

IODP Scientific Technology Panel (STP)

12th Meeting, 13 – 16 February, 2011

JOIDES Resolution and University of Auckland
Auckland, New Zealand



The IODP Scientific Technology Panel convened first on the *JOIDES Resolution* in the Port of Auckland for a one day investigative review. This was followed by a full agenda 3 day meeting held at the Owen G Glenn Building, University of Auckland. The meeting was organized jointly by the U.S. Implementing Organization (Jay Miller) and the New Zealand IODP office (Dr. Chris Hollis of GNS). The meeting resulted in 21 Consensus Statements and 6 Action Items. 16 of the full complement of 17 members attended the meeting. Mike Lovell attended as the alternate for Marc Reichow, Yuzuru Yamamoto for Saburo Sakai, and Denise Kulhanek for Martin Young. Sangmin Hyun was not able to attend the meeting and did not send an alternate. The opportunity to visit the *JOIDES Resolution* and test many of the new and enhanced onboard systems was a highlight of this meeting. The important agenda items included discussions of what the role of the proposed Technology Panel will be, how the current STP and EDP roadmaps can be archived, integrated, and disseminated, and a review of the Routine Microbiological Sampling policy.

No Conflicts of Interest were identified by the membership at the start of the meeting.

STP Consensus Statement 1102-01: Hands-on excursion to the *JOIDES Resolution*, Sunday, February 13.

STP would like to express its thanks to USIO and particularly Jay Miller for suggesting this Auckland visit and meeting. In many areas, STP was impressed with the significant improvements to the shipboard science systems since our last visit to the ship at the March 2009 STP meeting in Honolulu. STP has provided a number of observations and recommendations for continued improvement as attached below.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI and all IO's.

Background to STP Consensus Statement 1102-01: STP had the opportunity to visit and carry out hands-on evaluations of the shipboard laboratories. Various groups formed to discuss a range of activities and each group developed brief documents highlighting their observations and recommendations. For convenience, this material is attached as an appendix. STP greatly appreciates this chance to see the laboratories in operation and to interact with the technical and science staff aboard the ship.

STP Consensus Statement 1102-02: Responses of the STP on the proposed terms of reference for the 'Technology Panel'

STP reviewed the new terms of reference for the proposed 'Technology Panel' and has the four following recommendations:

- 1) Scheduling only one face to face meeting per year is insufficient and STP recommends that the current cycle of two meetings per year continue. In this interim period, STP urges IODP-MI to provide leadership in facilitating an effective communication strategy to maintain continuity of STP activities.
- 2) The role of the vice chair is important and should be retained within the panel structure.
- 3) The name 'Technology Panel' does not accurately capture the overall tasks of the proposed panel and STP recommends a different name that would also include the scientific relevant of the panel.
- 4) Publication activities of the program should be included within the mandate of the proposed Technology Panel as within the current STP mandate.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI, IWG+, SASEC

Background to STP Consensus Statement 1102-02: *The STP recognizes the hard work done by SASEC and IWG+ in developing the proposed Terms of Reference (ToR) for the transition to the new ocean drilling program; and STP appreciated receiving this information. Based on our discussions, the current STP made the above recommendations based on the following rationale:*

