excluded. Of the remaining 15, the top 9 rankings were quite close 5.59 to 7.29 with substantially overlapping standard deviations, reflecting significant differences of opinion. Due to the budget constraints, the first 9 were to be reviewed in August for developing into options for FY09 and beyond. The group 2 proposals (10-12) were to be re-ranked if not scheduled in FY 09/10.

The SPC view of the June meeting would be to farm the vessel out to create savings for more complex operations in FY10. Meanwhile, only simple expeditions should be undertaken FY 08-09.

CDEX 14months per two years, USIO projects 7-9 months/yr. Options involve: stacked, farm-out or co-funded. MSP operations are very expensive at the moment. The situation is difficult but science principles are paramount. Rigorous science review is even more important and more selective.

Imminent August review: the forward review will be divided into three groups.

1. Half require observatories, few of which seem possible before “renewal”.
2. Two are four major riser programs which SPC will review.
3. Two of the three MSP programs at OTF are very expensive.

The few remaining riserless programs are simple and relatively low cost. It is not possible simply to cancel MSP projects to fund the SODV/Chikyu platforms

Agendum Item 7: SASEC Working Group Recommendations (Becker)

Highlights of the SASEC March meeting included

- SASEC endorsed IODP-MI to explore alternative industrial use of platforms so long as the scientific integrity of the program is preserved.
- Reviewed seven proposals for workshops and prioritized for available funding (one workshop).

Highlights of the June Meeting:

- Unable to issue formal approval of the FY08 program.
- Planned to reaffirm the basic ISP themes but focus on selected subjects through phase 2.
- SASEC endorsed two proposals: complete farm-out of a hybrid model via a Complementary Project Proposal.

SASEC formed a working group to review SAS in IODP proposal process. After the budgetary shortfall came to light SASEC asked the WG to look at potential for cost savings. The WG perspective and interim recommendations honor the role of SAS in ISP. They confirm a proposal driven process.

Panel sizes and terms of membership were considered. Smaller core memberships augmented by expert advice. A possible reduction of US and Japanese members was suggested, but not ECORD. A reduction in meeting frequencies could be considered. There is no absolute mandate for twice-yearly panel meetings. An addendum to the WG report explored four further scenarios.

One scenario was of no further funding of engineering development. A suggestion was to combine STP/EDP, keeping two panels but restricting them to one meeting. There would be a further consultation with SAS. EDP might need to think ahead to consider how to operate at a reduced level. Engineering Development was one of the six implementation principles of the IODP ISP

The uncertainty is likely to continue over the next few months (Janecek). If the budget shortfall gets worse, SASEC may look at a further workgroup to consider additional savings.

Agendum Item 8: STP Report (Makoto Okada-10 minutes)

Latest STP meeting held in SF 7-9 Dec. It generated 1 recommendation, 24 consensus statements and 10 action items. Key consensus items were:

- ESO temperature tool, upgrade to an absolute accuracy of 0.01 degC and resolution of 0.001 degC before the New Jersey expedition.
- STP mandate, structure and format: suggested no change to the mandate but to continue with the three working groups. The two meeting/yr plan would allow one to be related to immediate issues and other for longer term planning matters.
- Operations review task force: STP will be involved in reviewing scientific technology aspects of programs.

The next meeting will be in Beijing in August.

Agendum Item 9: SSEP Report (Bill Ussler-10 minutes)

The SSEP panel reviewed the EDP mandate and major EDP activities in terms of the road map and the proposal review process. Tables 1 and 2 of the roadmap were reviewed and the types of engineering.

SSEP consensus on difficult drilling, and their request for EDP participation. The various factors associated with difficult drilling were reviewed:

1. Lithological: fractured basalts, chalks with hard fragments and hard-soft interlayers, including coring control. Future voyages will require the reduced core quality resulting from these features to be eliminated.
2. Thermal: high temperature conditions for equipment.
3. Fluid Overpressures: unconsolidated sediments making it difficult to get measurements.
4. Active tectonics: active faulting.
5. Contamination: getting pristine gas and water sampling due to drilling contamination as well as microbiological issues.

SSEP had to deal with 35 proposals, including 3 missions. Missions are integrated and coordinated drilling strategy, from the scientific community, a significant aspect of the IODP science plan and merits urgent promotion to meet IODP goals.

The key technical issues associated with this group of proposals. This was a perspective not previously considered by SSEP and, by beginning it early, it could improve deliverability of future programs. The Technical Roadmap does anticipate a good number of the problems identified by the SSEP program. Key issues are:

- Improved core recovery.
- Drilling into coral reefs.

- Hard rock paleo-magnetic remnance.
- Some of the holes are 7200m into basement.
- Observatory development shows up.

These are issues that are appearing a long time before EDP would normally see them. The major issue is still around heave: maintaining controlled weight on bit with improved compensation, seabed frame/template, bumper subs, motor driven core barrels, portable remotely operated drilling (PROD) is a commercial development. Two of these systems are under development: one a wireline and the other drillstring. There is also a German remote drill under development but no further information in the meeting.

As far as liaisons, it was very informative to be at the SSEP meeting and SSEP thought it would be of benefit to their future meetings. Early communications between the two groups may be of considerable value to proponents of future technologies to moderate future proposals. To review the engineering needs of these projects: run engineering developments in parallel with the scientific program, hence set long term engineering objectives.

Bill felt that it was very useful to be at the meeting and to be able to read all the confidential proposals as it enabled a much more informed review of the work than would have been possible with the information on the website. Although Bill had prepared the technology summary table, it may be that there is some overlap with the work that Greg Myers and Kelly Oskvig does.

To formalize the idea of a liaison would require a change to the EDP's terms of reference and the expenses would have to agree with the national bodies.

Agendum Item 10: Ranking Procedure (Ussler)

Bill reviewed the methods used in the past for prioritization of roadmap and proposals. At the 3rd meeting in Germany, they had three sub-groups and ranked separately. The top ten were identified in each subgroup. Votes counted H, M, L and produced a simple list. The Alberty Algorithm retained the three subgroups but ranking was weighted by expertise.

Questions for this meeting

- Maintain three separate subgroups or combine them?
- Take account of budgetary considerations.
- Consider riskiness in the proposal.

Some thoughts about time to do the development rather than cost. Steve Sears suggested that we had the roadmap and the proposal evaluation process. He questioned whether there was any value in the ranking process. Bill Ussler suggested that the EDP priority setting was not consistent with the overall science objectives. The prioritization might occur at a different level.

Tom Janacek stated that this provides a framework for getting proposals into the system. EDP can advise on cost, risk and feasibility. JLT agreed that we do not need to rank, simply advice on cost, risk, schedule and feasibility to ensure that planners of the science program can make properly informed decisions about future projects. By simply providing good information, EDP can help the program reach better decisions. This should be recognized in the process.

Agendum Item 11: Nankai Downhole Measurements Plan (M. Kinoshita-20 minutes)

This was an update on what is going on in JAMSTEC and might be considered as a case study of the technology roadmap in action. The drilling will start in September 2007. The plan is to drill a 3 km deep well to measure slips along three faults. It is planned to have shallow boreholes and seabed stations to create a real-time three dimensional monitoring system. There is a lot of technology development lead time for this project. The shallow hole is expected to be up to 100 degC with up to 170 degC for the deeper well. Measurements include: seismic deformation and strain, seismic activity and the hydrogeological properties of the formations. Studies are being carried out to determine the technological capabilities of the various sensors: tilt (10 microRad) 10 micro-strain. These will require a phased approach. The first well will incorporate ACORK behind casing pore pressure measurement. Deeper down will be a cemented in strain and seismic sensor. The proposed sensor distribution along the NT2-3 riser observatory well was described

The major technical challenges were described as:

- Monitoring at multiple intervals. Due to the expense of a single well, then the holes have to be equipped with multiple sensors. Requires behind casing monitoring technology due to feed through the wellhead, the multiple packer / clamping requirements will be difficult to satisfy.
- High temperature: initial goals are 100 degC and then leading up to 170 degC.
- Data transfer, power supply.
- Coupling to the formation.
- Shocks applied to the sensors during deployment.
- Vertical drilling and coring at the sampled interval, current instruments restricted to 3 degs maximum.
- Is there a simpler way of deploying in much shallower holes, possibly by jetting in?

There followed some considerable detailed discussion on the difficulties of multi-stage cementing to aid deployment of the external casing instrumentation. The bottom hole temperature for the second well is based on very simple basin temperature modeling. Drilling the fault will be highly problematic both due to loss of circulation and wellbore breakout.

JPFY2007 development plan:

- NT2-3 riser hole

- Land test of clamping system
- NT3 non-riser hole observatory.

Agendum Item 12: Technology Roadmap—Session 1:

a) Status of Roadmap (all)

Peter introduced the status of the roadmap by reminding the panel of its mandate and the purpose and scope of the roadmap, including its special attributes of being based on science goals. Proposals are assessed for cost, risk and deliverability. This is done to motivate engineering in all aspects of the program, to stimulate proposals, identify common challenges, priorities and stimulate cross communication between programs. The challenges will evolve with time. Some engineering development solutions have been identified as possible solutions. Proposals can range from innovation to increment, expensive to cheap.

By way of an example, consider data acquisition while coring. The major messages were:

- better coring tools
- drillstring g stabilization
- better coring

The idea of building a roadmap was to generate proposals. Build the roadmap and the proposals will come. The task now is to review and make additions, discuss prioritization, examine tables, agree on release of the revised roadmap with some top ranked items in each category.

Roadmap breakout group leaders

- Borehole infrastructure: Ussler
- Drilling/vessel infrastructure: Sears
- Sampling/Logging/Coring: Fukuhara

The idea would be to spend Tuesday summarizing changes, list high priorities and then spend Wednesday on grouping priorities.

Nakata's comments on the Roadmap in relation to the pathways to ED solutions:

1. There needs to be something drilling operations to counteract instability due to the stress field. Is this in the drilling or other categories?
2. Accurate estimation of downhole temperature: how is this done during planning? The prediction is critical for correctly de-risking the design of the well. How is it done during drilling? There are significant rig time delays involved in accurate temperature measurement while drilling.

b) Working Groups- Technology Roadmap (working group)

c) Reconvene: status and plans. (all).

Agendum Item 16: Operator Reports

a) CDEX

i. Current F.Y. ED Projects: LTBMS -Mr.Kyo (15 min)

Progress since last EDP meeting. The long term program has the opportunity to deploy long term borehole monitoring system in 2011. Sub-systems are being developed in parallel for systems test in 2009.

The plans for the shallow borehole were described together the sensor arrays required for the three major fault zones. Details of completion design activities were described to ensure the correct completion of the wells. Significant engineering requirements will be involved to make the telemetry system to work before full system integration tests can be carried out.

ii. Shimokita Syst. Integration Test-Mr. Miyazaki(10min)

The SITS were carried out last year coincident with the first riser drilling campaign. Five items were covered: coring, casing & cementing, riser & BOP, emergency disconnect and wireline operations. More shake down operations were continued in Kenya. Two emergency disconnects were carried out. One for trial and the other due to heavy weather: 50kts wind and up to 12m heave. Some parts of the system were damaged. This led to suspension of the well.

iii. Improved downhole drilling system for mud circulation-Mr. Higuchi(10min)

The main features and advantages of riser drilling were described: borehole stability, deep penetration, well control, more logging options and better core recovery. Core line wiper testing system is to be tested during 2007. It is expected to result in a diminished frequency for replacing the coring line. They're using industry equipment and casing sizes to get experience in the technology.

iv. Detection/prediction technique for pore pressure in fault zone-Mr.Higuchi(10min)

Riser drilling enables a lot more casing strings to be set. Objectives include borehole stability and pressure protection. Pressure prediction is complicated in NTS, first in splayed fault system. No offset wells and high understand horizontal stress. They had a number of studies beforehand, using Eaton's method based on interval transit time. Stress and borehole instability prediction is also being studied with Kyoto University. They are getting up to speed on various standard pressure detection methods while drilling. Developing skills, the stage 1 data is very valuable. Careful observation of the hole is important to the learning process.

The talk revealed a lot of progress and solid development and learning. There might be benefit from engaging a specialist pore pressure consultancy to advise on adequacy of methods.

v. Coring System, including Gel Core-Mr.Wada (15min)

They are looking at methods to improve on the present ODP RCB coring systems by modifying inner barrel and also a small diameter RCB for 8 ½" bit. They're working on a modified tool for NTS for high temperature resistance, 150 degC operations involving conversion of Al liner and changing of a Viton seal. New RCB PDC bit designed to maximize core recovery.

