EUROPEAN CONSORTIUM FOR OCEAN RESEARCH DRILLING

ECORD Facility Board Meeting

5th and 6th March 2014

MARUM, University of Bremen, Germany

Minutes

AGENDA

Wednesday, 5th March 8:30 – 17:30

8:30 Beginning

1. Introduction

1.1 - Call to order and opening remarks (K. Gohl) 5'

1.2 - Welcome and meeting logistics (M. Schulz) 5'

1.3 - Introduction of participants (K. Gohl) 5'

1.4 - Rules of engagement (COI policy, etc.) (K. Gohl) 5'

1.5 - Meeting agenda approval (K. Gohl) 5'

2. Brief reports of ECORD Facility Board (EFB) and other ECORD entities

2.1 - EFB: Report on main activities since last meeting (K. Gohl) 10'

2.2 - ESO: Drilling operations and technical developments (D. McInroy) 10'

2.3 - ESO: Expedition 347 Baltic Sea operations (D. McInroy) 10'

2.4 - Co-Chief 347: Expedition 347 Baltic Sea science outcome (T. Andrén) 15'

2.5 - ESO: Curation activities and update on measurements, sampling and data policies (U. Röhl) 10'

2.6 - ESO: Downhole logging data and core petrophysics measurements (S. Davies) 10'

2.7 - ESSAC: activities and educational/outreach issues (G. Früh-Green, A. Stevenson) 10'

2.8 - ECORD Industry Liaison Panel: recent activities (G. Camoin) 10'

2.9 - ECORD Vision Task Force: recent activities (G. Camoin) 10'

2.10 - ECORD Council: important issues of Executive Bureau (G. Lüniger) 10'

2.11 - EMA: ECORD budget (G. Camoin) 10'

3. Brief reports of other facility boards and IODP entities on recent activities

3.1 - *JOIDES Resolution* Facility Board (S. Humphris) 10'

3.2 - *Chikyu* IODP Board (N. Eguchi, H. Villinger) 10'

3.3 - Science Support Office (H. Given) 10'

3.4 - Science Evaluation Panel (D. Kroon, D. Mallinson) 10'

3.5 - IODP Forum; addressing themes & challenges of IODP Science Plan (K. Becker) 20'

12:30-13:30 Lunch

4. Procedures and issues regarding EFB activities and MSP operations

4.1 - ECORD forward look (G. Camoin) 10'

4.2 - ECORD budget for ESO operations of MSPs (G. Camoin) 10'

4.3 - ESO Annual Program Plan (preliminary) (D. McInroy) 10'

4.4 - MSP options, costs and tender process (D. McInroy) 20'

4.5 - Prioritising/ranking proposals according to cost categories (K. Gohl, G. Camoin) 20'

4.6 - Procedures for co-funded IODP-MSP and ICDP expeditions (K. Gohl, G. Camoin) 20'

4.7 - Collaboration between ECORD and industry (G. Camoin) 20'

4.8 - Implementing MSP-CPPs (G. Camoin) 20'

4.9 - Modifying measurements and sample & data policies to MSP needs (U. Röhl) 15'

4.10 - Policy on IODP/MSP expedition reports and publications (K. Gohl, G. Camoin) 15'

4.11 - Outreach and Education (A. Stevenson) 15'

4.12 - Selection of next EFB Chair and Science Board members (K. Gohl) 10'

4.13 - General issues: Adjustments of EFB-TOR; IODP logo; etc. (K. Gohl) 10'

17:30 End

19:00 Dinner at "Bremer Ratskeller" (old city center)

Thursday, 6th March 8:30 – 16:00

8:30 Beginning

5. Review of the MSP proposals

5.1 - **548-Full3 Chicxulub K-T Impact Crater (scheduled but needs revision)** 20'

5.1.1 - Summary of objectives, SSD and previous EFB decision (A. Cattaneo)

5.1.2 - Drilling operations and costs (D. McInroy)

5.2 - **758-Full2 Atlantis Massif Seafloor Proc. (scheduled but needs revision)** 20'

5.2.1 - Summary of objectives, SSD and previous EFB decision (D. Weis)

5.2.2 - Drilling operations and costs (D. McInroy)

5.3 - **581-Full2 Late Pleistocene Coralgal Banks (revision)** 20'

5.3.1 - Summary of objectives, SSD and previous EFB decision (K. Gohl)

5.3.2 - Drilling operations and costs (D. McInroy)

5.4 - **637-Full2+Add6 New England Shelf Hydrogeology (revision)** 20'

5.4.1 - Summary of objectives, SSD and previous EFB decision (M. Torres)

5.4.2 - Drilling operations and costs (D. McInroy)

5.5 - **716-Full2 Hawaiian Drowned Reefs (revision)** 20'

5.5.1 - Summary of objectives, SSD and previous EFB decision (G. Dickens)

5.5.2 - Drilling operations and costs (D. McInroy)

5.6 - **813-Full2 East Antarctic Paleoclimate (new)** 30'

5.6.1 - Scientific objectives (K. Gohl)

5.6.2 - Site survey data (D. Mallinson)

5.6.3 - Drilling operations and costs (D. McInroy)

5.7 – **708-Full Central Arctic Paleoceanography (new)** 30'

5.7.1 - Scientific objectives (D. Weis)

5.7.2 - Site survey data (D. Mallinson)

5.7.3 - Drilling operations and costs (D. McInroy)

12:00-14:00 Lunch and guided tour of Bremen Core Repository and facilities

6. MSP operation schedule for FY2014, FY2015 and FY 2016 (K. Gohl / All) 60'

7. Review of Consensus, Motions and Actions (K. Gohl, M. Borissova / All) 15'

8. Next EFB meeting (K. Gohl) 5'

9. Any other business (K. Gohl)

16:00 End

Roster

	NAME	***EMAIL***
MEMBERS		
a) ECORD Exec. Bureau		
ECORD Council	Guido Lüniger*	guido.lueniger@dfg.de
ECORD Council	Michael Webb*	mweb@nerc.ac.uk
ECORD Council	Martina Kern-Luetsch	mkern@snf.ch
ECORD Council	Michel Diament *	michel.diament@cnrs-dir.fr
ECORD Council	Mireille Perrin (alternate)	perrin@cerege.fr
ECORD Council	Anders Kjaer	akj@fi.dk
EMA	Gilbert Camoin	camoin@cerege.fr
ESSAC	Gretchen Früh-Green	frueh-green@erdw.ethz.ch
ESO	Robert Gatliff	rwga@bgs.ac.uk
ECORD ILP	Andrea Moscariello*	andrea.moscariello@unige.ch
b) Science Board		
	Karsten Gohl (Chair)	karsten.gohl@awi.de
	Antonio Cattaneo	antonio.cattaneo@ifremer.fr
	Gerald Dickens	jerry@rice.edu
	Marta Torres	marta.torres1@gmail.com
	Dominique Weis	dweis@eos.ubc.ca
c) Funding agencies		
NSF (USA)	Tom Janecek	tjanecek@nsf.gov
MEXT (Japan)	Yuzuru Kimura	yzkimura@mext.go.jp
LIAISONS		
IODP Forum	Keir Becker	kbecker@rsmas.miami.edu
Science Support Office	Holly Given	hgiven@iodp.org
SEP	Dick Kroon	dkroon@staffmail.ed.ac.uk
SEP (SCP)	David Mallinson	mallinsond@ecu.edu
EPSP	Barry Katz*	barrykatz@chevron.com
EPSP	Dieter Strack	ddhstrack@aol.com
JR Facility Board	Susan Humphris	shumphris@whoi.edu
Chikyu IODP Board	Gaku Kimura*	gaku@eps.s.u-tokyo.ac.jp
Chikyu IODP Board	Heinrich Villinger	vill@uni-bremen.de
CDEX – JAMSTEC (Japan)	Wataru Azuma*	azumaw@jamstec.go.jp
CDEX – JAMSTEC (Japan)	Nobuhisa Eguchi	neguchi@jamstec.go.jp
J-DESC (Japan)	Akira Ishiwatari	geoishw@cneas.tohoku.ac.jp
USIO (USA)	David Divins	ddivins@oceanleadership.org
USSSP (USA)	Jeff Schuffert	jschuffert@oceanleadership.org
KIGAM (Korea)	Gil Young Kim*	gykim@kigam.re.kr
IODP India	Dhananjai Pandey*	pandey@ncaor.org
IODP China	Shouting Tuo	*iodp_china*@tongji.edu.cn
ANZIC (Austral./N. Zeal.)	Neville Exon	neville.exon@anu.edu.au
ANZIC (Austral./N. Zeal.)	Chris Yeats*	chris.yeats@csiro.au
CAPES (Brazil)	Marcio de Castro Silva Filho *	marcio.filho@capes.gov.br
CAPES (Brazil)	Sidney Luis De Matos Mello*	smello@id.uff.br

OBSERVERS/GUESTS		
VSEGEI (Russia)	Daria Ryabchuk	*daria_ryabchuk@mail.ru*
VSEGEI (Russia)	Vladimir Zhamoida	*vsegei@vsegei.ru*
VSEGEI (Russia)	Evgeny Petrov	*vsegei@vsegei.ru*
Co-Chief Exp. 347	Thomas Andrén	thomas.andren@sh.se
ICDP	Ulrich Harms	ulrich.harms@gfz-potsdam.de
IMPRESS (IMAGES2)	Frank Lamy	frank.lamy@awi.de
MARUM	Michael Schulz	mschulz@marum.de
MARUM	Gerold Wefer	gwefer@marum.de
MARUM	Tim Freudenthal	freuden@marum.de
German IODP Office	Jochen Erbacher	jochen.erbacher@bgr.de
ESO	David McInroy	dbm@bgs.ac.uk
ESO	David Smith	djsm@bgs.ac.uk
ESO	Alan Stevenson	agst@bgs.ac.uk
ESO	Albert Gerdes*	agerdes@marum.de
ESO	Ursula Röhl	uroehl@marum.de
ESO-EPC	Sarah Davies	sjd27@leicester.ac.uk
ESO-EPC	Johanna Lofi	johanna.lofi@gm.univ-montp2.fr
EMA	Milena Borissova	borissova@cerege.fr
EMA	Patricia Maruejol	maruejol@crpg.cnrs-nancy.fr
USIO (USA)	Mitch Malone	malone@iodp.tamu.edu

* Apologies

LIST OF ACRONYMS

ACEX	Arctic Coring Expedition, Expedition 302
ANZIC	Australia-New Zealand IODP Consortium
AP	Advisory Panels
APL	Ancillary Project Letter
APP	Annual Program Plan
BGS	British Geological Survey
BoG	IODP-MI Board of Governors
CIB	Chikyu IODP Board
CMO	Central Management Office
CPP	Complementary Project Proposals
DIS	Drilling Information System
DLP	Distinguished Lecturer Program
EB	Executive Board
EC	European Commission
ECORD	European Consortium for Ocean Research Drilling
EDP	Engineering Development Panel
E-FB	ECORD Facility Board
EMA	ECORD Managing Agency
EPC	European Petrophysical Consortium
EPSP	Environmental Protection and Safety Panel
ESO	ECORD Science Operator
ESSAC	ECORD Science Support and Advisory Committee

ETP	ECORD Technology Panel
FB	Facility Board
ICDP	International Continental Scientific Drilling Program
IGSN	International Geo Sample Number
ILP	ECORD Industry Liaison Panel
IMAGES-IMPRESS	International Marine Past Global Changes
INSU-CNRS	Institut National des Sciences de l'Univers, France
IODP	Integrated Ocean Drilling Program
IODP	International Ocean Discovery Program
IODP-MI	IODP Management International, Inc.
IOs	Implementing Organizations
JAMSTEC	Japan Marine Science & Technology Center
JFAST	Japan Trench Fast Drilling Project
JR	JOIDES Resolution
KCR	Kochi Core Repository
KIGAM	Korea Institute of Geosciences and Mineral Resources
LAs	Lead Agencies
MDP	Multi-phase Drilling Proposal
MEXT	Ministry of Education, Culture, Sports, Science & Technology
MOST	The People's Republic of China Ministry of Science and Technology
MoU	Memorandum of Understanding
MSCL	Multi Sensor Core Logger
MSPs	Mission-specific platform
NanTroSEIZE	Nankai Trough Seismogenic Zone Experiment
NERC	Natural Environment Research Council, UK
NJSS	New Jersey Shallow Shelf
NSF	National Science Foundation, USA
NSF-OCE	NSF Ocean Sciences
NWO	Netherlands Organisation for Scientific Research
ODP	Ocean Drilling Program
OSP	Onshore Science Party
OTF	Operation Task Force
PCT	Project Coordination Team
PEP	Proposal Evaluation Panel
PMO	Program Member Offices
PMT	Project Management Team
POC	Platform Operation Costs
PPO	Project Partner Office
RMS	Routine Microbiological Samples
SAS	Science Advisory Structure
SEDIS	Scientific Earth Drilling Information Service
SIPCOM	Science Implementation and Policy Committee
SCP	Site Characterization Panel
SO	Support Office
SOC	Science Operation Costs
SPC	Science Planning Committee
SSC	Magellan Plus Science Steering Committee

SSDB	Site Survey Data Bank
ToR	Terms of Reference
USAC	U.S. Science Advisory Committee
USIO	U.S. Implementing Organization
USSSP	U.S. Science Support Program
US-JR FB/ JR-FB	U.S. JOIDES Resolution Facility Board
VTF	Vision Task Force

Wednesday, 5th March

1. Introduction

1.1 - Call to order and opening remarks (K. Gohl)

K. Gohl welcomed all of the meeting participants.

1.2 - Welcome and meeting logistics (M. Schulz)

M. Schulz welcomed the meeting participants to MARUM. A tour of MARUM - Center of Marine Environmental Sciences will be given on Thursday. He discussed the development of the new MeBo system and logging tools.

1.3 - Introduction of participants (K. Gohl)

The meeting participants were introduced.

1.4 - Rules of engagement (COI policy, etc.) (K. Gohl)

K. Gohl said that in the case of a very high conflict of interest, the proponent or co-proponents will have to leave the room during the discussion. The second and lesser COI level is an institutional conflict of interest. The person may stay or leave the room, but cannot take part in the discussion. He asked all participants to announce their COI to M. Borissova.

K. Gohl has a COI with the Arctic #708, as some of his colleagues are proponents.

1.5 - Meeting agenda approval (K. Gohl)

More details on the presentations are available in the EFB#2 Agenda Book**.**

Consensus 14-01-01*: The EFB approves unanimously the meeting agenda.*

2. Brief reports of ECORD Facility Board (EFB) and other ECORD entities

2.1 - EFB: Report on main activities since last meeting (K. Gohl)

The current EFB membership consists of the Science Board, the ECORD Executive Bureau and the Funding Agencies.

K. Gohl reviewed the results of the current EFB working group.

The following items were completed: revised guidelines on IODP ethical and environmental principles, which are also applicable for MSPs; comments and contributions to revised IODP proposal guidelines; contributions to revised IODP Site Survey Data guidelines; and revised the IODP Measurement Policy and Sample and Data Policy. The curators were asked by the FB Chairs to draft an implementation plan and the microbiological samples will be included in a future addendum, which both will be discussed at this EFB 2014 meeting. Furthermore, in this meeting it will be needed to determine/revise the IODP policy on reporting and publications for the MSPs.

A workshop on microbiological samples is planned to be held later in the year.

All progress will be noted on the Working document of the agenda motions, actions and consensus, the minutes and the past EFB meetings documents, which are to be posted online on the EFB webpage.

The EFB working document shows the work progress on the list of actions, motions and other activities and is regularly updated and archived after a new meeting.

Meetings Attended

A list of the key decisions and results was reviewed from several meetings.

The PEP/SCP took place in Santa Barbara on June 17-21, 2013 was attended by S. Davies, Robert Gatliff and K. Gohl. The meeting concluded with new revised guidelines for the site survey data, in order to allow more flexibility with regard to the used platform, drilling targets and region). The decisions will be made on a case-by-case. The EPSP may place additional restraints and requirements.

The JR-Facility Board tool place in Washington D.C. on August 26-27, 2013 and was attended by G. Camoin and K. Gohl. The following topics were discussed: the merger of the SCP and PEP into a single review team, the SEP; the EPSP Safety Review Guidelines document was approved with minor revisions; the revised IODP Environmental Principles document was approved; the revised Proposal Submission Guidelines with the revisions discussed was accepted; and the guidelines and Rationale for Site Characterization Data was approved.

The SEP took place in San Diego on the January 6-9, 2014. The meeting was attended by S. Davies and K. Gohl. The following MSP proposals were evaluated:

The 708-Full proposal (by Stein et al.) covered the topic of the Arctic Ocean Paleoceanography towards a continuous Cenozoic record from a greenhouse to an

icehouse world (ACEX2). SEP decided that the proposal was to be sent for external review in fast-track mode in time for the EFB meeting in March 2014.
The 813-Full proposal (by Williams et al.), which underwent an external review, covered the topic of the Greenhouse to Icehouse Antarctic paleoclimate and ice history from George V Land and Adélie Land shelf sediments. SEP decided that it is an excellent proposal and should be forwarded to the EFB.

Issues discussed at the previous EFB meeting
Last year, five proposals were discussed. K Gohl reviewed the decisions for each of the proposals:

The **581-Full2** was not scheduled, but the proponents were asked if they can lower the penetration depths. No response has been received and the EFB is to reconsider the proposal during the March EFB 2014 meeting. It must be discussed whether the use of the MeBo is an option.

The **637-Full2** was not scheduled, but the proponents were requested to give feedback to ESO on how the expedition costs could be reduced if some of the sites are changed. The proponents may also look for funds from outside ECORD. Their response was received and they will discuss the available options with ESO. The EFB will re-consider this proposal, including 637-Add6, at the EFB 2014 meeting.

The **716-Full2** was not scheduled. The EFB considered this proposal with high priority for scheduling in the first years after 2015 by using a seabed drill in order to try reducing the expedition costs, provided that proposed science objectives are met.
The proponents were offered three options: (1) accept the low recovery results risks in a JR operation, (2) wait until MeBo200 operational, or (3) find alternatives to MeBo. The proponents' response was that they will possibly consider a seabed drilling system, e.g. MeBo200, in discussions with ESO. The EFB will further re-consider this proposal at the EFB 2014 meeting.
The **548-Full3** was scheduled for the end of 2014, provided that the budget permits. A response from the proponents was requested on whether the foreseen scenarios are suitable for them. The proponents responded that they will approach additional funding

sources, e.g. ICDP, in order to lower the costs. After a large increase of cost estimates above US$20M, the proposal will have to be re-considered at the EFB 2014 meeting. The proponents are in contact with ESO and submitted an ICDP proposal in January 2014.

The **758-Full2** was scheduled, aiming for 2015, provided that the budget objectives are met. A response was requested from the proponents on whether the foreseen scenarios are suitable for them. The proponents have been in contact with ESO regarding the cost reductions and scheduling. An updated cost estimate of US$4.5M forces the EFB to re-consider this proposal at the EFB 2014 meeting.

2.2 - ESO: Drilling operations and technical developments (D. McInroy)

In terms of ESO Engineering Development for FY14, the focus will be on the development of logging tools, borehole sealing, and fluid sampling technology for seabed drills.

The BGS and MARUM (MeBo) have agreed to collaborate on developing tools that can work on both drills, a process that started at the 1st ECORD Technical Panel meeting, involving a: dual induction resistivity probe; magnetic susceptibility probe; drill string plug for fluid sampling; and a packer system. Once agreed, the plan and budget will be submitted to ECORD for approval. The cost estimate is $855k USD.

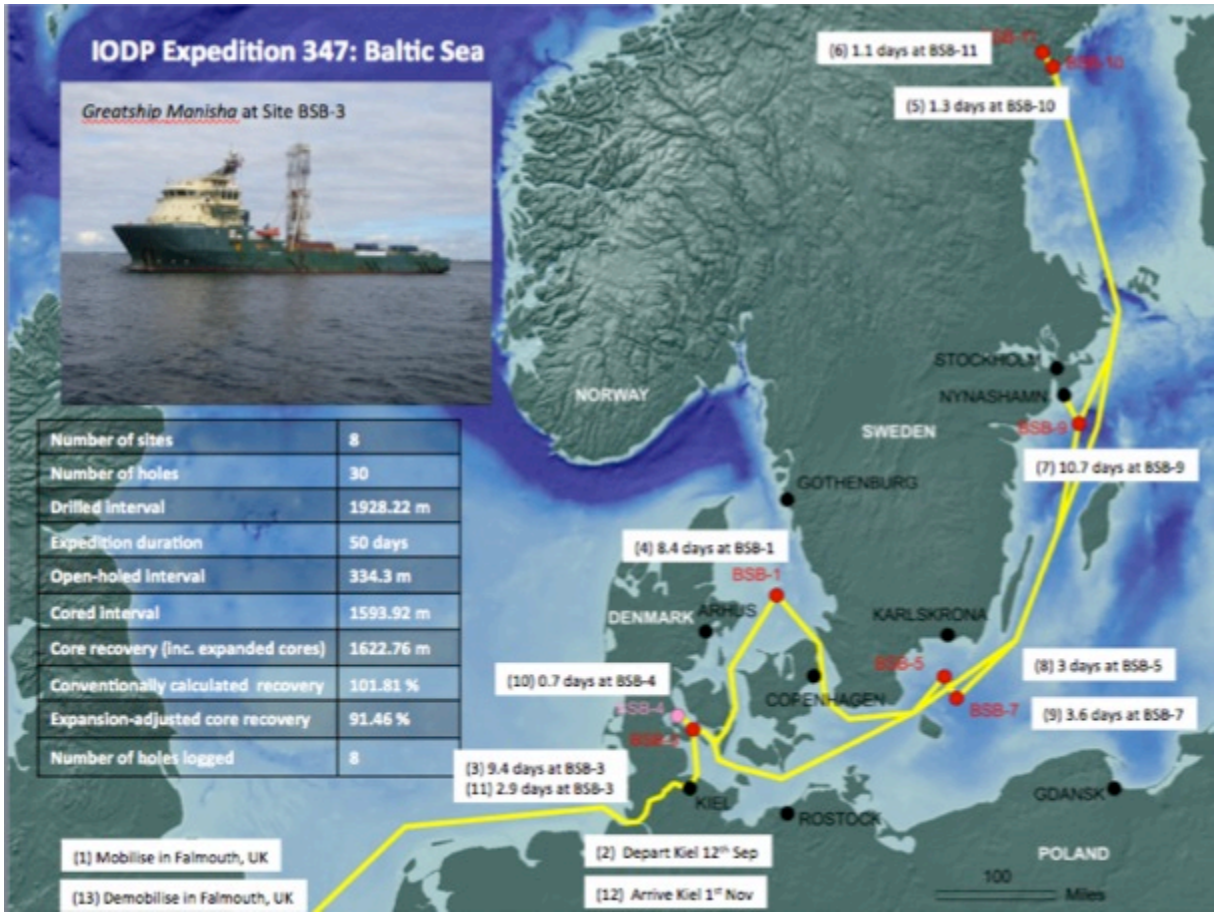
2.3 - ESO: Expedition 347 Baltic Sea operations (D. McInroy)

D. McInroy said that IODP Expedition 347 Baltic Sea Paleoenvironment was very successful. The expedition schedule was pushed back due to contractual issues for the vessel. The offshore phase took place from September-November 2013 and the onshore Science Party took place on January-February 2014.

The *Greatship Manisha* reaches a maximum borehole depth of 275 mbsf and a water depth of 34-451m. Over two km of pipe were available for this expedition. It used the same coring tools as the 2004 ACEX. The drilling services were provided by Island Drilling Singapore & Geoquip Marine. The Greatship Global Offshore Services provided the vessel and Weatherford performed the logging services.

D. McInroy mentioned that the mobilization of vessels is very challenging to organize and liaise with the drillers. This took place in early September. There are various containers, refrigerated storage, etc.

The IODP Expedition 347 map of route and sites was reviewed.



The team ran across some ammunition dumps and polluted areas. Overall, the result was a very high recovery of core, or about 1.6km.

Five coring tools were used, of which all belong to the BGS Marine system: extended coring; non-rotating rotary coring; push coring; and a hammer sampler.

The conclusion is that Expedition 347 was a very technical and successful mission. The cores were split a few weeks ago and the microbiologists are very pleased with the results.

ESO had invested into some new containers and new IT equipment. They used for the first time a microbiology container, a tracer injection system, in the microbiology sampling program. The samples are now distributed to all of the institutes that requested them.

D. McInroy showed a 6-minute video of the operations on the vessels. The video displayed images of a sediment coring procedure; ROV use; downhole logging; a core and core reception container; and stratographic correlators. The weather was overall

good for the expedition to progress quickly.

G. Dickens asked about the estimated cost. D. McInroy said that it was estimated that he expedition cost about $9M USD and eventually cost $7.5M USD. The day rate was $75.5k USD.

2.4 - Co-Chief 347: Expedition 347 Baltic Sea science outcome (T. Andrén)

T. Andrén gave a presentation on some of Expedition 347's outcomes. He said that the Baltic Basin is a sedimentary sink, so it is expected that they will see a long climate record in the Basin.

He reviewed the Baltic Sea basin history in the past 150 000 years, as well as during the last c. 16000 years. There is a lot that is not known. He reviewed the history of the Baltic Ice Lake.

T. Andrén showed a map of the requested drill sites for Expedition 347. He looked at the regression of sediments as one of the measurements. Diatom experiments and sea-level changes measurements also took place.

The expedition had some unexpected outcomes. There are indications that there was a warmer climate and richer formanifera, but there were non-existent diatoms. T. Andrén reviewed images of the recuperated varved glacial clay and laminated gyttja clay, which provided an annual sedimentation record.

Summary

He gave a summary of Expedition 347's results. The team recovered: an intriguing possible Eemian - Weichselian - Holocene sequence at BSB-1, Anholt; a c. 50 meter-long Holocene sequence at BSB-3, Little Belt and a sequence indicating the drainage of a local ice lake; an extremely expanded Holocene sequence and a c. 50 meters long varved sequence, possibly the entire Younger Dryas at BSB-9, Landsort Deep; forams and ostracodes in the sediments from BSB-10, Ångermanälven, previously not reported so far north in the Baltic Sea; laminated sediments indicating oxygen free bottom conditions under a thick sequence of varved glacial clay at BSB-7, Bornholm Basin; and three cores of diamicton from BSB-5, Hanö Bay. In addition, the team successfully collected all the offshore samples needed for meeting microbiological objectives.

D. Kroon asked about the use of carbon-dating on the sites. T. Andrén said that Sites 59 and 60 have a lot of microfossils present for carbon dating to be done, but it can be problematic where no microfossils are present.

A question was asked if the pore water absolute dating was used. T. Andrén said that no pore water dating was done as there are other calibrations done with the chemistry data.

2.5 - ESO: Curation activities and update on measurements, sampling and data policies (U. Röhl)

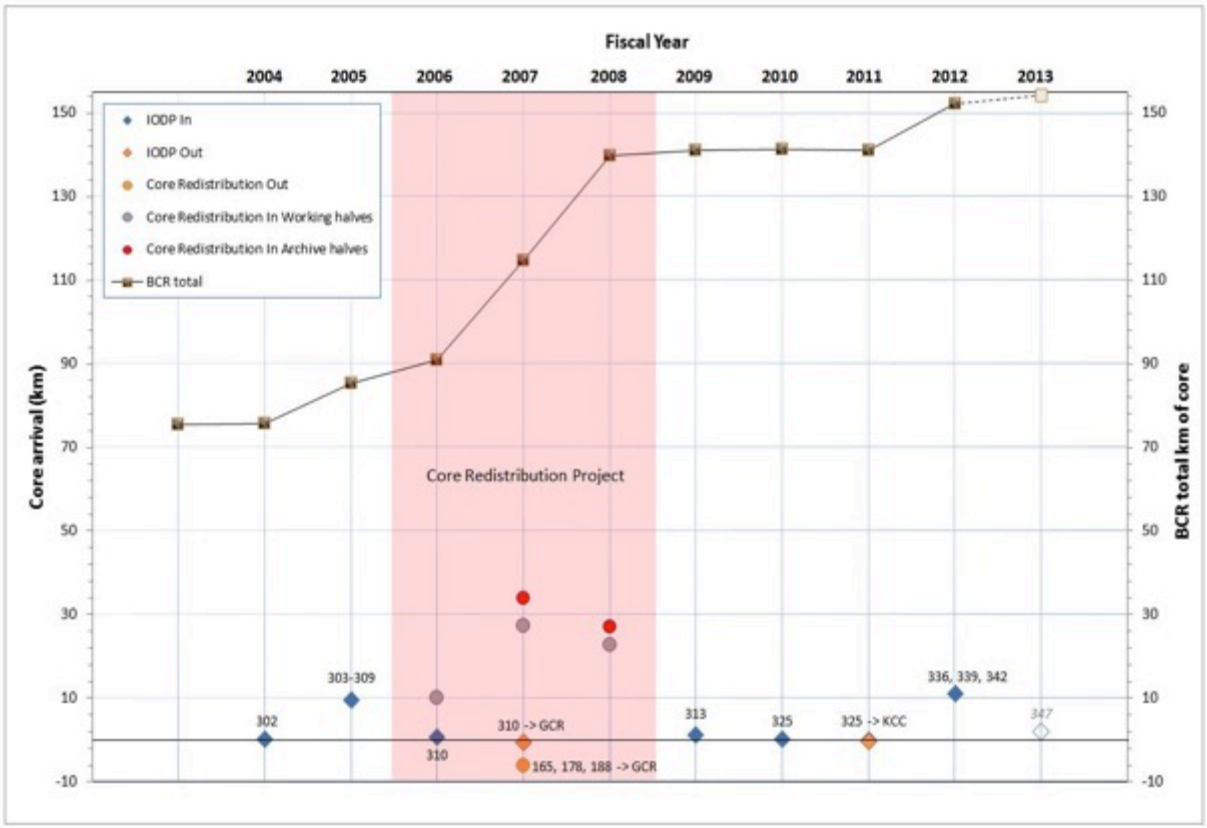
U. Röhl introduced the core dostribution map for the three IODP Core Repositories. The Bremen Core Repository (BCR) archives all IODP/ODP/DSDP cores form the Atlantic and Arctic Oceans and Mediterranean, Black and Baltic Seas.

The BCR

There were 5,293 total sample requests from cores now stored at BCR (DSDP/ODP/IODP; since 1969), and 1,504,053 total samples were taken from BCR cores, since 1969. About 2,940 individual scientists were involved since 1994. The BCR holds about 154 km of cores from the phases of IODP, ODP, and DSDP.

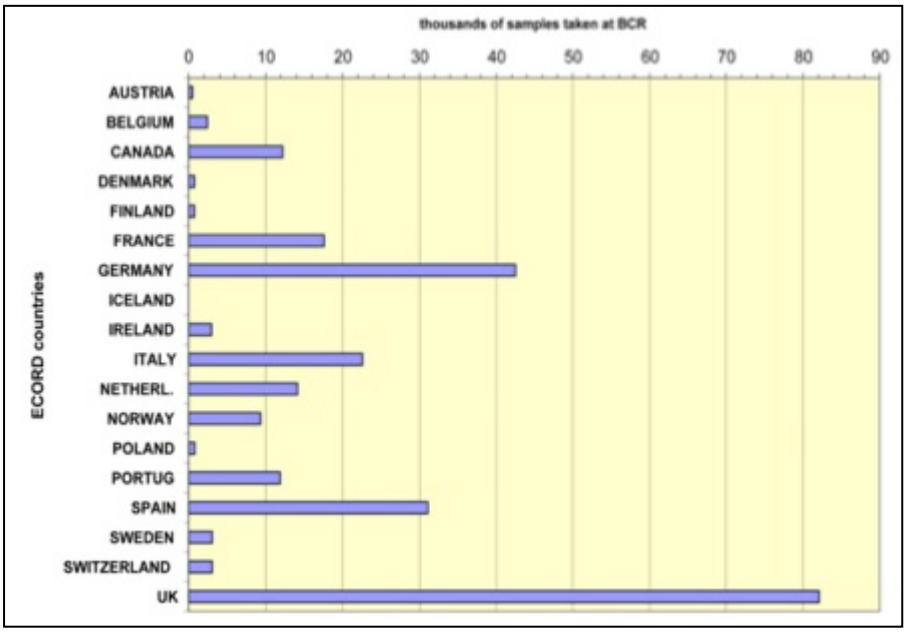
Development of the BCR Core Archive

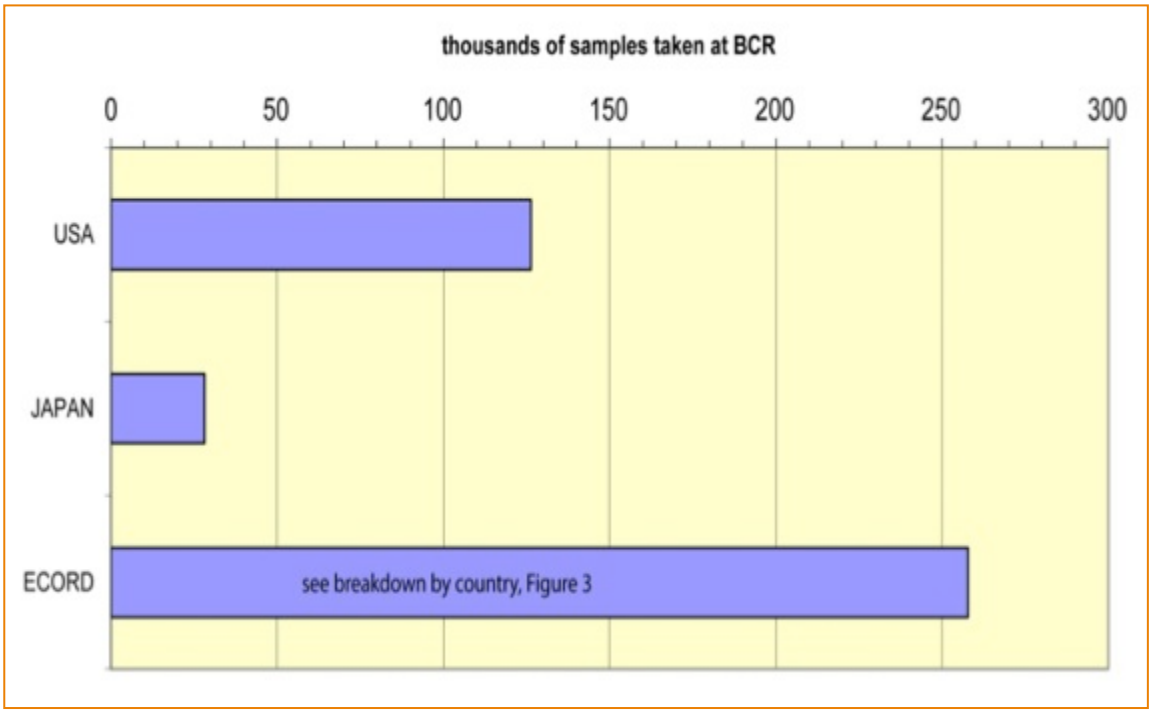
The core archive has developed significantly between 2003-2013, shown next.



Samples taken at BCR 2003-2013

U. Röhl showed two graphs of total the sample distribution by country and region.





Curation Offshore Expedition 347

There were 8 sites, M0059-M0067, where 30 holes were drilled, resulting in 1623m of core recovery and the retrieval of 5849 samples. Some of the offshore sampling included whole round sampling.

Onshore Science Party (OSP)

The OSP finished 10 days ago. The phase took 30 days. Over 26000 samples were taken. The team conducted analysis of diatoms, palynology, smear slides, TOC, IC, ICP OES, MAD, Pwave, and NRM.

Repository Database Curation

U. Röhl introduced the **Drilling Information System (DIS)** for Curation and Expeditions, which is a tool to establish and manage an information system for drill site and core repositories. For the first time in IODP, the system uses the International Geo Sample Number, where each of the samples is assigned a unique code.

U. Röhl explained that the **International Geo Sample number (IGSN)** is similar to DOI for articles and data. Expedition 347 represents the first Expedition within the IODP program to apply the IGSN, found at www.igsn.org, an alphanumeric system of unique identifiers. Each sample is assigned a unique code, potentially enabling the IODP Core Repository and investigators to track all samples accurately, even when shared between different laboratories.

This method will also provide a central registry for investigators in the future to be able to build on previous work as new techniques and methodologies are developed.

She also showed the online **MSP portal** for the BCR curation data, and the **Scientific Earth Drilling Information Service (SEDIS)** web based data and publications.

ECORD summer schools

U. Röhl reviewed the Bremen summer school topics since 2007.

2007: “Paleoceanography”

2008: “The Deep Subseafloor Biosphere”

2009: ”Geodynamics of Mid Ocean Ridges“

2010: “Dynamics of Past Climate Changes“

2011: ”Subseafloor fluid flow and gas hydrates”

2012: “Submarine Landslides, Earthquakes and Tsunamis”

2013: “Deep Sea Sediments: From Stratigraphy to Age Models”

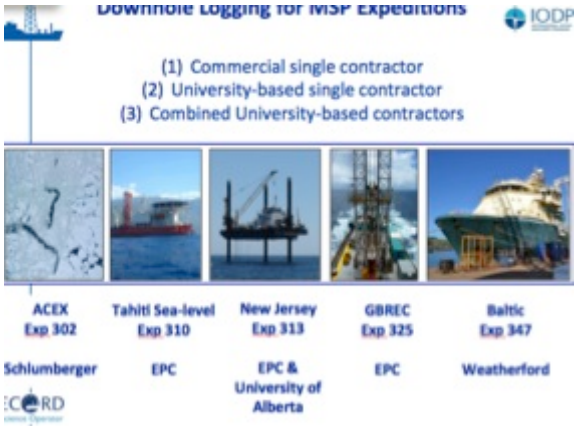
2014: "Subseafloor Biosphere: Current Advances and Future Challenges"

The goal is to provide an environment that combines a practical on the IODP style "shipboard" methodologies, lectures and interactive discussions on the main themes of IODP.