- 1) *The current STP does not believe that one annual meeting is sufficient to properly carry out its mandate. Even with electronic supplementation, meeting face-to-face once per year would not allow for appropriate continuity of developing issues nor would it allow STP to respond to queries for advice and direction from the implementing organizations. Good examples of this are STP's examination of the measurement plans for upcoming Expeditions and the post-Expedition Quality Assurance/ Quality Control reporting submitted by the IOs to STP; these are particularly crucial to the ongoing maintenance of cross-platform continuity. One added concern for STP is that the new proposal evaluation duties and added workload will exacerbate the need for more frequent meetings.*
- 2) *The proposed TOR does not include the vice-chair position. Experience within the current STP suggests that the vice-chair position is important because*
 - a. *The vice-chair is able to assist the chair with the operation of the meeting directly by taking over a number of duties that would otherwise distract the chair from the efficient operation of the meeting, and*
 - b. *The term of vice-chair allows that individual to see more directly the responsibilities that the chair takes on and allows for a smoother transition from chair to chair.*
- 3) *The mandate of the current STP is quite broad as it deals with numerous scientific issues that range from microbiology and chemistry through to physical properties and dealing too with the interdisciplinary aspects of these. The STP certainly looks at technology issues but through the lens of supporting the science being carried out. As such, a name for the proposed new panel that will incorporate this underlying science support function should be considered, with one recommendation being to retain the current name.*
- 4) *Publications are not explicitly listed among the mandate responsibilities within the new terms of reference. However, dissemination of the initial and final results from the ocean drilling is an important scientific aspect of the program. Maintaining standards within these publications is key. As such, the panel feels that monitoring of program's publications is important component of the proposed panel's responsibilities.*

STP Consensus Statement 1102-03: Proposed testing of the MDHDS (Motion Decoupled Hydraulic Delivery System)

The STP thanks Yoshi Kawamura and IODP-MI for presenting the proposed tests of the MDHDS. STP recommends that sufficient time be sought to test such instrumentation. The STP encourages locations convenient to the ship track be considered for the next sea trial opportunity.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI, EDP, and USIO

Background to STP Consensus Statement 1102-03: This statement extends from the STP Consensus Statement 1008-07 made in support of allocating sea trial test time for the MDHDS. The proposed at-sea engineering test site is not feasible because of the current drilling moratorium in the Gulf of Mexico and operational costs associated with dedicating a transit specific to conducting proposed tests. MDHDS is an important technological advancement and STP fully endorses these tests. Consideration of sufficient engineering time such that both the MDHDS with the SCIMPI could be tested at the same time would be advantageous.

<p>STP Consensus Statement 1102-04: Testing of the SCIMPI (Simple Cabled Instrument for Measuring Parameters In-situ) - Considerations of ship track</p> <p>The STP endorses the program to conduct SCIMPI sea-trials, as suggested in STP Consensus Statement 1008-07. However, the proposed Gulf of Mexico site is problematic and finding an alternative study site without these complexities is recommended. The STP encourages locations convenient to the ship track be considered for the next sea trial opportunity.</p>
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Vote: 15 Yes, 0 No, 0 Abstentions, 2 Absent (Yamamoto, Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI, EDP, and USIO

Background to STP Consensus Statement 1102-04: STP again supports sea trials of the SCIMPI. However, the drilling moratorium in the Gulf of Mexico makes the proposed test site at U1322 unlikely. STP recommends selecting a test site that may be located along the future ship track and schedule. The Cape Fear Slide is an example of an alternative site that has the proper site assessment and previous geochemical data needed for comparison with newly acquired tool data. Consideration of sufficient engineering time such that both the MDHDS with the SCIMPI could be tested at the same time would be advantageous.

STP Consensus Statement 1102-05: Approval of Expedition Measurement Plans for IODP Expeditions 334 and 335

The STP approves the expedition measurement plans for IODP Expeditions 334 (Costa Rica Seismogenesis Project) and 335 (Superfast Spreading Crust 4) presented by USIO.

Vote: 13 Yes, 0 No, 3 Abstentions (Yamamoto, Tominaga, Saito), 1 absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI, SPC, and the IOs.

Background to STP Consensus Statement 1102-05: During its meeting at Auckland, New Zealand (Feb. 13-16, 2011, STP12), STP reviewed the Expedition Measurement Plans for the expeditions listed above. In this context, the STP was pleased to learn about the USIO 'in house' solution for whole core imaging.