They are considering future coring systems to eliminate biological and chemical contamination from the drilling mud while drilling and tripping. This will be done through use of a gel coating system. They have a land based test facility to check their work on contamination prevention. The barrel is not presently RCB compatible.

vi. 3rd Party Tool Report-Mr.Ito (10min)

Mai Lin Doan HTPF tool proposal: hydraulic tests of pre-existing fractures. Present methods are XLOT (Sh), density (Sv), breakout or core measurements (stress ration, direction). All based on the assumption that one of the principal stresses is vertical hence describing the tensor with three parameters. However, the method attempts to derive the tensor for more sophisticated interpretation of available data. The system is designed to detect natural fractures and then straddle them before taking a measurement. Current interpretation methods cannot yield enough data to get the full tensor. However, the investigators have very good experimental data from the Paris basin to support their method. Further evaluation by a NTS scientist is required. There is an operational issue involved concerning the safe use of the tool in open hole. Is any other proven tool available?

Tuesday, July 10, 2007

Meeting was convened at 0830. Minutes taken by Bill Ussler.

Flemings – discussed future EDP meeting dates.

EDP #6 – Paris or Nice, January 9-11, 2008; Roland Person host.

EDP #7 – Monterey, CA or Washington, DC, July 14-16, 2008; Bill Ussler host.

A consensus was obtained on these meetings dates and proposed venue.

Flemings discussed slight modifications to the timing of meeting agenda items, and this was accepted by consensus.

Flemings reviewed the goal of the three Technology Roadmap working groups. He asked the panel to consider how to address TR Section 3.1, technology challenges, in light of the higher level issues faced by the IODP.

Flemings – discussed conflict of interest issues.

Flemings reviewed the COI statement. The EDP policy is a slight modification of that used by the SSEPs. Any COI is to be announced and documented in the meeting minutes. All potential COI are to be declared at either the start of the meeting, or at other appropriate times. With respect to the EDP, specific COI occurs when a panel member is a proponent of an active proposal. Proponents may participate in the discussion of all other proposals, including serving as watchdogs on other proposals. Institutional COI is common, and participation in discussion and ranking of proposals is acceptable unless the situation prevents the panel member from rendering an impartial assessment. If in doubt, inform the chair or co-chair of EDP.

Von Herzen asked how a conflicted panel member would participate in ranking exercises. Becker suggested that all conflicted proponents should be absent during proposal ranking.

There was a brief discussion of how to rank ED proposals. SSEP uses a five star ranking. Flemings pointed out that we would need a clear definition of each rank. Discussion of the ranking to be used was tabled.

Potential conflicts of interest were declared at this time.

- a. Flemings – proponent for the MDHDS.
- b. Becker – S-CORK proponent.
- c. Ussler – SCIMPI proponent.
- d. Grigar – working on the MDPDS.

Flemings reminded everyone of the confidentiality of the proposals. He reviewed the procedure for the review process and the content of the panel review. Notes from

discussion of each proposal do not go into the formal minutes for reasons of confidentiality.

Myers gave a presentation on the proposal process and then presented a PowerPoint presentation for each of the four engineering development proposals under consideration by the EDP.

Myers stated that ten proposals were received by the April 16th deadline. Four proposals were forwarded to EDP for their review. SOC money will be used to fund ED proposals.

A discussion of whether high level scoping issues for ED need to be resolved before supporting individual ED proposals. Myers stated that a solid plan for solving some of the ED problems highlighted in the TR needs to be achieved before throwing money at individual solutions. Ussler pointed out that Table 2 of the TR needs to be made clearer and better linked to the individual ED topics in section 3.2 of the TR. Sears emphasized that there is a need to work at a higher level and not spend more time work-smithing the detailed discussion of individual ED topics.

Myers described the steps for the proposal EDP reviews. Watchdogs prepare a written summary prior to departing from the EDP meeting. Letters will be sent to the proponents explaining the review process, and will contain technical comments and suggestions from the EDP. Based on EDP advice, IODP-MI will prepared a draft FY09 engineering development plan and prepare a funding request that will be submitted to the SPC at their annual August meeting.

Myers also discussed a coring study proposed for FY08 to investigate core quality and quantity. The panel made some suggestions concerning how to collate data and potential data sources. Holloway suggested the mining industry might have core quality data. Panel members endorsed the efforts to conduct the coring study.

Myers made four proposal presentations and entertained questions. Conflicted panel members and guests were not present as appropriate.

Break for lunch at 1230

Reconvened at 1357

Flemings discussed proposal ranking schemes. He suggested using a process similar to that used by the SSEPs. There is a grouping process and the panel comes to a consensus regarding the proposal rank (no voting). His initial proposal was one based on 3 stars, rather than the 5 star ranking used by the SSEPs. Editorial note: The number of stars is not communicated to the proposal, rather the words used to define each rank is used in the proposal review letter. Discussion ensued concerning whether 3 stars ranking provided enough spread, and on the description of each rank. Makoto-san preferred a 5 star ranking. Flemings tabled this discussion for the moment.

Agendum Item 16C: USIO status presentation (Grigar)

Grigar made an Engineering services report; described personnel reorganization at TAMU (Peter Blum is now head of the Engineering Services Group); and described various engineering activities underway. His report included the status of the DSS and PTM. A full-time technician will staff the Metrology Lab (thermistor and pressure transducer calibration). Also, he described the SBTF and the desire to test the IWS before taking it out on the ship in order to identify the best tip design for water sampling. These results will also affect probe tips design for temperature and pressure tools.

Agendum Item 17: Panel Structure Terms (Flemings)

Flemings discussed panel structure and terms in light of the fiscal realities of the IODP. All US members have a 6 meeting term, and started simultaneously. He asked for volunteers for two members to rotate off after this meeting.

Myers gave a brief REVCOM review which included describing the 3rd party tool pathway. Two tools, the APCT3 and HTPF are 3rd party tools and are working their way through the system. EDP will be asked to review these two tools at the winter meeting.

Myers described the funding reality at IODP and the proposed reduced ship schedules. It will be a difficult fiscal climate through 2013. Novel partnerships are being proposed to fill non-operation time periods. He also proposed an engineering mini-expedition (10 days or less) to conduct comprehensive testing of engineered systems.

Break at 1515.

Reconvened at 1530.

Agendum Item 18: Technology Roadmap Session 2:

Flemings asked the TR working groups to reconvene and continue revising Section 3.2

TR working groups met for the remainder of the day.

Meeting adjourned at 1700.

Wednesday, July 10, 2007

8:30 AM: meeting started, Group Photo.

Agendum Item 27: End Executive Session

8:45 AM: Executive Session adopted by consensus.

3:00 PM: Executive Session ended by consensus.

Agendum Item 28: Close Meeting

3:05 PM: Motion to adjourn accepted by consensus.

Industry-IODP Science Program Planning Group (IIS PPG)

1. General Purpose. The Industry-IODP Science Program Planning Group (IIS PPG) reports to the Science Planning Committee (SPC). The IIS PPG shall identify subjects of cooperative scientific research between the IODP and selected industries, and promote development of IODP drilling proposals to address these objectives within the context of the IODP Initial Science Plan (ISP). Industrial sectors of interest may include oil and gas and related services, mining, biotechnology, and research and development organizations in these fields.

2. Mandate. The IIS PPG shall:

- Most important, define industrial priority research of joint academic/industry interest within the IODP context using high quality industry datasets, and promote development of IODP drilling proposals to address such objectives within the context of the ISP.
- As appropriate, develop effective links between academic and industry scientists, facilitate communication and cooperative scientific and technical development activities between the IODP and industry, and foster integrated multidisciplinary research projects.
- Engage industry professionals as ambassadors in communicationg and promoting IODP activities.

3. Decisions. Decisions in the IIS PPG shall be made by consensus.

4. Term and Meetings. The IIS PPG shall have an initial term of three years, renewable after review by the SPC. It shall convene up to biannually, generally approximately mid-way between SPC meetings, and additional electronic meetings may be held as appropriate. Robert's Rules of Order shall govern its meetings. Conflicts of interest shall be declared at each meeting, and treatment thereof shall be recorded in the meeting minutes. The SPC chair shall approve meeting agendas, dates, and locations, and the IODP-MI Vice-President for Science Planning and Deliverables shall authorize the meetings.

5. Membership. The IIS PPG membership shall maintain a reasonable balance of expertise, research interests, and international participation, with an ideal goal of about two thirds of the members from industry and about one third from academia. Lead agency countries shall be entitled to appoint two members each, and other IODP members shall be entitled to appoint one member each. The remaining membership shall be approved by the SPC. IIS PPG members shall have experience in scientific ocean drilling as well as expertise in research related to industry interests. Members shall be appointed to initial terms of three years, and their terms may be extended on SPC approval of a renewed term of activity for IIS PPG.

6. Chair and Vice-Chair. The IIS PPG chair and vice-chair shall be appointed by the SPC. Their terms shall be three years. The IIS PPG chair shall be responsible for providing the IODP-MI Sapporo Office with meeting minutes within one month of each meeting.

7. Liaisons. The IIS PPG chair shall be liaison to the SPC, with vice-chair as alternate. The SPC may appoint a liaison to the IIS PPG; that liaison will brief the IIS PPG annually on the status of IODP scientific planning.

IODP-Industry Science Program Planning Committee Meeting

Minutes

19-20 January, 2007

Houston, USA

IIS-PPG Attendees:

Richard Davies, Richard.Davies at durham.ac.uk, IIS-PPG
Harry Doust, harrydoust at hotmail.com , IIS-PPG
Andrew Pepper, apepper at hess.com, IIS-PPG (Host)
Martin Perlmutter, mperlmutter at chevron.com, IIS-PPG
Kurt Rudolph, kurt.w.rudolph at exxonmobil.com, IIS-PPG
Ralph Stephen, rstephen at whoi.edu, IIS-PPG (Chair)
Osamu Takano: takano-o at japex.co.jp,
alternate for Yasuhiro Yamada: yama at electra.kumst.kyoto-u.ac.jp
Yoshihiro Tsuji ,tsuji-yoshihiro at jogmec.go.jp, IIS-PPG

Ex-Officio Attendees:

Keir Becker, kbecker at rsmas.miami.edu , SPC
Nobu Eguchi, science at iodp-mi-sapporo.org, IODP-MI
Manik Talwani, mtalwani at iodp.org, IODP-MI

Guests (*1st day only):

*Michael Grecco, mgrecco at chevron.com - RPSEA
*John Hopper, hopper at geo.tamu.edu, - Lead-PI on the Rifted Margins Mission
Proposal
Young-Joo Lee, yjl at kigam.re.kr , Petroleum and Marine Resources Research Div.,
Korea Institute of Geoscience and Mineral Resources (KIGAM)
*Harm van Avendonk, harm at ig.utexas.edu - Lead-PI on BESACM Proposal

IIS-PPG Regrets:

Didier-Hubert Drapeau, didier-hubert.drapeau at totalfinaelf.com, IIS-PPG
David Roberts, d.g.roberts at dsl.pipex.com, IIS-PPG
Eugene Shinn, eshinn at usgs.gov, IIS-PPG

Executive Summary

This was the second meeting of the IODP/Industry Science Project Planning Group. To promote development of industry related drilling proposals, to facilitate communication, and to develop effective links between academic and industry scientists, we generated eight consensus statements at the meeting:

IIS-PPG Consensus 0701-1: IISPPG is promoting the submission of two projects for the April 1/07 proposal deadline: 1) A South Atlantic rifted margins project which will be included in a rifted margins mission proposal. 2) A pre-proposal on the theme of silica diagenesis, shallow compaction and fluid flow.

IIS-PPG Consensus 0701-2: IISPPG is promoting a proposal or pre-proposal on Mesozoic source rocks and paleo-oceanography for possible submission in April 1/08.

IIS-PPG Consensus 0701-3: The Arctic Basin is one of the last remaining scientific frontiers on a number of fronts, from basin evolution to paleo-oceanography and paleo-climate change. IISPPG believes this is an area of great mutual interest to academia and industry. The panel will prepare a 2-3 page white paper scoping out possible Arctic drilling of joint industry-academic scientific interest.

IIS-PPG Consensus 0701-4: IISPPG recommends that IODP-MI increase the awareness of IODP in the Japanese petroleum industry in addition to US and European efforts, for example by having a booth at the JAPT. In conjunction with the next meeting in Sapporo, IISPPG will participate in a mini-workshop in Tokyo on "Applications of IODP data in petroleum exploration".