U. Röhl briefly mentioned the two new IODP policies to be represented and then discussed in the afternoon session 4.9.

2.6 - ESO: Downhole logging data and core petrophysics measurements (S. Davies)

S. Davies presented the different aspects of downhole logging for the MSP expeditions.



Downhole logging on Expedition 347

She showed images of the logging tools. For the expedition the Downhole Logging Team included D. Neuhaus and C. Sedlatschek from *Weatherford Wireline*, and A. Fehr from the EPC.

The Downhole Logging Measurements included *Weatherford Compact Tools*: Gamma Ray (MCG); Spectral Gamma Ray (SGS); Induction (MAI); Sonic (MSS); Microimager (CMI). There were the following *Logged Holes*: M0059B, M0059E; M0060B; M0062D; M0063A; M0064D; M0065A and M0065C. The toolstrings was about 7.5 to 10m in length.

Offshore Petrophysics Team

The team included Physical Properties Scientist A. S. Fanget, ESO Petrophysicis A. McGrath, and Petrophysics Staff Scientist A. Fehr.

Capability Development in the Offshore Container

The container equipment consists of a Standard Multi Sensor Core Logger (MSCL) that

measures Gamma density; P-Wave Velocity; Electrical Resistivity; and Magnetic Susceptibility. This is a dedicated system for rapid magnetic susceptibility core logging.

Fast-track results

The MSCL 152 enabled timely stratigraphic correlation and rapid logging of cores for microbiological analysis.

The pre-onshore science party petrophysics measurements took place between November 25th, 2013 and January 17th, 2014. The team worked at 4 C° to measure 4.6 km of core and used a different system as time was limited. The whole cores were analyzed with natural gamma and Radiation (NGR), and were measured for thermal conductivity (TC).

Capability Development

The tram developed and tested a more rapid NGR core logging system using a BGO, rather than NaI (TI). The testing in April 2013 prior to IODP Expedition 347 was successful. Used during the pre-onshore measurement phase and measured 1.6 km of core completed before the OSP.

The thermal conductivity measurements were conducted with a TeKa TK04 system.

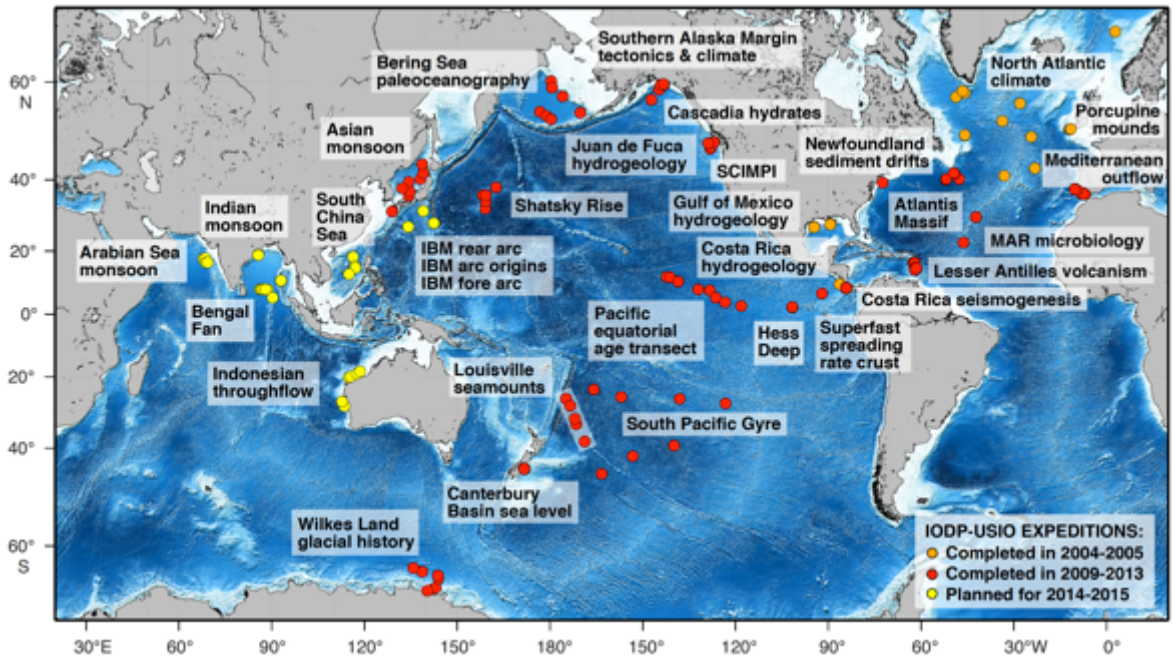
The petrophysics measurements included color reflectance, digital images, moisture and density, and P-wave velocity.

S. Davies reviewed hole 59D's physical properties measurements in porosity and density changes. The changes in density were driven primarily by porosity rather than mineralogical changes.

M. Torres asked how quickly the core can go through the fast track. S. Davies said that it takes a few minutes for every 1.5m of core.

2.7 - ESSAC: activities and educational/outreach issues (G. Früh-Green, A. Stevenson)

A map was shown of the IODP-USIO expeditions since 2004 up to 2014-2015.



G. Früh Green reviewed the nominations and staffing.

Completed Expeditions

In FY2013 ECORD's scientists sailed on all three platforms: 1 MSP, 1 *Chikyu* and 4 *JR.* A total of 51 ECORD scientists were invited to participate, including 4 Co-chief Scientists.

For the **Baltic Sea Paleoenvironment Exp. 347,** 17 ECORD scientists sailed, including the 2 co-chiefs. The nationality representations were the following: 3 Sweden, 4 Germany, 3 Denmark, 2 UK, 1 France, 2 Finland, 1 Netherlands, and 1 from Poland.

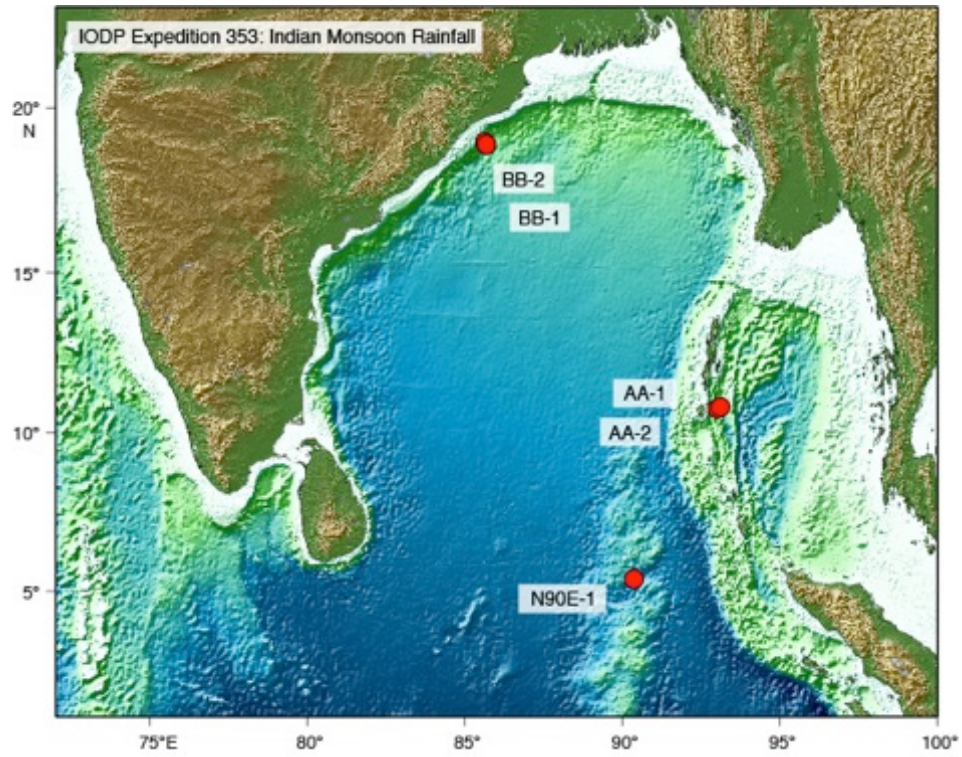
The OSP took place from January 22- February 20, 2014. A media conference was held in Bremen on February 13, 2014.

Summary of Staffing in USIO

USIO Expedition 353 Indian Monsoon took place on November 29, 2014-19, January 2015. The co-chiefs were S. Clemens and W. Kuhnt. The objectives are the Late Cretaceous-Holocene sediments to better understand the physical and Climatological mechanisms underlying changes in monsoonal precipitation, erosion, and run-off across multiple time scales. The deadline for applications was January 15, 2014 and the deadline for nominations is March 15, 2014.

There were 24 applicants:

Germany: 5; UK: 6; Italy: 1; Sweden:1; France: 8 (+1); Canada: 1; and Israel: 1.



USIO Expedition 354: Bengal Fan

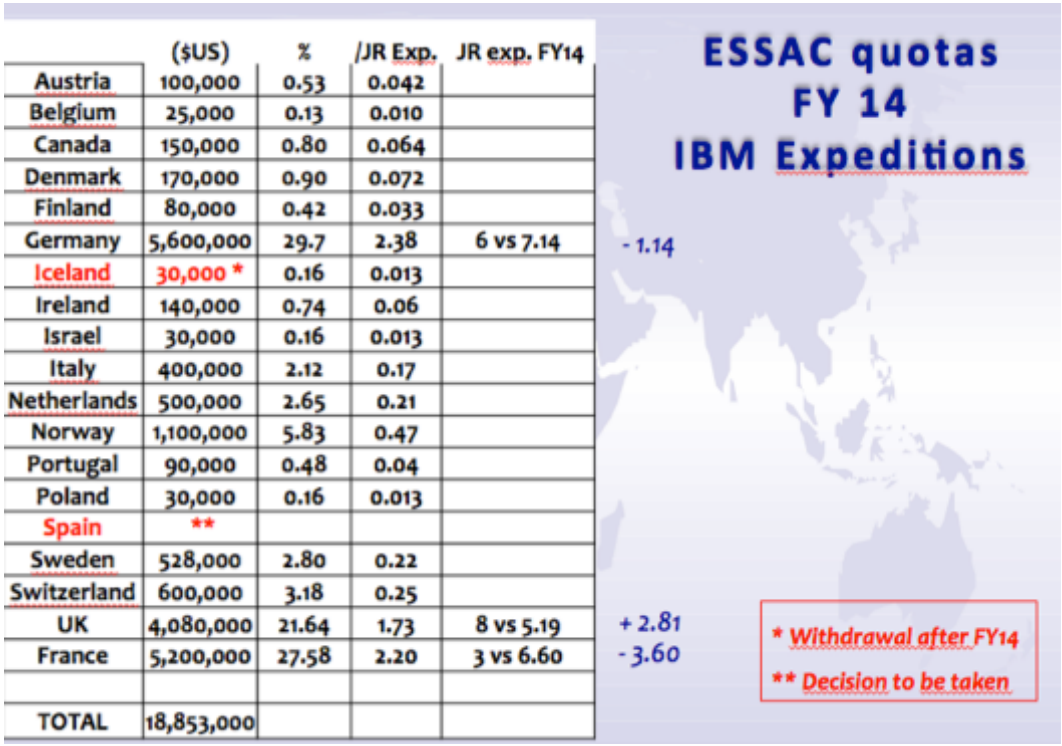
The expedition will take place on January 29 - March 31, 2015, from Singapore to Sri Lanka. The co-chiefs are C. France-Lanord and T. Schwenk. The objectives are to obtain a Neogene and late Paleogene record of Himalayan orogeny and climate. The goal is also to investigate the interactions among the growth of the Himalaya and Tibet, the development of the Asian monsoon, and processes affecting the carbon cycle and global climate. The deadline for applications was January 15, 2014 and the deadline for nominations will be April 15, 2014.

There were 30 applicants: Germany: 4; Spain: 2; Italy: 1; Sweden: 2; Switzerland: 1
France: 14; the UK: 5; and Israel: 1.

The **Next Calls for the JR Expeditions** will be: IODP Expedition 355 Arabian Sea Monsoon, to take place from 31 March-31 May, 2015; and IODP Expedition 356 Indonesian Throughflow to take place on 31 July-30 September, 2015. The deadline to apply is May 8th, 2014, due to conflicts with other deadlines and the EGU.

ESSAC quotas

G. Früh Green reviewed the FY14 IBM expeditions quotas.

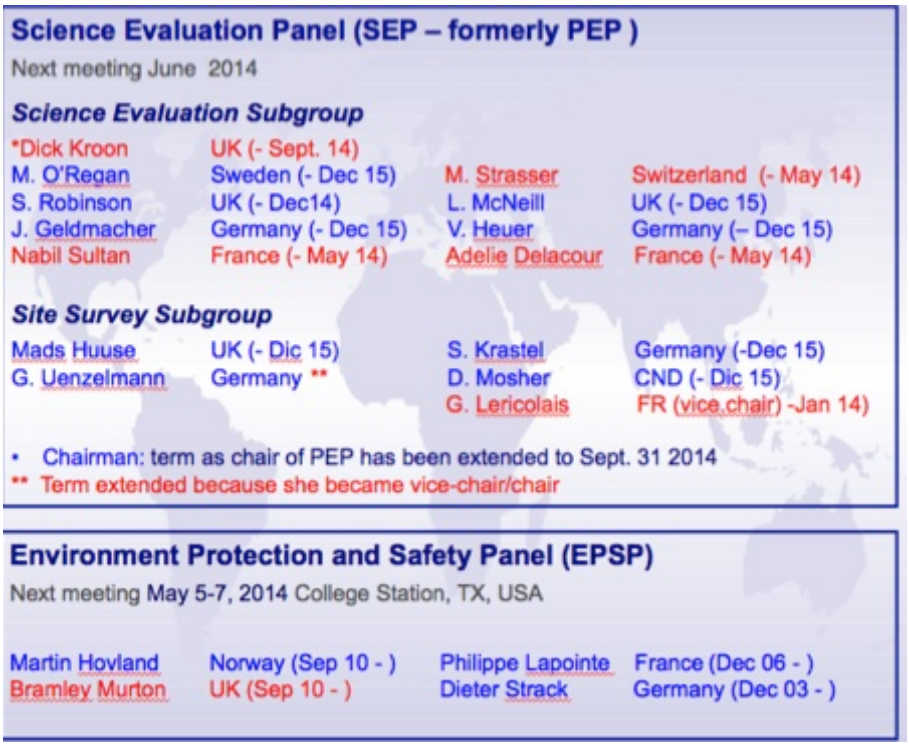


	($US)	%	/JR Exp.	JR exp. FY14
Austria	100,000	0.53	0.042	
Belgium	25,000	0.13	0.010	
Canada	150,000	0.80	0.064	
Denmark	170,000	0.90	0.072	
Finland	80,000	0.42	0.033	
Germany	5,600,000	29.7	2.38	6 vs 7.14
Iceland	30,000 *	0.16	0.013	
Ireland	140,000	0.74	0.06	
Israel	30,000	0.16	0.013	
Italy	400,000	2.12	0.17	
Netherlands	500,000	2.65	0.21	
Norway	1,100,000	5.83	0.47	
Portugal	90,000	0.48	0.04	
Poland	30,000	0.16	0.013	
Spain	**			
Sweden	528,000	2.80	0.22	
Switzerland	600,000	3.18	0.25	
UK	4,080,000	21.64	1.73	8 vs 5.19
France	5,200,000	27.58	2.20	3 vs 6.60
TOTAL	18,853,000			

G. Früh Green mentioned that there is a need to maintain attention to quotas in the new program, as the UK, Germany and France make up 79% of the funding and need to make sure their participation in the expedition corresponds to their financial contribution. Currently, the UK is over-quoted. Spain has still not committed to the new program and not paid for the past 3 years. Hence, the Spanish applicants cannot be considered until they pay for the program.

ECORD Membership on Science Advisory Panels

D. Kroon will be SEP Chair until FY15.



In red on table, the indicated scientists will be replaced.

There were ten applicants for the Site Survey Panel: D. Aslanian (F); V. Bout-Roumazeilles (F); C. Basile (F); S. Berné (F); A. Mazaud (F); E. Cauquil (F); B. Ildefonse (F); G. Lericolais (F); M. Rebesco (I); and A. Sánchez (Spain).

The deadline for the open call for the nomination of the ECORD Panel Membership in the Environmental Protection and Safety Panel is February 28, 2014. There were 3 applicants: D. Lang (UK); D. Mosher (Canada); and J. Thorogood (UK).

Future Activities

G. Früh Green is the convener of a 2014 IODP-ICDP "The Major Achievements and Perspectives in Scientific Ocean and Continental Drilling Forum". So far 40 abstracts were submitted. G. Früh Green said that there is a good collection of projects related to IDOP and ICDP, some resulting from the MagellanPlus.

The MagellanPlus Workshops

G. Früh Green reviewed the recently scheduled MegallanPlus workshops.

Title	Convenors	Dates	Location
ISOLAT Integrated Southern Ocean Latitudinal Transects (ISOLAT)	**Ian Hall** Luke Skinner	**September 23-25, 2013**	**Cambridge, UK**
DREAM II Deep-sea Record of Mediterranean Messinian Events II (DREAM II)	**Giovanni Aloisi**	**January 20-23, 2014**	**Paris, France**
Corinth Rift	**Lisa McNeill**	**February 11-14, 2014**	**Athens, Greece**
BLACKSINK	**Iuliana Vasiliev-Popa** Gert-Jan Reichart Wout Krijgsman	**February 27-28, 2014**	**Utrecht, the Netherlands**
NeoProterozoic Accelerating Neoproterozoic Research through Scientific Drilling	**Daniel Condon**	**March 17-19, 2014**	**Notitingham, UK**

There are also some newly approved workshops.

Title	Convenors	Dates	Location
Advancing Subsurface Biosphere and Paleoclimate Research	Jan de Leeuw Kai-Uwe Hinrichs Jens Kallmeyer Bo Barker Jørgensen Daniel Ariztegui & 5 other co-conveners	**August 21-23, 2014**	**Seoul, South Korea**
Newfoundland Drilling Filling the Oligo-Miocene Gap in the North Atlantic	**Oliver Friedrich** Richard D. Norris Bradley Opdyke Paul A. Wilson	**September 15-17, 2014**	**Heidelberg, Germany**

Future Activities: Education & Outreach

Two summer schools will take place in 2014: one in Bremen and one in Urbino. The Urbino Summer School in Paleoclimatology 2014 will take place on July 9-24, 2014 and the ECORD Bremen Summer School 2014 on the Subseafloor Biosphere: Current Advances and Future Challenges, will take place on September 22-October 3, 2014. Some scholarships will be offered. The applications deadline for scholarships is April 2, 2014. There will be a new call for summer schools in 2015, with a deadline of May 2, 2014.

The total ESSAC budget is $20 000, where $10 000 are awarded in grants per school.

There is an effort to increase the number of summer schools per year.

Distinguished Lecturer Program

There has been a new call for the DLP. The deadline is March 31, 2014. In total, so far 26 lectures were requested.

N. Exon asked if the DLP can come to New Zealand/Australia. G. Früh Green explained that ECORD cannot attend unless the institution's host pays for the lecturers' flight or accommodations. G. Früh Green proposed that Australia could pay for the flight and ECORD could pay for the accommodations. N. Exon agreed to further discuss this question with G. Früh Green.

2.8 - ECORD Industry Liaison Panel: recent activities (G. Camoin)

G. Camoin presented for A. Moscariello. He discussed the ILP's purpose and membership.

Purpose

The ECORD Industry Liaison Panel acts as a link between academia and industry to promote scientific and technologic collaboration.

Membership

There is a membership of representatives from interested industries and representatives from academia with a strong experience of collaboration with industry. Academia's representatives include: the University of Geneva; University of Newcastle; University of Leicester; the University of Tromso; and Delft University (ICDP).

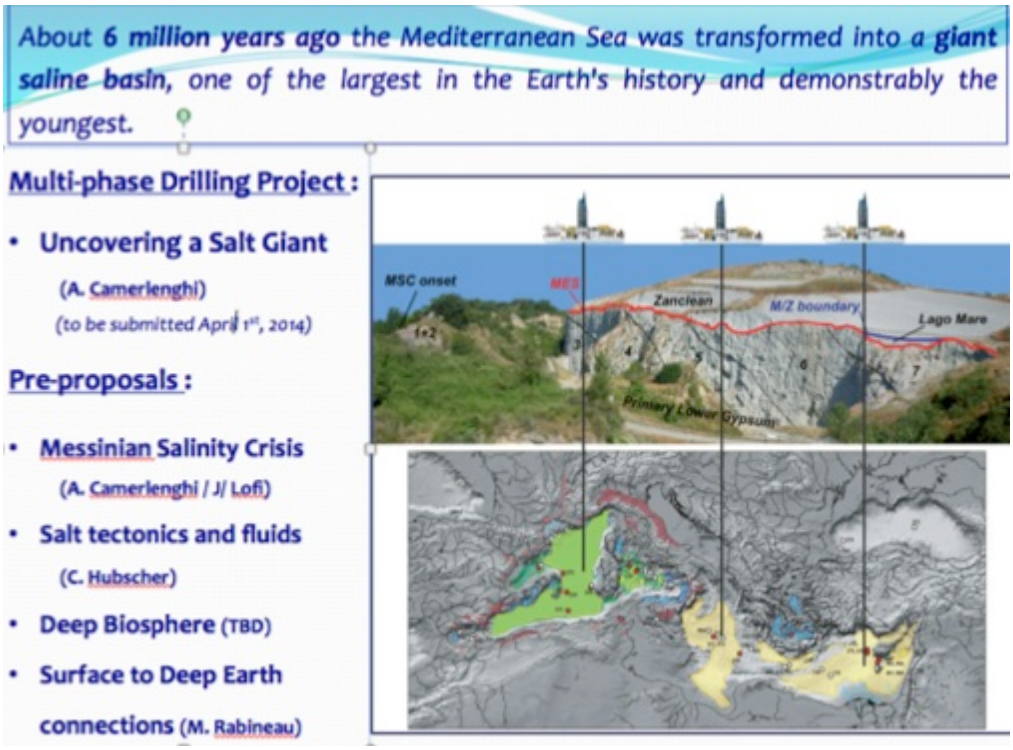
Industry is represented by the already involved: TOTAL; EXXON-MOBIL; BP; ENI; Anadarko; Fugro-Robertson; Badley Geoscience; Geotek; and DrillingGC. There has been also expression of interest from SHELL, Noble, Statoil, and Repsol.

ARCTIC (3P conference)

A meeting was proposed for the ILP to take place on October 16th. There was little response from industry, where 2 out of 6 companies responded. There were some interesting ideas but the conversations were short due to a very busy schedule. It is preferred that industry visits the booth.

MEDITERRANEAN (DREAM Project)

The DREAM project objectives were reviewed. The workshop was successful and well-conducted.



The E- ILP was invited to attend the 2nd DREAM MagellanPlus workshop that was held in Paris on January 20-23, 2014. Anadarko provided useful information related especially to drilling and logging sub-salt deep wells. ENI and ExxonMobil expressed a lot of interest, but could not attend the meeting. The participation of industry's representatives at MagellanPlus workshops is recommended as they can bring a sense of reality, e.g. about drilling, during the discussion on site selection and deep objectives. Ad hoc meetings were organized with the Geological Survey of Israel, which made the liaisons between locally operating companies, e.g. Noble Energy, and ECORD. Topics such as data exchange, e.g. seismic, cuttings, etc., were discussed.

A second E-ILP meeting will take place in June 2014, and will be possibly held in Bremen or Edinburgh. Discussion items will include a presentation of IODP proposals with some interest for the industry, e.g. Arctic proposals, DREAM proposal etc. ICDP, CDEX and USIO are invited to attend.

A question was posed regarding the planned drilling depth for DREAM. J. Lofi said that the deepest drill is 7 km and another pre-proposal plans for a 3-4 km depth.

2.9 - ECORD Vision Task Force: recent activities (G. Camoin)

G. Camoin reviewed the purpose and mandate of the VTF.

Purpose

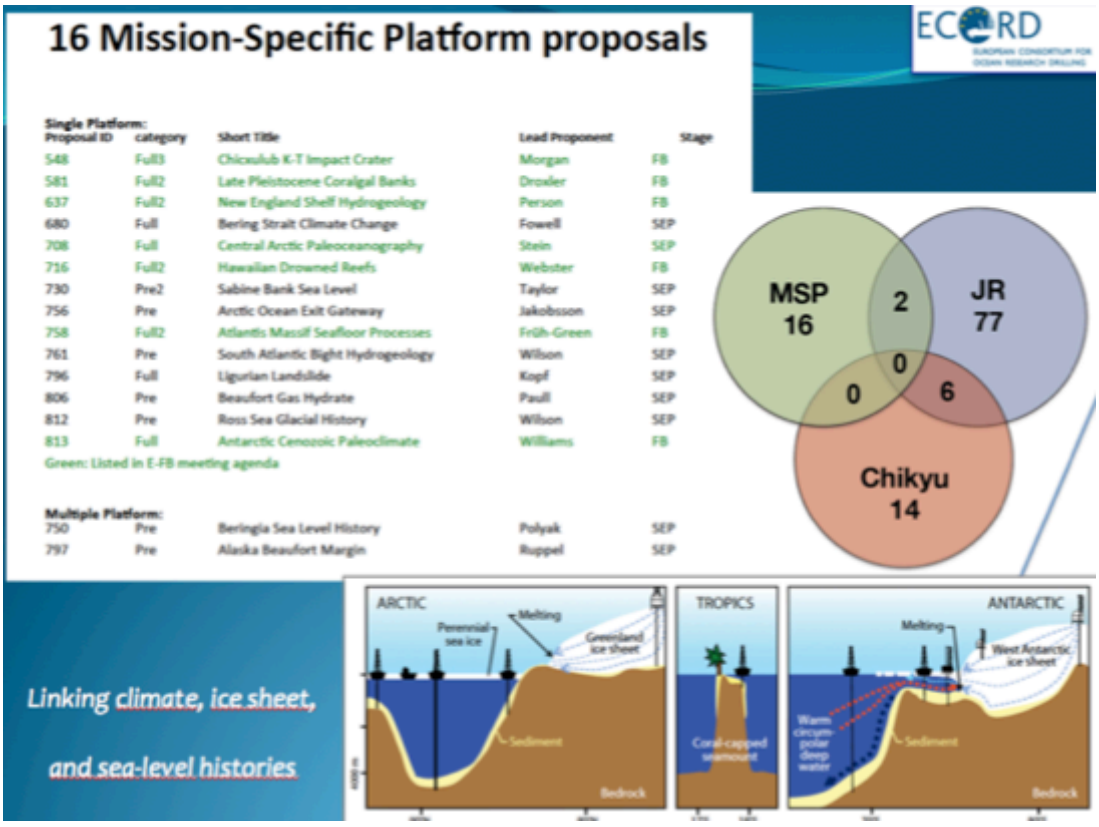
The ECORD Vision Task Force (E-VTF) is the ECORD strategic entity, in charge of identifying long-term scientific, technological challenges and funding opportunities.

Mandate

The VTF's mandate is to identify new scientific challenges; Advise ESSAC on ECORD long-term planning and scientific and operational strategy, including science, technology and partnership; Assist EMA to establish a European infrastructure focused on sub-surface sampling and observing systems; Identify co-funding opportunities from industry, EC, national funding agencies, etc.; Plan the relationships with industry and other science programs and organizations; and Identify potential new members and take the appropriate actions.

Forward look to the MSP Proposals and Expeditions

There are 16 MSPs in the system, highest ever, two of which are a mixed MSP-JR. Ten of the proposals are led by US scientists, 5 by European and 1 by ANZIC.



New opportunities for the ECORD Education Program

Some non-ECORD countries have expressed interest in ECORD's education and outreach activities, by applying to ESSAC. The objective is to offer the possibility to non-ECORD countries to participate to the ECORD Educational activities, such as the MagellanPlus Workshop Series, Distinguished Lecturer Program, ECORD Summer Schools, ECORD Scholarships, ECORD grants).

How?

Since an annual contribution is needed, it was proposed to charge a fee of $10k USD for access. Non-ECORD countries will get the same rights to access the ECORD Educational program.

The benefits will be community building, establishment of privileged relationships with new potential partners, development of ECORD educational activities, e.g. New Schools, more ECORD Grants, and opening of the ECORD Educational program to Developing / Emerging Countries.

T. Janecek asked which countries have expressed interest in this program. G. Camoin said that Korea, Brazil have expressed interest in this program.

ESSAC and the Council have endorsed this idea via ESSAC Consensus 13-11-04 and ECORD Council Consensus 13-04-2.

Status of "ECORD Associated Members"

The status of 'ECORD associated members' has been approved by the Council ECORD, via Council Consensus 13-06-2.

The objective of this idea is to open the possibility for non-ECORD IODP countries to offer in kind contributions, e.g. ship time and drilling equipment, in exchange of berths on any MSP expedition. The benefits could be access to the most appropriate ships/platforms; potential cost savings for MSP expeditions; and establishment of privileged relationships with other IODP members.

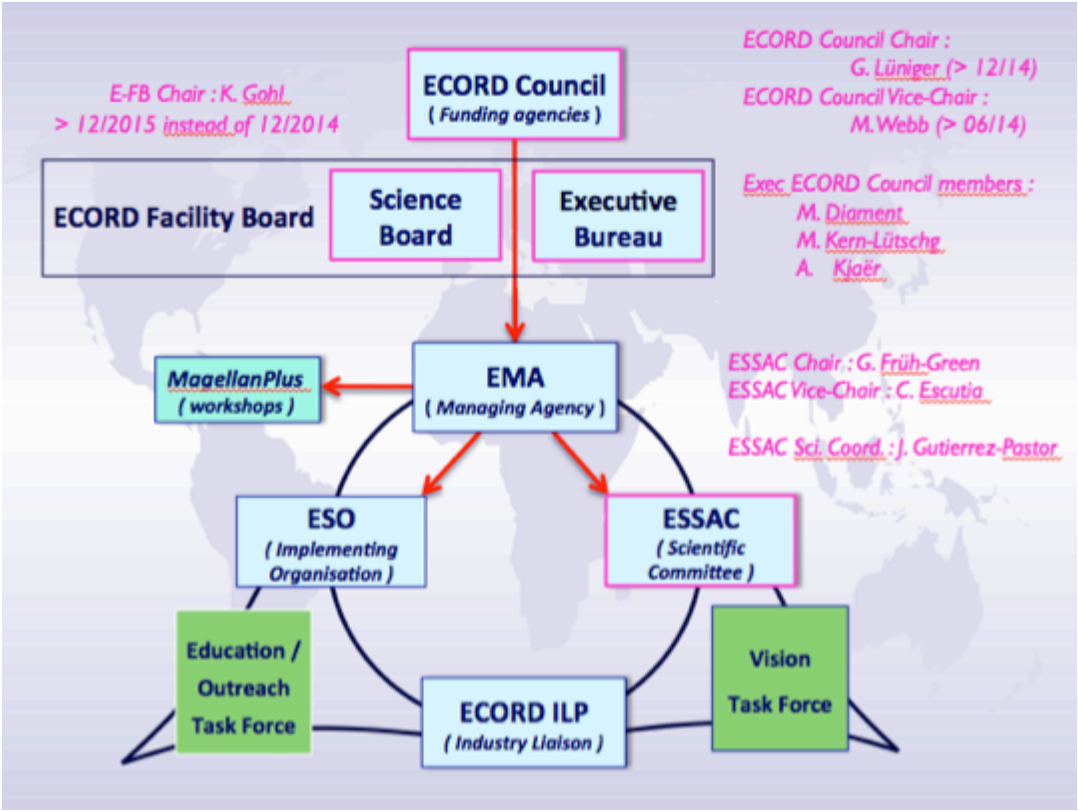
2.10 - ECORD Council: important issues of Executive Bureau (G. Lüniger)

&

2.11- EMA: ECORD budget (G. Camoin)

A diagram of the ECORD structure was introduced.

G. Lüniger is the new Council Chair, M. Webb will be the vice Chair until June and then replaced by a French rep in July. M. Diament, M Kern and A. Kjaer are the current Executive Bureau. The current ESSAC Chair is G. Früh Green and J. G. Pastor is the ESSAC Coordinator.



ECORD Annual Report

The ECORD Annual 2013 report is ready to be printed in the week of March 10th.

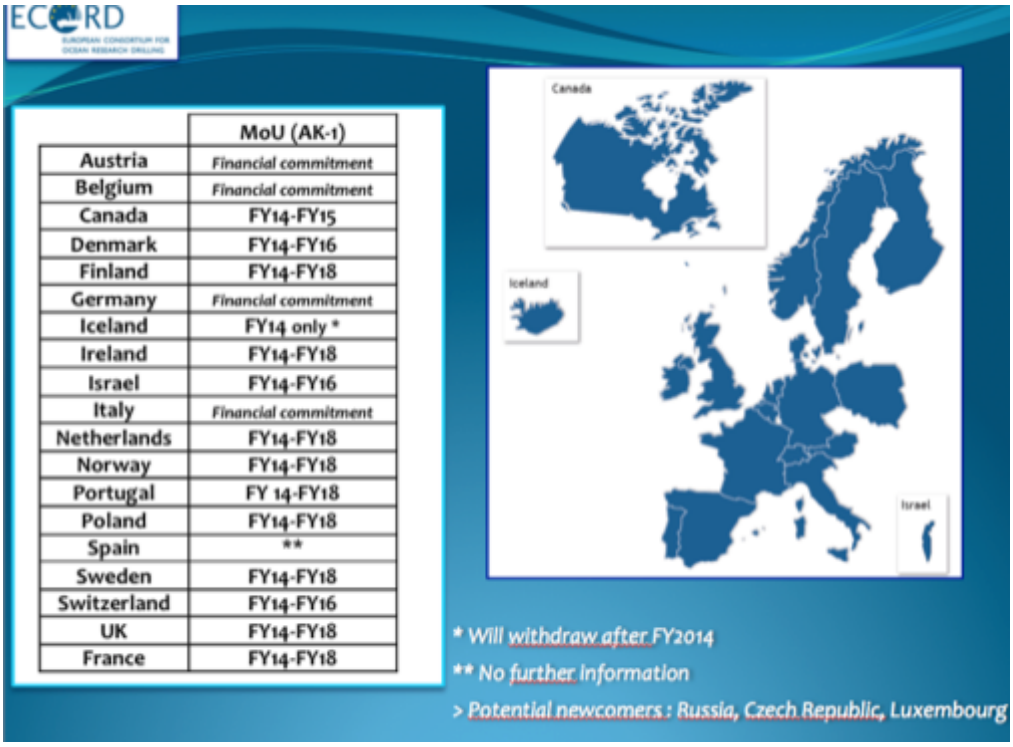
ECORD Headlines

The ECORD's headlines online section was created to announce key current events. This is a new communication tool for a direct and real time information ("breaking news ») of the ECORD/IODP community. It is intended to show most important topics, e.g. MoU signatures, new members, expedition scheduling etc., in addition to the ECORD

Newsletter. The tool will be available to all ECORD entities, such as EMA, ESO, ESSAC, E-FB, and the E-ILP.

ECORD MoU and contracts

The all-members-signature page will be sent for signature by all funding agencies. The MoU is a 49-page document that was sent to the ECORD funding agencies on February 25, 2013, and was reviewed and approved by the CNRS Legal Department. The ECORD MoU has been approved by most ECORD countries, except for Spain. Iceland will withdraw from the program in FY15.



	MoU (AK-1)
Austria	Financial commitment
Belgium	Financial commitment
Canada	FY14-FY15
Denmark	FY14-FY16
Finland	FY14-FY18
Germany	Financial commitment
Iceland	FY14 only *
Ireland	FY14-FY18
Israel	FY14-FY16
Italy	Financial commitment
Netherlands	FY14-FY18
Norway	FY14-FY18
Portugal	FY 14-FY18
Poland	FY14-FY18
Spain	**
Sweden	FY14-FY18
Switzerland	FY14-FY16
UK	FY14-FY18
France	FY14-FY18

ECORD-NSF MoU

The ECORD NSF-MoU is currently being reviewed by the NSF, and should be signed by mid-or late spring. The MoU is a 13-page document that was written in November 2012. Annexes C and D were revised in January 2013. There were a few changes requested by NSF, which were accepted in August 2013. The MoU is also reviewed by the CNRS Legal Department in review at NSF's changes regarding the program period of five instead of ten years.

ECORD-JAMSTEC MoU

The ECORD-JAMSTEC MoU was written in March 2013, amended in July-August 2013, and approved by the CNRS Legal Department. The signing ceremony took place on February 17th, 2014 at the Delegation of the European Union in Tokyo.

ECORD partnerships

ECORD will contribute to the annual funding of the *JOIDES Resolution* with $7M USD for the access of 8 ECORD per JR expedition.

The co-chief scientists are not counted against the participation levels on all IODP expeditions. ECORD will contribute to the annual funding of the *Chikyu* with a $1M USD minimum for the access of more than 3 ECORD berths per *Chikyu* expedition. If the *Chikyu* comes to European waters, the Council could consider to fund it up to $10M USD.