STP Consensus Statement 1102-06: Approval of Expedition Measurement Plan for IODP Expedition 337

The STP approves the expedition Measurement Plan for IODP Expedition 337 (Deep Coalbed Biosphere off Shimokita) as presented by CDEX. The STP recognizes that micropaleontological data, an IODP required minimum measurement, will not be collected during the expedition as no qualified micropaleontologist applied to sail. The STP notes with concern that finding micropaleontologists to sail, particularly on expeditions with limited stratigraphic and/or paleoclimatic objectives, is becoming more difficult, and that this topic should be further addressed by an additional STP Consensus Statement (STP Consensus Statement 1102-07).

Vote: 15 Yes, 0 No, 1 Abstentions (Morono), 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to SPC, IODP-MI and the IOs

Background to STP Consensus Statement 1102-06: During its meeting in Honolulu (March 2009, STP8), STP recommended that the IOs present the measurement plan for each scheduled expedition for each of the different platforms (STP Consensus Statement 0903-05). During its meeting in Auckland, New Zealand (February 2011, STP12), STP reviewed the Expedition Measurement Plan for the upcoming expedition to Shimokita (Exp. 337) presented by the CDEX representative.

STP Consensus Statement 1102-07: Lack of availability of shipboard biostratigraphers

The STP recommends that the IOs use the Paleontology Coordination Group (PCG) for advice when no micropaleontologist applies during the initial call for applicants. This would allow the widest possible pool to be reached in order to provide biostratigraphic support during the expedition.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 Absent (Hyun)

Priority: High

Forwarded to: IOs, PMOs, IODP-MI

Background to STP Consensus Statement 1102-07: During the CDEX presentation of the Shipboard Measurement Plan for IODP Exp. 337 (see STP Consensus Statement 1102-06) it was noted that no qualified micropaleontologists had applied to sail. Further discussion revealed that availability of shipboard micropaleontologists has been an issue on other recent expeditions (e.g., Expedition 333 had no shipboard micropaleontologist; other expeditions have sailed with inexperienced graduate students with no shipboard mentor), prompting STP to consider actions that could be taken if these circumstances occur during planning for future expeditions. Lack of biostratigraphic expertise severely limits the ability of the shipboard party to optimally evaluate drilling strategies and complete shipboard studies.

The STP suggests that the IOs use the expertise of members of the PCG, who have connections to the broader community within each microfossil discipline, to generate interest and thus find micropaleontologists to sail on these expeditions. If a graduate student with little or no prior experience is recommended to sail as the only biostratigrapher within a given fossil discipline, it should be made clear to the student's supervisor that he or she is expected to be available throughout the expedition to assist the student via e-mail in a timely fashion.

STP Consensus Statement 1102-08: New logging tools with sidewall coring and pore fluid collection capacity

The STP thanks Moe Kyaw Thu from CDEX for his presentation on new logging tools with sidewall coring, pressurized coring, and pore fluid collection capacity. The STP is impressed and applauds that items in the STP roadmap are brought to realization. The STP is looking forward to receiving a report of the deployment of the tools after Expedition 337.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI, IOs

Background to STP Consensus Statement 1102-08: Moe Kyaw Thu from CDEX presented the plan to deploy a new logging tool that has the capacity to core sidewalls and collect formation fluid on Expedition 337. Both of these types of sampling (sidewall coring and formation fluid sampling) are listed in the STP roadmap and the STP applauds the deployment of this tool as a realization of STP roadmap items.

STP Consensus Statement 1102-09: IODP Depth Scale documents

STP thanks the Depth Scale Task Force and Jamus Collier for their work in developing the latest version of the depth scale guidelines. STP appreciates receiving the revised document Version 2.0 from the Depth Scale Task Force and Jamus Collier's guidance in steering this group activity and in creating depth scale guidelines for publication. The STP endorses the release of the document but recommends that the following actions be taken following the results of the Depth Scale Task Force meeting in Fall 2010 and subsequent review by the STP at the current meeting:

1. The two documents "IODP Depth Scales Terminology" and "Guidelines for usage of IODP Depth Scale Terminology in Integrated Ocean Drilling Program Reports and Publications" should be merged into one document;
2. All depth scales described in the "IODP Depth Scales Terminology" document should be retained. Additional information regarding best practices for depth scales could be identified and added to the depth scale descriptions;
3. The use of Core depth below Sea Floor-A (CSF-A) as the default shipboard depth scale (and therefore assigned the meters below seafloor (mbsf) designation based on the "Guidelines for Usage..." document) is strongly encouraged. Careful consideration should be taken before a science party opts to use a different depth scale as the default for shipboard studies. This should include analysis of potential results from using a different depth scale for initial studies;
4. The final document should be made into a PDF, with links created between the acronyms in Table 1 and the more detailed descriptions in the text to make for easy navigation within the document;
5. All figures within the document should have acronyms defined either in the figure caption or within the illustration; and
6. IOs should ensure that co-chiefs receive appropriate education and training in the use of appropriate depth scales for a specific expedition during the pre-expedition

meeting. The co-chiefs and EPM will then be responsible for disseminating this information to the remainder of the science party prior to sailing.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI, Depth Scale Task Force, IOs, SPC

Background to STP Consensus Statement 1102-09: The measurement of depth is a central concept for IODP activities. Use of the units meters below sea floor (mbsf) and meters below rig floor (mbrf) in ODP/IODP is now considered inadequate because innovations in the methods by which depth is measured or calculated have progressed. Whereas the traditional units are still allowed in IODP publications, sufficient documentation is needed to explain the differences in meaning and relationship between depth scales. This is especially important to avoid confusion and the inappropriate use of individual depth scales.

The reason for documenting the IODP depth scales is to provide scientists data and sample materials with documented units and methods for capturing depth information, so that they will be able to perform shipboard duties, write reports and understand IODP literature. Use of these depth scales should also support the use of IODP data in depth mappings, analytical software tools, core visualization software and applications.

The reason for documenting all depth scales, even where some may not be regularly used, is to ensure all scientists are educated in the differences between depth scales and thus avoid inappropriate use, the introduction of significant errors through missuse, and can appreciate which is the most fit-for purpose.

The issue of depth in IODP (or any other drilling program) is complex. Depth is measured and used in many different ways. Increased documentation of the differences in the relative scales by which we report depth allows cross-correlation and integration (e.g., core, log and seismic correlation) between different data sets that allow greater understanding of the subseafloor. This document addresses the relationships between the different IODP depth scales and their relationship to the legacy system, and provides a useful reference against which scientific investigation using IODP data can be conducted.

STP Consensus Statement 1102-10: The IODP Third Party Tool documentation

The STP supports the IODP-MI efforts to update the IODP Third Party Tool and Laboratory Instrumentation Development, Procurement and Deployment Guidelines. The STP requests revision of the assignment flow of third party laboratory measurement tools in the Guidelines. The STP also realizes that further discussion is needed on how to deal with the data from observatory tools. Any updates will be reported back to STP.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 Absent (Hyun)

Priority: Medium

STP suggests this be forwarded to IODP-MI

Background to STP Consensus Statement 1102-10: This consensus statement is from the STP Action Item 1008-32: Third Party Tool discussion; The STP will review the IODP third party tool policy with the goal to revise and update the document.

STP Consensus Statement 1102-11: Magnetic freezing technique

The STP thanks Yuki Morono for his evaluation of the magnetic freezing technique (Cell Alive System - CAS). The STP recognizes the great potential of CAS for the preservation of precious core samples. The STP encourages continued studies on the uses of this technique that would improve IODP science.

Vote: 15 Yes, 0 No, 1 Abstentions (Morono), 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to IOs, IODP-MI,

Background to STP Consensus Statement 1102-11: The STP member Yuki Morono presented the updates of his study on the new magnetic freezing technique (CAS) of cores that tested for microbial cell survival after freezing. His experimental result show that it is the best way to preserve the microbes in the cores. It was also shown that it preserves several core properties without any detectable change in the volume of the core. Continued study is required to determine how much damage to the microstructures and microfossils in the cores this technique would induce.