IIS-PPG Consensus 0701-5: IISPPG supports the IODP data management efforts (SEDIS portal) which involve interoperable data portals. Coordination between US, Japanese, and European data management efforts is obviously essential. Specifically we request that the industry "user community" be involved in pilot projects to guide the development and to ensure the utility of the data management infrastructure.

IIS-PPG Consensus 0701-6: IISPPG will contact EGI (Energy Geoscience Institute - University of Utah) to identify whether they would have interest in developing with IODP scientists an integrated database of DSDP, ODP and IODP well data.

IIS-PPG Consensus 0701-7: IISPPG supports the membership of IODP-MI in the RPSEA and Deep Star projects. IISPPG will monitor developments on the Deep Star Technical Advisory Committees on Geoscience and Downhole Measurements.

IIS-PPG Consensus 0701-8: IIS-PPG members will identify alternates for themselves whom they know and with whom they can communicate easily. Ideally these alternates will meet the criteria for PPG membership outlined in the terms of reference. National committees (PMOs for US and Japan) should confirm that they will pay travel costs for the designated alternates if necessary. Action item for IIS-PPG members and Chair.

We thank Andy Pepper and Hess Corporation for graciously hosting the meeting.

Action Items

IISPPG members will be responsible for the various action items involved in the consensus statements.

0701-1: Stephen will continue to promote and monitor the BESACM project and its inclusion in the rifted margins mission proposal. Davies will be PI on the silica diagenesis pre-proposal.

0701-2: Doust will continue to be the lead on the mesozoic source rocks and paleo-oceanography pre-proposal

0701-3: Pepper will take the lead on drafting an Arctic Basin white paper.

0701-4: Tsuji-san will work with Nobu-san to encourage an IODP-MI booth at JAPT and to hold a mini-workshop in Tokyo on "Applications of IODP data in petroleum exploration" in conjunction with next IISPPG meeting.

0701-5: Pepper and Rudolf will work with Nobu-san to pursue connections between the industry "user community" and the US, Japanese and European data management efforts with the goal of establishing meaningful pilot projects.

0701-6: Perlmutter will contact EGI to pursue joint development of an integrated data base for all well data.

0701-7: Perlmutter and Stephen will monitor developments on the Deep Star Technical Advisory Committees on Geoscience and Downhole Measurements.

0701-8: Stephen will enquire from IODP-MI and the national agencies what is required to have "alternate" status. All committee members should contact the Chairman with suggestions for their own alternates.

Introduction

The focus of the first day's presentations was to review progress that the PPG had made since the last meeting. The focus of the second day was to develop strategies and mechanisms for future work.

Minutes of the Previous Meeting

The minutes of the previous meeting, in The Hague, 7-8 July, 2006 were accepted.

Feedback from SPC on Consensus Items from The Hague Meeting.

IIS-PPG Consensus 0607-1: The IIS-PPG requests the national funding agencies to consider mechanisms for funding small business participation on drilling expeditions (through separate grants or contracts, or some other mechanism). **No discussion at SPC. IISPPG will clarify this and resubmit.**

IIS-PPG Consensus 0607-2: IIS-PPG representatives have experienced some

difficulties in retrieval of measurements and other data from the legacy and electronic IODP databases. IIS-PPG requests IODP-MI to raise these concerns with the appropriate data custodians with a view to considering possible improvements. **SPC recommends contacting Roger Searle. Item 0701-5 (above) follows on this.**

IIS-PPG Consensus 0607-3: IIS-PPG will prepare 2-3 page white papers describing possible missions* on the following themes: i) rifted margins, ii) Mesozoic paleo-oceanography, iii) source-to-sink sediment transport processes, iv) high-scientific-value single wells, and v) shallow compaction and fluid flow. White papers are to be delivered by September 1 for rifted margins in time for the Continental Break-up and Sedimentary Basin Formation Workshop and by September 30 for the rest. **SPC supports this activity.**

Update on IODP activities and the August 2006 SPC meeting (Keir Becker)

Keir Becker gave an update on IODP activities (see Appendix 1). The short platform update is:

- Chikyu – accepted, tested, now operating for 3rd party offshore Kenya / Australia. 09/07 to start NANTROSEIZE (on time). Early wells shallow non-riser.
- Non-riser SOV – Joides Resolution accepted 06, with overhaul (stretched). To start operations 11/07 (Equatorial Pacific 626 – 603abc – 477 – 545 – 626(2))
- MSPs – To drill New Jersey margin, summer 07 (tentatively). Great Barrier Reef (519) targeted for FY 2008-2009 - site survey underway.

RPSEA presentation and discussion. (Mike Grecco, the RPSEA VP for Ultra-deepwater and the DeepStar Executive Director. See RPSEA web site - <http://www.rpsea.org/>)

Mike Grecco gave an overview presentation on RPSEA (Appendix 2). The Research Partnership to Secure Energy for America (RPSEA) is a non-profit corporation composed of a consortium of premier U.S. Energy entities. RPSEA's mission is to provide a stewardship role in ensuring the focused research, development and deployment of safe and environmentally sensitive technology that can effectively deliver hydrocarbons from domestic resources to the citizens of the United States.

RPSEA is a US national program concentrating on technology developments needed for deep-water and unconventional resource exploitation. It is affiliated with DeepStar, a more international program related to deep water technology development only. There is an opportunity for IIS-PPG to liaise with the Geoscience committee of DeepStar on possible issues of mutual interest.

Given the mutual interest of IODP-MI and RPSEA in deep water drilling and monitoring technologies, IISPPG is seeking to foster communication between the two groups. Greg Myers at IODP-MI has been in touch with Mike Grecco and IODP-MI is considering joining RPSEA.

Progress reports on IIS-PPG white papers.

a) Definition of IODP Missions (Keir Becker - Appendix 1)

"A Mission is an intellectually integrated and coordinated drilling strategy originating from the scientific community that addresses a significant aspect of an IODP Science Plan theme over an extended period and which merits urgent promotion in order to achieve overall IODP program goals. Missions must address scientific themes of global significance and must originate from, and must be strongly supported by, the international scientific community."

SPC will call for mission proposals as well as conventional proposals to be submitted 01/04 each year. Mission proposals will be reviewed by SSEPs/SASEC before going to SPC. SPC will then designate missions as appropriate and pass them to IODP-MI for formation of mission teams to prepare the component proposals. They will require extra financial resources (200-300k\$/yr). For definition see www.iodp.org/missions

b) Rifted margins -

i) Pontresina workshop and history of the BESACM (Birth and evolution of the South Atlantic conjugate margins) white paper (Ralph Stephen).

As Chair of ISSPPG Stephen attended the Pontresina Workshop on Continental Break-up (Appendix 3). A white paper had been submitted by Garry Karner, Ian Norton and others from Exxon to drill the South Atlantic margins. There was considerable enthusiasm for this project from Dimas Coelho and Webster Mohriak from Petrobras and Patrick Unternehr from Total. This was an obvious area for IISPPG involvement. Stephen prepared some notes on the BESACM discussions at Pontresina and continued to work with the investigators through the Fall. It was clear that BESACM should be first introduced as a component of the Rifted Margins Mission proposal being prepared by John Hopper. Harm van Avendonk was identified as the lead-PI for BESACM.

ii) Presentation on Rifted Margins Mission (John Hopper)

John Hopper gave an overview of the Rifted Margins Mission (Appendix 4). This relates to the "Solid Earth Cycle" theme of the IODP ISP. Six sub themes have been defined and the need is seen for a range of observations from different areas. As the current academic research on the rifting theme is areally splintered, there is an opportunity for IODP to provide integrational leadership. There is a need to involve more industry experience and expertise. The South Atlantic forms a component of this mission,

iii) Presentation on South Atlantic Rifted Margins proposal (Harm van Avendonk)

Harm van Avendonk (UT, Austin) gave an overview of the BESACM project (participants, goals, motivation, data and drilling requirements, etc - Appendix 5).

ACTION: A workshop is planned for 03/07 in Houston, hosted by Exxon, to draft the BESACM text for the Mission Proposal with potential industry partners. Exxon has volunteered to pay travel expenses, if necessary, for academic scientists involved in the project.

c) Mesozoic paleo-oceanography and source rocks (Harry Doust)

Harry Doust gave a presentation on the Mesozoic paleo-oceanography and source rocks theme (Appendix 6A) and the related draft white paper (Appendix 6B). There was general agreement on the contents, and HD will progress this further with a view to establishing a working group soon and submitting a (mission) proposal by 04/08. Becker noted that SSEP have submitted a request for an “Extreme Climates Workshop” to be held during the next year (07-08) – IIS-PPG will aim to participate. Perlmutter noted that the April 07 AAPG (Long Beach) will include a session on this subject (Perlmutter is co-chair). It was also noted that a number of service companies / industry groups are working with Mesozoic palaeoclimate models (eg Merlin of Robertson) – these should be approached to cooperate with this mission. Pepper, Perlmutter, Rudolph and Roberts have agreed to participate. Nick Stronach (UK-ILP is also interested). Harry **ACTION:** Doust will circulate the initial proposal, will form a working group, and will initiate liaison with SSEPs.

d) Silica Diagenesis, Shallow compaction and fluid flow (Richard Davies)

Davies has an advanced proposal to investigate compaction modification due to silica diagenesis and fluid release and flow (Appendix 7). He showed several seismic profiles in which this process is proposed to be occurring. He is working on a 2-location expedition in the Voring basin.

e) Source to Sink Theme

In the absence of Darpeau this was not discussed.

ACTION: Darpeau to develop proposal in Congo/Zaire fan system

6) Updates on national IODP-Industry Liaison efforts.

a) UK ILP meeting on October 5 (Richard Davies)

Approximately four proposals are being developed currently, arising from workshops held in June and October 2006 and links to the academic community (last page of Appendix 7). The rifting theme is prominent. In the UK-ILP all industry members have nominated alternates.

ACTION: Davies intends to submit at least a pre-proposal by 04/07

b) Japanese poll for industry participation (Yoshihiro Tsuji)

Tsuji-san and Yamada-san sent a questionnaire to 31 Japanese industry staff and received 20 replies (Appendix 8). In short 15 knew of IODP, 13 had used IODP results,

and 14 will possibly use IODP results in the future. 11 might contribute to IODP proposals. There are several areas of interest, similar to those of the IIS-PPG.

7) IIS-PPG Mandate, Membership and Mechanisms (Ralph Stephen).

Ralph Stephen lead a general discussion on industry/ academic partnership concerns and on mechanisms for accomplishing the charge to IIS-PPG. Becker made a presentation on SASEC which included a review of the IISPPG terms of Reference (Appendix 1).

Talwani gave a short presentation on "industry legs". For industry to partner with IODP, especially where the use of drill ships is involved, a number of sensitivities are involved. There are two end members of participation by industry scientists, for which there do not seem to be any issues. One end member is the present mode of industry scientists participating in IODP expeditions. Talwani sees no changes in this. The other end member is the use of the drill ships for non IODP purposes. IODP-MI is not involved and the drill ship operators can make any arrangements that they would like to, including leasing to industry (eg the recent use of the JOIDES Resolution to drill gas hydrates off India). The possibility of "hybrid" expeditions where both industry and IODP share the science objectives and costs is obviously of some interest and needs to be pursued by both sides.

Other comments from the group discussion were:

- Nothing in relation to IODP initiatives is likely to be endorsed by senior industry management unless previously proposed by IIS-PPG.
- There will be no IODP financial support for academics in white paper working groups tasked with maturation of proposals.
- There is an opportunity for industry to fund academics (for travel costs for example) to participate in proposal planning meetings. Such mechanisms should be informal and could be arranged ad hoc, arranged by the working group involved. (Perlmutter)
- IIS-PPG should limit its activity to identification of high-level initiatives and the facilitating working groups (Rudolph)
- Building relationships with industry is valuable for academics (Davies)
- Limiting the time between proposal submission and operation. See scheme by Pepper (Appendix 9), where tollgates trigger the next phase (eg. involving cost of studies / need for seismic data). Issues – it may be that currently, the large number of "active" proposals is slowing the system down. Is there a way to develop more bins or categories of acceptance/rejection? SPC to action?
- It appears that there are insufficient funds to keep IODP vessels continuously active (Talwani). This raises the possibility that Chikyu / SODV could be used occasionally for off-contract drilling. Is there scope for hybrid programmes to be jointly funded (IODP/industry), eg in the Arctic Ocean. SASEC would approve this, as long as confidentiality issues were honoured. It was noted that if industry were to participate, a change in the operational governance of IODP would be

required (Rudolph). IODP will come with a request to discuss these issues further with industry.