The level of funding to the *Chikyu* will be defined each year by the ECORD Council. The MSP expeditions allot more than 10 berths to ECORD, 13 to the US and its associated members and 4 to Japan.

There may be 1-3 co-funded projects. Some extra berths may be provided to ECORD's « Associated Partners », in the case that in-kind contributions are provided for the MSP expeditions.

ECORD FY13 Budget

G. Camoin presented the FY13 budget.

ECORD FY13 Budget

ECORD FY 13 budget		
in $US		
	Inc.	Exp.
FY 12 balance	11,449,011	
FY 13 contributions	19,858,452	
SOCs to NSF (1)		13,055,771
ESO		15,995,785
ESSAC (2)		285,702
EMA (3)		379,730
MagellanPlus		65,000
TOTAL	31,307,463	29,781,988
FY 13 balance	1,615,475	

(1) 16 800 000 - 3 744 229 (SOCs for ESO)
(2) FY13 + Oct.-Nov. 13
(3) Incl. ECORD outreach
Exchange rate = 1.3
Amounts in € are subjected to exchange rate fluctuations

ECORD FY13 contributions

in $US	
Austria	100,000
Belgium	30,000
Canada (1)	150,000
Denmark	170,000
Finland	66,380
France (1)	5,164,072
Germany	5,600,000
Iceland	30,000
Ireland	140,000
Italy	100,000
Netherlands	400,000
Norway	1,100,000
Poland	30,000
Portugal	90,000
Spain (2)	0
Sweden	528,000
Switzerland	560,000
UK	5,600,000
TOTAL	19,858,452

(1) Reduced contribution
(2) No contribution

The positive balance is $1.615M USD. The ECORD FY04-FY13 budget was reviewed next.

ECORD FY04 - FY13 Budget

	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	TOTAL
Austria	0	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	900 000
Belgium	0	30 000	30 000	30 000	30 000	30 000	30 000	30 000	0	30 000	240 000
Canada	150 000	150 000	150 000	150 000	300 000	300 000	500 000	500 000	500 000	150 000	2 850 000
Denmark	500 000	500 000	1 000 000	0	200 000	200 000	200 000	170 000	170 000	170 000	3 110 000
Finland	66 380	66 380	66 380	66 380	66 380	66 380	66 380	66 380	66 380	66 380	663 800
France	2 000 000	3 000 000	3 500 000	3 500 000	5 600 000	5 600 000	5 070 274	6 070 274	5 288 000	5 176 072	44 792 620
Germany	2 250 000	3 500 000	7 000 000	0	5 600 000	5 600 000	5 600 000	5 600 000	5 600 000	5 600 000	46 350 000
Iceland	30 000	30 000	30 000	30 000	30 000	0	0	30 000	30 000	30 000	240 000
Ireland	0	130 000	130 000	130 000	145 000	130 000	130 000	140 000	140 000	140 000	1 215 000
Italy	150 000	250 000	250 000	225 000	190 000	190 000	190 000	100 000	100 000	100 000	1 745 000
Netherlands	470 000	0	210 000	210 000	400 000	400 000	400 000	400 000	400 000	400 000	3 290 000
Norway	1 000 000	0	1 400 000	0	1 100 000	1 100 000	1 100 000	1 100 000	1 100 000	1 100 000	9 000 000
Poland	0	0	0	0	0	0	0	0	30 000	30 000	60 000
Portugal	90 000	90 000	90 000	90 000	90 000	90 000	90 000	90 000	90 000	90 000	900 000
Spain	150 000	350 000	350 000	350 000	476 000	762 000	762 000	0	0	0	3 200 000
Sweden	1 312 500*	330 000	330 000	330 000	528 000	528 000	528 000	528 000	528 000	528 000	4 158 000
Switzerland	150 000	350 000	350 000	350 000	560 000	560 000	560 000	560 000	560 000	560 000	4 560 000
UK	4 300 000	3 800 000	400 000	3 500 000	5 600 000	5 600 000	5 600 000	5 600 000	5 600 000	5 600 000	45 600 000
	11 306 380	12 676 380	15 386 380	9 061 380	21 015 380	21 256 380	20 926 654	21 084 654	20 302 380	19 858 452	172 874 420

** In FY04, includes USD 900,000 in kind contribution (Oden)*

The budget has been constant overall.

Germany, the UK and France have contributed 79% of the total ECORD budget, or about $173 M USD in total over the past IODP phase. Most ECORD members have either increased or maintained their current level of contribution. For example, Canada increased before FY13 and the Netherlands, and Spain increased before FY11. Other members, such Austria, Belgium, Finland, Iceland, Ireland, Italy, Norway and Poland

have maintained their contributions. Denmark has decreased its contribution after the first 4 years before it began to maintain the contributions at a constant level. Poland joined IODP in FY12.

G. Dickens asked what is the positive balance for the MSPs. G. Camoin said that the budget is about $9.6M USD and he plans to address this in further detail later in the day.

3. Brief reports of other facility boards and IODP entities on recent activities

3.1 - *JOIDES Resolution* Facility Board (S. Humphris)

S. Humphris reported on the JR-FB. She explained that the JR-FB provides oversight to the advisory panels.

JR-FB Role

The JR-FB role is to: Determine the operations schedule of the JOIDES Resolution; Approve the JOIDES Resolution Annual Program Plan and the IODP Science Support Office Annual Program Plan; Provide oversight of the JOIDES Resolution Facility's advisory panels by maintain communications with, and receive feedback from, other FBs regarding the effectiveness of the advisory panels in meeting their needs; and Develop and monitor policies for data collection, pre- and post-cruise publications, and core curation associated with the JOIDES Resolution.

JR-FB membership

Susan Humphris, Chair	Woods Hole Oceanographic Institution, USA
Ryo Anma	University of Tsukuba, Japan
Rick Murray	Boston University, USA
Heiko Pälike	University of Bremen, Germany
Andrew Roberts	Australian National University, Australia
James Allan	National Science Foundation, USA
B.K. Bansal	Ministry of Earth Science, India
Gilbert Camoin	European Management Agency, CEREGE, France
Manoel Cardoso	Coordenação de Aperfeiçoamento de Pessoal de Nivel (CAPES), Brazil
David Divins	USIO, Consortium for Ocean Leadership, USA
Gil Young Kim	Korea Institute of Geoscience and Mineral Resources (KIGAM), Republic of Korea

Jianzhong Shen	Ministry of Science and Technology, China
Chris Yeats	ANZIC, Australian Resources Research Centre, CSIRO, Australia

Approval of *JR* Facility FY'14 Annual Program Plan

28 January–30 March 2014:	Expedition 349: South China Sea CPP
30 March–30 May 2014:	Expedition 350: Izu Bonin Mariana: Rear-arc
30 May–30 July 2014:	Expedition 351: Izu Bonin Mariana: Arc Origins
30 July–29 September 2014:	Expedition 352: Izu Bonin Mariana: Forearc

S. Humphris mentioned that Expedition 349 is a CPP. The cost calculation is not included in the current budget. Its funding depends on external funding sources.

Recommendation of JR Facility FY'15 Schedule

29 November 2014–29 January 2015:	Expedition 353: Indian Monsoon
29 January–31 March 2015:	Expedition 354: Bengal Fan
31 March–31 May 2015:	Expedition 355: Arabian Sea CPP
31 July–30 September 2015:	Expedition 356: Indonesian Throughflow

***JR* Facility Policies and Guidelines**

There is an attempt to maintain some policies across all of the platforms. An international subcommittee provided revisions of the policy.

The FB has approve the: Conflict of Interest Policy; *JR* Staffing Procedures; *JR* Standard Measurements; SEP Site Survey Guidelines; and the EPSP Safety Review Guidelines. The Third Party Tools & Instruments Policy is currently in Revision.

IODP Policies

The JR-FB has approved the: IODP Environmental Principles; IODP Proposal Confidentiality Policy; IODP Site Survey Data Confidentiality Policy; and the IODP Proposal Submission Guidelines. The IODP Sample, Data and Obligations Policy is in revision.

Facility Board Chairs have requested that the Core Curators develop an Implementation Plan for the IODP Sample, Data and Obligations Policy by April 2014.

Implementation Plan request

The COI conflict is very much similar to the other FBs, except that the JR FB addresses

the advisory panels as well.

JR facility Board Panels

S. Humphris explained that there was a proposition to merge the PEP and SCP, due to some of the proposals' results, which lacked some essential site survey data. Hence, it was decided that the merging of the panels will have a more realistic view for the scientific merit, readiness of drilling and to improve communication with the proponents and FBs. The SEP is responsible for the evaluation of all IODP drilling proposals. It has two co-Chairs, one each for the scientific evaluation and the site survey review.

The first SEP meeting was held in January 2014. Thus the demonstrated synergy showed that the panel can give the proponents and Facility Boards better advice. The panels are currently very large, so some changes will be made to reduce its size.

The advantages of creating SEP is that it allows more holistic review of feasibility and readiness of proposals for drilling and the proponents receive one comprehensive review letter. The result is that this should result in fewer proposals in the "holding bin". There will be one message to the appropriate FBs about the status of the proposal.

The EPSP continues to function as it used to. The *Chikyu* uses the EPSP only for riserless drilling, as they have their own evaluation process for riser drilling. The EPSP provides independent advice with regard to safety and environmental issues associated with proposed drilling. The EPSP Safety Review Guidelines were updated and approved. These guidelines will be used by ECORD FB, and the CIB only for riserless proposals. The riser proposals will go straight to the *Chikyu* safety panel.

There were two *JR-FB* meetings in FY13 and one meeting coming up in April 2014.

3.2 - *Chikyu* IODP Board (N. Eguchi, H. Villinger)

H. Villinger gave a summary of the current CIB membership.

Members	Liaisons	Observers
Six leading scientists	IODP Forum Chair	NSF
Chikyu Regular Members	SEP Chair and Vice chair	*Chikyu* Partnership Members
Chikyu Project Members	Science Support Office(SSO)	Program Member Offices
Director/IODP, MEXT	USIO	J-DESC
CDEX Director	ESO	USSSP
	Kochi Core Center(KCC)	ESSAC
	ECORD FB Chair	Other PMOs
	JR FB Chair	
	EPSP Chair	

The CIB includes six leading scientists: G. Kimura; Y. Tatsumi; H. Kawahata; K. H. Nealson; J. Casey Moore; and H. Villinger.

CIB Mandate

The *Chikyu* IODP Board (CIB) will discuss and/or review the matters described below concerning the planning and the operations of *Chikyu* IODP expeditions and relevant programs, and provide suitable recommendations for JAMSTEC and other relevant parties.

1. Annual *Chikyu* IODP Implementation Plans for the following Japanese fiscal year.
2. Long-term *Chikyu* IODP Implementation Strategies for the following 4-5 years.
3. Data management, core curation, publications, capacity building, outreach programs, and other related activities.
4. The establishment of full-proposal formation workshops.
5. Discuss other related issues when a need arises.

The CIB Mandate is similar to the EFB and JRFB mandates, as it discusses the annual Chikyu-IODP implementation plan, etc. The CIB met on July 2013 at the JAMSTEC Yokohoma Institute for Earth Sciences (YES). About 60 participants attended, including 8 members and 8 liaisons.

Highlights of the CIB Agenda

Some of the topics that were discussed include a: Roadmap for the Chikyu Expedition; Outline of Ship Schedule for JFY2014 and 2015; the Chikyu +10 Workshop report; Proposal Overview; Long-term Planning; Toward project advancement; and the Chikyu facility procedures, guidelines and policies.

The CIB Consensus

There were 30 consensus decisions, reviewed.

CIB_Consensus_0713-10: The CIB made a request to JRFB to use PEP and SCP (now SEP) for all pre- and full proposals.

CIB_Consensus_0713-11: The CIB made a request to JRFB to use EPSP for *Chikyu* riserless operation.

CIB_Consensus_0713-12: The CIB endorsed to use a biannual proposal submission deadline (1 April and 1 October).

CIB_Consensus_0713-18: The CIB designated both IBM and CRISP as *Chikyu* Projects.

CIB_Consensus_0713-19: The CIB endorsed *Chikyu* riserless operation in the below criteria (but not limited to).

–Riserless operation beyond JR capability (e.g., ultra deep water).

–Riserless operation in the regions where JR will not be for many years (e.g., W. Pacific after FY2014).

–Riserless operation on the way to/from e.g., industry operations.

CIB_Consensus_0713-20: The CIB recommended to establish a PCT* for IBM and CRISP.

CIB_Consensus_0713-22: The CIB in principle agreed upon a common platform "IODP Environmental Principles". The CIB will review CDEX proposed revisions, in time for August 2013 JRFB meeting.

CIB_Consensus_0713-23: The CIB agreed upon a common platform "Sample, Data and Obligation Policy". Three FB chairs send a message to curators requesting implementing procedures.

•**CIB_Consensus_0713-24**: The CIB agreed upon a common platform "Proposal Submission Guidelines". Small working group across FBs will work some modification prior to the next proposal submission deadline of 1 October 2013.

CIB_Consensus_0713-25: The CIB agreed upon a common platform "Onboard Measurements Guidelines". Small working group across FBs will work its contents and the CIB support office will inform CIB at the next meeting.

CIB_Consensus_0713-26: The CIB wait for *Chikyu* version of "Third Party Tool Guidelines" at its next meeting.

CIB_Consensus_0713-27: The CIB agreed that the chairs of the boards (CIB, JRFB and ECORD FB) ask the three curators at the core repositories to update the Sample, Data & Obligation Policy, especially that they split up the document in a fairly short (two to three pages) policy statement and an implementation plan which contains all the details (see also CIB_Consensus_0713-23). The role of the Curatorial Advisory Board should also be defined in this document. The CIB encouraged that the geographic core distribution model should be kept as it is.

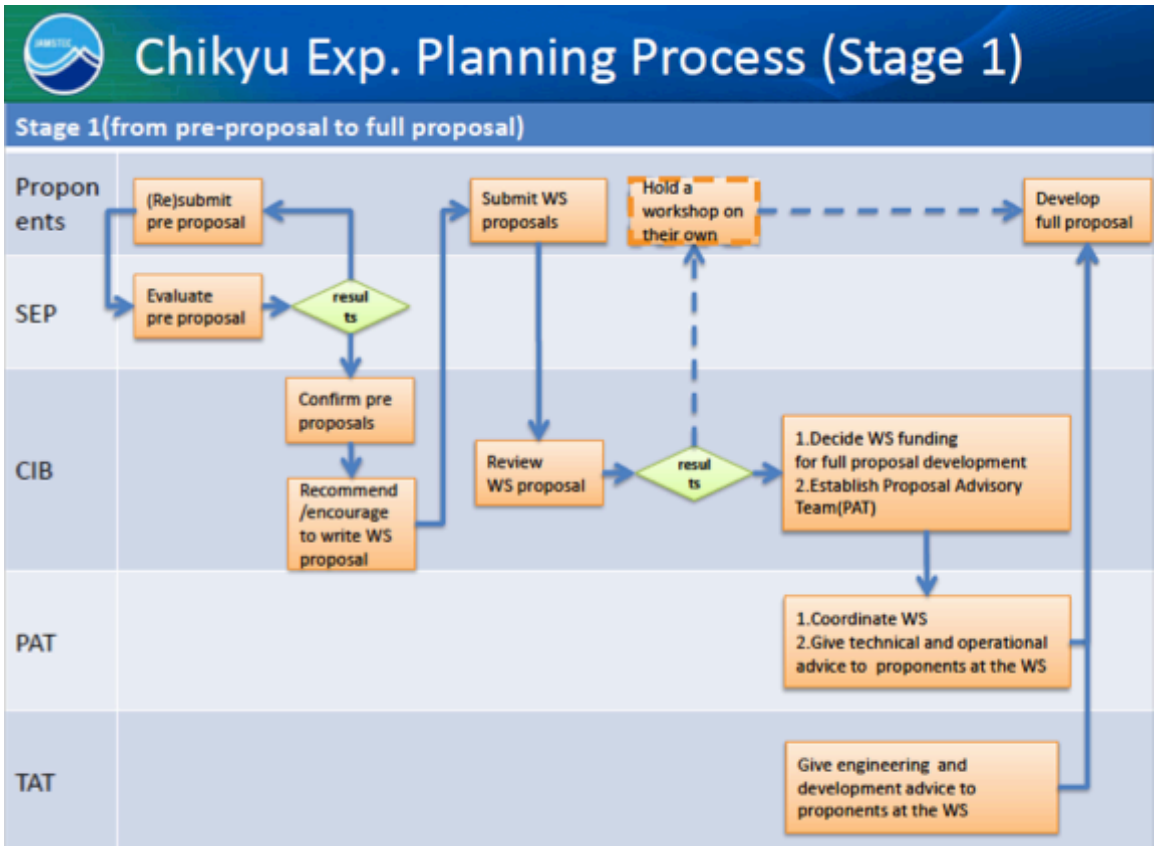
CIB_Consensus_0713-28: The CIB endorsed maintaining same quality and format of IODP expedition related publications.

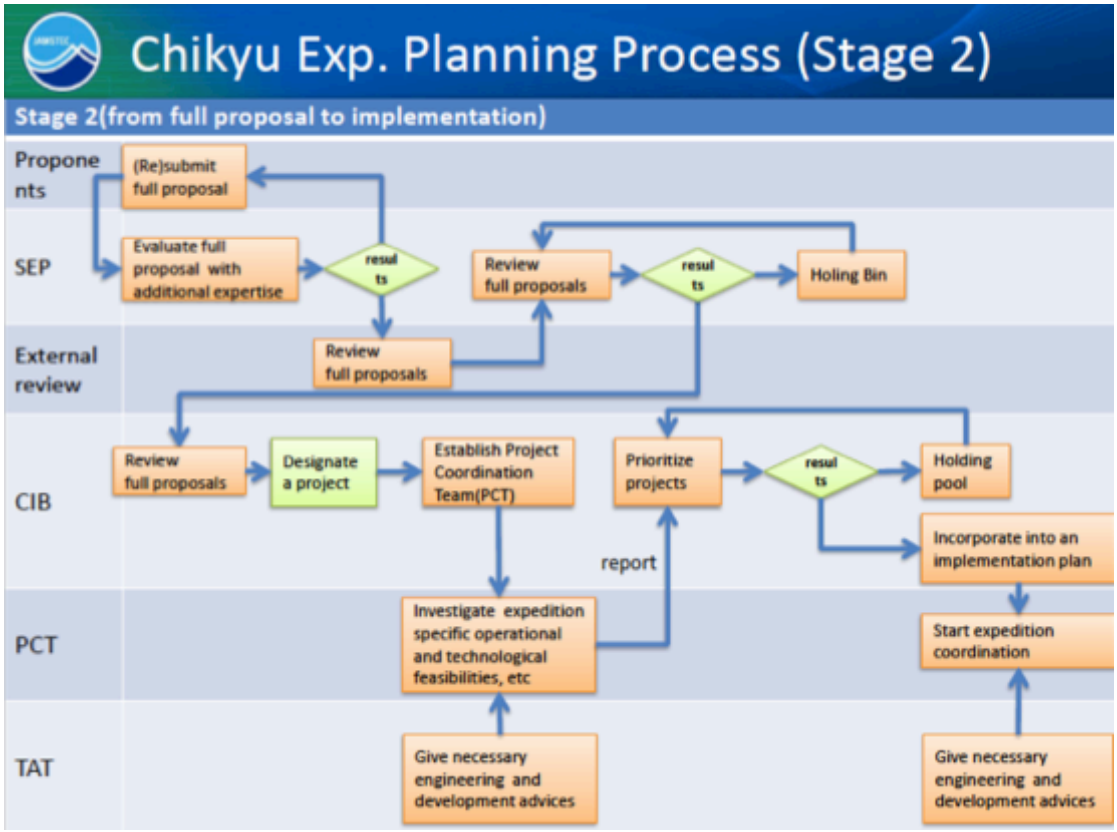
CIB_Consensus_0713-29: The CIB endorsed continuing to use the TAMU Publication team for *Chikyu*-related IODP expedition documents.

H. Villinger said that the CIB has established two Project Coordination Teams. The environmental policies are not reflected on the websites.
The CIB would like to see an all-platform common policy on the core repository. The Curatorial Advisory Board should be defined.

New Concepts

Several New concepts were discussed at the CIB: the Full Proposal Development Workshop Funding; Proposal Advisory Team (PAT); Project Coordination Team (PCT); Technical Advisory Team (TAT). H. Villinger explained that the TAT advises the CIB and JAMSTEC on technical issues.
Two diagrams of the Chikyu Expedition Planning Process were reviewed, showing Stages 1 and 2 of the process.


Chikyu Exp. Planning Process (Stage 1)
Stage 1(from pre-proposal to full proposal)
Proponents
SEP
CIB
PAT
TAT
(Re)submit pre proposal
Evaluate pre proposal
results
Confirm pre proposals
Recommend /encourage to write WS proposal
Submit WS proposals
Review WS proposal
results
Hold a workshop on their own
1.Decide WS funding for full proposal development
2.Establish Proposal Advisory Team(PAT)
1.Coordinate WS
2.Give technical and operational advice to proponents at the WS
Give engineering and development advice to proponents at the WS
Develop full proposal


Chikyu Exp. Planning Process (Stage 2)
Stage 2(from full proposal to implementation)
Proponents
SEP
External review
CIB
PCT
TAT
(Re)submit full proposal
Evaluate full proposal with additional expertise
results
Review full proposals
Review full proposals
results
Holing Bin
Review full proposals
Designate a project
Establish Project Coordination Team(PCT)
Prioritize projects
results
Holding pool
Incorporate into an implementation plan
report
Investigate expedition specific operational and technological feasibilities, etc
Start expedition coordination
Give necessary engineering and development advices
Give necessary engineering and development advices

The CIB will meet next in Yokohama in July, possibly for two days.

S. Humphris commented on the revised policy of the Curatorial advisory board. She reminded that the new policy consists of practices that are employed by all three of the Facility Boards.

3.3 - Science Support Office (H. Given)

H. Given introduced the Science Support Office, a new entity, located at the Scripps Institution of Oceanography, UC San Diego. The Support Office is supported by the NSF and *JR* partners and has been fully operational by October 1st, 2013. Its FY2014 budget amounts to $880k USD, or about 4.5 person-years (FTEs), which amount to 85% of budget. The office has four tasks: JRFB support, the IODP proposals, the SSDB, and the website. The support of the SD Journal has been directed to ICDPs office.

The Science Support Team includes: PI D. Norris; Executive Director H. Given; It Director K. Stocks; Proposal manager M. Yamamoto; Program/analyst D. Clark and A. Sweney; QC J. Perez; and Project Coordinator R. Bauer.

October 1st, 2013 Proposal Deadline

A PDB e-submission system is used for the proposals. Thirty-four items were prepared for SEP's review in January 2014. There were 16 new proposals, some revisions, external reviews or SSD.

About 74 user troubles were reported, which were used to improve the system.

Next Deadline April 1, 2014

The office aims to implement further improvements to PDB and to issue clarifications to the Proposal Submission Guidelines.

November 1st the Site Survey Data Deadline

H. Given said that 958 data files received, where the previous record was less than 300. About 33% were submitted past the deadline and approximately and 10% needed proponent remediation, thus affecting 13 proposals.

G. Dickens asked why so many site surveys arrived at this time. It is not known.

Next Deadline May 1, 2014

There is a need for stricter policy on accepting late data, as SEP plans to meet in less than 8 weeks after the deadline.

Observation on Proposal Review

H. Given said that overall the proposal review is working very well. There is a need to require 8 weeks optimally between the submission deadline and SEP meeting, in order to be fair to the proponents in the handling of the site survey data. For the external reviews, the goal is to find 'unconflicted' qualified reviewers. It should be noted that the "Fast track" review path should not become the norm.

Facility Board/Panel Support

The upcoming events are clustered to occur in the first 6 months of the year:

Science Evaluation Panel Jan (San Diego)
ECORD Facility Board Mar (Bremen)
JR Facility Board April (Washington)
Environ Protection & Safety Panel May (Texas)
IODP Forum May (Korea)
Science Evaluation Panel June (USA)
Chikyu IODP Board July (Yokohama)

IODP Website

The IODP website improvements are incremental as the Support Office does not have the full needed budget to make bigger changes. The central contact email address is science@iodp.org.

Proposal Submissions

More proposal submission information can be found in the EFB#2 Agenda Book.

G. Dickens said that it necessary to be clear what information is needed for the site survey, in order to avoid causing a bottle-neck in the proposal system.

3.4 - Science Evaluation Panel (D. Kroon, D. Mallinson)

D. Kroon reminded the Support Office's request for confidentiality regarding the proposals.

The following policy must be followed:

"The IODP Science Support Office is responsible for all matters related to IODP proposal handling, including confidentiality and release to the public. Proposals are confidential documents throughout the nurturing, evaluation, ranking, and scheduling processes in the *JOIDES Resolution* Facility Board (JRFB) and its advisory panels, and other Facility Boards utilizing the *JOIDES Resolution* Facility advisory panels. The distribution of proposals is limited to the JRFB or other appropriate Facility Board(s), relevant advisory panels, and detailed planning groups (DPGs); implementing organizations (IOs); IODP funding agencies; project scoping or management groups; and external reviewers designated by the IODP Science Support Office."

List of MSP proposals in the System

List of MSP proposals in the system

Proposal_Number	Latest_Version	Short_Title	Lead_Proponent_Calc	Country_Lead_P	Ocean	Platform	SAS_Stage
548	Full3	Chicxulub K-T Impact Crater	Morgan	ECORD: UK	Atl	MSP	ECORD FB/scoping phase
581	Full2	Late Pleistocene Coralgal Banks	Droxler	USA	Atl	MSP	ECORD FB
637	Full2	New England Shelf Hydrogeology	Person	USA	Atl	MSP	ECORD FB
672	Full3	Baltic Sea Basin Paleoenvironment	Andrén	ECORD: Sweden	Atl	MSP	ECORD FB/has been drilled
680	Full	Bering Strait Climate Change	Fowell	USA	Arc	MSP	SEP
708	Full	Central Arctic Paleoceanography	Stein	ECORD: Germany	Arc	MSP	ECORD FB
716	Full2	Hawaiian Drowned Reefs	Webster	ANZIC: Australia	Pac	MSP	ECORD FB
730	Pre2	Sabine Bank Sea Level	Taylor	USA	ac	MSP	SEP
756	Pre	Arctic Ocean Exit Gateway	Jakobsson	ECORD: Sweden	Arc	MSP	SEP
758	Full2	Atlantis Massif Seafloor Processes	Früh-Green	ECORD: Switzerland	Atl	MSP	ECORD/scoping phase
761	Pre	South Atlantic Bight Hydrogeology	Wilson	USA	Atl	MSP	SEP
796	Full	Ligurian Landslide	Kopf	ECORD: Germany	Med	MSP	SEP
806	Pre	Beaufort Gas Hydrate	Paull	USA	Arc	MSP	SEP
750	Pre	Beringia Sea Level History	Polyak	USA	Arc	MSP+JR	SEP
797	Pre	Alaska Beaufort Margin	Ruppel	USA	Arc	JR+MSP	SEP
812	Pre	Ross Sea glacial history	Wilson	USA	Ant	MSP/MEBO	SEP
813	Full	Antarctic Paleoclimate	Williams	USA	Ant	MSP/MEBO	ECORD FB

D. Kroon reported on the first SEP meeting that took place on January 6-9, 2014. The task is to get the proposals ready for drilling. He reviewed a list of the revised proposals that were submitted as of October 1st 2013. A site survey data watchdogs was assigned to each proposal.

For the **680-Full Bering Strait Climate Change** proposal, PEP asked the proponents to submit a revised Full proposal with a clearly testable hypothesis with a focus on the Pleistocene rather than the entire Cenozoic record, and possibly with 750-Pre. The PEP positively recognized the strategy and potentially important insights into Arctic climate and sea level change. The panel recommended that the proponents hold a workshop to combine efforts with 750-Pre (Polyak). This recommendation takes into consideration the complexities involved in drilling in this region that may only allow for a limited number of sites so that coordinating efforts with 750Pre is a more realistic approach especially given the weather conditions.
ESO's response for the 680-Full is that a suitable platform is likely to be a lift-boat or jack-up rig. Given the location, if a lift-boat is used there will be logistical issues regarding re-supply. The proponents estimate 7 days of coring per hole, but we envisage 20-30 days per hole. Six primary holes to 1000m may take months, and may make the expedition prohibitively expensive.

For the **750-Pre Beringian Sea Level History** PEP has decided that the proponents should submit a full proposal, possibly with 680-Full. The objectives are the history of Arctic-Pacific connections via the Bering Strait gateway; the impact of Late Cenozoic sea-level fluctuations on the high-Arctic depositional system and shelf architecture; and the Paleo sea-ice history in relation to climate change.
The proponents have responded that some of the issues related to the history of Beringia and the Arctic-Pacific connection are addressed in the IODP proposal 680 focused on drilling just north of the Bering Strait. However, the evaluation of relative sea-level changes in the Chukchi region requires additional drilling farther north on the Chukchi shelf and slope, notably in the filled channels
The PEP recommended that the proponents hold a workshop to combine efforts with 750-Pre (Polyak).

Regarding the **708-Pre2 the Central Arctic Paleoceanography,** a new proposal was submitted on January 6-9, 2014 and has been forwarded to the EFB. PEP recommends that the proponents submit a full proposal. The proposal objectives are to achieve a Continuous Cenozoic Record from a Greenhouse to an Icehouse World (ACEX-2).
PEP's remark is that the proposal is very much about completing ACEX 1 by recovering the late Eocene to middle Miocene intervals that were not preserved at the location of ACEX 1. The proponents will need to satisfactorily demonstrate that the missing time intervals can be recovered at the proposed sites by integrating core-seismic data from ACEX 1 and using existing and new seismic reflection data. The reprocessing of existing seismic data, evaluating seismic lines from the HOTRAX expedition, and incorporating site survey data from the planned Polarstern Cruise ARK-XXIII/3 in 2008 will allow the proponents to determine the positions of the drilling sites. Drilling in the area of the preliminary sites LORI-5B (LORI-15A alt): Cenozoic Paleoceanography (long stratigraphic gap encountered during ACEX 1) and LORI-16A: Neogene/Quaternary high-resolution records (skipped by ACEX 1) should enable the proponents to achieve their scientific goals.

For the **730-Pre2 Sabine Bank Sea Level proposal**, PEP recommended that the proponents submit a full proposal.
The panel generally acknowledges the importance of expanding the record of MIS 3 to 7 by drilling rapidly subsiding coral reefs. However, the panel feels that the scientific rationale and hypotheses are yet not fully developed. Specifically, the proponents offer three main objectives: Reconstruct the climate history of the WPWP; Obtain better estimates of changes in sea level of MIS 3-7; and Obtain the vertical tectonic history of SB to refine the rheology of the Australian Plate.
The panels (SSEP and PEP) feel that objectives 2 and 3 might in fact be dependent (circular). How can they reconstruct an accurate sea level history if there is no reliable model of subsidence history? Nevertheless, PEP has asked for a full proposal. For the 756-Pre Arctic Ocean Gateway, PEP recommended that the proponents submit a full proposal.
The two main objectives are: The evolution of the Fram Strait through the tectonic and rifting history of the Morris Jesup Rise and its subsidence history with respect to the Yermak Plateau conjugate physiographic feature. And second, the paleoceanographic

evolution of the Arctic Ocean Exit Gateway with emphasis on water mass and ice properties, sources and flux rates.
PEP's response is that the proposal 756-Pre (1 Oct 2009) addresses several relevant issues in tectonics and paleoclimatology that are highly relevant to the IODP Science Plan. It is clear that the Morris Jesup Rise is a location well placed to investigate the Cenozoic evolution of the Arctic Ocean and specifically to monitor variability in the outflow of waters and from the Arctic Ocean and associated ice dynamics and the tectonic and rifting history associated with the opening of the Fram Strait.

The **761-Pre South Atlantic Bight Hydrogeology** was recommended to submit a full proposal. The objective is to study five sites in shallow water using a mission-specific platform (MSP) are proposed. The panel (SSEP) recognizes that such a transect has not been drilled before, has clear ties to the IODP Initial Science Plan (ISP), and that good scientific hypotheses have been articulated.
D. Kroon said that the panel is enthusiastic about this pre-proposal to investigate the links between the ocean, the subseafloor ocean, and land-based hydrogeology. Monitoring to capture temporal variability in the geochemical signals is an especially exciting component of the project. PEP recognizes that the proposal aligns well with the IODP Science Plan Earth in Motion, Challenge 14.

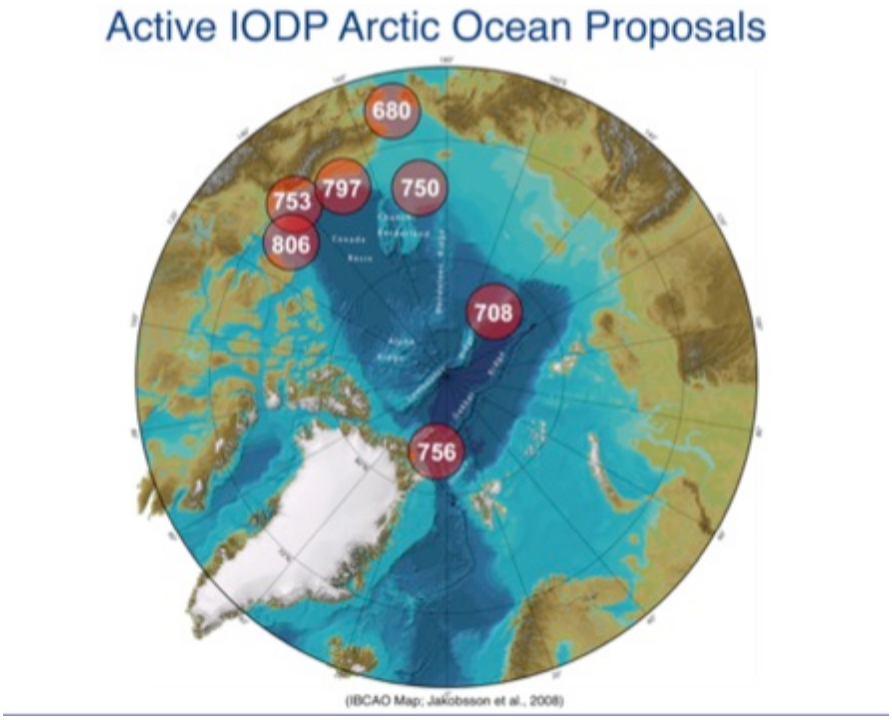
The **796 Full Lingurian landslide** proposal proponents were asked to submit a revised full proposal. The proponents proposed to drill a series of holes at the Ligurian slope south of Nice where water depths are less than 50 m so that the borehole monitoring becomes affordable, even in real-time. The drill sites aim is to characterize the metastable slope E and W of the former collapse structure, and the re-deposited material partly occupying the present-day landslide scar and deeper portions of the slope.
PEP has asked that in order to promote success and ascertain a potentially strong proposal ranking in the future, a few critical points should be clarified/strengthened before the external review. Following the Proposal evaluation criteria in the Science Advisory Structure Terms of Reference, the panel consensus is that the proposal would be further strengthened if the working hypotheses are better organized, focused, and quantitatively constrained. The strength of this proposal is assessing pore-pressure with

time. The proponents should focus on this aspect with model-based testable hypotheses.

The **806-Pre Beaufort Gas Hydrate and 797-Pre Alaska Beaufort** margin proposal proponents were asked to write a full MDP proposal, either as individual or a combined proposals.
The objective is to understand the geological processes caused by marine transgression and the ethane release and geological processes associated with the warming of permafrost and gas hydrate deposits beneath the Beaufort Sea Shelf and upper slope.

New Proposals list reviewed
For the **812-Pre Ross Sea Glacial History and 813-Pre Antarctic Cenozoic Paleoclimate** proposals, the objective is to study the drilling pro-grading sediment sequences using MeBo.
PEP has recommended that the proponents develop Full proposals, including a well-designed drilling plan. 813-Full has been submitted and reviewed in Santa Cruz. Thus PEP has chosen that it should undergo an external review. The proposal was forwarded to the EFB.

D. Kroon reviewed a map of the current **active IODP Arctic Ocean Proposals**.



D. Kroon said that at the full proposal level, SEP expects the proponents to update the site survey data.

The **797-Pre proponents** were supposed to submit a full proposal in October 2013 but they didn't. The IODP-ICDP 806-Pre proponents are planning a workshop in May.

The **680-Fulll and 750-Pre proposals** were discussed at the Chickchi Sea Workshop in March 2013. The coordinated full proposals will be submitted by the April 2014 deadline.

Proposals Arctic Ocean Drilling

Decision SPC Meeting Edinburgh, March 2011

645-Full3 North Atlantic Gateway was deactivated but a new pre-proposal will be submitted.

680-Full Bering Strait Climate Change was forwarded to PEP, and PEP asked in December 2011 that the proponents submit a revised full proposal.

708-Pre2 Central Arctic Paleoceanography was forwarded to PEP, and PEP asked in December 2011 that the proponents submit a full proposal.

746-Pre Arctic Mesozoic Climate was deactivated a pre-proposal was to be submitted.

750-Pre Bering Sea Sea Level was forwarded to PEP, and PEP recommended in December 2011that the proponents submit a full proposal.

753-Pre2 Beaufort Sea Paleoceanography was forwarded to PEP, and PEP recommended in December 2011 to submit a Full.

756-Pre Arctic Ocean Exit Gateway was forwarded to PEP, and PEP recommended in December 2011 that the proponents submit a full proposal.