STP Consensus Statement 1102-12: Core contamination issue

The STP fully endorses and supports contamination tests using PFT (PerFluorocarbon Tracer) and periodical sampling of the mud fluids for QA/QC of core samples during riser drilling on Expedition 337 Deep Coalbed Biosphere Off Shimokita. The STP wants to express its concern on the contamination tracing on major and trace elements and hopes it will also be done during Exp. 337. The STP asks that CDEX keep in contact with STP regarding this issue and after the expedition CDEX present results to the STP.

Vote: 15 Yes, 0 No, 1 Abstentions (Morono), 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to CDEX and IODP-MI

Background to STP Consensus Statement 1102-12: Drilling fluids contain high levels of active microbial cells and high concentrations of heavy mineral salts (e.g., barite) that are potential contaminants for microbiology and geochemistry, respectively (Action Item 0612-29). STP presented Consensus Statement 0802-06: “Detection and Control of Contamination Issues” and asked EDP to investigate drilling fluids and/or techniques that are less likely to adversely impact interstitial water geochemistry, rock geochemistry, and microbiology. The EDP responded to the STP Consensus and organized the Microbiology Contamination Working Group (Rick Colwell and Yuki Morono as STP liaison) at the EDP 7th meeting in July 2008. The EDP and working group finalized the discussion and forwarded their report to the STP (EDP Consensus 1001-17). STP then constructed a draft plan for contamination detection in riser drilling (Action Item 1003-23 and 1008-33) and asked CDEX to try the tracer test in future riser-drilling expeditions. CDEX will carry out these tests during Exp. 337 and has discussed the actual procedure with Yuki Morono; he is a STP member and also a member of the Exp. 337 Science Party.

STP Consensus Statement 1102-13: Deployment of the MMM tool

The STP recommends that the development of the Multisensor Magnetometer Module (MMM) tool be expedited, if possible, so that the timing of first deployment coincides with the Southern Alaska Expedition (July –Sept 2012).

Vote: 15 Yes, 0 No, 1 Abstentions (Stoner), 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI, USIO

Background to STP Consensus Statement 1102-13: The Multisensor Magnetometer Module (MMM) is now in development for in situ full vector magnetic measurements. This tool could have a significant impact by allowing magnetic stratigraphies to be developed even in intervals where core is not recovered. The tool is presently scheduled to have its first expedition deployment in late 2012. The primary scientific objectives of the Southern Alaska Expedition, presently scheduled for July –Sept 2012, require dating of material related to seismic reflectors that may be difficult to continuously recover. It is expected that when undisturbed core material is obtained it will provide useful information for the development of the magnetic stratigraphy. However, in those zones where core cannot be recovered the MMM will still be able to obtain a continuous record that will further assist in the development of this magnetic stratigraphy. Therefore, this

expedition provides a high profile opportunity to unveil the MMM tool if it is able to contribute to the primary expedition objectives.

STP Consensus Statement 1102-14: QA/QC Reporting Procedures

The STP thanks the IOs for their excellent QA/QC reports. The new way of reporting, following STP Consensus Statement 1003-03, allows a quick assessment of problematic measurements during past expeditions and for pointing to possible solutions for the future.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI and IOs.

Background to STP Consensus Statement 1102-14: QA/QC reports for Expeditions 325 (ESO), 327, 329 (USIO), and 331, 332, 333 (CDEX) were distributed by the IOs prior to the meeting and summarized during the meeting following the guidelines of STP Consensus Statement 1003-03. These guidelines were defined to clarify the content of QA/QC reports. The STP appreciates the excellent reports focusing on problematic measurements and possible solutions and is looking forward to receiving similar reports in the future.

STP Consensus Statement 1102-15: Adherence to IODP Measurement Policy

The STP wishes to reinforce the policy that all expeditions must adhere to the IODP Measurements document. This applies even when it may be perceived that the immediate objectives of an Expedition do not require every component of the dataset.