- Davies urged IIS-PPG to keep the list of “current active proposals with potential industry interest” evergreen.

8) Other business (Ralph Stephen)

- a) NSF grant opportunities for academic liaison with industry
- b) USSSP report on "Scientific opportunities in the deep seafloor biosphere"

10) Next Meeting

The next meeting will be held in Sapporo Japan on July 24 and 25, 2007 (Tuesday and Wednesday). Nobu Eguchi, IODP-MI, volunteered to host the meeting. Prior to the next meeting, on Monday July 23, IISPPG will participate in a mini-workshop in Tokyo on "Applications of IODP data in petroleum exploration".

Acknowledgements

We would like to thank Andy Pepper and Hess for graciously hosting the meeting. Harry Doust took notes during the meeting which were invaluable in preparing the minutes.

Appendices

Appendix 1: Becker Presentations

Appendix 2: Grecco Presentation

Appendix 3: Stephen Presentation

Appendix 4: Hopper Presentation

Appendix 5: Avendonk Presentation

Appendix 6a: Doust Presentation

Appendix 6b: Doust White Paper

Appendix 7: Davies Presentation

Appendix 8: Tsuji-san Presentation

Appendix 9: Pepper Presentation

DRAFT

IODP - Industry Science Program Planning Group Meeting

Executive Summary

23-24 July 2007

Sapporo, Japan

IIS-PPG Attendees:

Andrew Pepper, apepper at hess.com, IIS-PPG
Martin Perlmutter, mperlmutter at chevron.com, IIS-PPG
Kurt Rudolph, kurt.w.rudolph at exxonmobil.com, IIS-PPG
Ralph Stephen, rstephen at whoi.edu, IIS-PPG (Chair)
Yoshihiro Tsuji, tsuji-yoshihiro at jogmec.go.jp, IIS-PPG
Yasuhiro Yamada, yama at electra.kumst.kyoto-u.ac.jp, IIS-PPG

Ex-Officio Attendees:

Jamie Allan, NSF, by conference call on Tuesday morning
Tim Byrne, Science Planning Committee Liaison
Nobu Eguchi, IODP-MI
Hiroshi Kawamura, IODP-MI
Issa Kagaya, J-DESC
Hans Christian Larsen, IODP-MI
Manami Ono, AESTO
Toshiyuki Oshima, MEXT
Osamu Takano, JAPEx
Manik Talwani, IODP-MI

IIS-PPG Regrets:

Richard Davies, Richard.Davies at durham.ac.uk, IIS-PPG
Harry Doust, harrydoust at hotmail.com, IIS-PPG
Didier-Hubert Drapeau, didier-hubert.drapeau at totalfinaelf.com, IIS-PPG
David Roberts, d.g.roberts at dsl.pipex.com, IIS-PPG
Neil Frewin, IIS-PPG

Executive Summary

This was the third meeting of the IODP/Industry Science Program Planning Group. To promote development of industry related drilling proposals, to facilitate communication, and to develop effective links between academic and industry scientists, we generated seven consensus statements at the meeting:

IIS-PPG Consensus 0707-01: SASEC Consensus Statements 0706-07 and 0706-08 represent radical changes in the manner with which academic scientists collaborate with industry in ocean drilling. The “Deal” between academic scientists and the funding agencies and the drill ship operators is changing dramatically. We recommend that options for pursuing substantial industry support for the IODP drilling platforms be pursued by an Industry Task Force (ITF) independent of the IODP SAS. The ITF would consist of representatives from the petroleum industry, the Implementing Organizations, IODP-MI and SAS (ex-officio) facilitated by IODP-MI.

IIS-PPG Consensus 0707-02: Given the already strong proposal pressure and the much reduced availability of the IODP drilling platforms for the remainder of the program, there is little point in further “promoting development of IODP drilling proposals to address industrial priority research within SAS or within the context of the ISP”. We recommend a final IISPPG meeting in Paris in January-February 2008 to complete the white papers.

IIS-PPG Consensus 0707-03: The industry members of IISPPG would like to investigate the potential of using platforms currently utilized by IODP for industry developed drilling consortiums. A possible project envisioned could be, for example, an Arctic basin analysis program. In order to proceed in a timely manner, we request that IODP-MI ascertain the level of interest of the IO’s in pursuing and facilitating this approach to solving IODP funding issues. If there is interest, prior to the IISPPG or ITF engaging the entire industrial community to inquire about creating this consortium, we need the following information that will drive corporate decisions: (1) the approximate cost of the ships for drilling in both ice free and ice covered locations in the Arctic, (2) the drilling capabilities of each ship, (3) the scheduling and availability, and (4) the fiscal responsibilities (liability, etc). While this potential program would be driven by industry interests we believe that there could be significant opportunities for scientific collaboration with academia and government.

IIS-PPG Consensus 0707-04: We recommend that the SPC appoint Andrew Bell (Shell) as a new member of the Industry-IODP Science Program Planning Group (IIS PPG), replacing resigned member Neil Frewin, effective immediately.

IIS-PPG Consensus 0707-05: We request that SPC and the National Funding Agencies sort out all funding issues with respect to IISPPG member travel reimbursement. To be effective, the IISPPG needs members from multi-national oil companies and negotiating “who pays the travel” is not an effective use of IISPPG time.

IIS-PPG Consensus 0707-06: We recommend industry participation at the IODP rapid climate change workshop if approved (Kurt Rudolf).

IIS-PPG Consensus 0707-07: We recommend that technical sessions and/or panel discussions be held at AAPG, GSA and/or EAGE (Kurt Rudolf, Andy Pepper, and Marty Perlmutter to evaluate).

We thank Nobu Eguchi and the IODP-MI Sapporo Office for graciously hosting the meeting. We also thank Tatsuya Murayama and Takashi Agatsuma from JAPEx for hosting a celebratory, traditional Japanese dinner on Tuesday night and for leading a tour of the JAPEx Yufutsu Oil and Gas Field on Wednesday morning.

In conjunction with the IIS-PPG meeting on Monday and Tuesday in Sapporo, the PPG participated in a mini-workshop on Thursday at the JAMSTEC Tokyo offices. Over 60 representatives of academia, government and industry from the Tokyo area participated in the mini-workshop that was organized by Tsuji-san and Yamada-san. Taira-san, Director General of CDEX/JAMSTEC, gave the key note address.

Detailed Planning Group (DPG) on Hotspot Geodynamics

1. General Purpose. Volcanic chains associated with deep-seated mantle plumes potentially provide valuable information on mantle geochemistry and geodynamics, particularly in establishing the existence and magnitude of true polar wander. Several current IODP proposals (620-Full3 Hotspot Seamounts, 636-Full2 Louisville Seamount, 669-Full Walvis Ridge Hotspot) focus on drilling hotspot chains to address themes related to hotspot-generated volcanic lineaments, including hotspot motion, the temporal evolution of hotspot mantle sources, plate-motion reference frames, and mantle-plume models. The Hotspot Geodynamics DPG should review current approaches and produce a written report that lays out an optimal drilling, logging, and post-expedition science plan for addressing the above objectives.

2. Mandate. In particular, the Hotspot Geodynamics DPG should address the following questions:

- What are the minimal or optimal paleomagnetic observations necessary to distinguish true polar wander versus hotspot drift? How many sites are necessary within an ocean basin? In how many ocean basins must seamount chains be drilled? What is the most appropriate order of drilling?
- What geochemical tests are available for discriminating among deep plumes, shallow plumes, or no plumes? How well can geochemical data be used to estimate mantle potential temperatures? What is the best strategy for assessing the geochemical evolution of seamounts by drilling?
- What independent data are provided by mantle flow models? How can seamount paleolatitudes be incorporated to improve these models?
- What is the best strategy to obtain robust paleolatitude estimates from a single seamount? What depth of penetration and how many flows are needed to average secular variation?
- How can independent types of paleolatitude information (e.g., sediment paleoequator, seamount paleopoles) be used better to test true polar wander?

3. Decisions. The Hotspot Geodynamics DPG shall make decisions by consensus.

4. Term and Meetings. The Hotspot Geodynamics DPG shall have a term of one year, extendable if necessary after review by the SPC. It may convene up to biannually and may hold additional electronic meetings as appropriate. The SPC chair shall approve meeting agendas, dates, and locations, and the IODP-MI vice president of science planning shall authorize the meetings. The DPG chair shall submit meeting minutes to the IODP-MI science coordinators within one month of each meeting.

5. Membership. The SPC shall choose the DPG members for their expertise and experience with respect to the assigned mandate. The DPG may have a maximum of fifteen members, including at least two members from each of the main IODP members with lead agency status and at least one member from each of the other IODP members. The DPG members shall have initial terms of one year, extendable upon SPC approval of an extended term of activity for the DPG.

6. Chair. The SPC shall appoint the chair of the Hotspot Geodynamics DPG.

7. Liaisons. The SPC may appoint a liaison to the Hotspot Geodynamics DPG.

HOTSPOT GEODYNAMICS DETAILED PLANNING GROUP REPORT EXECUTIVE SUMMARY

Volcanic trails left by hotspots have the potential to provide information about (1) a mantle-based reference frame for plate motions and reconstructions, (2) the motion of the whole Earth with respect to its spin axis, (3) the scale, velocity and timing of deep mantle convection, (4) constraints on mantle physical properties such as viscosity, density and temperature, (5) distribution and scale of distinct mantle chemical regimes, (6) volume and rate of depletion of mantle plume sources, and (7) resolution of alternative plate circuits.

Developments in geochronology, geochemical tracers, paleomagnetic methods, seismic imaging and predictive dynamic models of mantle convection have re-focused community interest on quantifying hotspot motion, assessing the relationship between hotspots and mantle plumes, and describing mantle sources for hotspot volcanism. In particular, findings from ODP Leg 197 have shown a progressive $\sim 15^\circ$ southward motion of the Hawaiian hotspot during the 80-49 Ma period of construction of the Emperor Seamounts and a pronounced geochemical shift from depleted mantle sources to more enriched ones with time. However, questions remain about the magnitude of hotspot motion in other ocean basins, whether there is also a discernable component of whole Earth motion (“true polar wander”), whether such hotspot motion reconciles relative plate motion circuits, and whether other hotspot trails show similar chemical evolutions.

We recommend a global ocean drilling strategy that employs the ODP Leg 197 approach to include several additional (3-4) hotspot tracks formed during the same interval (80-49 Ma). Drilling of a minimum of 3 sites along each hotspot track, shipboard measurements and post-cruise studies will provide:

- (1) Paleolatitudes at comparable ages to Emperor seamount sites (80, 61, 56 and 49 Ma).
- (2) Radiometric ages to construct the necessary time-space framework.
- (3) Synthetic plate polar wander paths from combining data from continental portions of plates with the paleolatitude measurements.
- (4) Geochemical data to assess hotspot-ridge and plume-lithosphere interactions, plume source, temperature, depth and evolution.

After reviewing existing drilling proposals currently in the IODP science advisory system, we believe that all elements of this global strategy are potentially identified in the targeted hotspot tracks. Specifically:

The Louisville Ridge program (Proposal 636-Full2) is a Pacific plate complement to the Emperor Seamounts program (ODP Leg 197 and DSDP Site 433). It should focus on ~ 3 sites to achieve more than 250m penetration and recovery of core at each site for the paleolatitude test of Louisville hotspot motion. The outcome will determine the latitudinal motion of the hotspot during the period 80-49 Ma to reach one of these alternate conclusions: (1) increasing southward motion with age comparable to Hawaii (up to $\sim 15^\circ$), indicating a common motion of the mantle underlying the Pacific plate with respect to the spin axis (whole Earth polar

motion), (2) slower and variable (4-10°) southward motion that reconciles global plate circuit models, or (3) no discernable latitudinal motion, supporting mantle flow models.

Geochemical data from shield stage lavas will (a) test the hypothesized connection between Louisville Ridge and the Ontong Java Plateau, (b) document geochemical variability of hotspot products along this chain where the hotspot-lithosphere age difference is ~constant, in contrast to Hawaii and Tristan hotspot tracks, and (c) describe the magma flux behavior of the plume source over 80 m.y. This program, pending full assessment of site survey data and post-site-survey results, could move quickly to scheduling.