Decision PEP Meeting Edinburgh, May 2012

794-Pre Arctic Slope Stability was deactivated.

797-Pre Alaska Beaufort Margin was recommended to develop a full proposal, possibly a MDP with or without 806-Pre.

803-pre Greenland Ice Sheet was deactivated.

806-Pre Beaufort Gas Hydrate was asked to develop a full proposal possibly a MDP with or without 797-Pre.

Decision SEP Meeting San Diego, January 2014

708-Full	Central Arctic Paleoceanography	Send out for external review (Fast Track)

Now forwarded to the ECORD FB

It was noted that 797-Pre (MSP and JR) and 806-Pre (MSP and ICDP), Beaufort Margin, are being developed, but it is unknown when they will submit. The 680-Full (MSP) and 750-Pre (MSP and JR), Bering Strait, are expected to be submitted this April.

In summary, of the **first SEP meeting on January 6-9, 2014** at Scripps, USA.
D. Kroon reviewed a list of the revised proposals (see PowerPoint presentation).

D. Kroon commented that the 702 concentrates on a very important area and is a potential flagship but on holding bin because there is some site survey data.
For the rest of the proposals:
The 708 is an MSP, a very good proposal that could be an ACEX2.
The 781 seems to have some safety issues and not sufficient number of sites. The EPSP is working with the proponents to address the safety issues.
The 795 has been scheduled and is working on some site survey issues.
The 813 is a MeBo proposal.
The 819 is in the holding bin, as it needs to resolve some technical issues.
The 821 concentrates on a very important area of drilling
The 823 needs better imaging so was deactivated with the possibility of the proponents to come back with a shorter proposal.

Decisions on New Proposals

D. Kroon said that 835 (see PowerPoint presentation), needs to be developed into a full proposal, and it would need a workshop.
839 is developing well.
841 was rejected because it came back the same after the proponents were asked to revise it.
843 was deactivated because there were way too many proposed sites. This proposal, however, has potential for multiple proposals.

849-APL was advised to link up with the Monsoon Drilling proposal and has some technical issues to be solved.

D. Kroon said that the SEP feels very strongly to see IODP work together with ICDP and would like to see a call for ocean transects.

The decisions for the revised proposals that were submitted on October 1st, are summarized as the following:

Decisions on Revised proposals submitted for Oct.1

New ID	Short Title	PI	Stage	Ship	Theme	Destination
567-Full4	South Pacific Paleogene	Thomas	JRFB	NR	CO	addendum
696-Add	Izu-Bonin-Mariana Deep Forearc Crust	Pearce	JRFB	JR	EC	Update databank
702-Full2	Southern African Climates	Zahn	HB	JR	CO	Holding Bin
708-Full	Central Arctic Paleoceanography	Stein	SEP	MSP	CO	External review (now forwarded to ECORD FB)
751-Full2	West Antarctic Ice Sheet Climate	McKay	SEP	JR	CO	External review
781A-Full	Hikurangi: observatory	Saffer	JRFB	NR	EM	Address safety issues
781B-Full	Hikurangi: Riser	Wallace	SEP	Chikyu	EC	Forward to CIB-excellent
795-Add	Indian Monsoon Rainfall	Clemens	JRFB	NR	CO	Address site survey issues
799-Full2	Western Pacific Warm Pool	Rosenthal	SEP	JR	CO	External review
807-Full	Indonesian Throughflow	Gallagher	JRFB	NR	CO	Address site survey issues
811-Full	Cape Fear Slope Stability	Flemings	SEP	JR	EM	revise
813-Full	Antarctic paleoclimate	Williams	SEP	MSP	CO	Forward to ECORD-FB
819-APL2	Arabian Sea OMZ	Deo	SEP	JR	CO	Holding Bin
820-Full	Maldives monsoon	Betzler	SEP	JR	CO	External review
821-Full2	South-East Pacific Paleoceanography	Gersonde	SEP	JR	CO	Reject
823-Full2	Bengal Bay monsoon	Schwenk	SEP	JR	Co	Deactivate with strong endorsement
830-APL2	Scott Plateau Subseafloor Life	D'Hondt	SEP	JR	BF	Holding Bin

The decisions on the new proposals submitted as of October 1st are as follows:

New ID	Short Title	PI	Stage	Ship	Theme	Destination
834-Pre	Agulhas-Transkei Transect	Uenzelmann-Neben	SEP	JR	EC	Develop Full proposal
835-pre	Japan Trench Tsunamigenesis	Kodaira	SEP	Chikyu	EM	Develop full proposal, forward to CIB
836-APL	Continental Margin Methane Cycling	Malinverno	SEP	JR	EM	Revise
837-Full	Sumatra Seismogenic Zone	McNeill	SEP	JR	EM	External review
838-CPP	SCS Lithosphere Thinning	Sun	SEP	JR	EC	Revise
839-Full	Amundsen Sea Ice Sheet history	Gohl	SEP	JR	CO	External review
840-Pre	Niger Transform Margin	Wagner	SEP	JR	CO	Develop full proposal
841-APL	Creeping Gas Hydrate Slides	Pecher	SEP	JR	EM	Revise
842-Pre	Madeira Abyssal Plain Hydrogeology	Harris	SEP	JR	EC	reject
843-Pre	Amazon margin drilling	Baker	SEP	JR	BF	Deactivate with strong endorsement from the panel
844-Pre	Comet Nucleus Material	Jaye	SEP	JR	EC	reject
845-APL	Agulhas LGM Density	Adkins	SEP	JR	CO	Forward to the JRFB
846-APL	Falkland water depth record	Peck	SEP	JR	CO	Develop an extended APL
847-Pre	Drake Passage paleoenvironment	Weber	SEP	JR	CO	Develop full proposal
848-Pre	Weddell Sea History	Weber	SEP	JR	CO	Develop full proposal
849-APL	Indian Peninsula Paleoclimate	Giosan	SEP	JR	CO	Holding bin

3.5 - IODP Forum; addressing themes & challenges of IODP Science Plan (K. Becker)

K. Becker reminded that he has provided a table on p.145-146 of the EFB Bremen Agenda Book, showing the existing proposals versus the themes and challenges. He said that the proposal pressure is good across most of the IODP-defined themes and challenges.

IODP Forum, as "custodian" of New Science Plan, is charged with assessing new IODP progress toward addressing science plan. Indicated in green color on the table, the science themes were defined as top priority challenges. The yellow color stands for the *Chikyu*, the unhighlighted color stands for the JR and blue for the MSPs. The table shows full-proposal pressure only, as the pre-proposals are not included.

Key: green = Denver 2012 workshop top priority challenge for JR within theme

yellow = Chikyu; blue = MSP, unhighlighted = JR

	Done/Scheduled	At FB's	At SEP
Biosphere Frontiers			
#5 Origin, extent, significance of subseafloor biosphere	347-Baltic 758-Atlantis Massif	505-Mariana	830-APL Scott Plat. 833-Guaymas Basin
#6 Limits of subseafloor life			830-APL Scott Plat.
#7 Ecosystem sensitivity to env'l change		{724-Gulf of Aden}	819-APL Arab OMZ

Key: green = Denver 2012 workshop top priority challenge for JR within theme

yellow = Chikyu; blue = MSP, unhighlighted = JR

Earth Connections			
#8 Upper mantle comp/dynamics		522-Superfast 800-Atlantis Bank 800-Atlantis Bank	805-MDP Mohole
#9 Seafloor spreading and ocean crustal architecture	(345 Hess Deep) 349-CPP SCS	522-Superfast 769-APL	838-CPP SCSII
#10 Chemical exchange crust and seawater	758-Atlantis Massif		
#11 Subduction and cont. crust	350 IBM 351 IBM 352 IBM	**698- IBM middle crust	

Perhaps the EFB is to consider where is the proposal pressure and where it would recommend to have more proposal pressure.

Key: green = Denver 2012 workshop top priority challenge for JR within theme

yellow = Chikyu; blue = MSP, unhighlighted = JR

Earth in Motion			
#12 Control of EQ, landslides, tsunamis	NanTroSEIZE (CRISP-A 334/344)	**537-B CRISP-B 770-Kanto Asperity 781A-Hikurangi 781B-Hikurangi	*837-Sumatra 841-APL Hikurangi 811-Cape Fear
#13 Storage and flow of subseafloor carbon		553-Cascadia CORKs, 791-APL Cascadia	836-APL Timor Tr. 811-Cape Fear
#14 Fluids linking bio/chem/phys processes		637-New England hydrogeology 505-Mariana/CORKs 633-Costa Rica Mud Mounds/CORKs	

Climate and Ocean Change			
#1 Climate response to high atm. CO_2		567-S. Pacific Paleogene, 777-APL Okinawa 778-Tanzania {?} 813-Ant. Cenozoic	702-SAFARI *708-ACEX2 *799-WPac Warm Pool 845-APL Agulhas
#2 Ice sheet/SL response to warming climate	347-Baltic	581-Coralgal Banks 716-Hawaii Reefs 732-Ant. Sed Drifts 813-Antarctic Cenozoic	*708-ACEX2 *751- Ross Sea WAIS *820-Maldives Monsoon *839-Amundsen Sea
#3 Control of regional precip. patterns	(346-Asian Monsoon) 353-Indian Monsoon 354- Bengal Fan 355-Arab. Sea CPP 356-Indonesian Throughflow	{549-Arabian Sea} {595-Indus Fan} {618-East Asia Monsoon}	819-APL Arab OMZ *820-Maldives Monsoon
#4 Ocean resilience to chemical pert'n		548-Chicxulub	819-APL Arab OMZ

IODP Progress Toward Science

The IODP program was originally envisioned on a 10-year cycle, but the NSB authorized the NSF to plan a 5-year renewal of IODP until 2019. M. Webb highlighted in the November ECORD Newsletter that there will be a mid-term 5-year review of ECORD funding by the ECORD partners. Hence, several questions must be considered:

What else is needed, besides the IODP Forum assessment of progress on New Science Plan, to justify 5-year renewal, and when? What specifically is needed to prepare for reviews for 5-year renewal for the US, ECORD, Japan, and JR partners?

Are there special scientific focus areas or strategic priorities for MSP operations in first 5 years?

Given the 5-yr timeline, is a special Forum meeting needed before the June-July 2015 second Forum meeting in Canberra?

K. Becker emphasized that the first question is amongst the most important agenda items for the May IODP Forum. He said that it should be considered whether the renewal evaluation will take place in 5 years, and whether a second IODP Forum would be needed.

K. Gohl said that the 5-year strategy may change some of the strategy and proposal scheduling.

T. Janecek suggested that it may be too early to have a special Forum meeting regarding an assessment of progress on the IODP Science Plan to determine what is needed for reviews for the renewal of current phase of the new IODP. The US National Research Council Decadal Survey of Ocean Sciences will be completed in May 2015. The NSF will be utilizing the outcome of this Survey report, along with other data, to help guide decisions about the NSF Ocean Sciences scientific portfolio for the next decade starting in FY2017 and the infrastructure needed to address that portfolio. How the JOIDES Resolution will fit into this decadal need won't be know for another year, at least. Thus it is difficult, if not impossible, for the US at this time to determine what is specifically needed to prepare for a renewal in 5 years.

M. Torres asked about the APLs, if are clearly advertised in the proposal submission.

S. Humphris said that there was a meeting in the US, which will be advertised in an article. How widely available is it? Is it clear in the guidelines that an APL is possible? S. Humphris confirmed that that is the case.

4. Procedures and issues regarding EFB activities and MSP operations

4.1 - ECORD forward look (G. Camoin)

ECORD and the EC: I3 an Integrated Infrastructures Initiative

G. Camoin reviewed the rationale behind the Distributed European Infrastructure for Subseafloor Sampling and Monitoring (DEISM) proposal that was submitted on October 22, 2012.

The proposed DEISM focused on scientific research into the subseafloor and is designed to increase and optimize trans-national access to cutting-edge technologies and scientific services to the European science community. DEISM aimed to improve the

European collaboration in development and sharing of new, innovative technologies for coring, specialist sampling, downhole logging and long-term subseafloor observations, and it is likely to stimulate further technological developments in these areas.

In parallel, another proposal was submitted the same day by A. Kopf, titled the **Distributed European Drilling Infrastructure (DEDI).** The rationale of the proposal was that DEDI will go beyond the existing activities such as IODP (Integrated Ocean Drilling Program, and its successor, the International Ocean Discovery Program), as was explained in more detail in a Consultation statement by the ECORD Managing Agency. DEDI also planned to overarch other European initiatives such as Eurofleets, now followed by Eurofleets2, in which drilling (e.g. the MARUM seafloor drill MeBo) is made available to all European marine scientists for the first time. Other established RIs such as EMSO, the European Multi-Disciplinary Seafloor Observatory, or EPOS (European Plate Observing System) would benefit from new data in the third dimension collected using DEDI monitoring technology such as borehole sensors, etc. The DEDI proposal, mentioned other European initiatives, e.g. Eurofleets, MARUM, EMSO and EPOS.

The resulting EC Assessment Report to the Consultation, listed a recommendation under section ENV11/ENV12 that the European Research Drilling Infrastructure should integrate IODP, share technology with ICDP and link with EMSO.
The EC's Work Programme 2014-2015 document also issued a description of the ECORD proposal text with the recommendation to form a RI.
According to the document, the usual funding of WPs: is between € 5 – 7 M over the time period of 4 years. The distribution of funds is as follows:
Trans National Access (access to cores and data; ECORD expansion): 20 %
Joint Research Activities (Technological development and innovation: drilling equipment, instrumentation): 60 to 70 %
Legal and financial long-term structure: 5 %
Networking activities (training, workshops): 5 %
Management: 7 %

For example, ECORD could develop the MSPs with MeBo 1 and MeBo2, rockdrills, oriented drills, log piston coring used by IMAGES-IMPRESS and IFREMER.


Developing the concept of Mission Specific Platforms
Sea Floor Drills deployed from conventional R/V
ECORD
MARUM – Bremen, Germany
British Geological Survey – Edinburgh, UK
MeBo-1 (75 m) MeBo-2 (200 m)
50m rockdrill
oriented drill
Research Infrastructures
Ifremer 2010
Long Piston coring
IPEV – Brest, France
IFREMER – Brest, France
(35 to 50 m)


ECORD
Developing and using new tools
Research Infrastructures
In situ pressure sampling
Gas hydrates, Deep biosphere
Borehole observatories
P, T, fluid flows, sismicity, geochemistry, microbiology
High temperatures tools
Hydrothermal systems
ISOR (Iceland GeoSurvey)
Genius plus, MARUM
HYACE rotary corer
(TU Berlin, TU Clausthal, Univ. Cardiff, Fugro, Geotek)
300°C natural gamma ray
SmartPlug
DeepIsoBUG
Isolation Chamber
Univ. Cardiff
300° borehole televiewer

Via such an infrastructure funding mechanism, ECORD could develop in several ways:
Science: New drilling/coring targets / scientific issues
Technology: for technological development and the sharing of experience and capabilities.
Networking: for the creation of a stronger collaboration between the research &and operational groups across Europe, ECORD/IODP and other programs, e.g. ICDP, IMAGES, and initiatives, e.g. EMSO.
The additional funding will optimize the use of research vessels and sampling capabilities, cost efficiency for IODP MSP operations, new opportunities for funding at a national level, EC, partnership with industry, and SMEs.
A **kick off meeting** will be held on March 7th in Bremen with the following representations:
EMA (G. Camoin); ESO-BGS (R. Gatliff, D. McInroy, A. Stevenson, D. Smith); ESO-BCR (U. Röhl, H. Wallrabe-Adams); ESO-EPC (J. Lofi); MARUM (T. Freudenthal); ESONET / EMSO (C. Waldmann); DS3F (A. Kopf); ICDP (B. Horsfield); IMAGES (F. Lamy); ISOR (Á. Hjartarson); and IFREMER (A. Cattaneo).

Earth Science Europe

Earth Science Europe will hold its second meeting on April 2-3, 2014 on the topic of the "Role of Geodata and Information".

ECORD and the other programs

ECORD maintains strong connections with other programs. Several events were attended:
ICDP Science Conference: Potsdam, Germany, November 2013
EMSO Conference: Rome, Italy, November 2013
IMAGES: The ISOLAT Workshop funded by ECORD and held in September 2013. A submission of a proposal expected for the April 1st, 2014 deadline.
ANDRILL: meeting at the AGU regarding a potential IODP CPP with ECORD

G. Früh Green asked how the Earth Science Europe (ESE) is different from the DS3F project. M. Perrin said that it is different. She said that the ESE idea is a roadmap for earth science for Europe. There were meetings in Paris and a meeting with EPOS to begin working on the

preparation.

K. Gohl asked what MSP cost efficiency means. G. Camoin said that it means that with the help of technological developments, ESO could have its own tools.

4.2 - ECORD budget for ESO operations of MSPs (G. Camoin)

ECORD MSP Expeditions

ECORD is responsible for funding and implementing MSP operations for the International Ocean Discovery Program as an independent Platform Provider. The consortium's aim is to fund and implement one MSP expedition per year on average for the International Ocean Discovery Program. ECORD will also encourage and help proponents for MSP proposals to seek for additional funding sources on a project basis, e.g. EC, industry, increased contributions from ECORD and IODP members, foundation support, and in-kind contributions.

The mission-specific platforms might include specifically outfitted polar vessels, jack-up rigs, geotechnical vessels, seafloor drilling systems, long-piston coring, anchored barges and others, as determined by scientific priorities and operational efficiency.

ECORD FY 14 Contributions

Several countries decreased their contributions: Belgium, Canada and the UK. Iceland will withdraw after FY14. Finland, Italy, Netherlands and Switzerland increased their contributions.

	MoU (AK-1)
Austria	*Financial commitment*
Belgium	*Financial commitment*
Canada	FY14-FY15
Denmark	FY14-FY16
Finland	FY14-FY18
Germany	*Financial commitment*
Iceland	FY14 only *
Ireland	FY14-FY18
Israel	FY14-FY16
Italy	*Financial commitment*
Netherlands	FY14-FY18
Norway	FY14-FY18
Portugal	FY 14-FY18
Poland	FY14-FY18
Spain	**
Sweden	FY14-FY18
Switzerland	FY14-FY16
UK	FY14-FY18
France	FY14-FY18

* Will withdraw after FY2014

** No further information

	($US)
Austria	100,000
Belgium	25,000
Canada	150,000
Denmark	170,000
Finland	80,000
Germany	5,600,000
Iceland	30,000 *
Ireland	140,000
Israel	30,000
Italy	400,000
Netherlands	500,000
Norway	1,100,000
Portugal	90,000
Poland	30,000
Spain	? **
Sweden	528,000
Switzerland	600,000
UK	4,080,000
France	5,200,000
TOTAL	18,853,000

Iceland will withdraw after 2014 and a decision needs to be taken regarding the future membership of Spain.

In kind-contributions are not considered in these figures. Some potential newcomers might be Russia, the Czech Republic and Luxembourg.

ECORD FY14 Budget

	Incomes	Expenses
FY13 balance	1,615,475	
FY14 contributions	18,853,000	
ECORD-NSF MoU		7,000,000
ECORD-JAMSTEC MoU		1,000,000
EMA		315,000
MagellanPlus		88,825
ECORD Outreach		52,816
ESSAC		361,996
Support of SEP Chair		89,627
BCR		424,554 *
Total	20,468,475	9,332,818

* 15 months : Oct. 2013 – Dec. 2014

Available for ESO in FY14	11,135,657

FY 14 ESO budget : ± USD 3.7 M > USD 7.4 M to be carried over

> Average annual funds available for ESO beyond FY14 : ± USD 9.6 M

The FY13 net balance was $1.615M USD and the expected available amount for ESO in FY14 is $11.13M USD.

Annual available ECORD for ESO

FY 2014: $7.4 M USD

FY 2015: $17.0 M USD

FY 2016: $26.6 M USD

The CNRS has an account in USD dollars that provides interest rates.

D. McInroy commented that when there is no expedition the ESO running costs are about $2.5M USD.

G. Dickens asked when an expedition occurs if the ESO running costs are the same. D. McInroy clarified that when the expedition costs are presented each year, the estimate includes the ESO running costs. The ESO running costs do not change, however the ESO expedition costs can change.

K. Gohl said that the running costs should be shown apart from the expedition costs in order to give a clear idea of what the expedition costs will be.

He said that there is a need for another funding source for ECORD, such as in-kind contributions, CPPs and new members.

N. Exon commented that there do exist opportunities with the EU operational funds, however getting involved in the calls is a long process.

G. Früh Green asked when the funds would be available for use. G. Camoin said that he does not have the details. A. Stevenson said that it takes a few months.

K. Gohl said that not enough funds were in the bank so that a call for tender could not be issued last year. G. Camoin said that it should be expected to get about $7.4M USD for ECORD by June 2014.

D. Kroon said that this is a better financial situation for ECORD in terms of available funds in comparison to previous years.

4.3 - ESO Annual Program Plan (preliminary) (D. McInroy)

D. McInroy presented the ESO FY14 Budget Request for October 2013- December 2014.

The requested ESO base costs for the planning of new expeditions amounts to $3.2M USD. ESO will ask for an additional $400k USD for technology updates, the total requested amount will be about $3.6M USD.

	($)
Management & Administration	1,178,718
Technical, Engineering & Science Support	1,309,996
Engineering Development (development of logging tools for MeBo and BGS seafloor drills – required for Atlantis Massif and other seafloor drill MSPs).	To be requested if required Estimated $855k
Core Curation	97,595
Data Management	337,319
Publications	150,000
Education &Outreach	140,992
Total	**3,214,620**

A budget justification is provided in the ESO FY13 Annual Program Plan. The base costs cover the planning and post-expedition work, and there are no new expedition/platform costs. The platform costs will be requested when next MSP is known.
ESO will request an additional Engineering Development budget to develop new logging tools for the MeBo and BGS seafloor drills.
G. Dickens asked why a second coring instrument is build when there are not enough funds. The $855k funds for engineering development are intended for the development of logging tools.

4.4 - MSP options, costs and tender process (D. McInroy)

D. McInroy reminded that the detailed MSP costs are shown on page 150 in the Agenda Book.
The source of estimates is from past experience and past bids (IODP and non-IODP), inquiries with companies, and published information, e.g. historical day rates.
The major cost controlling factors are the mobilization and demobilization costs, the vessel day rate, and logging contract costs. The logging contract costs are significant figures in the overall budget, but still relatively constrained.

Cost element	Influenced by...	Estimate difficulty	Past MSP rates
Mob / demob	Market supply Market demand Geography (transits) Level of modification needed	Difficult to estimate.	$2.3M - £4.9M
Day rate	Market supply Market demand Fuel costs	Reasonably difficult to estimate. Historical rates are available.	$58k - $79k / day
Expedition duration	Coring rate Total penetration Transits	Difficult to estimate. Individual MSPs have few or no comparisons.	30m – 80m / day
Logging contract	Slim-line tools (in house) vs. commercial provider	Can reasonably estimate, but costs depend on logging tool type, which depends on coring system used.	Use $500 per metre logged as rule of thumb.
ESO costs	Across several ESO partners	Can be accurately estimated.	Varies: base costs (~ $2M) and expedition year costs (~$2-2.5M).

The drilling services day rate and ancillary costs, are often combined with the vessel day rate. In addition, the expedition duration is a cost factor, determined by the coring rate, total penetration, and transits. The ESO costs are fixed base costs and expedition year costs.

G. Dickens asked about the base cost in case that there are 2 expeditions per year. The base cost would be $2.5 M USD and then each of the expedition costs would be additional for each mission.

MSP Estimates

MSP contracting

D. McInroy explained that the tendering process cannot be used to get accurate quotes because by the time ESO goes to tender they are in the process of organizing the expedition.

ESO-BGS conducts all contracting under the UK's Natural Environment Research Council (NERC). In order to enter a contracting process, the financial resources must be available and intent must be demonstrated. The companies expect a real work opportunity, as they will spend significant resources compiling tenders and will attempt

to line up surrounding opportunities. The tendering process cannot be used to obtain accurate quotes. ESO follows the following time line:
A notice of interest is given a period of about 40 days. The invite to tender is sent after 14 days. The tender deadline takes place after 40 days. ESO typically receive 2-3 tender responses per expedition.
It is possible that all bids received are beyond ECORD's budget, in which case one of the following occurs, in order of preference:

1. ESO may request additional funds from ECORD (assuming ECORD has those funds).
2. If extra funding is not available, the scientific scope of the expedition is reduced through discussion with the Co-chiefs/proponents most likely scenario.
3. The expedition is abandoned. This is least satisfactory as it damages NERC's reputation in the contracting market.

G. Dickens asked if the budget has been discussed with all of the proponents and if they fully understand these costs. D. McInroy said that these estimates were sent and almost all proponents responded, with the exception of the New England proponents who thought that the estimates are way too high. The New England proponents probably did not account for the extra container space, berths for scientists and extra space for pipe and technology. The New England group had acquired the quote from another company but did not account for these extra costs.
M. Torres asked what is included in the proposal costs. The costs presented are the costs of the proposal as it is currently done, with the planned logging and drilling holes.
S. Humphris asked about the different funding sources and if these concepts have been introduced to the proponents. D. McInroy said that the Chicxulub proponents have had some extra funding, but the other proponents have not brought any funding themselves. G. Dickens said that a letter was sent to the proponents with this information.
K. Gohl said that if there occur major changes to a proposal and the objectives are compromised, the proposal may go back to SEP. D. Kroon said that it will have to be checked if the objectives in a big change are feasible.
In response to comments by K. Gohl and D. Kroon about the need for a proposal to return to SEP if fewer objectives are achieved due to reduced funding, T. Janecek said that SEP is merely an advisory group. The SEP does not require that proposals go back to them for

review in this type of situation. However, the SEP is willing to make an additional review if requested, but an additional review is not a "programmatic requirement". The E-FB has it in their purview to make any implementation decision on a proposal or any portion of a proposal.

D. Smith asked if there is a policy in case that a proponent gets co-funding and if they will get priority in ranking. K. Gohl said that there is no such policy, but this would be considered on a case-by-case basis.

M. Torres asked that some proponents writing the MSP proposals have a good idea of the costs. Is it in the guidelines, a statement that the proponents should contact ESO prior to submission for a funding and feasibility questions.

K. Gohl confirmed that there this is addressed in the guidelines.

M. Torres asked if the previous expedition costs are available for proponents to refer to. D. McInroy said that there are costs issued in the Annual report and also workshop guidelines. It is in the MagellanPlus guidelines to involve all proponents in the beginning of the proposal writing process.

G. Dickens said that the Chicxulub was agreed on $17M USD, and there is now a different figure. Why is there such a difference? D. McInroy said that the difference is due to a 20% margin of error.

G. Dickens reminded that last year the EFB pushed forward the Chicxulub proposal with a $17M USD budget. A few months ago the cruise was labeled as a $21M USD and now the EFB is considering a $14M USD cost. Is scenario 1 a reasonable cost? G. Früh Green said that the funds were not available at the time to foresee this change in consideration. G. Dickens said that if that is the case, then should the proposal be re-considered again as the budget is not finalized yet. K. Gohl agreed that it is a good question. D. McInroy said that at the last EFB, ESO was asked to scope the budget costs because the budget was not confirmed.

K. Gohl said that at the start of the ECORD phase, the situation was not ideal as the best possible estimates were not available.

The proposal was still reconsidered because of the changing costs.

J. Schuffert asked at what level should a budget be considered. D. McInroy said that it is not for the operator to decide. They will work with the budget that is available.

D. Smith said that for Chicxulub there is a need to achieve the requested target depth in order to get the science, so the risk is that the results depend on the available time and

money.

4.5 - Prioritizing/ranking proposals according to cost categories (K. Gohl, G. Camoin)

K. Gohl said that there is a strategy needed to help ranking proposals for scheduling. He showed a suggested ranking matrix of the MSP proposals. In the table, the vertical order within each cell represents a ranking order, wheras the top is of highest ranking. The MSP and possibly ECORD's priorities should determine the ranking order.

Prioritising/ranking proposals

Suggested ranking matrix of MSP proposals:

IODP Science Plan Themes	low cost (< $10 m)	medium cost ($10-20 m)	high cost (> $20 m)
Climate & Ocean	proposal D proposal H	proposal P proposal B	proposal K proposal O proposal M
Biosphere Frontiers	proposal G	proposal X proposal A proposal S	
Earth Connections		proposal J	
Earth in Motion		proposal N	proposal C proposal F

In the future, the EFB should consider that there should be a balance between the themes, depending on the distribution of forwarded proposals. Following this, the EFB can split up the categories of high cost, medium and low cost.

There is also a need for a strategy for proposals that will not be drilled due to the science plan theme categories.

What are priorities for MSPs?

Ranking matrix of MSP proposals

G. Früh Green said that the balance of science plan themes is missing from the ranking of MSPs.

K. Gohl reviewed several example issues that could be treated as priorities in the

ranking of MSPs: shallow seas; ice-covered seas; shallow-penetration targets with maximum core recovery; drilling where *JR* and *Chikyu* are not an option in terms of drilling technology; environmentally sensitive targets; and high visibility of drilling project to help extend the IODP program. Are there other ECORD priorities? K. Gohl said that regions of high interest must be considered. The polar regions – in particular the Arctic – have been named high priority regions by ECORD.

He showed a table of the proposals that are to be considered by the current EFB.

Prioritising/ranking proposals

Ranking matrix of MSP proposals:

IODP Science Plan Themes	low cost (< $10 m)	medium cost ($10-20 m)	high cost (> $20 m)
Climate & Ocean	581-Coralgal Banks 716-Hawaii Rfs- MeBo 813-Antarct. Cenoz.	(716-Hawaii Reefs)	548-Chicxulub 708-Arctic ACEX2
Biosphere Frontiers	(758-Atlantis Massif)		
Earth Connections	758-Atlantis Massif		
Earth in Motion			637-N.E. Hyd-Geology

No internal ranking yet!

M. Torres commented that the list is a mismatch, because the shallow seas are for MSPs only. So within these priorities, it is the science plan and high visibility that could be overarching guiding principles in making a decision. Is it the EFB that decides on the regions of interest?

K. Gohl said that the Council members should voice their opinions on these issues. G. Camoin said that the 2011 'Future of ECORD' document talks about addressing issues of societal relevance such as climate change, societal challenges, the biosphere and the Arctic.

G. Dickens said that the high visibility is a strategic move. He said that if ECORD manages to achieve all of the high-point achievements in the first 5 years of the program, then how would the funding agencies be convinced to fund the program for the next 5 years.

K. Gohl said that this could be one type of difficulty for the MSPs. S. Humphris has asked SEP that given that there has to be a JR renewal, what would be the key high visibility

projects that could potentially be drilled to position the program for renewal also recognizing the point that not all key projects should be done right away.
G. Dickens said that according to EFB motion 13-03-01, it was recommended to go forward with the Chicxulub.
M. Kern said that from the funding agencies' view, the big projects have to be considered with an upper budget limit, because a choice that uses up the whole budget of the program in a few years could discourage the funding agencies from supporting the program in the future. Is it really wise to allow for a project's budget that takes up more than one year of the consortium's budget?
K. Gohl said that with the potential rising expedition costs, such a limit eventually may have to be imposed. Proponents are already aware that they need to have a cost estimate before they proceed to propose a project.

4.6 - Procedures for co-funded IODP-MSP and ICDP expeditions (K. Gohl, G. Camoin)

It was considered during this discussion that the Chicxulub or ANDRILL, for example, offer opportunities for a CPP. ANDRILL has submitted a proposal to ICDP. Should there be some kind of formal agreement between ICDP and IODP who will do the quality control and how much of the funds will be provided by each side?
U. Harms said that the New Jersey Shallow Shelf is a precedent example. ICDP has a contract with the principle investigators, but the money is with the ICDP. Some of the funding for most projects is collected in a pool. ICDP pays invoices that come from contractors. K. Gohl asked if the New Jersey expedition can be used as an example for the future. U. Harms said that ICDP funding differs for each project. ICDP has enough flexibility to react according to each situation, There is no need yet for specific procedures.
M. Torres said that the original contract is done by the PIs, and that this is a step that is different from the IODP approach.

4.7 - Collaboration between ECORD and industry (G. Camoin)

G. Camoin presented for A. Moscariello.
The start of the new programme can be taken as an opportunity to re-think ECORD's potential collaboration with Industry.
A different mind-set and time-line

Industry looks at the overall IODP program with great interest and can see certainly mutual benefits in joining forces to carry selected projects forwards. Industry's interest in various parts of the world, which are considered 'new-frontiers': high latitudes regions, e.g. Artic, Antarctic; subsalt in the Mediterranean basin; and areas not densely drilled, e.g. North African coast offshore Algeria or Libya, Mediterranean, SE India shelf (Sri Lanka). Industry's interest however may vary depending on factors, e.g. economic and geopolitical), which may induce a sudden drop or rise of attention with a speed which does not follow necessarily the pace of ECORD scientific program maturation and realization.

Better communication for improved stake-holder management

E-ILP Industry members may be interested to hear about specific drilling scientific projects. It would find very useful to identify key aspects of each proposal, which may be presented to individual companies in order to identify common interests and possible synergies that may be realized in a relative short time frame.

Finding new ways forward: Recommendations

Collaboration with industry should be also an IODP Forum discussion. Early involvement of Industry on potentially interesting drilling projects is recommended via ad-hoc events, e.g. the MagellanPlus workshops, which can certainly facilitate to build up a common discussion ground. The companies may be approached to find 'creative' ways to cooperate and possibly drive forward a common project, for example the "DREAM-2 experience". A pro-active approach may be more efficient to get Industry partners on board in several propose ways: easier access to IODP web page/project description; executive summary with potential interest for industry; facilitate understanding on how ECORD operates and its possible benefits/tools to respond to Industry requirements (APL, CPPs); and other modalities of co-operation and industry contribution (e.g. data access, financial) will have to be discussed on a case-by-case basis.

A. Stevenson commented that arranging workshops is broader involvement, so the reason that the ILP exists is to facilitate access to industry. He recommended that the engagement with industry should happen faster. J. Lofi said that industry expects projects to take place within short rangers of time, a few years, and not in the next 5-7 years. A. Stevenson said that this is why ECORD should work with industry. If they want the project to go faster ECORD should invite them to contribute to bring it to reality faster.

A Cattaneo said that perhaps there can be a reverse approach to bring industry to IODP

targets.

G. Wefer said that there is a lot of industry interest to work with science, but it rarely matures to a collaboration.

D. Mallinson said that other sectors of industry exist that need ECORD-type data, such as in water resources. Hence, there are other industry directions that ECORD could pursue. The EFB agreed that this is a good suggestion.

4.8 - Implementing MSP-APLS and CPPs (G. Camoin)

APL - Ancillary Project Letters General Guidelines

An APL is a project with valuable science objectives requiring less than 10-15% of dedicated platform time, including transit, from an already scheduled expedition. APLs can require an investment of drilling, logging, and technician time, as well as a platform berth. Therefore, the IODP will strive to integrate such projects with an appropriate drilling proposal as early as possible in the normal planning process.

MSP APLs

One of the topics that was discussed at the VTF is whether an APL call is to be issued when the proposals are forwarded to the EFB.

ECORD VTF 's input

The MSPs are operated in a different way than the *JR* and the *Chikyu*. Long-term planning by the EFB is critical for the APLs in MSPs, before the program goes to tender. The duration of APL needs to be defined since APLs are "fast-tracked" by SEP, although excellent science, i,e. an APL vs. a drilling proposal. The duration of an APL will also depend on the available budget. The two-step process consists of the proposals consideration by the EFB for long-term planning and the Science Support Office, which is to issue a call for APLs with indication of platform time and facilities. A proposal could result in more than one short APL being implemented.

The VTF suggested that a call should be issued for the APLs not only when the expeditions are scheduled, but also when the proposals are forwarded to the EFB so that the science community could respond quicker.

G. Dickens said that adding an APL to the 5 proposals that are considered would just increase the costs. G. Camoin said that if an APL is considered for a lower cost expedition then there will be some added scientific value to the expedition.

H. Given commented about the APL review. The review is not really fast-tracked, as it is not as complicated, but it does follows the normal review process. Still, it takes a lot of work to fast-track a proposal just to have it ready on time.
So far there have been no APLs for the MSPs. G. Camoin said that the advantage of an APL would be to explore the opportunities and the possible cost saving.
D. Kroon mentioned that the APLs do not have external reviews.
K. Becker reminded that the MSP-APLs are defined in the guidelines.

Complementary Project Proposals (CPPs) Guidelines

A CPP is a Full Proposal that has a commitment from a third party source outside IODP for a substantial amount of financial support, usually 70% of the total costs of a drilling program. Early discussions of potential plans with staff at the Science Support Office or appropriate IO before a CPP is written. The CPPs should be prepared as regular IODP Full Proposals but, in addition, must include a description of the formal / to-be-arranged financial commitment from a third party to support the estimated platform operating costs for the proposed expedition(s).

The SEP assessment is based on the same criteria as that of a regular Full Proposal. If fast-track consideration is required by the situation, e.g., funding source, operational plans, etc. the SEP may conduct an internal science review, and then forward the proposal directly to the relevant IO(s). If fast track is not required, SEP follows the normal procedures for the Full Proposals. The final decision regarding the implementation of a CPP is made by the FB overseeing the scheduling of the platform in question. The FB may negotiate with the proponents on details of the external funding. The proposal must satisfy all EPSP requirements before it can be implemented. The CPP expeditions follow the normal IODP rules for designation of co-chief scientists, scientific staffing, and the IODP Sample, Data and Obligations Policy that defines the data moratorium, data access, and publication responsibilities.

There are **two options** depending on the situation: fast track and normal track. The Executive Bureau recommended that these options should be considered very carefully and on a case-by-case basis without being too strict about the rules. There are no CPPs currently for the MSPs. ECORD is in contact with ANDRILL about a possible CPP.

A common practice for different case scenarios may also have to be considered. How would a 50% funding be dealt with in a CPP?

T. Janecek said that all possibilities should be carefully considered. But some things cannot be decided on a case-by-case basis, such as access to data and samples. If the free access and data transparency are limited, that would change the principles of IODP. The moratorium period could be negotiable and should be discussed with the other FBs as they would too be affected by such a decision. G. Dickens mentioned that the CPPs originated because of vessel costs. M. Torres said that ECORD could offer the labs, expertise and technical assistance. M. Malone added that if an entity wants exclusive rights to data access, then they would have to finance the whole expedition.
N. Eguchi said that the CIB has not discussed yet the CPPs, but the 70% funding rule should probably be maintained.

4.9 - Modifying measurements and sample & data policies to MSP needs (U. Röhl)

U. Röhl discussed the **policies and guidelines for the standard measurements**. There are differences between the *JR* and MSP standard measurements, highlighted in red. The rest of the categories are about the same as the *JR*, except that the definitions are slightly different.

Policies/Procedures/Guidelines

The policies have been forwarded to the FBs to be approved and discussed.
The program wide policies include measurements, samples and data during the term of the IODP 2003 - 2013. The JR-FB working group JOIDES Resolution Standard Measurements, August 2013 can be found online at www.iodp.org/doc_download/3892 2013 august jr standard measurements.

The JR Standard Measurements

JOIDES Resolution (JR) standard measurements are those that should be made on all *JR* expeditions if practical for the material being drilled or recovered. Deviations from standard measurements should be identified in the Scientific Prospectus. In addition, the Implementing Organization may require additional measurements to meet safety requirements and protocols. The measurements include:

1. Core Characterization Measurements

1. Core Characterization Measurements
   - Core orientation (APC only)
   - Headspace gas analysis (sediments)
   - Pore water chemistry (e.g., nutrients, pH, alkalinity, sulfate, chloride, major and trace elements)
   - Borehole depth scale
   - Thermal conductivity (both whole core and pieces)
   - Core logging
     - Whole Round
       - Natural gamma ray
       - Gamma ray attenuation
       - Magnetic susceptibility
       - *P*-wave velocity
     - Split Core
       - Digital imaging
       - Reflectance spectroscopy and colorimetry
       - Natural remnant magnetism (NRM) with step-wise demagnetization
   - Moisture and density/porosity (discrete samples)
   - *P*-wave velocity (discrete samples)
   - Biostratigraphy
   - Visual core description
   - Smear slides and/or thin sections
   - Carbonate analyses (sediments)
   - Bulk carbon-hydrogen-nitrogen-sulfur (CHNS) analyses
   - Whole rock major and trace elements (hard rock)

2. Rig Floor Measurements: Driller depth; Heave compensation; Weight on bit; Penetration rate; Mud pressure; Mud logging (important for Expeditions with Microbiology component); and Pump rate.

3. Downhole Logging and Measurements

Once per site, as practical: Natural gamma ray; Spectral gamma; Density; Porosity; Resistivity; Sonic; Borehole imaging; Caliper; and Formation temperature.

JR Supplemental Measurements

Supplemental measurements are defined as additional measurements that may be needed to meet expedition objectives, and are conducted where possible and scientifically justified.

1. Core Characterization Measurements

Anhysteretic Remanent Magnetization (ARM) and Isothermal Remanent Magnetization (IRM) with step wise acquisition and demagnetization; Shear strength; Cell counts; Contamination testing; Microbial activity measurements using radiotracers; Whole rock major and trace elements (sediments); Rock maturity analysis; X ray diffraction; Micro imaging; and Whole round core digital surface photography (hard rock).

2. Downhole Logging and Measurements

These include: Magnetic susceptibility; Borehole temperature; Vertical seismic profile or check shot (requires permitting); Magnetic field; Formation pressure; Logging and measurements while drilling; and Packer tests.

MSP Operations

The MSP Operations consist of an Offshore phase and an Onshore science party.

EFB working group

A working group was created, including U. Röhl, A. Cattaneo, J. Dickens, and D. Weis, to work on the Mission Specific Platforms (MSP) Standard Measurements draft version from November 2013.

T. Janecek asked if SEDIS is being just maintained or also developed. U. Röhl said that it is maintained and there are likely plans to further develop it at the MARUM, by the PANGEA group.

M. Torres asked about the Baltic expedition. Riser samples and stand-up press samples have been taken immediately on the ship.

Mission Specific Platforms (MSP) Standard Measurements

The *Mission Specific Platforms* (MSP) standard measurements are those that should be made on all MSP expeditions, if practical for the material being drilled or recovered. Deviations from standard measurements should be identified in the Scientific Prospectus. In addition, the Implementing Organization may require additional measurements to meet safety requirements and protocols. The measurements include:

1. Core Characterization Measurements

U. Röhl reviewed the edited text of the MSP Standard Measurements Core Characterization section.

1. Core Characterization Measurements (at the Onshore Science Party, OSP)
   - Core orientation (APC only)
   - Gas sniffer
   - Headspace gas sample acquisition (sediments)
   - Pore water chemistry (e.g., nutrients, pH, alkalinity, ammonia, sulfate* (**only if data affect drilling decisions*), chloride, major and trace elements)
   - Borehole depth scale
   - Thermal conductivity (both whole core and pieces)
   - Core logging
     - Whole Round
       - Natural gamma ray
       - Gamma ray attenuation
       - Magnetic susceptibility
       - *P*-wave velocity
     - Split Core
       - Digital imaging
       - Reflectance spectroscopy and colorimetry
       - Natural remnant magnetism (NRM) with step-wise demagnetization
   - Moisture and density/porosity (discrete samples)
   - *P*-wave velocity (discrete samples)
   - Biostratigraphy (*offshore on CC samples only*)
   - Visual core description
   - Smear slides and/or thin sections
   - Carbonate analyses (sediments)
   - Bulk carbon-hydrogen-nitrogen-sulfur (CHNS) analyses
   - Whole rock major and trace elements (hard rock)

2. Downhole Logging and Measurements

Once per site, as hole conditions allow: Natural gamma ray; Spectral gamma; Density; Porosity; Resistivity; Sonic; Borehole imaging; Caliper; and Formation temperature.

3. Rig Floor Measurements

Involve Driller depth; Heave compensation; Weight on bit; Penetration rate; Mud pressure; Mud logging (important for Expeditions with Microbiology component); and Pump rate.

Supplemental MSP Measurements

Supplemental measurements are defined as additional measurements that may be needed to meet expedition objectives, and are conducted where possible and scientifically justified.

1. Core Characterization Measurements

These could include: Anhysteretic Remanent Magnetization (ARM) and Isothermal Remanent; Magnetization (IRM) with step wise acquisition and demagnetization; Shear strength; Cell counts; Contamination testing; Microbial activity measurements using

radiotracers; Whole rock major and trace elements (sediments); Rock maturity analysis; X ray diffraction; Micro imaging; Whole round core digital surface photography (hard rock); and whole round non contact resistivity.

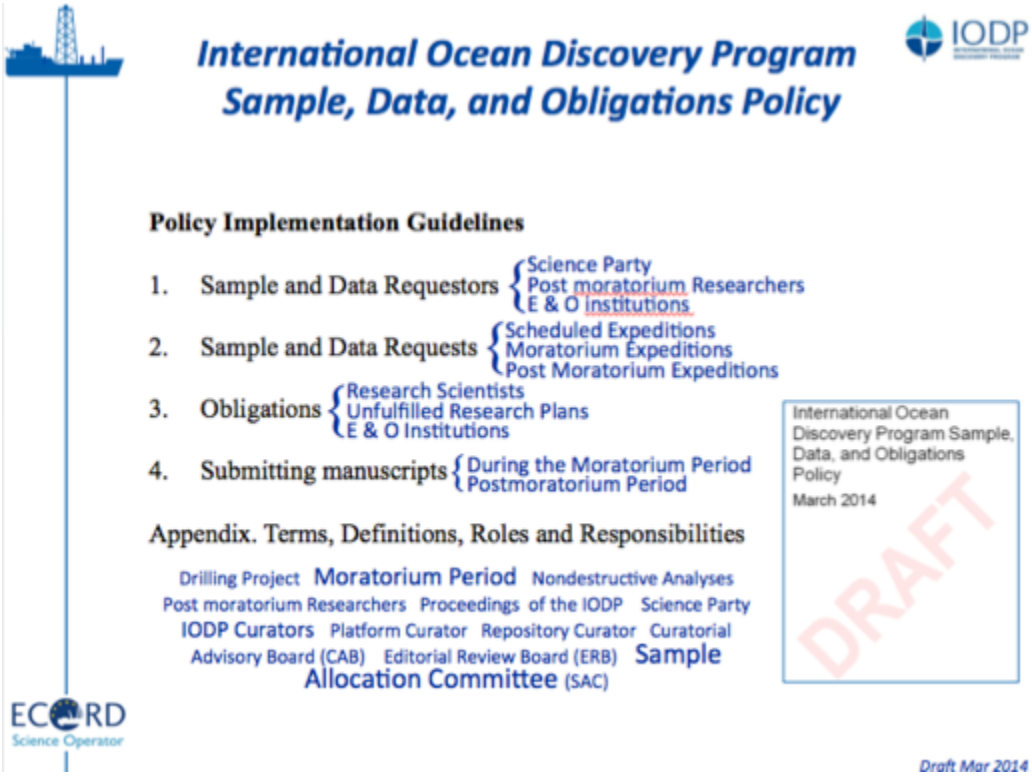
2. Downhole Logging and Measurements

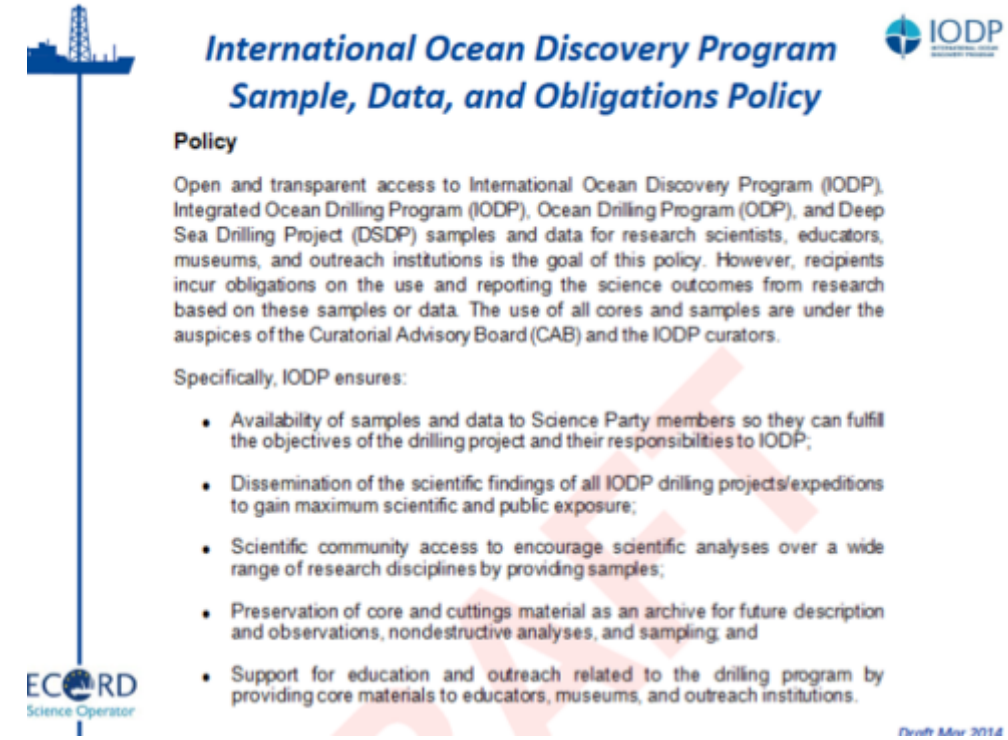
May include: Magnetic susceptibility; Borehole temperature; Vertical seismic profile or check shot (requires permitting); Magnetic field; Formation pressure; Logging and measurement while drilling and Packer tests.

International Ocean Discovery Program Sample, Data, and Obligations Policy

A working group was created, including D. Divins, N. Eguchi, W. Azuma, J. Allan, K. Becker, and U. Röhl, to draft the March 2014 version International Ocean Discovery Program Sample, Data, and Obligations Policy. The March 2014 EFB will be asked to consider this draft version. The IODP Curators are to provide an implementation plan.

U Röhl showed several examples of the guidelines draft.





International Ocean Discovery Program
Sample, Data, and Obligations Policy

IODP

Policy

Open and transparent access to International Ocean Discovery Program (IODP), Integrated Ocean Drilling Program (IODP), Ocean Drilling Program (ODP), and Deep Sea Drilling Project (DSDP) samples and data for research scientists, educators, museums, and outreach institutions is the goal of this policy. However, recipients incur obligations on the use and reporting the science outcomes from research based on these samples or data. The use of all cores and samples are under the auspices of the Curatorial Advisory Board (CAB) and the IODP curators.

Specifically, IODP ensures:

- Availability of samples and data to Science Party members so they can fulfill the objectives of the drilling project and their responsibilities to IODP;
- Dissemination of the scientific findings of all IODP drilling projects/expeditions to gain maximum scientific and public exposure;
- Scientific community access to encourage scientific analyses over a wide range of research disciplines by providing samples;
- Preservation of core and cuttings material as an archive for future description and observations, nondestructive analyses, and sampling; and
- Support for education and outreach related to the drilling program by providing core materials to educators, museums, and outreach institutions.

ECORD Science Operator

Draft May 2014

International Ocean Discovery Program
Sample, Data, and Obligations Policy

IODP

2. Sample and Data Requests

Requests for data or samples must be made through official IODP channels. There are three categories of expeditions from which samples may be requested: **scheduled expeditions**, **moratorium expeditions**, or **post-moratorium** expeditions, including old IODP, ODP, or DSDP expeditions.

- **Scheduled Expeditions**. There is a SDRM sample and data request system that allows scientists to create and submit requests for scheduled expeditions.

  Moratorium Expeditions. IODP imposes a moratorium, generally one year from completion of the expedition, during which sample access is restricted to members of the expedition science party. Samples and data from moratorium expeditions can be accessed via the following link: Data: http://www.iodp-usio.org/Data_Samples/

  Post-Moratorium Expeditions. Samples and data from IODP expeditions no longer under moratorium restrictions, including past IODP, ODP, and DSDP expeditions can be accessed via the following link: http://www.iodp-usio.org/Data_Samples/

Shipping and supply costs in excess of reasonable costs are the responsibility of the requester and should be coordinated with the appropriate IODP Curator.

ECORD Science Operator

Draft May 2014

N. Exon asked, in cases where reef core recovery is slow and it could make sense to reduce the amount of downhole logging, how such a decision would be made. D. McInroy said that

it is a difficult question and ESO usually has to discuss that with the co-chiefs. It may be difficult to prescribe a rule because every situation could be different.
G. Dickens asked if any of the measurements change the dimension and size of the ships, because that would change the day rate of the ship.
D. McInroy said that it depends on the expedition. Changing the type of measurements could affect the number of containers. G. Dickens said that rather than making strict rules, perhaps cutting some of these measurements could reduce the expedition's costs. U. Röhl said that this is continually done.
S. Davies said that depending on the expeditions, some of these measurements are essential. G. Dickens said that it should be considered whether there is a measurement that can be reduced, and if so it should be done. U. Röhl agreed that the measurements must be practical for both the science and costs.
G. Wefer said that if the conditions allows, all measurements should be followed. S. Davies said that these measurements are decided on a case-by-case basis and if possible all measurements are done.

Consensus 14-02-01*: The EFB supports the adoption of the MSP Standard Measurements and the following addition to its text: "if practical and within the budgetary constraints".*

IODP Sample, Data and Obligations Policy: Implementation Plan

U. Röhl also presented several examples of the **Implementation Plan's Repository procedures**. The Multi-repository requests will be reviewed for approval by the IODP Curator/repository that houses the lowest numbered leg/expedition listed in the sample requests. The creation of permanent archive lists is the responsibility of the IODP Curator for the drilling operator that obtained the cores. U channels that are analyzed non-destructively with scanners are to be loaned and returned, according to loan agreements signed by the IODP curators or their designated curatorial staff. Cores or materials for display at museums, etc. are to be loaned and returned, with loan agreements signed by the IODP curators.

U. Röhl reviewed several past steps. A working group was created, including D. Divins, N. Eguchi, W. Azuma, J. Allan, K. Becker, U. Röhl to draft the International Ocean Discovery Program Sample, Data, and Obligations Policy, version March 2014. The goal is for the Facility Boards to consider the March version. The IODP Curators are also to provide an

implementation plan.
U. Röhl reminded that according to the IODP Sample, Data, and Obligations Policy, the Curational Advisory Board holds several functions.

U. Röhl summarized the document changes. The **Curator's Policy** is now shorter and more concise, but the content did not change much. The section on sample and data requests only includes information on data access for the JR and USIO only. For the MSPs and *Chikyu*, more information would be needed on where to find MSP data and sample. The new sample request system (SaDR) mentioned in the new policy is not yet fully in place for all cores.
U. Röhl reviewed the BCR/MARUM webpage, which was recently revised.
She asked the EFB to consider the March version of the obligations policy.
K. Gohl suggested that U. Röhl provides the two parts of the policy and implementation parts of the document to all EFB members, and then to call for the EFB's email vote.

ACTION: *U. Röhl to provide the two parts of the "Policy and IODP Curators Implementation Plan" document to all EFB members. K. Gohl to issue a call for an email vote from the EFB members on the Policy documents that will be provided by U. Röhl.*

G. Wefer suggested that under Section 2 of the policy regarding the moratorium, the word "generally" should be removed to avoid any ambiguity. A definition for an expedition may be also needed.

ACTION: *U. Röhl to remove the word "generally" from the text under Section 2 of the IODP Curators Policy document, in order to avoid any ambiguity. The correction should read:*
"IODP imposes a moratorium, generally one year from completion of an expedition, during which sample access is restricted to members of the expedition science party. Completion of an expedition is designated as the date when shore-based sampling at the end of the Sampling Party or Onshore Science Party (MSPs) related to the expedition is officially concluded. The one-year term may be modified ahead of the expedition in certain cases, such as when significant funding derives from external sources."
The recommended change is also derived from the IODP Curator's discussion after the meeting. U. Röhl noted that each of the three repositories is aiming for a joint policy and

implementation plan with the repository procedures, which might slightly differ from those published on the repository webpages.

4.10 - Policy on IODP/MSP expedition reports and publications (K. Gohl, G. Camoin)

K. Gohl gave an overview of the different types of reporting.

Overview on (currently) required reports

Pre-Expedition Reporting-Expedition prospectus

A pre-cruise prospectus is required for all scheduled IODP-MSP expeditions. All efforts should be made to make this available prior to the scientist application process for expedition participation. The prospectus should include a short summary for the general public. The emphasis for the prospectus should be on timely publication rather than production aspects, e.g. layout, undue graphical editing, etc.

Offshore Expedition Reporting

The reporting includes Daily reports by the Expedition Project Manager and Weekly reports by the Expedition Project Manager.

K. Gohl suggested that the expedition operational review reports by the co-chiefs should be combined with the previous review.

Post-Expedition Reporting

The **Preliminary Report** is done by the Co-Chiefs on the preliminary scientific outcomes of the expedition. Most of it is written at the onshore phase of an MSP expedition. The report is submitted to publications services at the end of this phase and is published about two months later on the IODP/ECORD websites. This service is provided by ESO. The FB needs to consider what information the Preliminary Report has to include, and who is the audience in order to determine specific content requirements. This is best done when discussed with ESO.

Expedition Operational Review Reports

Two reports are to be submitted to the EFB about 5 months after the expedition's onshore phase. The report is supposed to consist of a Technical Operations Review by

ESO and a Scientific Operations Review by Co-Chiefs, *refer to outline temple*. There are discussion items on the pre-expedition planning, operations during the expedition, e.g. drilling, coring, logging etc., communications between scientists and operators, roles and responsibilities of scientists and operators, general procedures and policies, e.g. curation, communications, laboratory operations, etc.

The resulting recommendations are to be compiled into a short summary report, which is posted on the IODP/ECORD websites. Following this, the recommendations are implemented via the ECORD Annual Program Plan.

Review Meeting

The Expedition Reports by ESO and the Co-Chiefs will be reviewed during a Review Meeting organized by the EFB. The meeting will be scheduled approximately 6 months after the end of the onshore part of the expedition, if applicable.

Report in 'Scientific Drilling'

One year after the end of an MSP expedition or the end of its onshore phase, if applicable, the Shipboard Party led by the Co-Chiefs will be required to have published a report in 'Scientific Drilling'.

IODP Initial Reports

One year after the sampling party, the Scientific Party will have to produce a volume of the 'Initial Reports' similar in content and quality to the current publication, with a summary overview chapter and an expedition bibliography. This report will have to be submitted to the IODP Science Support Office.

The **progress on reporting requirements** is supposed to be overseen by the FBs. Is this feasible with number of Science Board members and no existing resources??

In terms of the general **IOPD Policy on reporting**, the EFB is supposed to oversee these requirements and if these reports are not provided, then there will be consequences for the proponents. K. Gohl reminded that the reporting is a heavy task and more people need to be involved. He suggested that a working group should be created to work with ESO and a previous MSP co-chief who has been in this process before.

G. Dickens commented about the reasoning in having two separate reports. After the ACEX expedition, there were some major problems and hence there are two documents, providing two views on how things went on the cruise.

K. Gohl said that this is a good point, but perhaps the information could be on the same

report. There is also a need for someone to review this process.
T. Janecek said that for an operational review to properly address, in a timely fashion, the issues that arose during an expedition (so that lessons learned can be applied to future expedition planning) it is important to have a basic understanding of which scientific objectives, as outlined in the Expedition Prospectus, were achieved. This information can come quickly from the co-chief scientists in the form of a short post-expedition report. A more formal analysis of meeting IODP Science Plan objectives is more appropriate at a later stage (perhaps several years) when post-expedition research is more complete.
K. Becker commented that the power behind the ESO technical report and co-chief report is to have the opportunity to say that they would not want to say in public.

***Consensus 14-03-01**: The EFB decides to leave the Reporting Policy for Expeditions as it is currently.*

It was recommended that a meeting should be scheduled to further discuss this topic.

4.11 - Outreach and Education (A. Stevenson)

A. Stevenson reviewed the pre-expedition types of outreach activities for the Baltic Sea paleoenvironment Expedition Outreach activities. There is a Communications Plan and several Promotional materials, such as Articles in ECORD Newsletter; Baltic Sea Paleoenvironment flyer; Expedition logo; Banner for the *Greatship Manisha* and an Expedition web page on ESO's website.

The Baltic Sea Expedition

A. Gerdes and A. Stevenson have discussed with the expedition's manager. There was a meeting with the offshore science party in Copenhagen on September 4th. A media event took place in Copenhagen International Press Center along with a press release on September 5th. There were presentations by the co-chiefs and Expedition Project Manager. This resulted in over 45 separate reports in press, radio and TV, especially in Sweden and Denmark, which were picked up by numerous websites. The collaboration was good with the media relations staff at Aarhus and Sødertørn.
In addition, the Facebook and science party blogs were updated. An expedition logbook and photographs/videos were provided.

A half-hour documentary was made by PrimeView Apps and will be offered to national Danish TV station, DR1. The project was led by Aarhus University with funding from the Danish Ministry of Education and the Danish National Research Foundation.

ESO Web Outreach

ESO's web outreach site includes a home page, expedition page, media page, daily ship reports expedition logbook and a logbook entry page.

Onshore Science Party

There were several reports on the expedition web page along with a press release. A media day was held on February 13th.

OSP Media Day

Nineteen journalists attended the event, resulting in the publication of 127 articles within one week, along with several radio reports and a nationwide TV broadcast. U. Rőhl, C. Cotterill, T. Andrén and B. Barker Jørgensen made presentations and were followed by a tour of the labs. Some video footage was provided to the journalists. T. Andrén will speak at the EGU Press Conference.

Next steps

A folder will be kept up-to date giving information about ESO and a new folder will be created about the Baltic Expedition. There will also be a place for newsworthy stories about ECORD in laymen's terms on the ECORD website, along with information about any ECORD scientist involved in an IODP expedition and if there are resulting publications. The coordination of this task will involve the US and Japanese outreach teams.

The next upcoming steps will be the creation of the Baltic Sea expedition leaflet in an ECORD brochure; the EGU booth and Townhall meeting; and the EGU Press Conference.

The following sites were provided: www.iodp.org; www.ecord.org; and www.eso.ecord.org.

H. Given said that outreach is very important, and such news links are essential references for the Support Office.

4.12 – Selection of next EFB Chair and Science Board members (G. Camoin)

The 5 science board members

A proposition was made to extend the terms of the current science panel members.

It was proposed that K. Gohl is to remain as EFB Chair until end of 2015. This has to be approved by the Council.

T. Janecek said that he sees a large group of people rotating off at the same time, and asked about the rationale of this change. G. Camoin said that he thinks that if at least two members stay on board, regardless of the change, the balance of new versus current members on the board should be OK.

G. Früh Green said that the call for the EFB Chair will have to take place a year before K. Gohl rotates off. The Chair needs to be an ECORD scientist and will have to be in place by the end of 2015, if K. Gohl is the outgoing Vice Chair. So the call could take place early 2015 and the new chair should to start in early 2016. The EFB Chair is designated internally.

G. Dickens said that some proposals will take 3 years to schedule.

Yuzuru Kimura expressed his interest in a regional balance of the EFB's members, and suggested that there be one member from Japan.

The Science Board selection process was reviewed.

It was discussed that nominating the Chair could be a problem if the call for applications is in FY15. It was proposed that in this case the call should be in FY14.

Consensus 14-04-01*: The EFB recommends the following rotation scheme:*

- M. Torres and A. Cattaneo will rotate off on December 31st, 2015;

- K. Gohl will step down as Chair on December 31st, 2015 and will serve one more year as EFB member;

- G. Dickens and D. Weis will rotate off on December 31st, 2016.

The EFB decides to hold the call for the new EFB Chair either in late FY14 or early FY15.

Thursday, 6th March

Conflict of Interest Policy (COI)

K. Gohl further discussed the policy for COI. A 'soft' COI is e.g. an institutional conflict, in which case the person can stay in the room, but cannot participate in the discussion, unless the FB members object.

K. Gohl has a soft COI with proposal 708 (Arctic) as several lead proponents are his colleagues. Hence, for the presentation and discussion of this proposal, K. Gohl cannot

lead the discussion. He asked that instead D. Weis or G. Camoin lead the discussion in this case. K. Gohl's vote will not take place and it will not be exercised by anyone else.

G. Früh Green is a first proponent of proposal 758 (Atlantis Massif) and will have to leave the room when the proposal is discussed. When the members vote on the other proposals she can be present but not participate in the discussion on the vote.

G. Dickens has an institutional conflict with proposals 581 and 637 as stated further below.

S. Humphris recommended that in the case of an institutional conflict the person should remain in the room and not participate in the discussion, as in K. Gohl's and G. Dickens' case. G. Früh Green should leave the room when the Atlantis Massif will be discussed.

Consensus 14-06-01*: The EFB decides that in light of K. Gohl's COI, he is to remain in the room, but not participate and vote when the #708 proposal is discussed.*

Consensus 14-07-01*: The EFB decides that in light of G. Früh Green's COI with the #758 proposal, she is to leave the room during this specific discussion and may be present, but not participate, when the other proposals are ranked.*

Consensus 14-08-01*: The EFB decides that in light of G. Dickens' COI with the #581 and #637 proposals, he is to remain in the room, but not participate and vote when the proposals #581 and #637 are discussed.*

5. Review of the MSP proposals

5.1 - 548-Full3 Chicxulub K-T Impact Crater (scheduled but needs revision)

5.1.1 - Summary of objectives, SSD and previous EFB decision (A. Cattaneo)

The MSP proponents are Morgan et al. Two boreholes will be drilled in the Gulf of Mexico.

Site Location

The site location is the *Chicxulub* impact crater. It is a unique, well-preserved large impact structure on Earth. It has an unequivocal topographic "peak ring," a global ejecta layer and is linked to the K-T mass extinction.

History of the Proposal

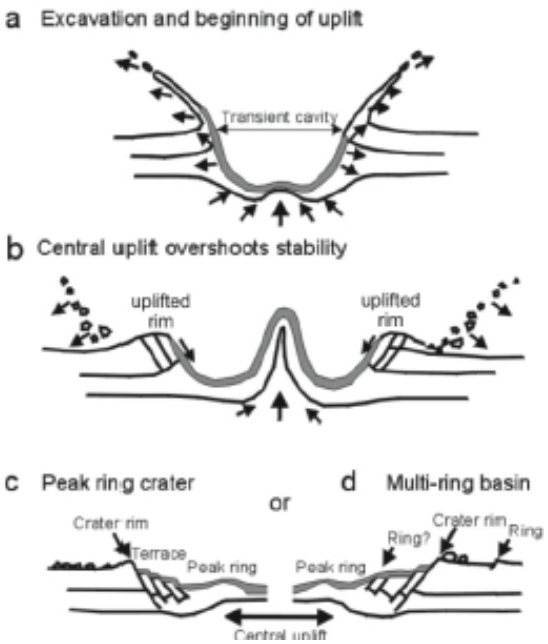
The 548-Full was reviewed by the panels in May 2000. The 548-Full3 was forwarded to the Science Planning Committee (SPC) with 4 stars in May 2009.

Relevance to the IODP Science Plan

The proposal is relevant according to Chapter 2 "Climate and Ocean Changes" and Chapter 3 "Biosphere frontiers".

Scientific Objectives

1) Identify peak ring lithology, structure, and formational mechanism and compare with current models.

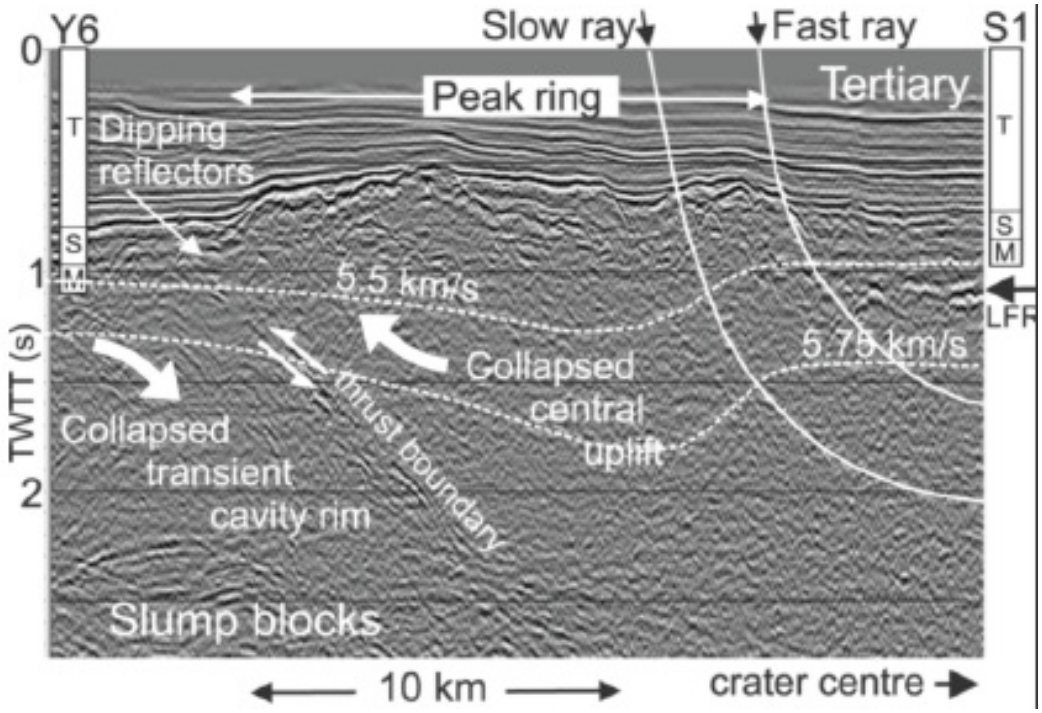


2) Understand the effects of the *Chicxulub* impactor on the deep sub-surface biosphere, e.g. changes in porosity and colonization.

3) Verify the extent of the hydrothermal system and the magnitude of chemical and mineralogical alteration of the crust.

4) Assess the environmental effects of the impact: quantification of the energy of the impact where melt sheet volume = proxy and the amount/type of ejected material. There is a question if there are pollutants with a role in K-Tmass extinction.

5) Explore the pattern of biotic recovery and response of a carbonate platform system to a marine target impact.



Borehole targets and working hypothesis

Hole Chicx-03A

The hole will be at a 1500 m penetration-17 m w.d. There is a pink ring forming material. The question is if there will be overturned/uplifted basement rocks; megabreccia and other.

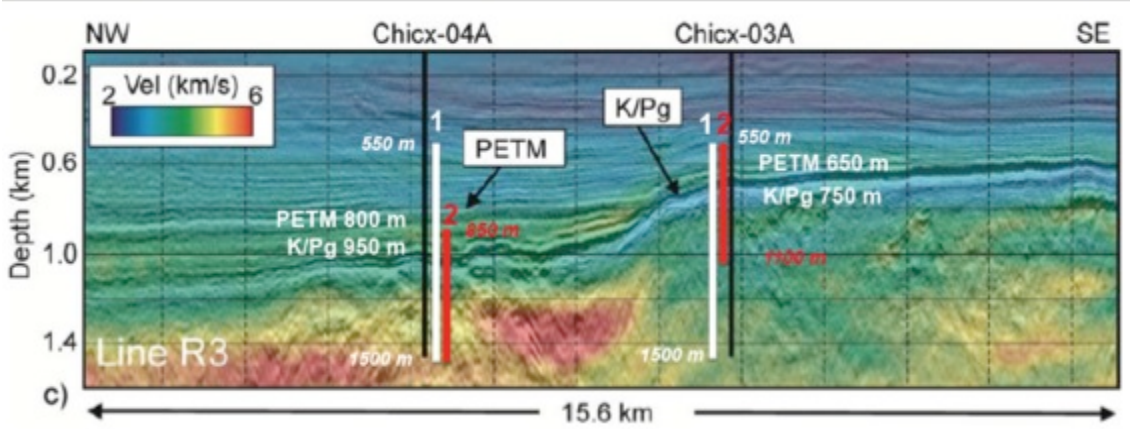
Hole Chicx-04A

The penetration is 1500m-17 m w.d. There is an enigmatic dipping reflector. Questions are posed if: there is a lithologic boundary between the uplifted basement and younger Mesozoic sediments; thrust fault formed during the peak ring emplacement; and about the result of the hydrothermal circulation and mineral deposition.

A. Cattaneo showed the proposed modification along with the ESO cost evaluation. The proponents' proposed solution is to reduce the drill depth and to focus only on the K/T boundary as a second scenario. Hence, two scenarios exist. Scenario 1 guarantees that all objectives will be met and Scenario 2 guarantees that only the key objectives will be met.

Scenario 1 is an optimistic estimate, of 100 days, where Chicx-03A 950m and Chicx-04A 950m will be drilled as planned.

Scenario 2 is a pessimistic estimate of 110 days. The coring is where the Chicx-03A 550m maximum drilling depth will be reduced and the Chicx-4A 650m open hole drilling depth will be increased. The principal objectives are maintained: to study the peak ring, dipping reflectors, and the K-Pg transition. The secondary objectives are lost, in reference to the Eoc-pal extended section and deeper peak ring material.



Summary

The 548-Full3 proposes a unique site with a fully preserved large impact crater on Earth. The site is associated with the K/T global mass extinction, which has a potential to unveil the mechanisms of impact dynamics and to detail the global effect of impact on ecosystems. The proposal was written with a clear hypothesis driven tests, detailed drilling strategy and could present an occasion for an effective outreach communication.

A. Cattaneo reviewed last year's EFB motion and action:

Motion 13-03-01: The E-FB to go forward with the Chicxulub (aim for end of 2014) and the Atlantis Massif (2015), provided that the budget objectives are met. The E-FB requests a rapid feedback response from proponents, if the foreseen scenarios are suitable for them.

G. Dickens moved, M. Torres (C. Escutia as alternate) seconded, all approved.

ACTION E-FB #1: the E-FB to request a rapid feedback response from the Chicxulub (aim for end of 2014) and the Atlantis Massif (2015) proponents, if the foreseen scenarios are suitable for them.