The Chagos-Maldives Ridge and Ninetyeast Ridge program (proposal 620-Full3) relies heavily on re-occupation of previously drilled DSDP and ODP sites (214, 216, 713, 715, 756 and 758), where shallow penetration of basement established the age and paleomagnetic potential for the Kerguelen and Reunion hotspot motion tests. Site survey data for the Ninetyeast Ridge sites will be acquired summer 2007 (*R/V Revelle*). We have concerns about the Ninetyeast Ridge sites with regard to post-volcanic faulting or tilting, and possible reversals in the northward aging of volcanic centers due to ridge jumps. Although the Reunion hotspot track terminates with the Deccan flood basalts (65 Ma) and does not offer a complete comparison with the Emperor seamount experiment, extending drilling at sites 713 and 715 to 250m+ depths could produce two high-resolution paleolatitudes, for comparison with the well-determined Deccan paleolatitude. Mantle flow models predict no discernable latitudinal motion for Reunion (65-49 Ma) but small northward motion (~4°) for Kerguelen (80-49 Ma), while whole Earth motion models predict ~5° northward motion for Reunion between 65 and 45 Ma, and lesser motion for Kerguelen.

The Tristan-Walvis Ridge program (proposal 669-Pre) focuses on the most complete and continuous, long-lived hotspot track, linking a large igneous province erupted during continental breakup with an age-progressive volcanic chain, changing from ridge-centered to off-ridge hotspot setting. In addition, this hotspot track forms the central mantle-based reference for all global plate reconstructions tied to the African plate. It is also, then, directly tied to the synthetic continental apparent polar wander path. However, we give this program lower priority because of lack of site survey data. Re-occupation of DSDP Site 525 (~80 Ma) to achieve more than 250m penetration and a high-resolution paleolatitude is the most immediately achievable goal. Younger sites, comparable to Emperor seamount paleolatitude sites, are desirable but cannot be selected from existing data. We note that a German expedition is scheduled for mapping and dredging the southwestern portion of the province in 2008. Mantle flow models predict no discernable latitudinal motion for 80-49 Ma, while whole Earth motion models predict ~5-10° northward motion between 60 Ma and the present. A site on the Walvis Ridge near the continental margin (~110 Ma) is attractive because it would test the maximum predicted whole Earth polar motion (~10° southward) derived from continental paleomagnetic studies, and provide information about the geometrical relationship of plume and LIP soon after continental breakup.

We have several general recommendations about site selection and drilling plans for any of these programs:

- (1) Holes should be sited near seamount summits, rather than flanks to avoid tectonic

disturbances and to most optimally intersect the waning phase of the shield stage activity. The ideal drilling site is a section of lava flows accumulated from a time series of separate eruptions that have traveled a significant distance from source. Evidence of time (to fully sample paleo-secular variation) includes: soil interbeds, a preponderance of lava flows over volcanoclastic units, compositional changes, and variation in paleoinclination, all of which should be monitored during drilling operations.

(2) Drilling penetration should be sufficient to recover 20 to 30 lava units in order to provide a nominal $4-5^\circ \alpha_{95}$ on paleolatitude estimates. From previous experience, this requires at least 250 to 300m of drilling in basaltic basement. Real-time monitoring of onboard paleomagnetic data, geochemical data, and physical volcanology is required to determine the termination depth at each site. This depth of penetration will require multiple bit changes and re-entry capability.

(3) Pre-cruise evaluation of each drilling environment should consider guidebase and casing versus free-fall funnel re-entry strategies.

(4) Extensive dredging during site surveying will be crucial to provide an expanded geochronology and geochemistry framework in which to interpret the drilling results.

In the following report, we review the current issues and controversies about hotspot geodynamics, and describe methodologies available for testing competing hypotheses (Section I). We then present a global drilling strategy for sampling and measurement (Section II). Finally, we suggest priorities for drilling along major hotspot chains, and make recommendations about drilling proposals in the IODP science advisory structure (Section III).

Science Steering and Evaluation Panel (SSEP)

1. General Purpose. The Science Steering and Evaluation Panel (SSEP) reports to the Science Planning Committee (SPC). The panel shall interact with proponents (and Program Planning Groups, or PPGs, as necessary) to nurture submitted drilling proposals to maturity, and send mature proposals for external review before forwarding them to the SPC. Within the context of the IODP Initial Science Plan (ISP), important thematic (and initiative) areas of investigation addressed by proposals that shall be considered by these panels include: the deep biosphere and seafloor ocean (deep biosphere; gas hydrates); environmental changes, processes and effects (extreme climates; rapid climate change); solid earth cycles and geodynamics (continental breakup and sedimentary basin formation; large igneous provinces (LIPs); 21st century Mohole; and seismogenic zone); and additional themes (and initiatives) that may arise from future scientific planning and assessment.

2. Mandate. The SSEP shall be responsible for nurturing and evaluating proposals, and for forwarding mature proposals to the SPC after they have been externally reviewed.

2.1 Nurturing. The SSEP shall help proponents develop strong proposals through an iterative process. The panel shall provide proponents and the SPC with written reviews and comments through the IODP-MI Sapporo Office. As part of the nurturing process the SSEP may reject proposals at any stage. As each new proposal is received by the SSEP, the panel shall assess whether or not the proposal would benefit from evaluation by the Scientific Technology Panel (STP) and the Engineering Development Panel (EDP). If so, the SSEP shall request that the IODP-MI Sapporo Office coordinate distribution of proposals to the STP and EDP for evaluation.

2.2 Evaluating. The SSEP shall determine whether proposals address important scientific problems that are related to the scientific themes and initiatives outlined in the ISP, and review the scientific merits of these drilling proposals. The SSEP shall assign its own watchdogs. Taking into account evaluations by the Site Survey Panel (SSP), STP, and EDP, the SSEP shall select proposals for external review, and suggest appropriate reviewers to the IODP-MI Sapporo Office, which handles the external review. The SSEP shall provide the SPC with a summary of these external comments and a written review.

2.3 Forwarding proposals to the SPC. The SSEP shall decide, taking into account evaluations by the SSP, STP, EDP, and external reviewers, when a proposal is ready to be forwarded to the SPC, and provide the SPC with a grouping and a written final review. The final review shall conclude the SSEP nurturing process and shall include both a review of the current version of the proposal and an additional general review including information and recommendations to the SPC.

2.4 The SSEP shall advise the SPC on scientific themes and initiatives that need further development through the formation of PPGs, as necessary.

2.5 The SSEP shall facilitate communications among the SPC, PPGs, and proponents.

3. Decisions. The SSEP shall normally reach decisions by consensus. In cases when a consensus is not possible, decisions shall be decided by a majority of all members present and eligible to vote. A quorum shall consist of at least two-thirds of the voting members. Voting records shall be kept and reported in the meeting minutes. When grouping proposals to be sent to the SPC, all SSEP panel members are required to

vote (yes, no, abstain), unless conflicted. A five point (or star) grouping (with five being the highest and using 1 and 5 sparingly) is recommended.

4. Meetings. The SSEP shall convene biannually, generally six to eight weeks after IODP proposal deadlines, and additional electronic meetings may be held as appropriate. In view of the large number of members and wide range of proposal science objectives, thematic breakout sessions are encouraged. Robert's Rules of Order shall govern its meetings. Conflicts of interest shall be declared at each meeting, and treatment thereof shall be recorded in the meeting minutes. The SPC chair shall approve meeting agendas, dates, and locations, and the IODP-MI Vice-President for Science Planning and Deliverables shall authorize the meetings.

5. Membership. In view of the breadth of expertise needed to evaluate and nurture proposals, the SSEP shall be composed of twice the general panel membership entitlement for SAS panels stated in the Memoranda among the IODP funding agencies. The SSEP co-chairs shall work with IODP-MI and the national and consortia committees to maintain scientific balance and breadth of expertise in the panel co-chairs and membership, and to ensure regular rotation of its membership. SSEP members shall normally serve for terms of three years. Members of the SSEP shall not be members of any PPG. Guests may be invited to SSEP meetings on an *ad hoc* basis to help with examinations and reviews of proposals. If a SSEP member misses two meetings in succession, the SSEP co-chairs shall discuss the problem of SAS representation with the SPC chair or vice-chair.

6. Chairs. The SSEP co-chairs shall be nominated by the SSEP membership and approved by the SPC. The terms of the SSEP co-chairs shall be two years and are normally staggered. For any given time interval, one co-chair shall be designated as the primary contact for the SSEP. The SSEP co-chairs shall be responsible for providing the IODP-MI Sapporo Office with meeting minutes within one month of each meeting.

7. Liaisons. The SSEP co-chairs shall be liaisons to the SPC. The SSEP shall have liaisons from the SPC, including, but not limited to the SPC chair and vice-chair. The SSEP co-chairs shall assign liaisons from SSEP membership to the active PPGs, as appropriate, and receive liaisons from other advisory panels, as appropriate. Science coordinators from the IODP-MI Sapporo Office shall attend each SSEP meeting. PPG chairs shall normally meet with the SSEP at least once per year. Representatives from the implementing organizations (IOs) shall also be invited to attend the meetings.

**7th Meeting of the
Science Steering and Evaluation Panel
November 13 to 16, 2006
Sapporo, Japan**

EXECUTIVE SUMMARY (v1.1)

1. Joint Session, Reports

1.1. Introduction of panel members, liaisons, and guests.

1.2. Opening remarks by local host.

Naokazu Ahagon welcomed attendees and summarized logistics.

1.3. Approval of last SSEP meeting minutes

SSEP Consensus 0611-1: The SSEP approves the minutes of their 6th SSEP meeting on 29 May-01 June 2006, Potsdam, Germany.

1.4. Approval of SSEP meeting agenda

SSEP Consensus 0611-2: The SSEP approves the revised agenda of their 7th meeting on November 13-16, 2006, Sapporo, Japan.

1.5. Introduction to meeting organization

Ryuji Tada briefly reviewed the meeting agenda and described how the meeting would be organized.

1.6. SPC Report

Jim Mori reported on outcomes of the 8th meeting of the Science Planning Committee, which was held in Bergen/Os, Norway, 28-31 August 2006.

1.7. SSP Report

Yoshikazu Yaguchi reported on outcomes of the 6th meeting of the Site Survey Panel, which was held in Sapporo, 24-26 July, 2006.

1.8. USIO Report (United States Implementing Organization)

Cedric John reported on personal changes and operational activities of the United States Implementing Organization (JOI Alliance), and SODV update.

1.9. CDEX Report (Japan Implementing Organization)

Kan Aoike reported on Chikyu shakedown cruise and schedule of Chikyu.

1.10. ESO Report (European Implementing Organization)

David McInroy reported on recent status of Expeditions 302, 310 and 313, future expeditions, and engineering and other developments.

1.11. IODP-MI Report

Jeff Schuffert reported on activities at IODP-MI including SAS meeting schedule, proposal submission statistics, possible SSEP recommendations, workshop update, SSEP rotations, and personnel changes. Greg Myers presented an IODP engineering update.

2. Meeting Overview

2.1. Reviewing process

Ruediger Stein reviewed the SSEP mandate, conflict-of-interest rules, confidentiality of proposals, proposal review process, purpose of breakout sessions, the purpose and content of general sessions, the content of final reviews for proposals forwarded to SPC, and 5 star grouping system.

2.2. CDP rules

Mike Underwood gave an introduction on the criteria for identification, characteristics, and the process of designation of Complex Drilling Project (CDP).

2.3. Impact of recent IODP-MI workshops on proposal reviews

Mike Underwood led informal reports and discussion on recently held workshops that were sponsored by IODP-MI: Fault Zone Drilling, Mission Moho, Continental Break-Up, Sub-seafloor Life, and Chicxulub Impact Crater. Panel members and guests who attended the workshops provided brief summaries of activities and outcomes.

3. Breakout Sessions

A total of 15 proposals were reviewed during the meeting. New external reviews were available for 1 proposal. Panel members were subdivided into three breakout sessions for detailed discussions of the proposals: BS1: *Faults and Fluids* (chaired by Mike Underwood); BS2: *Ocean History and Paleoclimate* (chaired by Ruediger Stein); BS3: *Solid Earth* (chaired by Ryuji Tada).

The conflict of interest rules and confidentiality requirements were respected during the entire review procedure (breakout sessions, general sessions, and grouping). The course of action regarding each of the 15 proposals reviewed during the Sapporo meeting was achieved by consensus of the full panel. The dispositions are as follows:

Pre-Proposal: request Pre2 Proposal = 2
 Pre-Proposal: request Full Proposals = 4
 Pre-Proposal: Special Case = 1 (see recommendation below)
 Full Proposal: forward to SPC = 2
 Full Proposal: send for External Review = 2

Full Proposal: request revision = 1
 Full Proposal: request revision or CDP = 1
 Full Proposal: request revision or new APL= 1
 Full Proposal: deactivate = 1

A qualitative grouping was assigned to the two proposals forwarded to the SPC using the revised 5-star scale. Each grouping was obtained by consensus of the full panel.