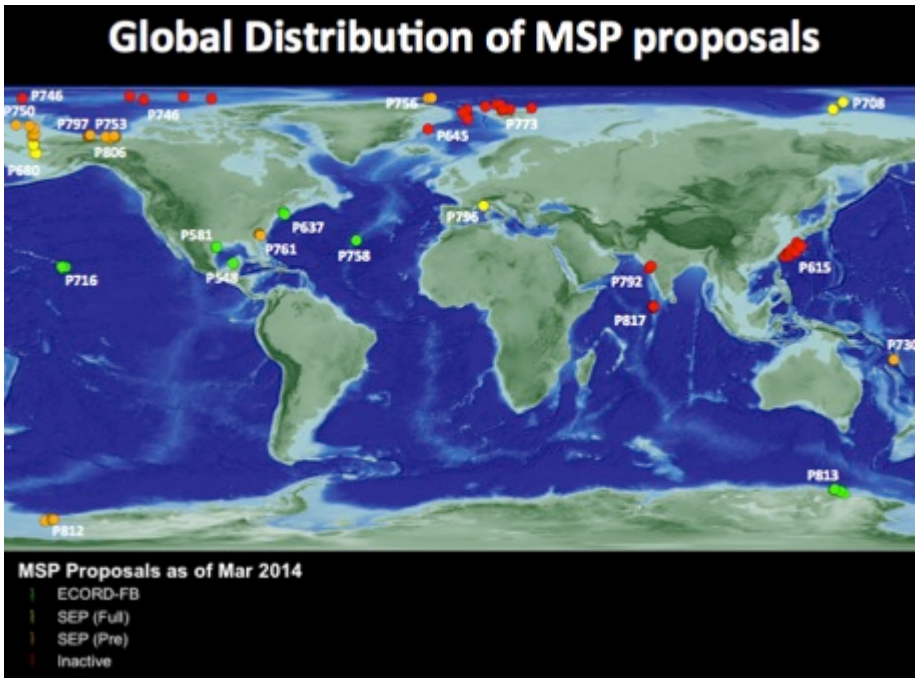
G. Dickens asked if the transit is included in the 100 days of expedition. D. McIntoy confirmed that that is the case. G. Dickens recommended that when there are 100-110 day expeditions, each should be divided into two expeditions.

D. McInroy said that if that is done then the two expeditions should be done back to back. D. Smith agreed that this is a good point. K. Gohl said that it should be considered if this would increase the costs.

The cost estimate would remain between US$15 and $25M, thus a high cost project. The site remains a center of attention as there is still a strong scientific debate about the site's history, recently expressed in a *Nature* magazine publication.

5.1.2 - Drilling operations and costs (D. McInroy)

D. McInroy showed a map of the Global Distribution of the MSP proposals.



D. McInroy discussed *Chicxulub's* main operation characteristics and cost estimates.

The water depth is 17 m and the penetration is at 1500 mbsf at 2 holes. The primary lithologies involve post impact Cenozoic sediments, impact breccia, hydrothermal minerals or melt and platform carbonates. The platform type(s) are a liftboat or a jack-up. ESO is scoping and the Project Management Team (PMT) is meeting with the co-chiefs. The drilling is technically feasible, with no development needed**.** An ICDP proposal for $1.5M USD has been submitted by the Co-chiefs.

December to May is the preferred drilling window, in order to avoid hurricane season. The hazard site survey was completed in Spring 2013. The results suggest that there is no significant point of concern. There may be a difficulty with the permitting procedure, but it looks optimistic that it will be granted.

Contingency Plan

What can be done is to reduce the Chicx-3A drill to 1100m and increase the open holing of Chicx-4A, which would lead to saving about $1.8M USD.

D. Weis asked what would be lost with the reduction of the drill hole. A. Cattaneo said that the primary objective could be kept, but the secondary objective about the recovery of the Miocene sedimentary sequence will be lost. D. Weis pointed out that a $1.8M USD saving is not much.

G. Camoin asked if SEP should review the second scenario to see if the objectives will be kept. A. Cattaneo said that a second review would be very lengthy. He said that they could request for a quick review, but the $1.8M USD saving is not a major argument to cut these objectives. D. Kroon said that he does not think that returning the proposal back to SEP would help, as the objectives are already clear. He said that the two sites are needed, because if they fail at one place then the opportunities will be lost.

D. Kroon asked why the estimate gap is so big. D. McInroy said that the day rate for the vessel is a determining factor in this difference. G. Dickens said that in terms of negotiation from a tender point of view, the tender should be placed based on the size of the vessel. D. McInroy said that that is done bases on the equipment and technology needs. The providers come back with the options. R. Gatliff said that a commitment to both holes should be done. D. Mallinson agreed that ideally there should be two holes. K. Gohl said that this is a high-risk operation that can turn out to be very expensive with only one hole drilled due to budget restrictions. M. Torres said that the objectives might be missed with only one hole.

G. Dickens said that there is always a risk with any expedition.

A. Cattaneo said that all considerations are based on global data sets, boreholes, sediment holes, but there is no conclusive consideration in the ICDP record. There is no biological or geochemical proxy that could prove that that borehole will be OK.

D. Weis asked if a 3D correlation is possible with the two holes.

U. Harms asked such discussions should be brought before the ICDP Panel. The group agreed.

F. Lamy mentioned that it is difficult to see where the seismic lines are located.

H. Given said that the EPSP meeting is ready to take place in May and the MSP proposals will be discussed by EPSP.

D. Mallinson said that all of the data is in the databank.

H. Given said that the Support Office works with the Chair of the EPSP on the proposals. There is a need for information from the EFB on which proponents are to be contacted.

5.2 - 758-Full2 Atlantis Massif Seafloor Proc. (scheduled but needs revision)

G. Früh Green left the room due to her COI as first proponent of the proposal.

5.2.1 - Summary of objectives, SSD and previous EFB decision (D. Weis)

The proposal addresses the serpentization and life: biogeochemical and tectono-magmatic processes in young mafic and ultramafic seafloor. D. Weis discussed the science objectives. The proposal is by G. Früh Green and 23 other co-proponents.

The Atlantis Massif (30°N, MAR) is near the serpentine-hosted Lost City Hydrothermal Field. The ten drill sites have a maximum 100m deep, using a seabed rock drill system on a MSP for the first time.

The proposal includes the seabed rock drill of two profiles, where the E-W profile is in serpentinites exposed at different times by detachment faulting and the N-S profile towards gabbroic basement at Site U1309D.

The main goal is to explore the subsurface biosphere and its link to serpentization, deformation and alteration processes in lithosphere of different age and rock type.

Serpentinization is a Fundamental Process

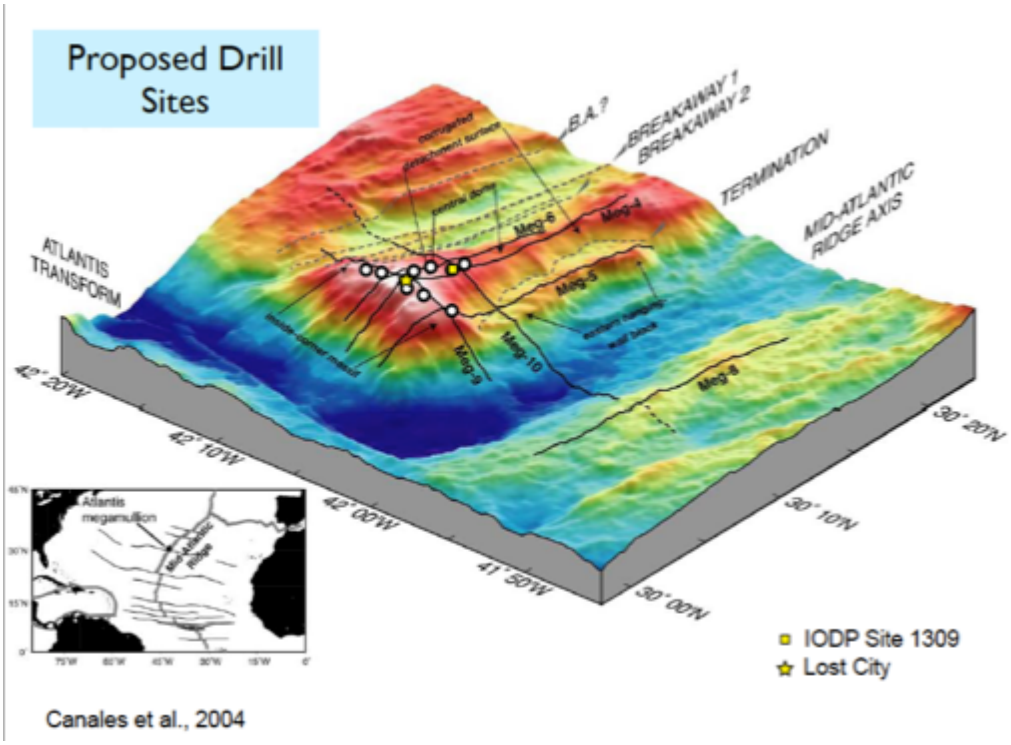
Seprentinization, or hydration of olivine, occurs in many geological environments, where there are changes in density, rheology, and magnetic priorities. Serpentinization provides a long-term reservoir of 2H0, C, S, B, and Cl from seawater. It also produces H2 and CH4-rich hydrothermal fluids that are important to support a deep, subsurface biosphere. About 10-20% of the seafloor exposed in slow and ultraslow spreading environments is ultramafic and is affected by serpentinization. Six known hydrothermal sites along the Mid-Atlantic Ridge are hosted in ultramafic rocks. Similar processes may have been the source of prebiotic organic compounds on early Earth.

Serpentinization has been identified as an important research target in the IODP New Science Plan.

The Lost City is unlike any known submarine vent system, but it is unlikely to be unique. Nothing is known of the sub-subsurface biosphere in this environment. There is no magma at these depths and the biosphere is hosted in 1-1.5 ma old serpentinization peridotites. The environment is defined by high alkaline fluids, pH 9-11, and low temperatures below 100°C. There are carbonate deposits rather than sulfide minerals, which is important for C02 sequestration. The environment is enriched in abiotic hydrogen, methane, formate, and other hydrocarbons, which is important for the sustaining of microbial communities. This could be the closest analogue to early Earth and conditions for extraterrestrial life.

The Oceanic Core Complex at the Atlantis Massif provides the opportunity to study the serpentinization processes and microbial activity that is associated with active fluid discharge at the Lost City. The study also provides information about the evolution of the massif as it was progressively denuded to the seafloor and cooled rapidly from around 1Ma onwards. This includes understanding the longevity of and possible precursors to the Lost City, seprentinization processes and changes in microbial activity in the footwall. Finally, the study addresses the early history of the detachment fault which localized high strain deformation and fluid flow at 300-400°C, possibly up to several km below the seafloor.

D. Weis showed an image of the proposed drill sites.



The Objectives of the E-W profile

The objectives are: to constrain the nature and distribution of microbial communities that are supported by H2 and CH4 rich fluids and determine how these vary with age and substrates; to investigate the controls on fluid flow and the consequences of serpentinization for global (bio)geochemical cycles and carbon fixation, as biomass or solid carbonate; to evaluate the links between denudation and hydrothermal circulation and to test the hypothesis that detachment faults channel hydrothermal fluids and ultimately lead to mid-ocean ridge vent fields.

Objectives of drilling N-S profile, where basement changes from ultramafic to gabbroic.

The objective is to investigate the axis-parallel variations in lithologies, alteration, and microbial activity away from the focus of fluid discharge and in approximately 1.16 to 1.31 Ma lithosphere. The profile will allow the evaluation of: the length scale of lithological and hydrothermal variability and the implications for heat and fluid flow paths/fluxes and microbial activity; and the rheological role of competent gabbros and weaker serpentinised ultramafic rocks in localizing deformation.

Advantages of using Seabed Rock Drills

The drills are deployed from a conventional R/V; there are high recovery rates, currently to about 70m; and the developments are ongoing to increase the depth capability to 200m, to allow downhole measurements, sample for microbiology and fluids, etc.

Challenges in using seabed Rock Drills: what further planning/technical developments necessary?

Some of the required technical developments involve devising a microbiological contamination and sampling schemes; adapting conventional logging tools; designing low-cost fluid sampling and microbial observatory capabilities; and possibly modifying downhole tools such as the Deep Exploration Biosphere Investigative tool (DEBI-t) for deployment with seabed rock drills.

Reviews

D. Weis emphasized the number of positive reviews about the project. She reminded of Motion 13-03-01 from the Edinburgh 2013 EFB meeting, which supported that the Atlantis Massif be drilled in 2015.

M. Torres said that the proposal is very important and D. Weis emphasized the low cost of the expedition.

5.2.2 - Drilling operations and costs (D. McInroy)

D. McInroy reviewed the **758-Full2 Atlantis Massif Seafloor Processes** operations details and costs.

The water depths reach 750-1770 m and the penetration will be at 50-100 mbsf for up to 10 holes. The primary lithologies include lithified pelagic carbonates and basaltic breccias in a carbonate matrix, and a serpentinized peridotite with zones of talc-amph-chl schists.

The platform type is a seafloor drill that will be deployed from a research vessel.

ESO will do the scoping, there will be 2 PMT meetings, and an ECORD Technical Panel.

The sea-bed drills do not currently provide all IODP minimum downhole measurements. Further downhole tool development is needed to meet the minimum objectives of the proposal. Some developments were identified at the ECORD Technical Panel.

Other factors

ESO has submitted an application for ship time on the *R/V James Cook*, October-

November 2015.

Also, there is a possibility of using the *RV Maria S. Merian*. The decision for the ship will be made in April 2014.

D. McInroy commented that the tools will be ready in time for the next year when the expedition is planned to take place.

G. Dickens asked about the rational for including both drills. D. McInroy said that the technologies are fairly new and not entirely reliable but getting better, so if one fails it is important to have another sea-bed drill as a back-up. Additional drill costs are about US$800k.

D. Smith said that it is not clear if it will be practical to have two drills.

G. Camoin said that if the depth is reduced to be less than 100 meters, some major objectives may be lost. D. McInroy said that he has discussed this issue with G. Früh Green, and she has agreed to reduce the depth to a maximum of 50m.

G. Wefer said that the drilling two holes at 70m with the RV Merian has advantages. He said that it is en excellent ship and can stay 35 days at sea. The expedition will take place over a 40-day time period.

T. Freudenthal said that 70 m drilling takes 1.5 days so they will have to take into account the slower drilling rate, thus increasing the drilling to 2.5 days.

The ship is free but there may be associated ship costs.

It is expected that there may about $1.650 M USD in total costs.

It is not sure if rock drills may be used, as the available ship place is also needed in terms of berths.

K. Gohl said that not only the costs for using one or two seabed drills need to be considered, but also the costs for the onshore expedition party.

D. Weiss said that there is a need for a microbiology team on board of the ship, so only 6 scientist berths would not be sufficient to meet the objectives.

M. Torres asked if additional operators would be needed. D. Smith said that the James Cook has the space and the berths.

K. Gohl said that there are a few options, but it needs to be considered how to be done in a reasonable costly manner. There is a question about the availability of the two ships that are requested during the time of the expedition. G. Wefer said that there is a need to confirm if the Marion is available for this time window.

K. Gohl said that ESO should consider the possibility of the RV as a serious option.

5.3 - 581-Full2 Late Pleistocene Coralgal Banks (revision)

G. Früh Green was asked to come back to the room.

5.3.1 - Summary of objectives, SSD and previous EFB decision (K. Gohl)

K. Gohl reviewed the objectives of 581 in the Gulf of Mexico. The proposal goal is to study the Southern and Baker Banks that are currently drowned coralgal reefs, about 40 to 50 m thick, on the edge of the South Texas shelf 55 km offshore Corpus Christi. They are interpreted to have grown during the first half of the last sea level transgression on top of topographic highs occurring along a lowstand siliciclastic paleo-coastline at the Last Glacial Maximum.

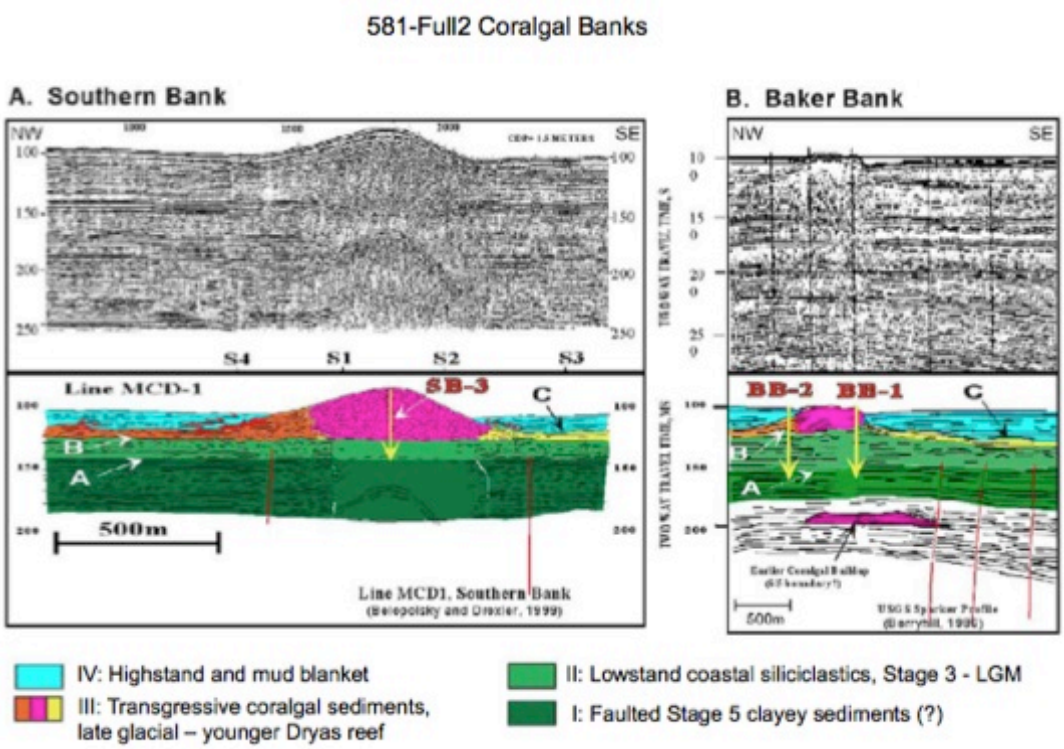
Drilling plan

The drilling plan includes a total of 7 drill holes, each 80 to 100 m deep, consisting of an array of 5 boreholes through Southern Bank and a 2 borehole-transect through Baker Bank and their siliciclastic substratum. The water depth is about 60-70 m.

Each borehole will include at least two of the three following sedimentary packages: the siliciclastic substratum of the reefal edifice; the coralgal sequence itself; and/or the mud blanket that partially covers the reefal edifices.

In addition, a 2 borehole-transect across similar transgressive banks was observed at the edge of the Mississippi-Alabama continental shelf and has been integrated to this drilling proposal.

K. Gohl reviewed a seismic cross-section image, shown next.



Summarized objectives

The proposal sheds new light on the enigmatic findings that coralgal edifices flourished on the edge of the South Texas and Mississippi-Alabama shelves during the first part of last deglaciation, an interval of time when conditions of sea surface temperature and sea surface salinity were expected to be lower in the Gulf of Mexico, and rates of eustatic sea-level rise much faster than they are today.

The drilled material will improve the resolution of the last deglacial sea-level history from late Glacial to the Younger Dryas, including the interval of the melt-water pulse 1A, from a passive margin environment less influenced by discontinuous tectonic activity as in the offshore Barbados.

Also, the drilled material will help better understand the sedimentary and biological processes involved with the origin (initial establishment), growth, and demise of carbonate reef tracts along the edge of siliciclastic shelves.

The latest Pleistocene transgressive coralgal reefs on the edge of the South Texas Shelf can be studied as recent analogs for reefal reservoirs buried in siliciclastic shelves.

K. Gohl said that the proposal's objectives have been evaluated as excellent.

Decision and recommendation at EFB meeting in March 2013

The cost estimate was a concern. The proposal was not scheduled, but the proponents were asked if they can lower penetration depths and still achieve most of their objectives.

Development since March 2013

The proponents have been in contact with ESO and there have been discussions since March 2013 on using seabed-drilling system from research vessel; penetration depth of up to 80 m may address almost all objectives.

D. Mallinson said that the site survey is lacking of data from two banks, such as the Mississippi and Alabama. K. Gohl said that the Mississippi-Alabama site has been eliminated, but the Southern Bank should be included. The seismic data is currently available.

5.3.2 - Drilling operations and costs (D. McInroy)

D. McInroy said that there are two cost estimates. The proponents would prefer the shallow penetration, which leads to considering the existing drills. The mobilization and demobilization costs are disproportionate in comparison to the range of the expedition, as it is a short expedition.

Drilling operations and costs

The water depths reach at about 60-78 m and the penetration will be 70-100 mbsf at 7 holes.

The primary lithologies include coralgal limestone, coastal sandstone, shelfal shale, and a mud blanket.

Possible platform type(s) include a geotechnical ship with coring rig or possibly in the future a sea bed drill. Currently, ESO is scoping only, and there has been no proponent meeting or PMT. The proposal is technically feasible, with no development needed.

December to May is the preferred drilling window, in order to avoid hurricane season.

The requested 100 mbsf is beyond the current reach of BGS RD2 and MeBo, but this could be potentially reachable with the MeBo200.

D. Kroon said that last year there was a discussion about the number of holes. D. McInroy said that he has not discussed of the number of holes with the proponents.

G. Camoin said that a 40-50 m drill depth is enough to meet these objectives. D. McInroy said that he has not asked the proponents if they would consider the drill depth.

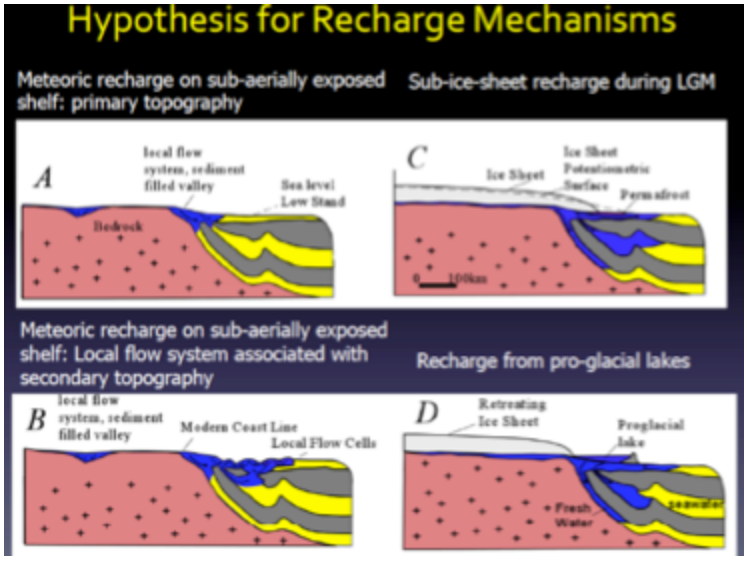
D. Freudenthal said that the drill depth depends on the geology, e.g. depending if there is sand sediments. If there is limestone, it should not be a problem.
D. Mallinson recommended that he should discuss with the proponent to submit their data for the Southern Bank.

ACTION: *D. Mallinson to communicate to the #581-Full2 proposal proponents that they should submit their data to the SSDP.*

5.4 - 637-Full2+Add6 New England Shelf Hydrogeology (revision)

5.4.1 - Summary of objectives, SSD and previous EFB decision (M. Torres)

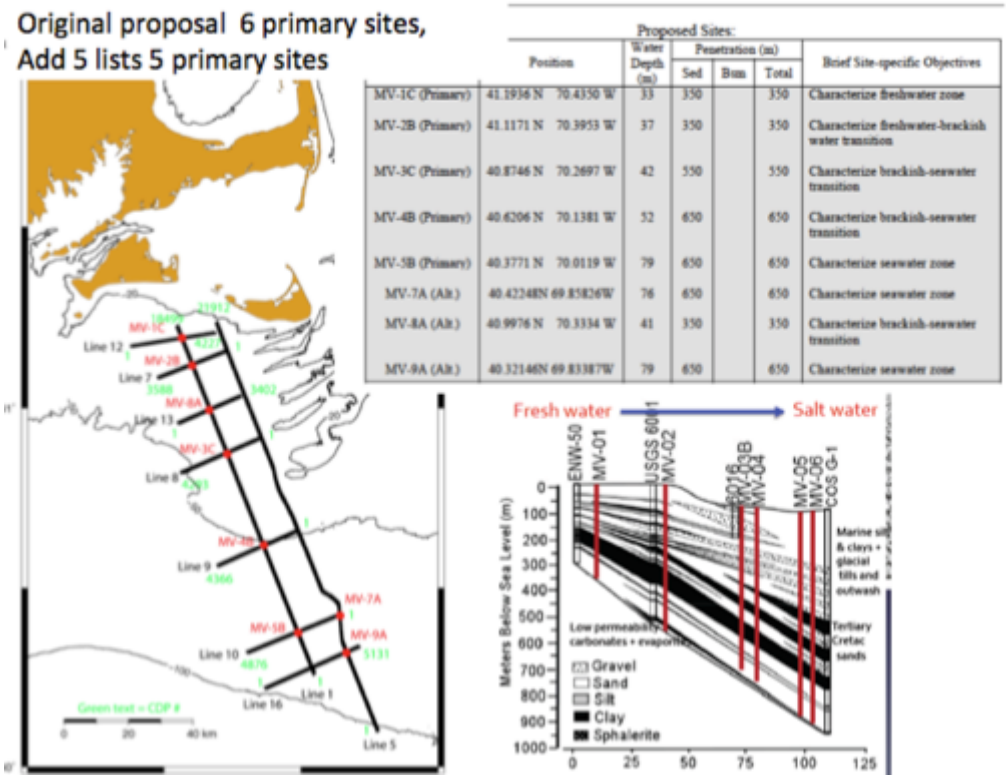
M. Torres summarized the New England 637 objectives. The proposal goals are: to characterize the distribution of fresh-brackish water on the NE shelf- Fate of groundwater at the land/ocean interface; determine mechanisms and time of emplacement; and quantify fluid, chemical and nutrient fluxes- - long term global water and nutrient budgets; unravel relationships between hydrogeochemistry, fluid flow and microbial activity; and study a potential fresh water resource for coastal populations.
M. Torres explained that the proponents will study the sand aquifers. She reviewed the hypothesis for the recharge mechanisms.



Different recharge mechanisms were differentiated, using environmental, isotope data and ages. If a combination of the recharge mechanisms is examined, the hydrological process models may unravel the distribution and age patterns.

Modeling Updates-Addendum 5

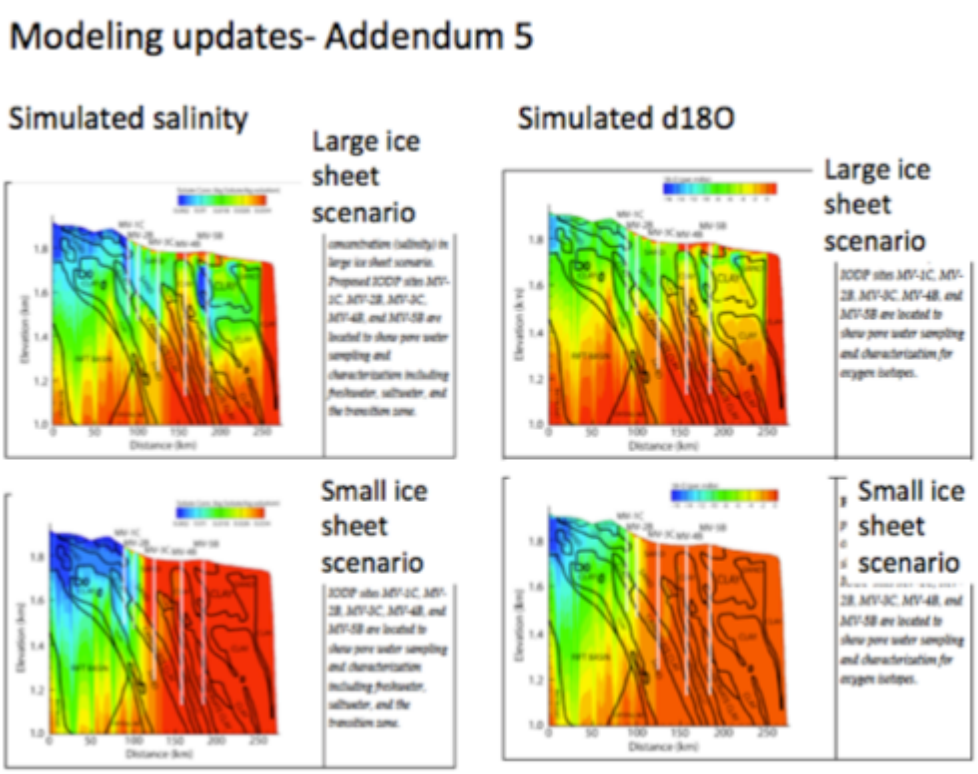
The original proposal had 6 primary sites, shown next.



Proposed Sites:

	Position	Water Depth (m)	Penetration (m)			Brief Site-specific Objectives
			Sed	Bsm	Total	
MV-1C (Primary)	41.1934 N 70.4350 W	33	350		350	Characterize freshwater zone
MV-2B (Primary)	41.1171 N 70.3953 W	37	350		350	Characterize freshwater-brackish water transition
MV-3C (Primary)	40.8746 N 70.2697 W	42	550		550	Characterize brackish-seawater transition
MV-4B (Primary)	40.6206 N 70.1381 W	52	650		650	Characterize brackish-seawater transition
MV-5B (Primary)	40.3771 N 70.0119 W	79	650		650	Characterize seawater zone
MV-7A (Alt.)	40.42248N 69.85826W	76	650		650	Characterize seawater zone
MV-8A (Alt.)	40.9976 N 70.3334 W	41	350		350	Characterize brackish-seawater transition
MV-9A (Alt.)	40.32146N 69.83387W	79	650		650	Characterize seawater zone

The modeling updates were reviewed.



Full suite geochemical, isotopic, and noble gas samples and measure fluid pressure were used to conduct hydrologic modeling to distinguish between the different flow mechanisms, salinization mechanisms, and microbial processes.

M. Torres reviewed the high rankings and endorsements of the proposal's science and approach. The reviews were very good.

EPSP

The EPSP had recommended that there should be an independent shallow hazard survey, including the high-resolution seismic data, before the final recommendation for approval. There may be a need for a geotechnical survey, depending on the drilling vessels.

Other Hazards

The currents and hurricane season from March-August must be taken into account.

M. Torres reviewed a table of the drill holes.

	Water depth	Penetration/ sed	Coring	# of holes	Special tools	Add#	
MV-1C	33	**350m** sand silt and clay	APC, XCB and RCB (as needed to reach TD)	3	LWD, packers with hydro tests VSP	5	Abnormal pressures, March-Aug hurricanes and winter storms Borehole stability and integrity
MV-2B	37	**350 m** sand silt and clay		3		5	
MV-3C	42	**550** sand silt and clay		3		5	
MV-4C	52	**650** sand silt and clay		3		6	
MV5-B	79	**650** sand silt and clay		3		5	
MV-7A	76	650 sand silt and clay		3		5	
MV-8A	41	650 sand silt and clay		3		5	
MV-9B	79	650 sand silt and clay		3		6	
		2550m per hole- primary sites only					

Hole A-petrophysics,
Hole B, continuously cored and used for hydrologic tests,
Hole C spot cored for microbiology

Three holes: Petrophysics (LWD), coring and screening and spot coring for microbiology. Can do microbiology in Hole B

LWD and special logging tools: geochemical, Formation Fluid sampling, Borehole Temperature)

Screened casing in combination with packer and pump systems

Sample collection under ambient pressure for analyses of noble gases

Next, a table of the expedition estimates was shown. There is a tremendous difference in time coring using ESO's estimates.

Number of holes to be cored	5
Number of LWD holes	5
Departure port	
Total Expedition transit distance (km)	
Total LWD interval (m)	2550
Total coring interval (m)	2550
Total penetration (m)	
Number of scientists	
Number of ESO staff	
Total number of staff	

Table 2. Estimate of Drilling/Logging Time for Proposed wells

Well Name	*Distance (km)	Water Depth (m)	Well Depth (mbsl)	Transit Time (hr)	Drilling Time (hr)	Logging Time (hr)	Total Time (Days)
MV 01	8	18.4	350	3	50	27	5.2
MV 02	29	18.6	550	3	68	32	6.2
MV 03B	61	45.8	650	2	76	34	6.6
MV 04	73	59.2	750	2	87	37	7.2
MV 05	90	80.3	775	1	93	37	7.4
MV 06	107	109	800	2	94	38	7.5
							40.1

*Distance from Martha's Vineyard well ENW-50

Technical capabilities / rates	Scenario 1	Scenario 2
Ship transit speed (knots)	6	6
LWD advance rate (m/hr)	10	5
Coring rate (m/day)	30	20

Times	Scenario 1	Scenario 2
Transit (days)	1.0	1.0
LWD time (days)	15.625	26.25
Coring time (days)	85	127.5
Hydro. formation testing	2	2
Expedition duration (days)	103.7	156.8
OSP duration (days)	41.25	41.25

ESO estimates

Coring time: 85-127 d (*20*)

LWD: 16- 26 days (*8*)

Hydro testing: 2 days

Expedition duration: 103-157 days

The proponents estimated 40 days and used the *JR* estimates to make these calculations, which do not match the potential realistic exploration length.
The EFB #1 consensus was to ask the proponents for reduced cost and to look for outside funding. It is not know how much of this communication was done. The removal of hole C is not included in the ESO estimates.

The proponents have confirmed that they are considering in approaching the NSF to lower the costs. There is also a plan to approach commercial companies that study freshwater.
N. Exon asked, if the objectives are achieved, whether the results would be widely applicable around the world. J. Lofie confirmed that fresh water has been found in similar settings elsewhere. M. Torres said that this process is limited to the mid-latitudes. The question is how this mechanism would be applicable to the total global inventories.
M. Torres said a potential recommendation would be to pursue logging while drilling.

5.4.2 - Drilling operations and costs (D. McInroy)

D. McInroy said that the water depth for this proposal reaches 33-79 m. The penetration is 350-650 mbsf, for 2 holes at each of 5 sites. The expedition could take 3-5 months.
The primary lithologies include sands, silts and clays.
The platform type(s) would be a large liftboat, jack-up or industry-style semi-submersible rig. Currently, ESO is in the initial scoping phase. There have been no proponent or PMT meetings. Logging while drilling is required, as well as casing, screening, packing and pumping. The New Jersey proponents considered an LWD, but as it would be too expensive, so then did logging, which could not have compromised the objectives. S. Davies reminded that there are recovery issues with the sands.
For Hole A, a LWD would be applicable, while for Hole B it will be needed to undertake coring, microbiology sampling, packing and fluid testing. The proponents assumed that the coring and LWD advance rates as much higher than ESO's estimates.
Overall, the proponents plan to study 2 holes at each of 5 sites. The estimate assumes that the LWD will be done in 5 holes.
This is amongst the most expensive MSPs, but it is possible to have a *New Jersey*-type expedition at the $15-16M USD range. The pumping tests have not been done by ESO before.

D. Kroon said that this is highly expensive and the number of holes needs to be reduced. If such a substantial reduction of holes is recommended then it should go back to SEP to consider if the cheaper option would maintain the scientific objectives.

K. Gohl asked about the global relevance, as displayed in K. Becker's list in terms of the IODP challenges. This is the only fluid exchange proposal under the "Earth in Motion" IODP theme. The FB needs to consider the balance of the themes.

K. Becker said that proposal #758 could be another option in this theme.

D. Smith said that if ICDP includes drilling as in-kind contribution this could reduce the costs. At the same time, the LWD really increases the costs. K. Gohl said that there is a big list of options to make this proposal feasible.

M. Torres agreed and said that compared to other proposals there is a step-wise learning, incrementally so even if the result of this expedition is partial recovery, there can be still valuable information. The sites have a good location, and hold key analysis that could tell an important story.

5.5 - 716-Full2 Hawaiian Drowned Reefs (revision)

5.5.1 - Summary of objectives, SSD and previous EFB decision (G. Dickens)

G. Dickens reviewed the science objectives. There are similarities to past MSPs such as the *Tahiti-GBR*, and the onshore Huon Peninsula. But there are also fundamental differences: there is a subsiding margin with accommodation space during the sea-level fall and diagenesis.

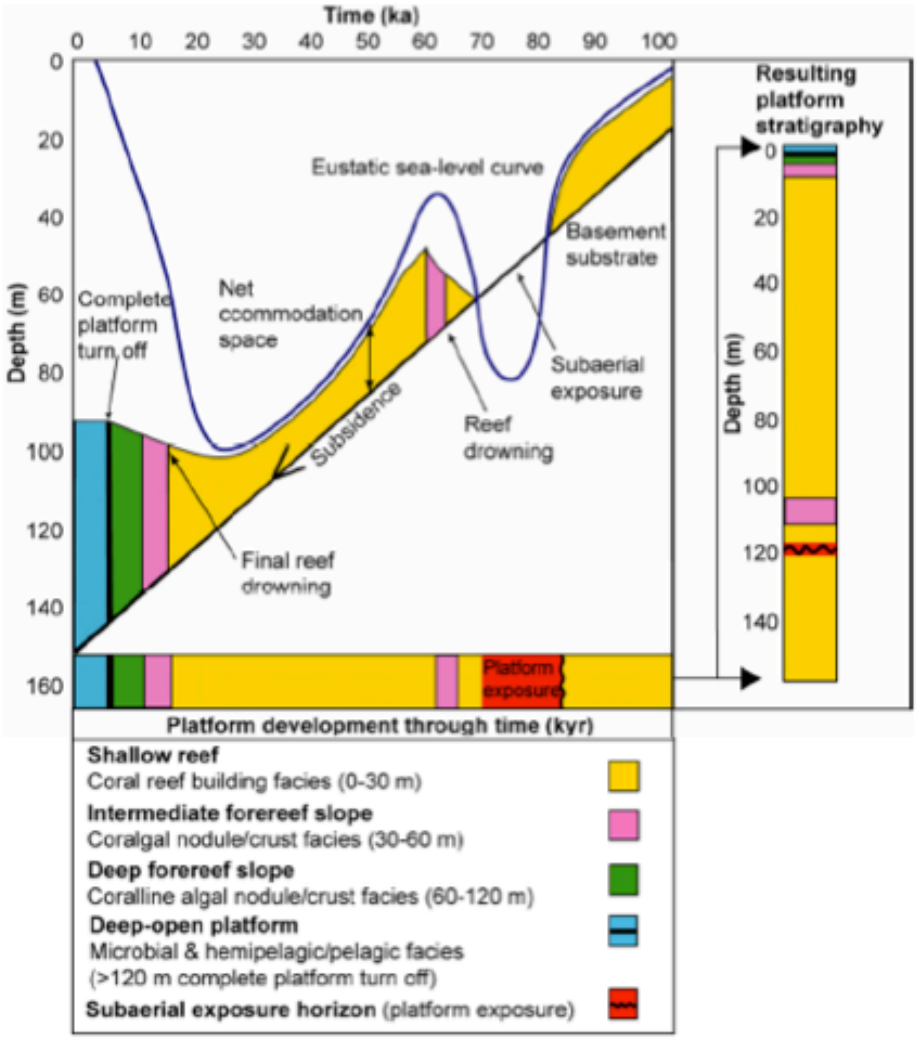
The proposal goals are to: define nature of sea-level change in central Pacific over the past 500 kyr; determine the critical processes that determine paleoclimate variability in central Pacific via SST analyses of massive corals and seasonal records; establish response of coral reef systems to abrupt changes in environment via sea-level and climate studies; and elucidate the subsidence history of Hawaii. The proposal objectives cover two science themes:

Challenge 2: How do ice-sheets and sea level respond to climate change?

Challenge 7: How sensitive are ecosystems to environmental change?

The proposal is also interesting because the subsidence is thought to be reasonably well constrained.

G. Dickens reviewed the regression intervals of a sea level drop.



There were several sites proposed, shown next, some at 200m, which would require the MeBo200.

Proposed Sites:

Site Name	Position	Water Depth (m)	Penetration (m)			Brief Site-specific Objectives
			Sed	Bsm	Total	
Primary						
KON-01A	19.600341N, -156.010975W	-145	140	10	150	H1d reef that spans MIS 1-5 (leeward, dry)
KAW-03A	20.018587N, -155.866458W	-154	140	10	150	H1d reef that spans MIS 1-5 (leeward, dry)
KAW-04A	19.995815N, -156.032933W	-419	140	10	150	H2d reef that spans MIS 6-7 (leeward, dry)
KAW-06A	20.036417N, -156.065696W	-737	140	10	150	H4 reef that spans MIS 8-9 (leeward, dry)
KAW-07A	20.137266N, -156.079341W	-988	140	10	150	H6 reef that spans MIS 10-11 (leeward, dry)
MAH-01A	20.055411N, -156.189697W	-1102	140	10	150	H8a reef that spans MIS 12-13 (leeward, dry)
MAH-02A	20.050262N, -156.192035W	-1154	140	10	150	H8b reef that spans MIS 12-13 (leeward, dry))
KOH-01A	20.290268N, -155.651218W	-410	140	10	150	H2d reef that spans MIS 6-7 (windward, wet)
KOH-02A	20.273958N, -155.490294W	-930	140	10	150	H7 reef that spans MIS 10-11 (windward, wet)
HIL-01A	19.758805N, -154.985708W	-134	140	10	150	H1d reef that spans MIS 1-5 (windward, wet)
HIL-05A	19.876999N,-154.939618W	-402	140	110	150	H2d reef that spans MIS 6-7 (windward, wet)
Alternate						
KAW-01A	20.011332N, -155.848480W	-109	140	10	150	H1b reef that spans MIS 1-5 (leeward, dry)
KAW-02A	20.017325N, -155.857206W	-131	140	10	150	H1c reef that spans MIS 1-5 (leeward, dry)
KAW-05A	19.978715N, -156.029159W	-466	140	10	150	H2d reef that spans MIS 6-7 (leeward, dry)
HIL-02A	19.883005N, -155.029932W	-271	140	10	150	H2a reef that spans MIS 4?-7 (windward, wet)
HIL-03A	19.867141N, -154.973387W	-338	140	10	150	H2b reef that spans MIS 5a?-7 (windward, wet
HIL-04A	19.869407N, -154.954576W	-354	140	10	150	H2c reef that spans MIS 5a?-7 (windward, wet
MAH-03A	20.140405N, -156.238194W	-1213	140	10	150	H9 reef that spans MIS 14-15? (leeward, dry)
MAH-04A	20.065165N, -156.266945W	-1234	140	10	150	H10 reef that spans MIS 14-15? (leeward, dry)
MAH-05A	19.994893N, -156.229296W	-1289	140	10	150	H11 reef that spans MIS 14-15? (leeward, dry)

Keys: 11 sites to 150 m

With MeBo-200: US$ 6.9 – 9.8M

Changes since the 2013 EFB suggestions

The proponents are considering using the MeBo instead of a geotechnical vessel and are flexible on the sites. G. Dickens said that this is a good example of when a proposal can be shaped through strong communication between the proponents and ESO. The proponents should re-visit which sites will be re-considered.

G. Dickens said that the site has constant subsidence to be measured relatively to the sea level, but the goal of the proposal is also to measure the subsidence. If subsidence changes over time and the team attempts to measure the sea level that changes with depth, this could be a problem. The subsidence in Hawaii is relatively constant. D. Weis said that this issue should be discussed. The magma output rate is high, on an exponential curve. Thus the issues of magma input and subsidence have to be considered.

G. Camoin said that the GBR was on the last rise and the Hawaii is a long-term study, thus the proposal is more about the climatic changes. G. Dickens commented that the area is not flushed with meteoric water.

5.5.2 - Drilling operations and costs (D. McInroy)

The 716-Full2 proposed sites are at a water depth of 134-1154 m.

716-Full2 Hawaiian Drowned Reefs revised penetrations

Site Name	Position	Water Depth (m)	Penetration (m)				Brief Site-specific Objectives
			Sed (revised)	Sed	Bsm	Total	
Primary							
KON-01A	19.600341N, -156.010975W	-145	80	140	10	150	H1d reef that spans MIS 1-5 (leeward, dry)
KAW-03A	20.018587N, -155.866458W	-154	80	140	10	150	H1d reef that spans MIS 1-5 (leeward, dry)
KAW-04A	19.995815N, -156.032933W	-419	150	140	10	150	H2d reef that spans MIS 6-7 (leeward, dry)
KAW-06A	20.036417N, -156.065696W	-737	65	140	10	150	H4 reef that spans MIS 8-9 (leeward, dry)
KAW-07A	20.137266N, -156.079341W	-988	70	140	10	150	H6 reef that spans MIS 10-11 (leeward, dry)
MAH-01A	20.055411N, -156.189697W	-1102	160	140	10	150	H8a reef that spans MIS 12-13 (leeward, dry)
MAH-02A	20.050262N, -156.192035W	-1154	110	140	10	150	H8b reef that spans MIS 12-13 (leeward, dry))
KOH-01A	20.290268N, -155.651218W	-410	80	140	10	150	H2d reef that spans MIS 6-7 (windward, wet)
KOH-02A	20.273958N, -155.490294W	-930	45	140	10	150	H7 reef that spans MIS 10-11 (windward, wet)
HIL-01A	19.758805N, -154.985708W	-134	135	140	10	150	H1d reef that spans MIS 1-5 (windward, wet)
HIL-05A	19.876999N,-154.939618W	-402	140	140	110	150	H2d reef that spans MIS 6-7 (windward, wet)

The penetration will be between 55-180 mbsf. The primary lithologies would include carbonates and minor volcanics. The platform type(s) would be a geotechnical ship with coring rig or possible in the future a seabed drill. Currently ESO is scoping and the PMT is meeting. The proposal is technically feasible, and no development would be needed if a vessel-based rig is used. March-April or September-October are the recommended weather windows in order to avoid any weather issues and the whales. D. McInroy mentioned that the 180 mbsf is beyond the current reach of BGS RD2 and MeBo, but it can be potentially reachable with the MeBo200.

D. McInroy said that a reduction in penetration will reduce the costs, which are needed for use of a seafloor drill. If a seafloor drill is used instead of a drillship, it could be easier with the authorities in Hawaii.

R. Gatliff added that this is a classic case of where the team should wait for MeBO 200.

D. Fredenthal said that there will be a test cruise this year for the MeBo 200 in the North Sea, but it is not scheduled for anything yet, as it needs to be tested first.

D. Mallinson mentioned that the site survey is in order.

G. Dickens asked if the MeBo200 will be tested on hard rock, e.g. consolidated sediments, or soft testament. T. Freudenthal said that the first test will be in the North Sea on both types of rock. The drilling procedure was built for hard rock so the challenge is to see how it would function for soft rock. G. Camoin asked if the MeBo can be tested. R. Gatliff said that that the same problem is faced by a drillship.

D. McInroy said that an expedition with a vessel would last 32-51 days and with a seabed drill it will take 84-146 days. What is the difference between the sail and daily rate? D. McInroy said that sometimes the sail rate is less than the daily days.

G. Dickens said that this expedition will have to be 146 days, hence it will have to be multiple expeditions. If the first half of the study is not working, then the team could abandon the rest.

D. McInroy suggested that the number of holes could also be reduced.

K. Gohl said that this could cause problems and a proposal must be designed realistically from the start. D. Weis added that the weather could be difficult due to the strong winds.

K. Gohl recommended that the EFB should not risk scheduling a proposal with MeBo200 until this system has a good track record of successful expeditions. The MeBo200 needs to be tested in the next few years. In addition, 140 days is too long and would be impossible as a single expedition.

M. Torres asked about the difference between the MeBo70 and 200 technologies in recovering the lithologies. D. Freudenthal explained that the stroke length is increased with MeBo 200.

5.6 - 813-Full2 East Antarctic Paleoclimate (new)

5.6.1 - Scientific objectives (K. Gohl)

K. Gohl said that the 813-Full2 seabed-drilling proposal has focused and well-outlined paleoclimate and paleo-ice sheet objectives. The goal is to use MeBo shallow drilling in the transect or offset strategy on the shelf. The proponents are experienced in Paleoclimate and in drilling in the Antarctic glaciated margins.

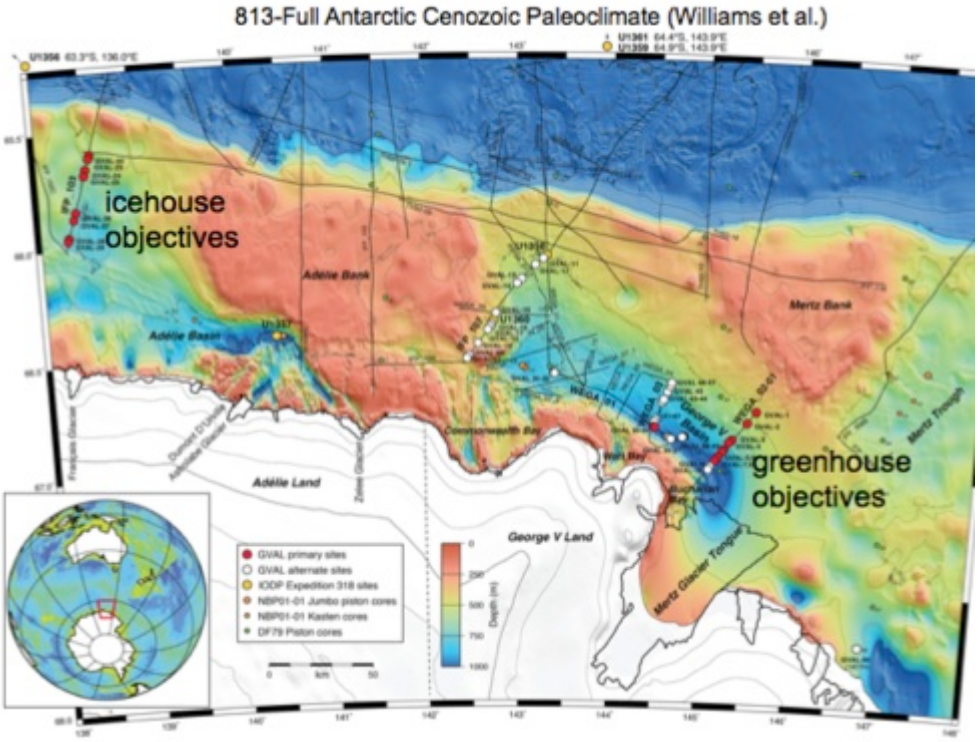
The study's target is the shelf, which was a problem for expedition #318 due to weather, lack of technology and ice problems. Proposal #813's goal is to answer several open questions.

K. Gohl said that there is an ambitious large range of objectives. The goals are:

1) Reconstructing major ice advances over the shelf, and how this relates to records

of IRD, sea level and oxygen isotopes; records of **Eocene/Oligocene** ice advance (~34 Ma), **Oligocene** environmental conditions, **mid-Miocene** climate transition (~14 Ma), and **earliest Pliocene** warmth and climate fluctuations (~5 Ma).

2) Climate cooling in the **late Eocene** in advance of main glacial inception at the Eocene/Oligocene boundary: what were the paleoenvironmental conditions, was there cyclicity, and were there precursor glaciations?
3) Antarctica's climate during the **early Eocene** climatic optimum, including cyclicity, hyperthermals, temperatures and vegetation.
4) **Early Cretaceous greenhouse conditions** (non-marine sediments): are they stable or cyclic, and how do conditions compare to the Eocene greenhouse?

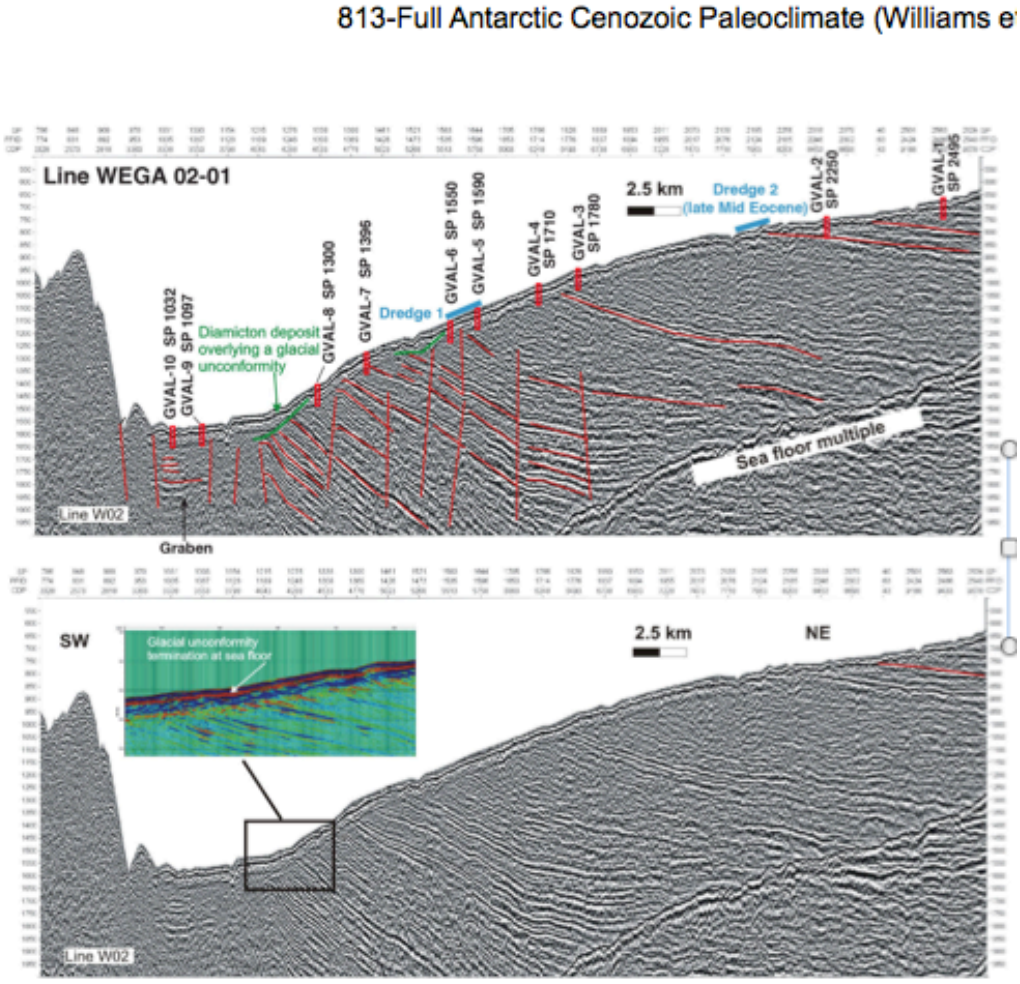


There are two main transects of primary and alternate sites along the existing seismic lines, a with total of 18 primary and 29 alternate sites up to 80 m penetration, or 353-1407 m WD.

18 primary sites are too many to drill in one expedition, so in terms of core recovery this is not likely to achieve. The drilling strategy is very good and has good opportunities for data achievement.

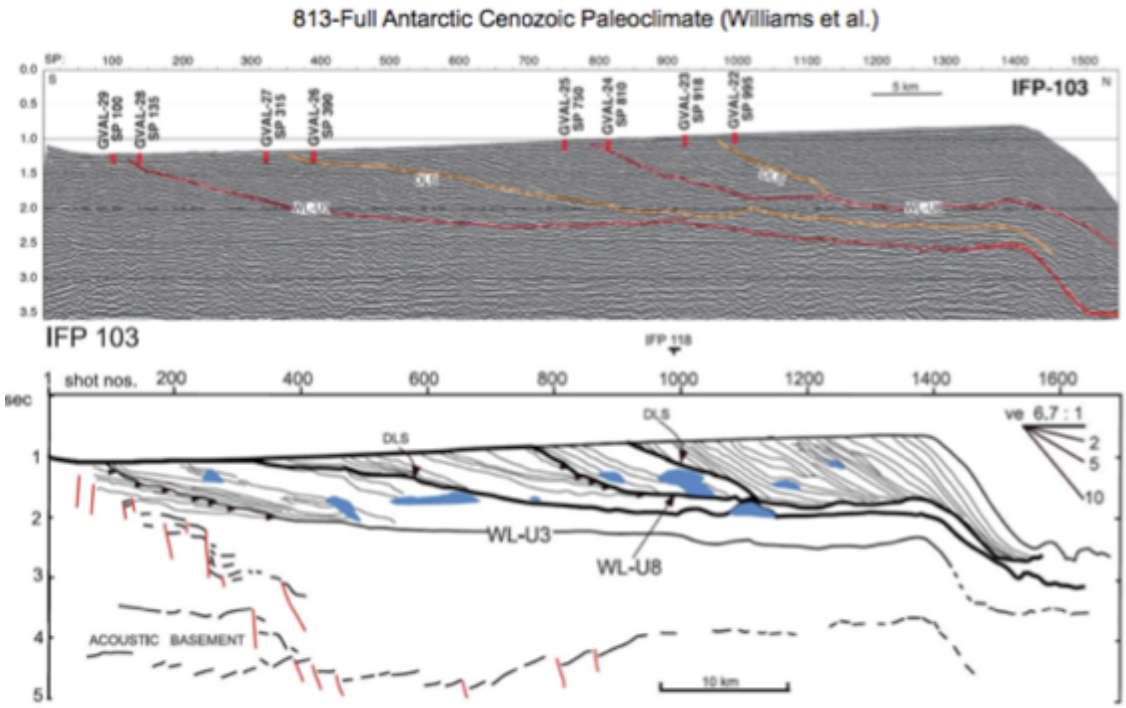
Seismic transect Greenhouse

The greenhouse-transect site locations covering Paleocene to middle Eocene objectives.



Seismic Ice House transect

The icehouse-transect site locations cover the late Eocene to Pliocene objectives.



SEP evaluation and external review

The SEP was enthusiastic about this proposal right from the beginning of the evaluation process. There were four excellent external reviews. The study is seen as relatively low risk and potentially very high reward.

Only concerns by reviewers and responses from proponents

(1) MeBo system had no track record at recovering glacial sediments.

> This has changed since drilling of Barents Sea shelf sediments in 2013 with 50% recovery.

(2) MeBo might not be able to attain the proposed 80 m penetration.

> The total 80 m may not have to be drilled necessarily.

(3) Associated logging tools are relatively immature.

> More logging tools may be available at time of expedition.

(4) Proposal was formulated as objectives rather than testable hypotheses.

> The leg is partly exploratory, which may lead to new hypotheses to be tested in the shore-based science.

It was mentioned that it would be a risky operation if the *JR* is used.

T. Freudenthal said that a 25m sequence of gravel layer would affect the drilling with MeBo.

Regarding the 80m proposed penetration, which is seen as risky, the proponents said that any record, even less would be very important of results. There will not be a continuous recovery of different periods anyway.

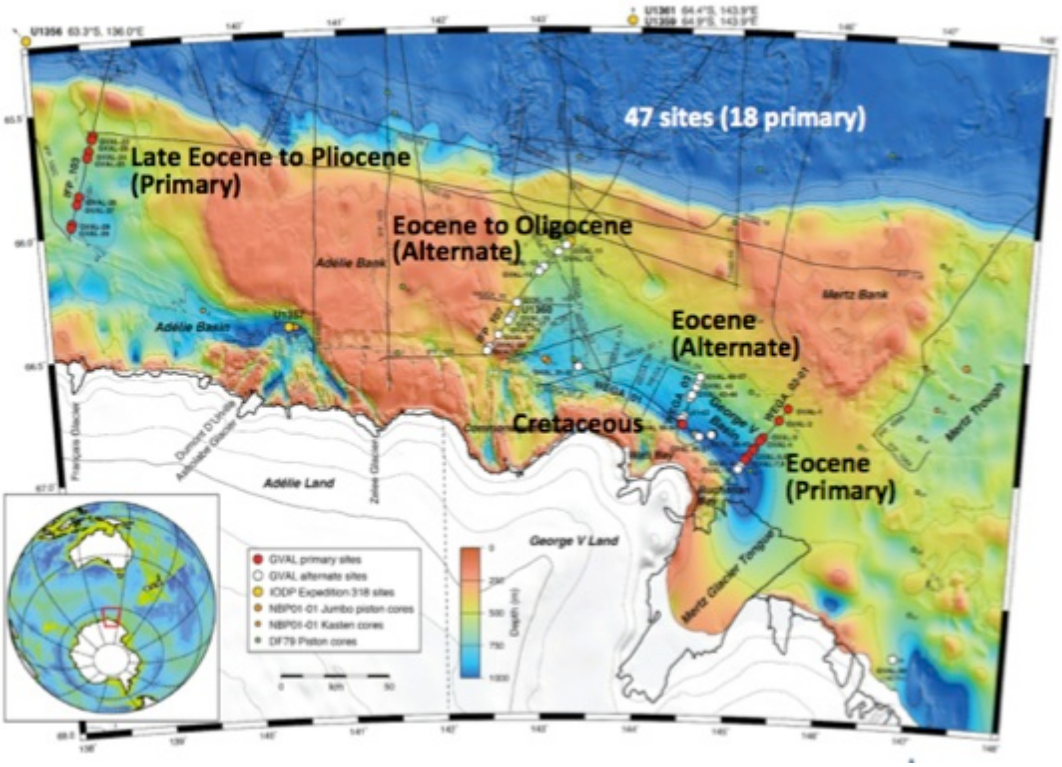
Regarding issue 4, K. Gohl said that there is no need for a testable hypothesis driven proposal, as this is a new territory so it could be the source of future testable hypothesis.

G. Dickens said that the ACEX core (Arctic) is highly discontinuous so that demonstrates that there is no need for continuous records.

There is a theory that there is no glacial sediment in the Eocene, so there may be none at that level.

5.6.2 - Site survey data (D. Mallinson)

D. Mallinson pointed out the primary mapped sites.

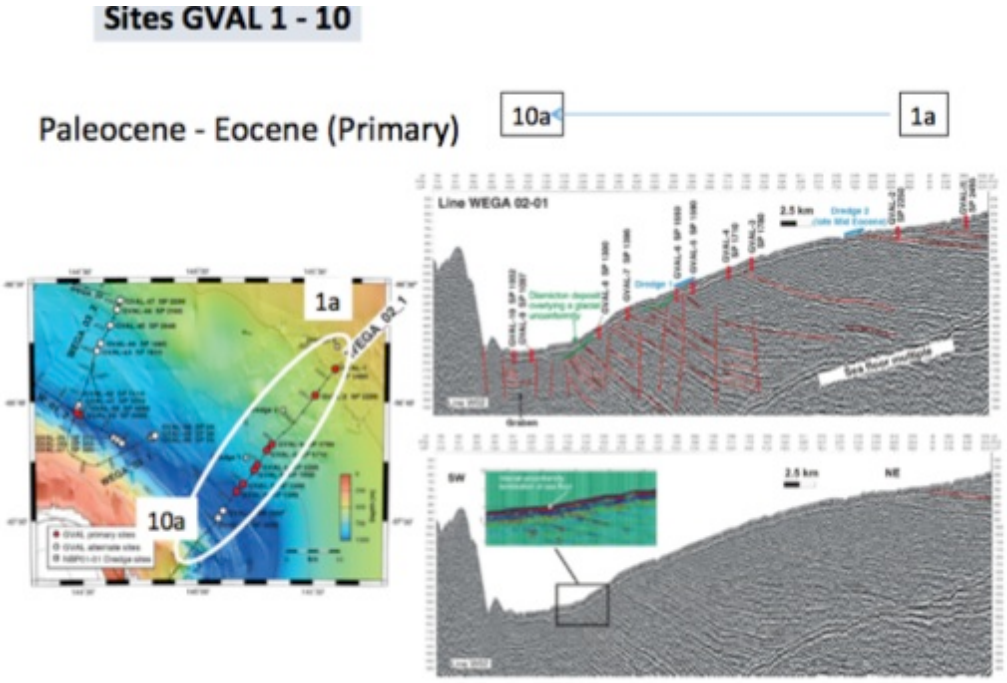


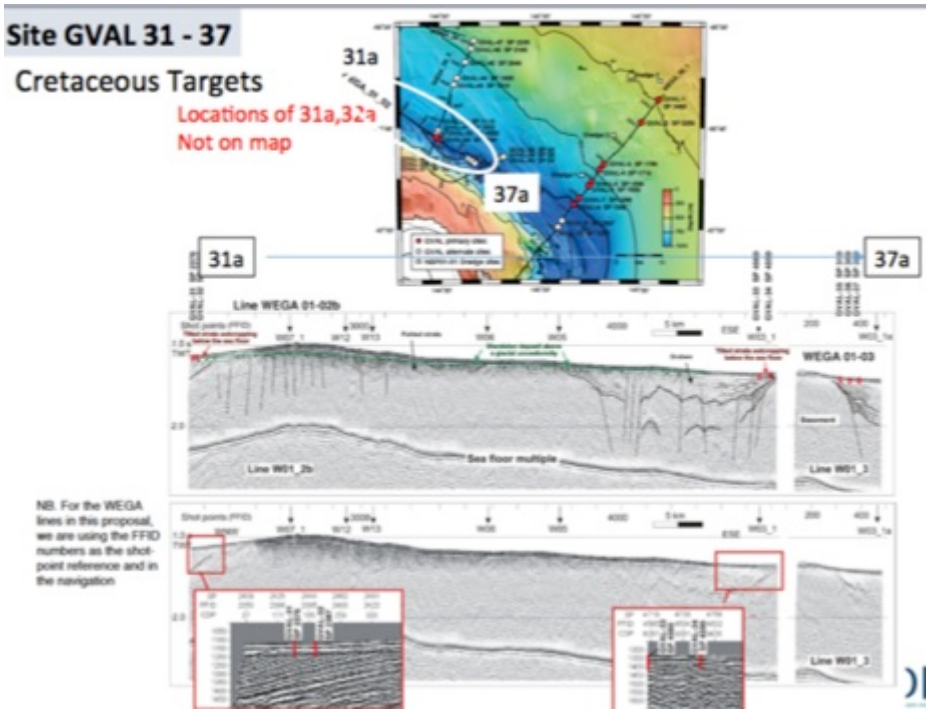
There are several sites with major transects. The distance between the transects is about 300 km. There are about 80 meters of logging.

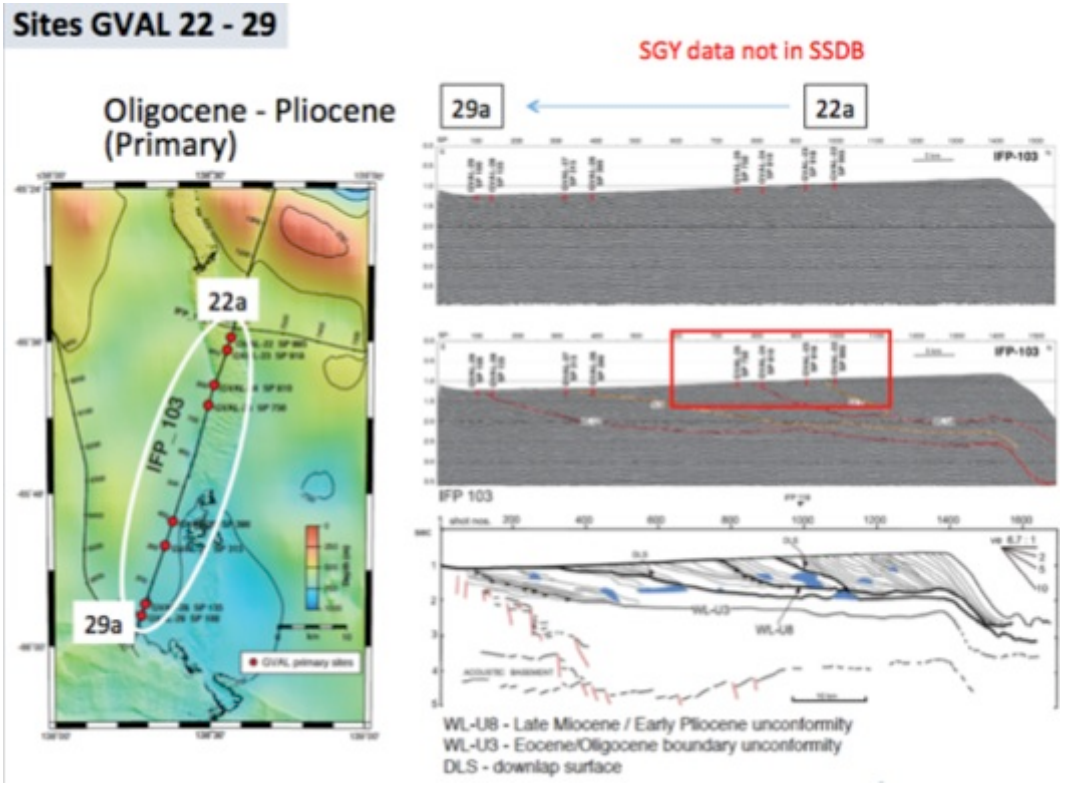
Drilling approach

The drilling approach would be to use MeBo seafloor drilling and possibly logging with gamma rays.

D. Mallinson showed images of sites GVAL 1-10, GVAL 31-37 and GVAL 22-29.







D. Mallinson reviewed the corresponding diamicton images. For GVAL22-25 the diamicton thickness is not resolved and there is no new data. There is no data west because of a sea-ice cover.

K. Gohl commented that he has received an email from T. Williams stating that they collected new data (along the eastern greenhouse transect).

D. Mallinson said that the sites are imaged with lower resolution, deep-penetration MCS data (single lines).

The data are sufficient for general siting in the imaged general off-lapping sequence, but are insufficient for placing individual holes ~80 m long in a specific stratigraphic context. The proponents were asked to upload the following: All MCS data in SEG-Y format; Metadata; Better annotations on maps and seismic images; and Multibeam source and digital data (NetCDF).

A site survey cruise was recently conducted on the *Nathaniel B. Palmer* to collect multibeam, chirp and high-resolution MCS. New data should remedy any perceived imaging inadequacies for as many of the proposed sites as ambient ice conditions will allow. Typically, seafloor samples and video/photos are required for the Ocean and Climate Change drilling programs, but these requirements will likely be fulfilled during initial deployment of the MeBo system.

It was emphasized that there is a concern about the thickness of the diamicton. In addition, some problems may arise with the icehouse transect of the west.

G. Dickens said that it has to be two different proposals, as the ship cannot be brought to the region for over 100 days. The west transect may have to be a different expedition. D. Mallinson agreed.

There have been some recent email exchanges from S. Gulick about the new data that was collected in February: 4 high res MCS seismic lines (~ 70 nm); chirp data and multibeam data. There is no new data over other primary sites, e.g. lines WEGA01-02 or IPF-103.

Site Characterization Completeness and Data Adequacy Classification

As of January 2014, the SCP classified the proposal as a 2B, meaning that substantial items of the required data are not in the SSDB and are not believed to exist, but a site survey cruise is scheduled.

Data Adequacy

The data adequacy was classified as "c", as the data does not image the target adequately. But, the SCP expects this to improve, for at least the Eocene targets in Mertz area, to a 1A or B once the recent site survey data are uploaded.

The concern is that the thickness of the diamicton will remain unresolved, and may be thicker than anticipated, in the western areas, e.g. IFP-103.

The SCP has stated that it recognizes that flexibility in the study is key, given the challenges presented by sea ice and weather in this area.

D. Smith asked about the ice conditions. K. Gohl said that the general distribution of sea ice can be estimated based on a certain trend, but the wind can change these results, so this needs to be estimated for more accurate trends, 3-4 weeks maximum before the expedition.

D. Smith said that unless there is completely open water, there is a very limited time window to work. For example, there is a need to make sure that the umbilical stays free of ice during the expedition.

5.6.3 - Drilling operations and costs (D. McInroy)

The 813-Full2 proposal water depth ranges from 353-1407 m. The penetration is at 80 mbsf for up to 18 holes. The platform type is a seafloor drill that will be deployed from an icebreaking research vessel. Currently, ESO is in the initial scoping phase. The

expedition is too long for single visit. Considering that there is a 11-day transit, the team will have 46 days of coring. The question remains if one transect is to be done.

K. Gohl said that there cannot be two subsequent expeditions in the same season, because there is an optimum ice window of only 6-8 weeks.

D. Kroon said that SEP liked this proposal, as it is very unique strategy and the way the sequence is characterized in the area.

The costs are not that high and this has a very high potential of good science.

M. Torres asked whether the scoping is for 1/3 of the site, and if all of the objectives will be addressed with this reduction.

D. McInroy said that the available estimate is for one transect of 46 days. K. Gohl said that with one transect would concentrate on certain objectives.

D. Kroon added that it is not necessary for the proposal to go back to SEP, should the proposal be cut in half.

M. Torres recommended that this should be further discussed with the proponents.

R. Gatliff said that two expeditions in the same season could happen if two research vessels will be available.

G. Wefer asked how the drilling time was estimated. D. McInroy said that it is assumed that about 20m will be drilled per day. G. Wefer said that this is optimistic and the pessimistic scenario is about 8 days per hole. As there are 18 holes, if all are OK to be drilled, then the total drilling time could be 54 days. The penetration total for 1440m, where on average 20m is drilled per day, would result in a realistic estimate of 72 days of drilling. The transit time is separate and logging time is separate from this estimation.

K. Gohl said that ESO is the operator for ECORD until 2016. The BGS and MARUM are part of ESO and it is expected that both organizations should talk to each other and provide estimates together. In the future these numbers need to be reliable for EFB to base its decisions on.

A. Cattaneo said that in the case there are 2 visits, it should be considered if one will be prioritized over the other.

G. Dickens that this would go back to the proponents for one more round, to expand on the MeBO discussion and the cost rates. Next year there will probably be two proposals under one umbrella.

K. Gohl reminded that if the objectives are compromised the proposal should go back to SEP.

As this is an ice-covered area that poses a risk to the shallow drilling device, there is a need to be flexible when selecting the sites. The sites may have to be moved to different locations along the seismic line and different successions may have to be analyzed. Hence, the sites should not be concentrated on.

D. Strack said that there should be no concern for shifting the sites in a shallow drilling.

D. Kroon said that SEP was not aware of the drilling time. This is important for the consideration if it is feasible. This drilling has an exploratory nature and was liked by SEP.

If the team can do one transect, then most of the sites may be done along the transects. D. Kroon recommended that the proponents should be consulted on this issue.