4. Discussion on Workshops

Mike Underwood gave a brief summary on the present state of the two workshop proposals, “Dynamics of the Earth System during Extreme Climates of the Cretaceous and Paleogene” and “Ultra-high resolution of Paleoclimate”, which SSEP recommended to SPC at the last SSEP meeting in Potsdam. SPC endorsed SSEP’s recommendation and forwarded the two proposals to SASEC for consideration. SASEC did not formally accept these two workshop proposals, but encourages submission of revised proposals for the next annual call for IODP-MI sponsored workshops Feb 01, 2007. Proposal submission and further planning and organization of the workshops will be the responsibility of the steering committees, including additional funding sources. Mike Underwood also explained a role of the workshops in planning for Missions and SSEP role in recommending topics for workshops.

5. Discussion on Mission Implementation

Mike Underwood gave an introduction on the definition, goals, overarching principles, and potential problems of the IODP Mission, as approved by SASEC during their last meeting. He further explained call for Mission proposals schedule, format of proposals, proposal review process and mechanism, criteria for proposal evaluation, and SSEP’s role in proposal evaluation process.

6. Recommendation related to 705-Pre2 (Santa Barbara Basin)

The SSEP recognizes 705-pre2 (Santa Barbara Basin) as a special case. The primary scientific objectives and potential results of this proposal are extremely exciting; however, the proposal cannot proceed forward without a drilling strategy that adequately addresses environmental and safety issues. To expedite the process, proponents need to be guided on viable strategies. The full panel agreed to the following recommendation by consensus:

SSEP Recommendation 0611-3: The SSEP recognizes 705-Pre2 as a special case, and suggests that one or more meetings should occur with various “stakeholders”, including (a) proponents, (b) EPSP members, (c) potential science operators, and (d) IODP engineers to develop an adequate drilling strategy that meets EPSP criteria. The SSEP recommends that the first of these meetings coincide with the scheduled June 2007 EPSP Meeting.

7. Nomination and Election of a next co-chair candidate

Gail Christeson nominated Barbara John to serve as the next Co-Chair of SSEP, Mike Underwood. Julia Morgan seconded the nomination. The nomination of Barbara John was approved by vote of the full panel, using paper ballots.

SSEP Recommendation 0611-4: The SSEP recommends that SPC consider Barbara John for appointment as the next Co-Chair of SSEP.

8. Next SSEP meetings

Julia Morgan announced that the 8th SSEP meeting has been scheduled in Rice University, Houston, Texas, U.S.A. Tentative dates are May 29 to June 1, 2007. Frédérique Eynaud kindly extended an invitation for the 9th SSEP meeting to be held in France (Bordeaux or Paris?) in November, 2007.

9. Other items

Robert Zierenberg proposed to have a discussion on technologies needed for difficult drilling/coring and to make a roadmap for technology development during the next SSEP meeting. Mike Underwood suggested inviting a liaison from the EDP for the next SSEP meeting to give an overview about existing technologies and development plans, followed by a discussion on what new techniques are needed from the SSEP point of view.

SSEP Consensus 0611-5: The SSEP approved to include discussion on technologies for difficult drilling and request a liaison from the Engineer Developing Panel to participate in the next SSEP meeting.

10. Resolutions for outgoing SSEP members

Resolutions were presented thanking outgoing SSEP members for their years of dedication: Junichiro Ishibashi, Takashi Ito, Joerg Erzinger, and Juergen Thurow.

11. Conclusion

The co-chairs Ryuji Tada, Ruediger Stein, and Mike Underwood thanked again the host Naokazu Ahagon for his excellent logistical arrangements, guided tours, and warm hospitality throughout the meeting. The co-chairs thanked all of the panel members for their dedication and hard work. Watchdogs submitted drafts of all proposal reviews to the IODP-MI science coordinators (Jeff Schuffert, Barry Zelt, and Nobu Eguchi) before the meeting ended.

Meeting MINUTES (v.2)

1. Joint Session, Reports

1.1. Introduction of panel members, liaisons, and guests.

1.2. Opening remarks by local host.

Naokazu Ahagon welcomed attendees and summarized logistics.

1.3. Approval of last SSEP meeting minutes

SSEP Consensus 0611-1: The SSEP approves the minutes of their 6th SSEP meeting on 29 May-01 June 2006, Potsdam, Germany.

1.4. Approval of SSEP meeting agenda

SSEP Consensus 0611-2: The SSEP approves the revised agenda of their 7th meeting on November 13-16, 2006, Sapporo, Japan.

1.5. Introduction to meeting organization

Ryuji Tada briefly reviewed the meeting agenda and described how the meeting would be organized.

1.6. SPC Report

Jim Mori reported on outcomes of the 8th meeting of the Science Planning Committee, which was held in Bergen/Os, Norway, 28-31 August 2006. Topics of interest included:

- i) an update of FY07-09 schedule development related to Chikyu, SODV, and MSP planning,
- ii) August SPC actions relevant to SSEP:
 - Development of borehole tool (e.g., SeisCORK) forwarded to EDP
 - SPC supports the two workshops proposed by SSEP (Extreme climates and High-resolution climates)
 - Results of the last global ranking exercise
 - Progress on formation of a DPG for hotspot geodynamics
- iii) report from SASEC meeting, and
- iv) update for mission implementation.

1.7. SSP Report

Yoshikazu Yaguchi reported on outcomes of the 6th meeting of the Site Survey Panel, which was held in Sapporo, 24-26 July, 2006. Twenty nine proposals were reviewed. Especially emphasized is 637Full2 which was commended by SSP. At the same time, SSP urged SPC to consider the way to evaluate and develop a variety of drilling and sampling methods proposed by proponents, which are crucial to develop drilling strategy. Yoshikazu also reported that a prototype of the Data Acquisition System was demonstrated and well received

at the SSP, that SPC requires site summary form 6 for full proposals, and that Yoshikazu Yaguchi was elected as a vice chair.

1.8. USIO Report (United States Implementing Organization)

Cedric John reported on scheduling developments, progress on expedition staffing, personal changes and operational activities of the United States Implementing Organization (JOI Alliance). He also reported SODV update including her delivery date and planning schedule.

1.9. CDEX Report (Japan Implementing Organization)

Kan Aoike reported on Chikyu shakedown cruise which was conducted off Shimokita from August 6th to October 26th in 2006. Riser drilling was conducted to 647 mbsf. System integration test was successful in spite of typhoon that caused emergency disconnection of the sequence. He also gave an update of the NanTroSEIZE planning (222 scientists applied!!) and reported future schedule of Chikyu related to oversea drilling SIT offshore Kenya and NW-Southern Australia (Nov06-Aug07).

1.10. ESO Report (European Implementing Organization)

David McInroy reported on recent status of Expeditions 302, 310 and 313, and future expeditions including #519 (Great Barrier Reef) and #637 (New England Hydrogeology). He also gave information on engineering developments such as through-pipe camera and other developments such as standardization of data entry and nomenclature across the three individual database systems used by the IOs and plans for ESO web-based tutorials and information pages.

1.11. IODP-MI Report

Jeff Schuffert reported on activities at IODP-MI including SAS meeting schedule, proposal submission statistics, possible SSEP recommendations during their reviews of proposals, workshop update, SSEP rotations, and personnel changes. He reported that only 14 proposals (7 environment, 7 solid earth) were submitted for the October 2006 deadline; four of these proposals were new preproposals. These numbers are similar to the number of proposals submitted for the October 2002 deadline, which is the smallest in IODP history. Notable is the relatively small number of active proposals from Japan, which amounts to only 15% of 122 active proposals in the pool. He also mentioned that Site Summary Form 6 has to be included in each full proposal. Jeff Schuffert announced that he will move to JOI in Dec. 1, 2006.

Greg Myers presented an IODP engineering update that includes i) utilization of SAS advice to create the FY2008 Engineering Development Plan, ii) engineering task force, iii) engineering development documents, and iv) engineering web page (www.iodp.org/eng-intro).

2. Meeting Overview

2.1. Reviewing process

Ruediger Stein reviewed the SSEP mandate, conflict-of-interest rules, confidentiality of proposals, proposal review process, purpose of breakout sessions, the purpose and content of

general sessions, the content of final reviews for proposals forwarded to SPC, and 5 star grouping system.

2.2. CDP rules

Mike Underwood gave an introduction on the criteria for identification, characteristics, and the process of designation of a Complex Drilling Project (CDP). He explained that a CDP should be identified by the SSEP based on a submitted preliminary or full proposal that may comprise part of a CDP. The initial proposal of a CDP should define the overall scientific objectives of the entire project and justify the need for a multi-platform or multi-phased drilling strategy to achieve the objectives. Once identified, the SSEP recommends developing a set of related proposals to describe the individual steps or phases in greater detail, each component of which will be evaluated within the broader context provided by the umbrella proposal. All components of a CDP must fulfill the normal requirements for preliminary and full proposals and follow the normal review process. It is the SSEP that decides whether a CDP has reached a sufficient stage of development for external peer review and whether it should be forwarded to SPC for the next stage of internal review. CDP should have one or more, clearly articulated, overarching goal(s), and the pathway achieving these goals requires completion of a series of linked scientific and operational components that can be completed in a reasonably short time. Underwood also stressed the pitfalls in applying the criteria and the ambiguities in asking SPC for approval of a CDP designation.

2.3. Impact of recent IODP-MI workshops on proposal reviews

Mike Underwood led informal reports and discussion on recently held workshops that were sponsored by IODP-MI: Fault Zone Drilling, Mission Moho, Continental Break-Up, Sub-seafloor Life, and Chicxulub Impact Crater. Panel members and guests who attended the workshops provided brief summaries of activities and outcomes. Some of the workshops (e.g., Moho and Continental Break-up) clearly aimed to prepare mission proposal while others did not. It was agreed that workshop reports are very useful way to obtain feedbacks.

3. Breakout Sessions

A total of 15 proposals were reviewed during the meeting. New external reviews were available for 1 proposal. Panel members were subdivided into three breakout sessions for detailed discussions of the proposals: BS1: *Faults and Fluids* (chaired by Mike Underwood); BS2: *Ocean History and Paleoclimate* (chaired by Ruediger Stein); BS3: *Solid Earth* (chaired by Ryuji Tada).

Breakout Session 1: Faults and Fluids (Chair: Mike Underwood)							
Proposal Number	Short Title	Lead Proponent	Lead Watchdog	Watchdog 2	Watchdog 3	Watchdog 4	Watchdog 5
644-Full2	Mediterranean Outflow	Molina	Jaeger	Jian	Menez	Schulte	Hirono
707-Full	Sagami Bay Seismic Monitoring	Kobayashi	Morgan	Gurnis	Jaeger	Spinelli	Takeuchi
710-Pre	Gulf of Corinth Rift	McNeill	Zierenberg	Torres	Spinelli	Erzinger	Morgan

574-Full3	Rainbow Hydrothermal Field	Fouquet	Ishibashi	Menez	Takai	Spinelli	Zierenberg
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Breakout Session 2: Ocean History and Paleoclimate (Chair: Ruediger Stein)							
Proposal Number	Short Title	Lead Proponent	Lead Watchdog	Watchdog 2	Watchdog 3	Watchdog 4	Watchdog 5
556-Full4	Malvinas Confluence	Wefer	Nishi	Eynaud	Ito	Suzuki	Palike
567-Full3	South Pacific Paleogene	Rea	Ito	Schulte	Backman	Aiello	Ishibashi
644-Full2	Mediterranean Outflow	Molina	Backman	Thurrow	Sawada	Dickens	Kim
705-Pre2	Santa Barbara Basin Climate	Nicholson	Dickens	Summa	Torres	Takai	Jian
708-Pre	Central Arctic Paleooceanography	Stein	Thurrow	Suzuki	Kim	Takeuchi	Jaeger
709-Pre	Pacific Mesozoic Extreme Env	Ohkouchi	Aiello	Eynaud	Backman	Sawada	Nishi
711-Pre	Tanzania Margin Paleoclimate	Wade	Summa	Eynaud	Nishi	Palike	Dickens

Breakout Session 3: Solid Earth (Chair: Ryuji Tada)							
Proposal Number	Short Title	Lead Proponent	Lead Watchdog	Watchdog 2	Watchdog 3	Watchdog 4	Watchdog 5
522-Full5	Superfast Spreading Crust	Teagle	Tamura	John	Abe	Xu	Konnerup-M
669-Full2	Walvis Ridge Hotspot	Sager	Gee	Fujiwara	Xu	Gurnis	Tamura
694-Full2	Izu-Bonin-Mariana Arc Evolution	Tatsumi	Christeson	Erzinger	Kimura	Gee	Abe
697-Pre2	Izu-Bonin-Mariana Reararc Crust	Tamura	John	Anma	Hirono	Fujiwara	Kimura
698-Pre2	Izu-Bonin-Mariana Middle Crust	Tatsumi	Anma		Abe	Konnerup-M	Christeson

The conflict of interest rules and confidentiality requirements were respected during the entire review procedure (breakout sessions, general sessions, and grouping). The table below lists the conflicted SSEP members, liaisons and guests who left the room before the review of the relevant proposals.