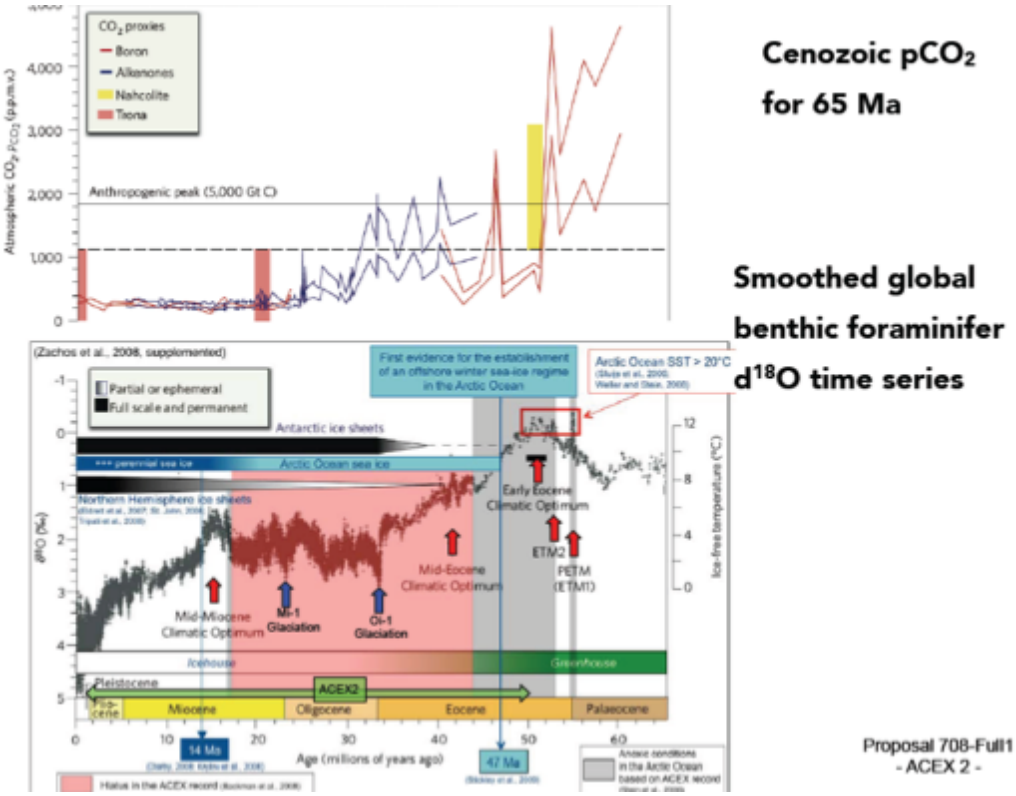
5.7 – 708-Full Central Arctic Paleoceanography (new)

5.7.1 - Scientific objectives (D. Weis)

D. Weis reviewed the key scientific objectives.

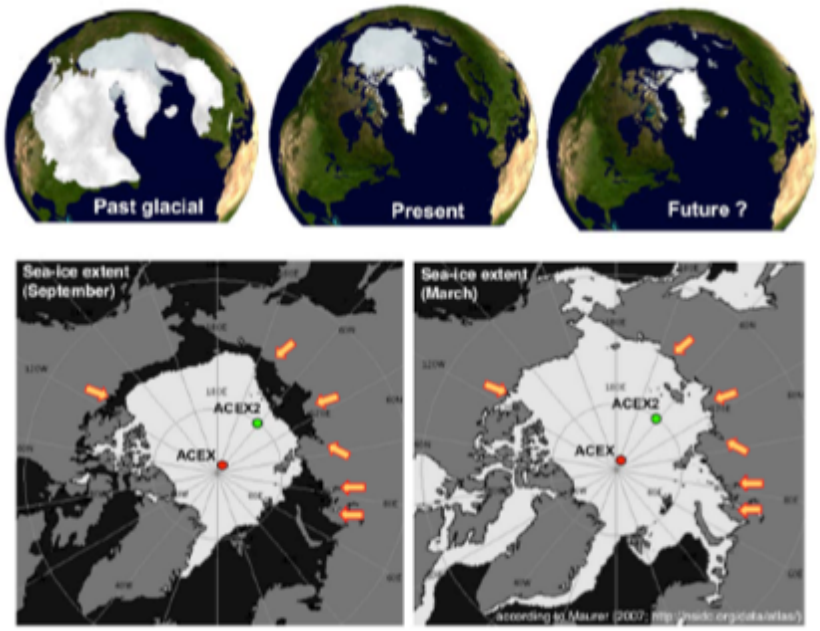
The proposal's goal is to: obtain a complete characterization of the Cenozoic transition from Greenhouse to Icehouse in the Arctic; uncover the history of Arctic Bottom and Surface-Water Circulation and the history of Arctic (Lena) River Discharge; obtain High-Resolution Characterization of the Pliocene Warm Period in the Arctic; and solve the "Hiatus Problem".

The study looks into a period of 65Ma.



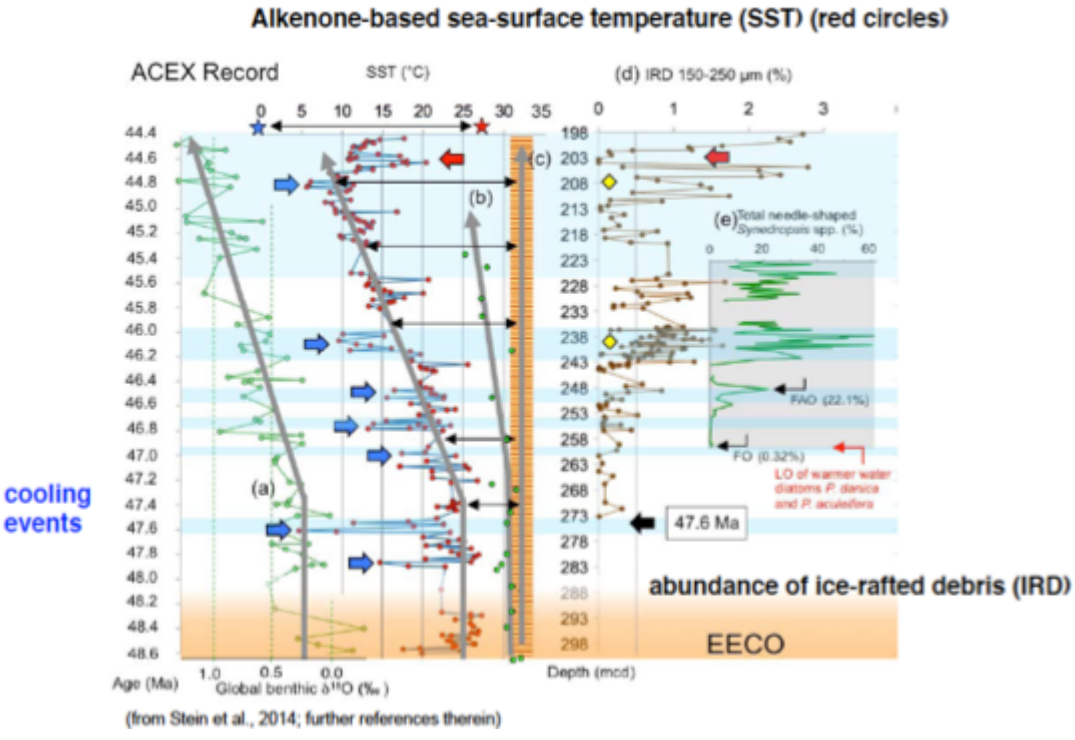
The proponents want to investigate the decrease in temperature period. In 2004, ACEX was the first cruise on these topics. There was a major hiatus in the study after this. There were two key drilling points that were missed. The 708-Full is a very exploratory leg, as ACEX was the only drilling expedition that was done there.

D. Weis showed a diagram of the ice sheets distribution and sea ice during the past glacials. The map also showed the average distribution of the sea-ice in the Arctic Ocean in September 1979-2004 and March 1979-2005.



She said that there is no explanation for the 18.2M and 40.4M years period. The question is to model what will happen in the future in terms of ice coverage.

Some data was shown from the ACEX, where seawater temperatures were modeled, showing a major drop in temperature for the period of 40.4 to 48.6Ma.



One of the key questions is: what drives the variations and how it corresponds to climate change?

D. Weis showed the list of objectives in the proposal.

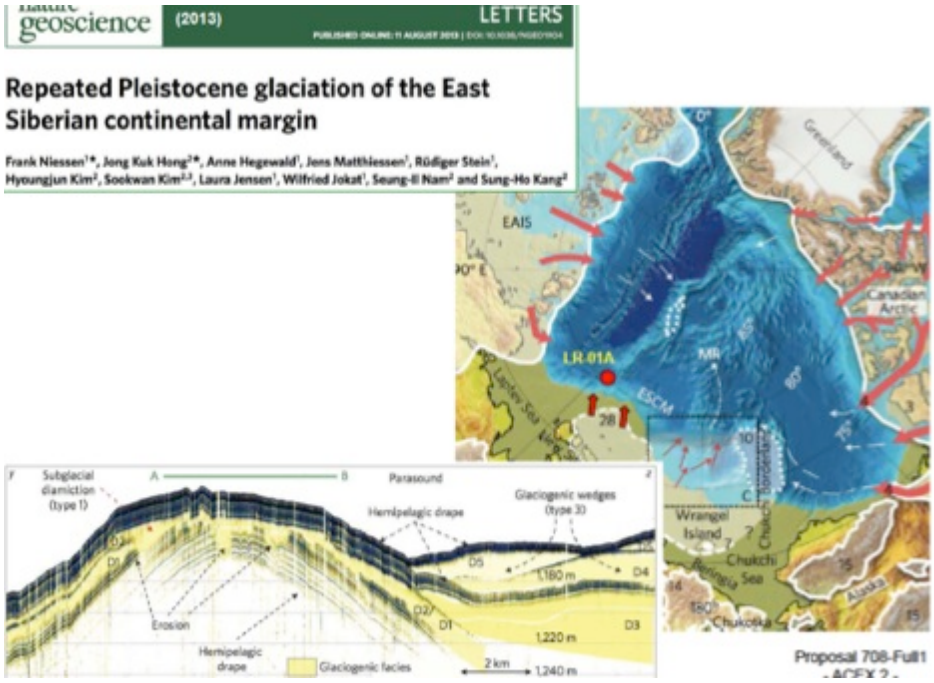
Scientific Objectives

A complete Cenozoic sedimentary sequence from the central Arctic Ocean will be studied to answer the following key questions:

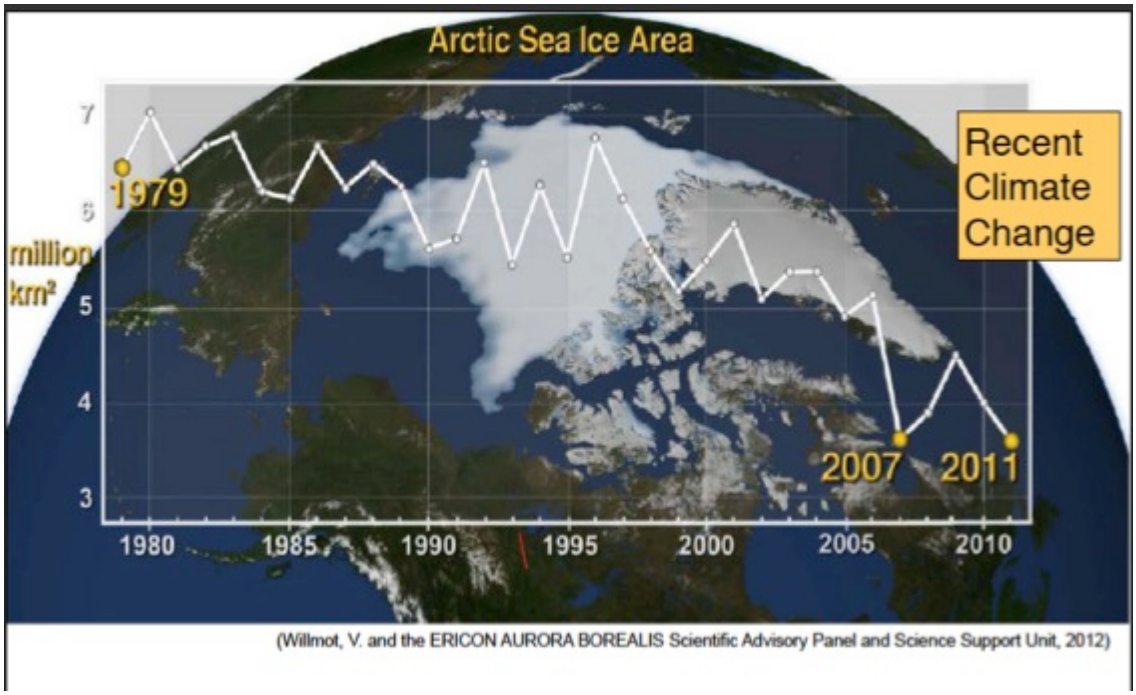
- Did the Arctic Ocean climate follow the global climate evolution during its course from early Cenozoic Greenhouse to late Cenozoic Icehouse conditions?
- Are the Early Eocene Climate Optimum (poor recovery in the ACEX record) and the Oligocene and Mid-Miocene warmings also reflected in Arctic Ocean records?
- Did extensive glaciations (e.g., the Oi-1 and Mi-1 glaciations) develop synchronously in both the Northern and Southern Hemispheres?
- What is the timing of repeated major (Plio-)Pleistocene Arctic glaciations as postulated from sediment echosounding and multi-channel seimic reflection profiling?
- What was the variability of sea-ice in terms of frequency, extent and magnitude?
- When and how did the change from a warm, fresh-water-influenced, biosilica-rich and poorly ventilated Eocene ocean to a cold, fossil-poor, and oxygenated Neogene ocean occur?
- How critical is the exchange of water masses between the Arctic Ocean and the Atlantic and Pacific for the long-term climate evolution as well as rapid climate change?
- What is the history of Siberian river discharge and how critical is it for sea-ice formation, water mass circulation and climate change?
- How did the Arctic Ocean evolve during the Pliocene warm period and succeeding cooling? How do the ACEX2 record correlate with the terrestrial record from the Siberian Lake Elgygytgyn?
- What is the cause of the major hiatus recovered in the ACEX record? Does this hiatus in fact exist?

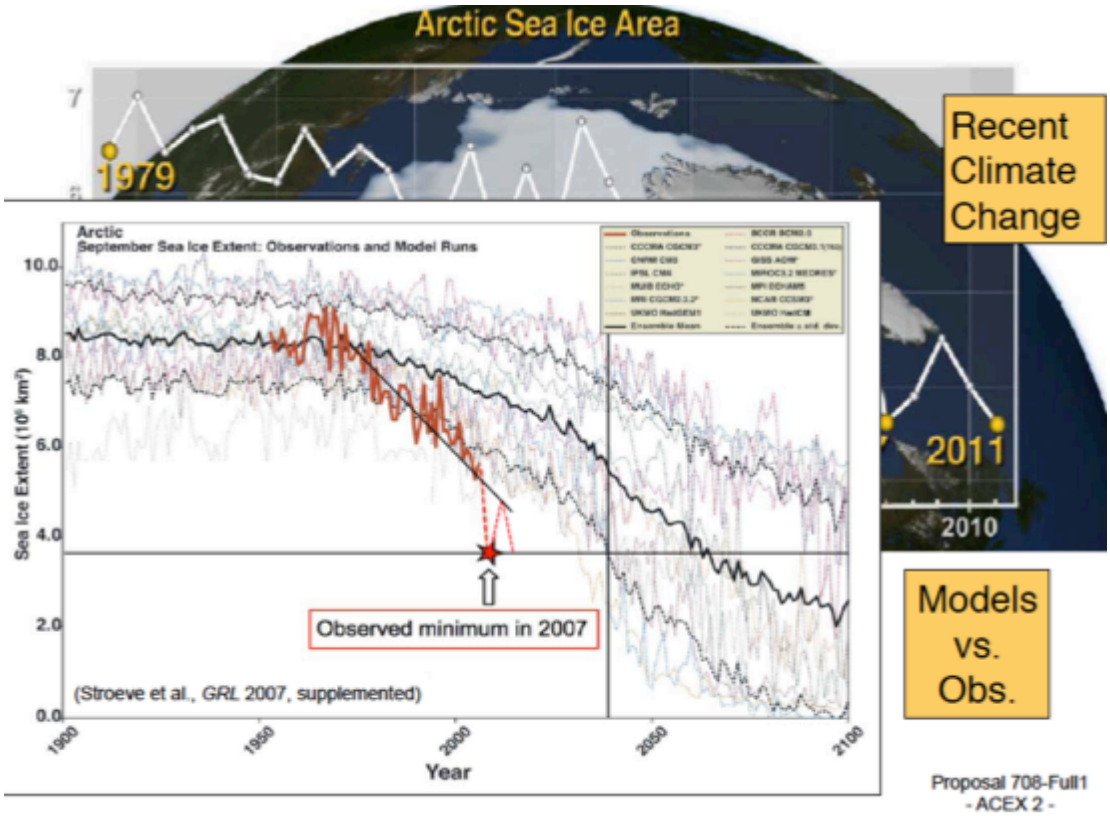
The question is whether or not this hiatus exists everywhere.

The Pleistoscene topic was discussed in a recent *Nature* publication.



A curve shows evolution of the sea ice in the Arctic since 1979.





Proponent Comments

We propose one primary drill site on southern Lomonosov Ridge, Site LR-01A, located on crossing point of line AWI-98597 and line AWI-20080160 (Fig. 9a). At this site, we propose drilling three APC/XCB/RCB holes down to basement (the "purple" reflector in ~1225 mbsf; Fig. 9b). This is required to ensure recovery of a complete composite stratigraphic sediment record and to meet our highest priority paleoceanographic objective, the **continuous long-term Cenozoic climate history of the central Arctic Ocean**. Based on its protected location and the existing seismic profiles, a continuous record without a major hiatus is very probable. Logging should be carried out at one of the holes. For the entire drilling, coring, and logging activities, a total 29 days is estimated. As alternate drilling locations Site LR-02A, LORI-16A and LORI-05B (located on line AWI-20080160, AWI-98597 and AWI-98565, respectively; Fig. 9a) are proposed.

Proposed Sites

Proposed Sites

Site Name	Position (Lat, Lon)	Water Depth (m)	Penetration (m)			Brief Site-specific Objectives
			Sed	Bsm	Total	
LORI-5B	83.80, 146.48	1334	1250	0	1250	Recovery of a complete stratigraphic sedimentary record on the central Lomonosov Ridge to meet our highest priority paleoceanographic objective, the continous long-term Cenozoic climate history of the central Arctic Ocean. (Alternate Site)
LORI-16A	80.78, 142.78	1752	1850	0	1850	Recovery of a complete stratigraphic sedimentary record on the southern Lomonosov Ridge to meet our highest priority paleoceanographic objective, the continous long-term Cenozoic climate history of the central Arctic Ocean. (Alternate Site)
LR-02A	80.97, 142.47	1450	1300	0	1300	Recovery of a complete stratigraphic sedimentary record on the southern Lomonosov Ridge to meet our highest priority paleoceanographic objective, the continous long-term Cenozoic climate history of the central Arctic Ocean (Alternate Site)
LR-01A	80.95, 142.97	1405	1225	0	1225	Recovery of a complete stratigraphic sedimentary record on the southern Lomonosov Ridge to meet our highest priority paleoceanographic objective, the continuous long-term Cenozoic climate history of the central Arctic Ocean (Primary site)

Reviews/comments

The full proposal is recent and D. Weis reviewed the original comments, showing high enthusiastic support for the study.

SEP enthusiastically welcomed this proposal to build on and complete ACEX 1

Expedition 302. The 708 is regarded to hold high priority scientific objectives that are relevant to the IODP Initial Science Plan themes on Environmental Change, Processes and Effects, or extreme Climates and Rapid Climate Change initiatives). The two proposed themes are:

1) Cenozoic Paleoceanography (long stratigraphic gap of ACEX 1) and the

2) Neogene/Quaternary high-resolution records, which was skipped by ACEX 1, hence the goal is too provide a complete picture of the Paleogene and Neogene.

The goal is to drill three APC/XCB(/RCB) holes at each site to recover multiple sections of the sediment sequence to ensure complete recovery for construction of a composite section is appropriate.

Following the SEP reviews in 2006, 2007, which required an additional site surveys, in 2009, and a global review 2010 and 2011. The full proposal was reviewed in January 2014.

SEP Comments

1. Are the scientific questions/hypotheses being addressed exciting and of sufficiently wide interest to justify the requested resources?

SEP's consensus view is that the scientific value of recovering a continuous (or nearly continuous) stratigraphic record of Cenozoic paleoceanographic change in the Arctic Ocean is of utmost importance to the broader paleoceanography community. The results of ACEX1, notwithstanding the 44-18 Ma hiatus/condensed-section issue, yielded groundbreaking new science. We think that ACEX2 has similar potential.

2. Will the proposal significantly advance one or more goals of the Science Plan?

SEP decided that the proposal learly meet Challenges 1 and 2 of the Climate and Ocean theme of the IODP Science Plan 2013-2023, and have the potential to provide valuable paleoceanographic/paleoclimate data. Additionally, the importance of recovering records from polar regions is clearly met.

3. Would the proposal engage new communities or other science programs into the drilling program?

The proponents would potentially engage with the ice sheet modeling community.

4. To what degree does the integrated experimental design of site characterization, drilling, sampling, measurements, and downhole experiments constitute a compelling and feasible scientific proposal?

Overall, the panel deems that the drilling/coring plan as laid out in the proposal, which includes ice-breaker support, is robust.

Some Highlighted Issues

The scientific risk of the encountering the same hiatus/condensed-section should be acknowledged. The proponents do address this by showing some additional seismic stratigraphic illustrations that help to constrain age. However, the panel thought a comparison of the key interval of interest shown on the seismic profile, between orange and pink and labeled as 'Eocene/Oligocene' with the seismic from ACEX1 would have been very helpful. Overall, the proposal was evaluated as a scientific risk worth taking.

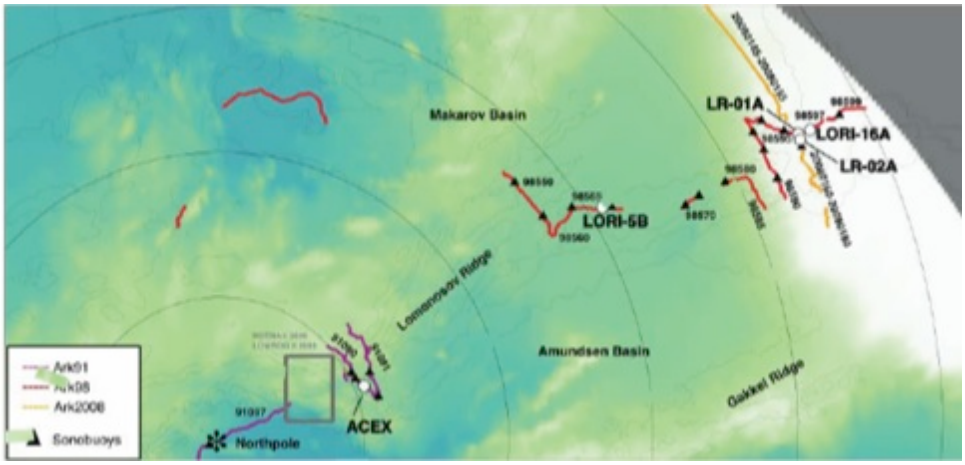
In addition, the poor core recovery of ACEX1 was mentioned, but how the proposed plan will improve the core recovery at ACEX2 was not clear in the drilling/coring plan.

Finally, it needs to be known to what extent might the Eurasian ice sheet influences the ice-sheet discharge signal, instead of solely an East Siberian origin. It was recommended by SEP that the proponents research this possibility and to what extent provenance analysis could help resolve this.

D. Weis commented that the proponents have provided some additional data on this question.

A transect of sediment cores was recovered across the southern Lomonosov Ridget during the Polarstern Expedition ARK-XI/1.

The 708 Sites



The proponents picked one site that is possibly related to the Eocene.

In conclusion, this is a very exploratory scientific challenge and thus it needs to be supported.

G. Dickens asked how diagenesis was addressed. D. Weis said that there was no mention on this topic. G. Dickens said that in ACEX unit 3, there were some major Nature publications about the organic biomarkers and diatoms at 300 m.

M. Torres asked about the temperature gradients. D. Weis said that the proposal is more superficial, with less hypothesis discussed. G. Dickens said that the ACEX problem was that was designed as a piston core. So they may have to do rotary drilling if they go at greater depths beyond 300m. It will not be APC coring.

D. Smith said that the scoping was different for ACEX, as they needed technology for greater depths. To go at 1400m is different from going 300m. There is a possibility that this would involve another technological update to drill beyond the current possibilities.

G. Früh Green, asked why the proponents want to have a study at such a depth. D. Weis said that the goal is to get a complete section of the Cretaceous.

G. Dickens said that the temperature gradient on ACEX is unknown, because the borehole temperature tools did not work. There is something special about the 300m-beyond point.

D. Kroon explained that SEP was focused on the hiatus sequence and whether it can be acquired elsewhere. The depth is not the most important part of the proposal. The main objective is to see when the sea ice started.

5.7.2 - Site survey data (D. Mallinson)

Requested Site Survey Data

D. Mallinson said that some data is still missing from the SSDB: the 1991 ~ 2009 – Deep seismic reflection profiles at the Lomonosov Ridge (icebreaker-based expedition); 1999 SCICEX – chirp, swath bathymetry, sidescan sonar data (USN nuclear submarine); 1995, 1998 – Parasound data; gravity core data in the area of the proposed ACEX2 sites (in proposal); MCS processing details (included in PRL); and Velocity data in table form (included in PRL).

In the SSDB

The databank has maps, navigation and PDFs for MCS lines AWI 98550, 98565, 98567, 98597. There is also available the SEG-Y data for each site, but not for all lines. A Polarstern cruise is scheduled for this summer and this will add to database.

The proponent response letter addressed all points from SEP.

As of the January 2014 SEP meeting

D. Mallinson reviewed the SEP comments about the sites.

We classify the sites as 1Bb because a few required items are missing from the Site Survey Data Bank but are believed to exist, and because additional processing of the seismic data will be needed to find the best possible site position.

Site Characterization Completeness and Data Adequacy Classification:

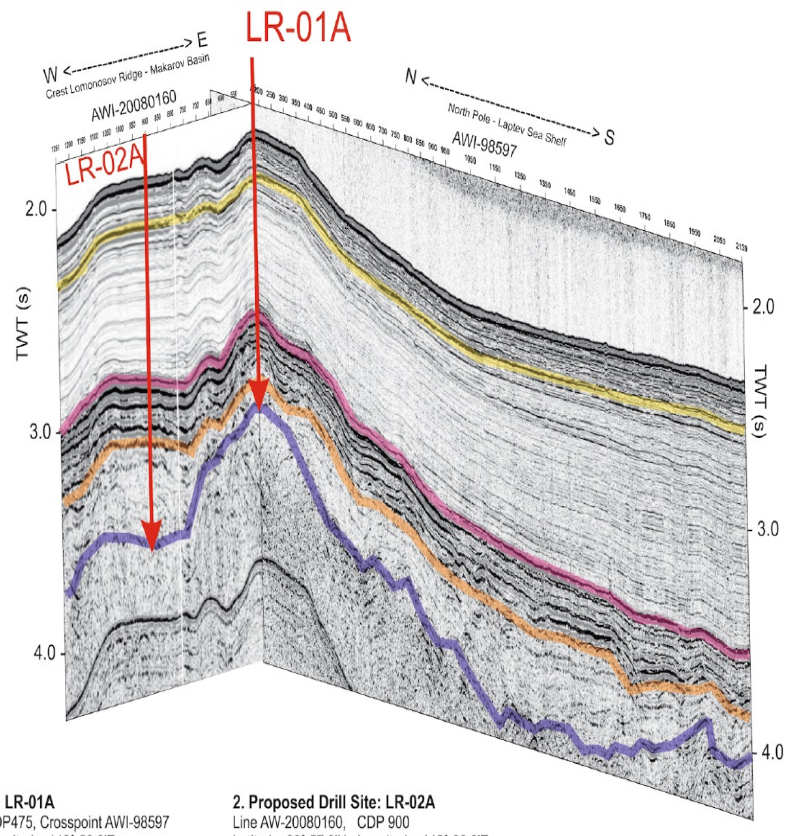
Site	Classification	Latitude	Longitude
LORI-5B	1Bb	83.8	146.48
LORI-16A	1Bb	80.78	142.78
LR-02A	1Bb	80.97	142.47
LR-01A	1Bb	80.95	142.97

Completeness:
1B – A few items of required data are not in the SSDB but are readily available

Data Adequacy:
"b" – the data image the target adequately but there are scientific concerns of drill site location or penetration.

An important objective is the lines. He outlined where the missing section could occur, showing on a map. The age control is not very reliable as it is wholly based on the *ACEX* and *Chuckchi* expeditions.

The SEP was concerned about the LR1 and LR2.



1. Proposed Drill Site: LR-01A
Line AW-20080160, CDP475, Crosspoint AWI-98597
Latitude: 80° 57.01'N Longitude: 142° 58.3'E

Depth (m)	Depth (mbsf)	Horizon
1405	0	Seafloor
1580	175	Top Miocene (5.3 Ma)
2240	835	Top Oligocene/Early Miocene
2546	1141	Lower Eocene
2630	1225	Acoustic Basement

2. Proposed Drill Site: LR-02A
Line AW-20080160, CDP 900
Latitude: 80° 57.9'N Longitude: 142° 28.3'E

Depth (m)	Depth (mbsf)	Horizon
1450	0	Seafloor
1670	220	Top Miocene (5.3 Ma)
2415	965	Top Oligocene/Early Miocene
2720	1270	Lower Eocene
3600	2150	Acoustic Basement

The SEP warned that the proponents should be aware that the location of LR-01A and LR-02A may not allow for full recovery of Paleogene sediments due to the onlapping characteristic of reflectors in the more basinal area, see termination of units MB3a and onlap of MB3b and lower MB4 in Figure 1 of the PRL appendix. Repositioning of these sites was suggested by a reviewer, and may be desired upon analysis of new data from the Polarstern cruise, summer of 2014. The proponents acknowledge this in their PRL. One of the important objectives is to recover the late Eocene to mid-Miocene section that was missing at ACEX1.

Comments and Recommendations

D. Mallinson mentioned that the proponents have to upload the finished data. High quality MCS data and navigation files for each site are in the SSDB. But the SEP does not have all of the data. It's very important to have these in the event that the proposed sites are undrillable and new sites need to be quickly found.

The velocity model of LR-16A needs to be changed because the suggested velocities are uniform (2.2 km/s) throughout target depth. The average thickness, age and sedimentation rate of each layer are similar to other sites. This was addressed in the PRL, a typographical error.

The proponents have to revise the proposed penetration depth of the LR-16A based on the corrected velocity model.

Addressed in the PRL

Some concerns exist regarding the onlap and pinch-out of reflections in the Paleogene section at sites LR-01A and LR-02A, which limits the recovery of a complete section. The proponents may select a different site based on the resulting Polarstern data. Furthermore, the proponents need to finish uploading requested existing data, additional seismic data, velocity data, and bathymetry, along with the new data from the Polarstern cruise.

5.7.3 - Drilling operations and costs (D. McInroy)

The 708-Full goal is to work at water depths ranging from 1334-1752 m and a penetration of 1225-1850 mbsf at 3 holes.

The platform type(s) will be an ACEX-style fleet, with large icebreaking drill ship and a 150T rig. ESO is in the initial scoping phase and is drawing on the ACEX experience. There have been new proposal calls for three deep holes in deep water, hence the need for a 2.6-3.6 km of drill string. A casing will be required with extra space and time needed, as well as a special vessel and a stronger rig in order to handle the 2.6-3.6 km of pipe.

D. McInroy said that there is a big different between the previous and current ACEX proposals, in terms of the water depth penetration. Some cost savings could occur by reducing the number of drill holes. This cost assumes that ECORD will pay for everything.

Access to the Arctic

D. McInroy showed a map of the ACEX sites since 2000. The sites seem more accessible on the ice edge as of 2013. The ice-breaker would still have to be applied heavily, however.

If there is an ice-breaker in-kind contribution, ESO would expect to save over $6M USD. *G. Früh Green asked if the proponents went to shallower depths, whether they have can access with a rig. D. McInroy said that it is possible to research with a special rig. This has not been discussed with the proponents yet.*

The ACEX 1 cost $13M USD, where $0.9M USD was an in-kind contribution from Sweden. This proposal will take more than twice as long compared to the ACEX.

The longest a ship has stayed on station is about 9 days on average. Staying longer would be a risk and the ice situation is difficult to predict in advance.

6. MSP operation schedule for FY 2014, FY 2015 and FY 2016 (K. Gohl / All)

K. Gohl presented a strategic plan for scheduling MSP expeditions for the first 5 years of the new IODP phase. This strategy was developed by the EFB Science Board as a suggestion to be discussed in the general meeting.

He said that due to budgetary constraints until 2018, ECORD will be able to afford only one high-cost expedition in the first 5 years. The EFB should try to schedule one Arctic proposal, but not necessarily the #708. There is no guarantee that this is the only Arctic proposal that can be drilled; other Arctic proposals are being prepared and may have to be considered as well.

K. Gohl reviewed a list of the 7 proposals that have been considered at this EFB:

He said that it is convincing to schedule the *758 Atlantis Massif*, and it could be considered a flagship for 2015.

One Arctic proposal, either proposal 708 or another expected Arctic proposal, may be scheduled for 2018, or in 2017 if the budget allows. For instance, if Russia becomes an ECORD member, this could speed up the scheduling for 2017. In-kind contributions will also be considered.

For 548 *Chicxulub*, there is high risk and high expense, which is why it should not be scheduled during the first 5-year IODP period, or until there is a new window for a high cost expedition.

The 581 for the moment will not be taken into consideration.

The 637 is very expensive, so it has not been taken into consideration.

The 716 may be scheduled in 2016 or 2017: it is a low cost operation provided the MeBo200 will be available.

Low cost expeditions should be considered for FY16 and FY17.

All of the proponents will be sent letters.

D. Weis suggested that the proponents should reserve the MeBo for 2016.

T. Freudenthal said that the MeBo70 will be booked until the end of 2015. There are 6 outside IODP expeditions approved, but still not scheduled. MeBo is in high demand in the system. Regarding MeBo200, it is not known yet when the first expedition will be scheduled as it has risks and will be tested at a workshop.

D. Smith said that for BGS there are 3 projects for RockDrill-II including the Atlantis Massif for 2015, so the services are on a first-come first-serve basis.

D. Ryabchuk asked about the possibility to contribute and provide in-kind contributions in the near future. She said that the Arctic is very interesting for Russian scientists, but the current membership considerations are not for a high contribution level. M. Torres asked if it would matter for Russia if an Arctic expedition is scheduled for 2017 instead of 2018. D. Ryabchuk said that it could make a difference.

G. Camoin said that with respect to the science plan, there are strong proposals on these important topics, so if ECORD could implement 4 expeditions until 2018, this could help the funding agencies with the decision to continue with the program: 716; 758; 708; and 813. R. Gatliff asked if there will be any budget left over if all 4 expeditions take place. Savings will be needed if an Arctic expedition takes place.

D. Kroon asked why the 581 is not considered. G. Dickens said that ECORD does not have a large budget. If the Atlantic Massif is scheduled and an Arctic cruise is scheduled, that costs about $18-24M USD, then ECORD can consider a maximum of two other small expeditions.

D. McInroy said that the Coralgal Banks is a candidate for a short expedition. Perhaps the 581 and the ACEX could be scheduled in 2018. It is possible in terms of cost estimates. What happens to the proposals that are not scheduled in the first half of the program? The EFB discussed that such proposals are to be considered along with other similar proposals in the second half of the program.

G. Früh Green suggested that when considering to schedule the MeBo twice in a year for

two expedition, the reservation should be made ahead of time.

The EFB will send letters to all proponents explaining the above procedure.

***Motion 14-01-01**: The EFB recommends to the Council to schedule proposal #758 Atlantis Massif in 2015, provided that the budget constraints are met.*
K. Gohl moved, G. Dickens seconded. All approved. G. Früh Green abstained.

***Motion 14-02-01:** The EFB recommends to schedule a low cost expedition in 2016, e.g. a seabed drilling expedition, provided that the budget constraints are met.*
K. Gohl moved, D. Weis seconded. All approved.

***Motion 14-03-01**: The EFB recommends the attempt to schedule a low cost expedition in 2017, e.g. a seabed drilling expedition, provided that the budget constraints are met.*
K. Gohl moved, D. Weis seconded. All approved.

***Motion 14-04-01**: The EFB recommends the scheduling of an Arctic expedition in 2018, or in 2017 if the funds are available.*
K. Gohl moved, D. Weis seconded. All approved.

***Motion 14-05-01:** The EFB recommends to hold a virtual discussion by May 31th, 2014 to further consider which proposal to schedule in 2016, with the purpose of scheduling the seabed drilling equipment, subject to exchanges between ESO and the proponents.*
G. Dickens moved, M. Torres seconded. All approved.

***Consensus 14-09-01**: The EFB recommends that proposals not scheduled for the first five years of the IODP program are to be kept with the EFB and considered along with new proposals forwarded by the SEP for potential scheduling after the first five years of the program.*

The EFB discussed that there is no need for another EFB meeting to take place to have a general decision in the next few months about which one of the proposals should go forward. The EFB should not wait until next year to make the decision.

Consensus 14-10-01*: The EFB endorses the joint calls for co-funded ICDP-IODP proposals.*

7. Review of Consensus, Motions and Actions (K. Gohl, M. Borissova / All)

The EFB reviewed the list of actions, consensus, and motions.

8. Next EFB meeting (K. Gohl)

The next EFB will be held in Aix-en-Provence, France. It was suggested to shift the meeting 2-3 weeks after early March, but not to conflict with the JR-FB and CIB meetings.

Consensus 14-05-01*: The EFB decides to hold the next EFB meeting on March 25-26, 2015 in Aix-en-Provence, France.*

S. Humphris said that meeting dates should be OK for the JR-FB. N. Eguchi also confirmed that the next CIB meeting should be OK with this scheduling.

9. Any other business (K. Gohl)

S. Humphris provided some news as Chair of the Board of Governors of IODP-MI. After the restructuring of the new program, a decision had to be made regarding IODP-MI's role in the new IODP. At the end of last year, the Board of Governors decided that IODP-MI should be dissolved. The member universities and institutions are in the process of voting that dissolution. On March 14th, 2014 a proxy ballots decision will take place regarding the question if IODP-MI will be dissolved.

K. Gohl thanked all the participants.

Consensus 14-11-01*: The EFB thanks MARUM for hosting the meeting.*

Meeting closed at 16:12 hrs.