Proposal No.	Short Title	Lead Proponent	Conflict of interest
522-Full5	Superfast Spreading Crust	Teagle	

556-Full4	Malvinas Confluence	Wefer	
567-Full3	South Pacific Paleogene	Rea	
644-Full2	Mediterranean Outflow	Molina	
644-Full2	Mediterranean Outflow	Molina	Eynaud
669-Full2	Walvis Ridge Hotspot	Sager	
694-Full2	Izu-Bonin-Mariana Arc Evolution	Tatsumi	Tamura, Gurnis
697-Pre2	Izu-Bonin-Mariana Reararc Crust	Tamura	Tamura, Gurnis
698-Pre2	Izu-Bonin-Mariana Middle Crust	Tatsumi	Tamura, Gurnis
705-Pre2	Santa Barbara Basin Climate	Nicholson	Tada
707-Full	Sagami Bay Seismic Monitoring	Kobayashi	Hirono, Curewitz
708-Pre	Central Arctic Paleoceanography	Stein	Stein
709-Pre	Pacific Mesozoic Extreme Env	Ohkouchi	
710-Pre	Gulf of Corinth Rift	McNeill	
711-Pre	Tanzania Margin Paleoclimate	Wade	
574-Full3	Rainbow Hydrothermal Field	Fouquet	

The course of action regarding each of the 15 proposals reviewed during the Sapporo meeting was achieved by consensus of the full panel. The dispositions are as follows:

Pre-Proposal: request Pre2 Proposal = 2
Pre-Proposal: request Full Proposals = 4
Pre-Proposal: Special Case = 1 (see recommendation under Topic 6)
Full Proposal: forward to SPC = 2
Full Proposal: send for External Review = 2
Full Proposal: request revision = 1
Full Proposal: request revision or CDP = 1
Full Proposal: request revision or new APL = 1
Full Proposal: deactivate = 1

The specific dispositions for each proposal are as follows:

Proposal Number	Short Title	Lead Proponent	Comments
Pre-Proposal: request Pre2 Proposal			
709-Pre	Pacific Mesozoic Extreme Env	Ohkouchi	also encouraged to submit a new pre with more emphasis on technological/engineering aspects
710-Pre	Gulf of Corinth Rift	McNeill	
Pre-Proposal: request Full Proposals			

697-Pre2	Izu-Bonin-Mariana Reararc Crust	Tamura	after completion of site survey
698-Pre2	Izu-Bonin-Mariana Middle Crust	Tatsumi	
708-Pre	Central Arctic Paleoceanography	Stein	
711-Pre	Tanzania Margin Paleoclimate	Wade	
Pre-Proposal: Special Case = 1			
705-Pre2	Santa Barbara Basin Climate	Nicholson	
Full Proposal: forward to SPC			
522-Full5	Superfast Spreading Crust	Teagle	
644-Full2	Mediterranean Outflow	Molina	
Full Proposal: send for External Review			
556-Full4	Malvinas Confluence	Wefer	
669-Full2	Walvis Ridge Hotspot	Sager	
Full Proposal: request revision			
694-Full2	Izu-Bonin-Mariana Arc Evolution	Tatsumi	
Full Proposal: request revision or CDP = 1			
707-Full	Sagami Bay Seismic Monitoring	Kobayashi	
Full Proposal: request revision or new APL			
567-Full3	South Pacific Paleogene	Rea	
Full Proposal: deactivate			
574-Full3	Rainbow Hydrothermal Field	Fouquet	

A qualitative grouping was assigned to the two proposals forwarded to the SPC using the revised 5-star scale. Each grouping was obtained by consensus of the full panel.

4. Discussion on Workshops

Mike Underwood gave a brief summary on the present state of the two workshop proposals, “Dynamics of the Earth System during Extreme Climates of the Cretaceous and Paleogene” and “Ultra-high resolution of Paleoclimate”, which SSEP recommended to SPC at the last SSEP meeting in Potsdam. SPC endorsed SSEP’s recommendation and forwarded the two proposals to SASEC for consideration. SASEC did not formally accept these two workshop proposals, but encourages submission of revised proposals for the next annual call for IODP-MI sponsored workshops Feb 01, 2007. Proposal submission and further planning and organization of the workshops will be the responsibility of the steering committees, including additional funding sources. Mike Underwood also explained a role of the workshops in planning for Missions and SSEP role in recommending topics for workshops.

5. Discussion on Mission Implementation

Mike Underwood gave an introduction on the definition, goals, overarching principles, and potential problems of the IODP Mission, as approved by SASEC during their last meeting. He further explained call for Mission proposals schedule, format of proposals, proposal review process and mechanism, criteria for proposal evaluation, and SSEP's role in proposal evaluation process. In brief, a mission is an intellectually integrated and coordinated drilling strategy originating from scientific community that addresses a significant aspect of an ISP theme on global basis over an extended period of IODP and merits urgent promotion. Mission proposals will be called annually with the first call on April 1, 2007, and first SSEP review will be in May 2007.

6. Recommendation related to 705-Pre2 (Santa Barbara Basin)

The SSEP recognizes 705-pre2 (Santa Barbara Basin) as a special case. The primary scientific objectives and potential results of this proposal are extremely exciting; however, the proposal cannot proceed forward without a drilling strategy that adequately addresses environmental and safety issues. To expedite the process, proponents need to be guided on viable strategies. The full panel agreed to the following recommendation by consensus:

SSEP Recommendation 0611-3: The SSEP recognizes 705-Pre2 as a special case, and suggests that one or more meetings should occur with various “stakeholders”, including (a) proponents, (b) EPSP members, (c) potential science operators, and (d) IODP engineers to develop an adequate drilling strategy that meets EPSP criteria. The SSEP recommends that the first of these meetings coincide with the scheduled June 2007 EPSP Meeting.

7. Nomination and Election of a next co-chair candidate

Gail Christeson nominated Barbara John to serve as the next Co-Chair of SSEP, thereby replacing Mike Underwood. Julia Morgan seconded the nomination. The nomination of Barbara John was approved by vote of the full panel, using paper ballots.

SSEP Recommendation 0611-4: The SSEP recommends that SPC consider Barbara John for appointment as the next Co-Chair of SSEP.

8. Next SSEP meetings

Julia Morgan announced that the 8th SSEP meeting has been scheduled in Rice University, Houston, Texas, U.S.A. Tentative dates are May 29 to June 1, 2007. Frédérique Eynaud kindly extended an invitation for the 9th SSEP meeting to be held in France (Bordeaux or Paris?) in November, 2007.

9. Other items

Robert Zierenberg proposed to have a discussion on technologies needed for difficult drilling/coring and to make a roadmap for technology development during the next SSEP meeting. Mike Underwood suggested inviting a liaison from the EDP for the next SSEP meeting to give an overview about existing technologies and development plans, followed by a discussion on what new techniques are needed from the SSEP point of view.

SSEP Consensus 0611-5: The SSEP approved to include discussion on technologies for difficult drilling and request a liaison from the Engineering Developing Panel to participate in the next SSEP meeting.

10. Resolutions for outgoing SSEP members

Resolutions were presented thanking outgoing SSEP members for their years of dedication: Junichiro Ishibashi, Takashi Ito, Joerg Erzinger, and Juergen Thurow.

11. Conclusion

The co-chairs Ryuji Tada, Ruediger Stein, and Mike Underwood thanked again the host Naokazu Ahagon for his excellent logistical arrangements, guided tours, and warm hospitality throughout the meeting. The co-chairs thanked all of the panel members for their dedication and hard work. Watchdogs submitted drafts of all proposal reviews to the IODP-MI science coordinators (Jeff Schuffert, Barry Zelt, and Nobu Eguchi) before the meeting ended.

Attachment 1. List of participants

Attachment 2. Provisional agenda

Attachment 1. List of participants

Name (*co-chair)	Affiliation		Notes
Abe, Natsue	JAMSTEC/ IFREE	SSEP	alternate for Ohara, Yasuhiko
Aiello, Ivano	Moss Landing Marine Laboratories	SSEP	
Anma, Ryo	Tsukuba University	SSEP	
Backman, Jan	Stockholm University	SSEP	
Chen, John Yongshun	Peking University	SSEP	Not attending
Christeson, Gail	University of Texas at Austin	SSEP	
Dickens, Gerald	Rice University	SSEP	
Elliott, Timothy	Bristol University	SSEP	Not attending
Erzinger, Jörg	GeoForschungsZentrum Potsdam	SSEP	
Eynaud, Frederique	University of Bordeaux	SSEP	
Fujiwara, Toshiya	JAMSTEC/ IFREE	SSEP	
Gee, Jeff	Scripps Institution of Oceanography	SSEP	
Gurnis, Mike	California Institute of Technology	SSEP	
Hirono, Tetsuro	Osaka University	SSEP	
Ishibashi, Jun-ichiro	Kyushu University	SSEP	
Ito, Makoto	Chiba University	SSEP	Not attending
Ito, Takashi	Ibaraki University	SSEP	
Jaeger, John	University of Florida	SSEP	
Jian, Zhimin	Tongji University	SSEP	
John, Barbara	University of Wyoming	SSEP	
Joye, Samantha	The University of Georgia	SSEP	Not attending
Kim, Dae Choul	Pukyong National University	SSEP	
Kimura, Jun-ichi	Shimane University	SSEP	
Konnerup-Madsen, Jens	University of Copenhagen	SSEP	
Menez, Bénédicte	Paris Geophysical Institute (IPGP)	SSEP	
Morgan, Julia	Rice University	SSEP	
Nishi, Hiroshi	Hokkaido University	SSEP	
Ohara, Yasuhiko	Japan Coast Guard	SSEP	Not attending
Pälike, Heiko	University of Southampton	SSEP	alternate for Elliott, Timothy
Sawada, Ken	Hokkaido University	SSEP	alternate for Ito, makoto
Schulte, Mitchell	University of Missouri	SSEP	alternate for Joye, Samantha
Spinelli, Glenn	New Mexico Institute of Mining and Technology	SSEP	alternate for Wilson, Alicia
Stein, Rüdiger *	Alfred Wegener Institute	SSEP	
Summa, Lori	Exxon Mobil Exploration Company	SSEP	
Suzuki, Atsushi	AIST/ Institute of Geology and Geoinformation	SSEP	
Tada Ryuji *	University of Tokyo	SSEP	
Takai, Ken	JAMSTEC/ SUGAR	SSEP	

Takeuchi, Mio	AIST/ Institute for Geo-Resources and Environment	SSEP	
Tamura, Yoshihiko	JAMSTEC/ IFREE	SSEP	
Thurrow, Jürgen	University College London	SSEP	
Torres, Marta	Oregon State University	SSEP	
Underwood, Mike *	University of Missouri - Columbia	SSEP	
Wilson, Alicia	University of South Carolina	SSEP	Not attending
Xu, Yigang	Chinese Academy of Sciences	SSEP	alternate for Chen, J. Y.
Zierenberg, Robert	University of California, Davis	SSEP	
Ahagon, Naokazu	Hokkaido University	STP/ Local host	
Aoike, Kan	JAMSTEC/ CDEX	CDEX	
Ebeling, Carl	JOI	JOI	
Eguchi, Nobuhisa	IODP-MI, Sapporo	IODP-MI	
John, Cedric	TAMU	USIO	
Kitazato, Hiroshi	JAMSTEC/ IFREE	SPC	
Larsen, Hans Christian	IODP-MI, Sapporo	IODP-MI	
McInroy, David	University of Leicester	ESO	
Mori, James	Kyoto University	SPC	
Myers, Gregory J.	IODP-MI, Washington D.C.	IODP-MI	
Schuffert, Jeffrey	IODP-MI, Sapporo	IODP-MI	
Tanaka, Akiko	AIST/ Institute of Geology and Geoinformation	SSP	
Yaguchi, Yoshikazu	Mitsui Oil Exploration Co., Ltd (MOECO)	SSP	
Weinberger, Jill	LDEO	USIO	
Zarikian, Carlos	TAMU	USIO	
Zelt, Barry	IODP-MI, Sapporo	IODP-MI	

Attachment 2. Provisional agenda**IODP Science Steering and Evaluation Panel (SSEP)****7th Meeting, 13-16 November 2006****Sapporo Convention Center****Sapporo, Japan****DRAFT AGENDA (v3)****Sunday, November 12 (Optional)**Excursion (Lake Toya)**Monday, November 13**Joint Session, Reports

- Introduction of attendees to SSEP
- Opening Remarks by Host (Naokazu Ahagon)
- Approval of the agenda
- Approval of minutes from May 2006 SSEP meeting
- Introduction to the meeting (Ryuji Tada)
- SPC Report (Jim Mori)
- SSP report (Yoshikazu Yaguchi)
- USIO report (Cedric John)
- CDEX report (Kan Aoike)
- ESO Report (David McInroy)
- IODP-MI Reports (Jeff Schuffert and Greg Myers)

Meeting overview

- Reviewing process (Rudiger Stein)
- Breakout sessions (Ryuji Tada)
- CDP “rules” (Mike Underwood)
- Impact of recent IODP-MI workshops on proposal reviews

Breakout sessions

- Proposal review

Reception (Hokkaido University and J-DESC?)**Tuesday, November 14**Breakout sessions

- Proposal review

Parallel meetings of US, ECORD and Japanese members

- discussion on any national aspects

Wednesday, November 15**Breakout sessions**

- Proposal review, cont. (if necessary)

Joint SSEP session

- About workshops
 - o Role of workshops and their achievement
 - o SSEP role in planning for workshops
 - o SSEP response to recent IODP-MI workshops
- Mission implementation discussion (Mike Underwood)
- Proposal review

Thursday, November 16**Joint SSEP session**

- Proposal review
- SSEP recommendations to SPC
- Announcement on coming SSEP meetings

**8th Meeting of the
Science Steering and Evaluation Panel
May 29-June 1, 2007
Rice University, Houston, Texas, U.S.A**

Draft EXECUTIVE SUMMARY (v5)

1. Joint Session, Reports

1.1. Introduction of panel members, liaisons, and guests.

1.2. Status of IODP

Manik Talwani addressed all attendees and summarized the status of funding and operations with IODP.

1.3. Opening remarks by local host

Julia Morgan welcomed attendees and summarized logistics.

1.4. Approval of last SSEP meeting minutes

SSEP Consensus 0705-1: The SSEP approves the minutes of their 7th SSEP meeting on 13-16 November 2007, Sapporo, Japan.

1.5. Approval of SSEP meeting agenda

SSEP Consensus 0705-2: The SSEP approves the revised agenda of their 8th meeting on May 29-June 1 in Houston, Texas.

1.6. Introduction to meeting organization

Barbara John briefly reviewed the meeting agenda and described how the meeting would be organized.

1.7. SPC Report

Keir Becker reported on outcomes of the 9th meeting of the Science Planning Committee, which was held in Osaka, Japan, March 4-7, 2007.

Becker reported information from the Hotspot DPG meeting held in Honolulu, Hawaii, January 12-13, 2007.

1.8. SSP Report

Dale Sawyer reported on outcomes of the 8th meeting of the Site Survey Panel, held February 20-22, 2007 in San Diego, Calif., USA.

1.9. USIO Report (United States Implementing Organization)

Jay Miller reported on personal changes and operational activities of the United States Implementing Organization (JOI Alliance), and SODV update.

1.10. CDEX Report (Japan Implementing Organization)

Yusuke Kubo reported on Chikyu test cruises and the Chikyu schedule.

1.11. EDP Report (Engineering Development Panel)

Bill Ussler (EDP liaison) provided an overview of existing technologies and engineering development plans, as requested by the SSEP in their last meeting.

1.12. IODP-MI Report

Nobu Eguchi reported on activities at IODP-MI including SAS meeting schedule, proposal submission statistics, possible SSEP recommendations, workshop update, SSEP rotations, and personnel changes. Greg Myers presented an IODP engineering update.

1.13. MS PHD'S Program

Charna Meth introduced JOI's partnership with the Minorities Striving and Pursuing Higher Degrees of Success in the Earth System Sciences (MSPHD's) Professional Development Program, as a mechanism to encourage minority students to explore and pursue careers in the ocean sciences.

1.14. Report on new tools and technologies

Chris del Campo (Schlumberger) reported on new tools being developed, followed by questions.

2. Meeting Overview

2.1. Reviewing process

Ruediger Stein reviewed the SSEP mandate, conflict-of-interest rules, watchdog responsibilities, organization and objectives of breakout sessions, the purpose and content of watchdog reports during general sessions, the content of final reviews for proposals forwarded to SPC, procedures for rejecting (deactivating) proposals, and 5 star grouping system.

2.2. Mission concept review

Mike Underwood gave an introduction to the Mission Concept, and outlined the SSEPs role in Mission implementation, the goals and definitions of missions, the review mechanism, and SSEPs evaluation responsibilities.

As outlined, SSEP is charged to recommend to SPC if Mission Proposals warrant Mission designation based on their definition as 1) intellectually integrated and coordinated drilling strategy, 2) originating from the scientific community, 3) address a significant aspect of an IODP Science Plan theme over an extended period, and 4) merits **urgent** promotion in order to achieve overall IODP program goals.

3. Breakout Sessions

A total of 35 proposals were reviewed during the meeting that include new external reviews available for 2 proposals. Panel members were subdivided into three breakout sessions for detailed discussions of the proposals: Breakout Session 1: Faults/Fluids (chaired by Ruediger Stein); Breakout Session 2: Paleoclimate/oceanography (chaired by Ryuji Tada); Breakout Session 3: Solid Earth/Petrology (chaired by Barbara John).

The conflict of interest rules and confidentiality requirements were respected during the entire review procedure (breakout sessions, general sessions, and grouping). The course of action regarding each of the 35 proposals reviewed during the Houston meeting was achieved by consensus of the full panel. The dispositions are as follows:

Pre-Proposal: request Pre2 Proposal = 2 Pre-Proposal: request Full Proposals = 1 Full Proposal: forward to SPC = 2 APL: forward to SPC = 1 Full Proposal: forward to SPC for CDP approval = 2 Full Proposal: send for External Review = 5 Full Proposal no action = 1 (special case – see below)
Full Proposal: request revision = 11 Full Proposal: request new submission = 3 Pre Proposal: request new submission = 2 APL: request new submission = 2 Mission proposal: evaluated = 3

A qualitative grouping was assigned to the two proposals forwarded to the SPC using the revised 5-star scale. Each grouping was obtained by consensus of the full panel.

669-Full 2 went out for external review following the November 2006 SSEP meeting in Sapporo. The SSEP received a PRL to the review in November, but no response to external reviews. The proponents indicated in March 2007 that they plan to submit a revised Full3 for the October 2007 deadline. The SSEP therefore did not review the existing proposal 669-Full2), and no action was taken.

4. Discussion of Mission proposals

Three Mission proposals (713-MP Mission Monsoon, 719-MP Mission Moho, 720-MP Mission Birth of Oceans) were submitted by the deadline to be considered at the SSEP meeting. The SSEP was charged to recommend to SPC if Mission Proposals warrant Mission designation based on their definition as 1) intellectually integrated and coordinated drilling strategy, 2) originating from the scientific community, 3) address a significant aspect of an IODP Science Plan theme over an extended period, and 4) merits **urgent** promotion in order to achieve overall IODP program goals. Breakout group discussions on Mission proposals were led by 5 assigned watchdogs and followed the review procedure similar to other ordinary proposals except the evaluation step which focused on whether the proposals

satisfied the four criteria required to satisfy Mission designation. In the joint session discussion, the three mission proposals were evaluated again based on the Mission designation criteria to assure the same criteria were applied to all the three proposals.

5. Discussions and recommendations

5.1 Recommendation related to 707-Full2 (Sagami Bay Seismic Monitoring)

The SSEP recognizes 707-Full2 (Sagami Bay Seismic Monitoring) as a very important proposal, addressing key seismic hazards in heavily populated area case. The proposal as written by Kobayashi and 34 other proponents for the Kanto asperity, is identified as an umbrella proposal for a CDP. This is not stated specifically but implied. Previous review confirmed importance of the scientific objectives, and relevance to the ISP (solid earth cycles). The SSEP therefore forwards the proposal to SPC for designation as a CDP for prompt approval, with very strong support. The full panel agreed to the following recommendation by consensus:

SSEP Recommendation 0705-3: SSEP recommends that Proposal 707-Full2, **Kanto asperity project: Geological and geophysical characterization of the history and present behavior of the earthquake cycle**, be recognized as a Complex Drilling Proposal (CDP) associated with component proposals presently assigned 722-Full and 723-Full. The SSEP views the scientific goals of this project as very high priority and unusually high in terms of societal relevance. The scope of the project, the interrelationship of individual phases of proposed research, and the dependence of individual expeditions on the outcome of previous ones, necessitates this designation. At this time, all of the proposals lack critical site survey data, and further consideration by the SSEP will be delayed until such data have been acquired and analyzed. However, we note that designation of Proposal 707 as a CDP may help the proponents to obtain funding to carry out the needed surveys. Additionally, CDP designation would enhance integration of the multiple science components and long-term science planning.

5.2 Recommendation related to forming a DPG related to the Asian Monsoon and Tibetan Uplift History

During discussion of the 713-MP (Mission Monsoon) proposal it was recognized that the four proposals dealing with the Asian Monsoon and Tibetan Uplift History, all proposals reviewed very positively during earlier SSEP meetings, need further coordination, organization and prioritization. This can be best achieved by forming a Detailed Planning Group (DPG) to develop an optimal plan (including drilling, proxies to be used, post-cruise science, etc.) for addressing the main objectives of research. Thus, the full panel agreed to the following recommendation by consensus:

SSEP Recommendation 0705-4: The SSEP recommends that SPC consider forming a Detailed Planning Group that will be responsible for organizing and prioritizing proposals dealing with the history of Asian monsoon and its linkage to the uplift of the Himalayan-

Tibetan orogenic system (Proposals 552 – Bengal Fan, 595 – Indus Fan, 618 – SE Asian Shelf, and 683 – East Asia Topography and Monsoon). The SSEP will provide SPC with a mandate for the DPG before the next SPC meeting.

5.3 Recommendation related to 694-Full3 (Izu-Bonin-Mariana Arc Evolution umbrella proposal)

The SSEP understands the scientific importance of Izu-Bonin-Mariana arc drilling described in Proposal 694-Full3 submitted as an umbrella proposal for IBM complex drilling project. However, the SSEP could not agree by consensus whether or not this proposal should stand as a CDP umbrella proposal, but did agreed by consensus to forward the proposal to the Science Planning Committee for their judgement.

SSEP Recommendation 0705-5: The SSEP asks SPC to decide whether or not 694-Full3 should be endorsed as a Complex Drilling Project (CDP).

6. Presentation by MS PHD'S students

Each of the visiting MSPHD students made a short presentation about what they learned during the meeting through interaction and observation with panel members and liaisons.

7. Nomination and Election of a next co-chair candidate

Jan Backman nominated Heiko Pälike to serve as the next Co-Chair of SSEP. Frederique Enuade seconded the nomination. The nomination of Heiko Pälike was approved by vote of the full panel, using paper ballots.

SSEP Recommendation 0705-6: The SSEP recommends that SPC consider Heiko Pälike for appointment as the next Co-Chair of SSEP.

8. Next SSEP meetings

Frédérique Eynaud announced that the 9th SSEP meeting has been scheduled in Bordeaux, France. Tentative dates are Nov 12-15, 2007. The following meeting will be held in Asia during May 2008.

9. Resolutions for outgoing SSEP members

Resolutions were presented thanking outgoing SSEP members for their years of dedication including, John Chen, Jerry Dickens, Jeff Gee, Makoto Ito, Zhimin Jian, Juli Morgan, Ruediger Stein, Lori Summa, and Mike Underwood. A special resolution was made for Nobu Eguchi, moving from the position of IODP-MI science coordinator.

10. Conclusion

The co-chairs Ryuji Tada, Ruediger Stein, and Barbara John thanked again the hosts Juli Morgan, Jerry Dickens and Lori Summa for their excellent organization and arrangements, field trip coordination, and hospitality throughout the meeting. The co-chairs thanked all of the panel members for their dedication and hard work. Watchdogs submitted drafts of all proposal reviews to the IODP-MI science coordinators (Nobu Eguchi and Barry Zelt) before the meeting ended.

USSP 2007 Impressions