Vote: 16 Yes, 0 No, 0 Abstentions, 1 Absent (Hyun)

Priority: High

STP suggests this be forwarded to IODP-MI, IOs

Background to STP Consensus Statement 1102-15: STP notes that the lists of minimum and standard measurements, and the purpose of acquiring them, have been queried by the co-chief scientists of a recent expedition. STP has been asked by ORTF to review the implementation of the measurement document, especially where the immediate objectives of an expedition do not necessitate the acquisition of the full suite of measurements.

The IODP Measurements document was developed to address variability in acquisition of measurements between expeditions, and between IOs. One of the outcomes of the

document is to establish consistency across the whole integrated program, independent of drilling platform, and to ensure that a legacy dataset is acquired for use by the community post-expedition.

Minimum Measurements are defined as measurements that shall be conducted in all boreholes and on all cores in IODP. This statement does not preclude the taking of whole-round core samples on an as-needed basis to achieve specific science objectives and/or obtain legacy samples.

Standard Measurements are defined as standard measurements that shall, whenever practicable and appropriate, be carried out across all platforms and/or shore-based labs.

STP welcomes documented specific examples where acquiring minimum or standard measurements has affected, or could affect, negatively the objectives of an expedition, as the basis for further discussion with this policy, a policy developed based on experiences over many sailings.

STP Consensus Statement 1102-16: Joint activities on Technology Roadmaps of the EDP and STP towards program completion

Both EDP and STP have developed technology roadmaps over the last five years. STP supports additional linkage between these two roadmaps to ensure continuity of this work into the new program and to facilitate a more public dissemination of roadmaps priorities. These documents need to be properly archived for future drilling programs. STP supports development of an integrated executive summary and publication of the major recommendations of the roadmaps. STP does not believe a full merger is necessary because it is not yet clear how the two complementary mandates of the EDP and STP will be handled in the new program

Vote: 15 Yes, 0 No, 0 Abstentions, 2 Absent (Hyun, Kulhanek)

Priority: High

STP suggests this be forwarded to IODP-MI, EDP and all IO's.

Background to STP Consensus Statement 1102-16: Both the EDP and the STP have expended significant efforts over the last 4 years towards the development of technology roadmaps: these are intended to be living documents that provide guidelines to researchers and implementing organizations for future planning. These documents are already cross-referenced. As noted, both STP and EDP have worked extensively on developing roadmaps for future technical developments. These roadmaps were intended to point out what new technologies and/or scientific techniques (that are either existing or do not yet exist), could relatively easily be developed with current technologies, or do not yet exist. The major purpose of the exercise was to point out these technologies as ways to be able to carry out better or new science objectives. A draft concept for the

linkage and publication of these documents was developed between the Chairs of EDP and STP in early 2011.

The current SAS structure will end in September 2011. Both panels believe these roadmaps are important to preserve for the future and to disseminate to the more general scientific drilling community. Discussions between the EDP and STP chairs led to the development of a way to go forward to link this information and to ensure that it is published. STP has nominated the chair and vice-chair to form a joint working group with members of the EDP. This group would be tasked with linking the documents, writing the executive summary, and preparing a brief article for publication in a magazine such as Scientific Drilling.

STP Consensus Statement 1102-17: Recommendations by the Operations Review Task Force (ORTF)

STP thanks Yoshi Kawamura for the presentation of recommendations to STP by the ORTF's for Expeditions 323, 319/322 and 313. STP recommends that IODP-MI conduct ORTF meetings within 4 months post-expedition, and routinely report recommendations relevant to STP.

Vote: 15 Yes, 0 No, 0 Abstentions, 2 Absent (Hyun, Kulhanek)

Priority: Medium

STP suggests this be forwarded to IODP-MI

Background to STP Consensus Statement 1102-17: STP appreciates the presentation by Yoshi Kawamura (IODP-MI) of recommendations by Operations Review Task Forces (ORTFs) for Expeditions 323, 319/322 and 313, which all met after the STP meeting in August 2011 (Geneva). In the past, IODP-MI has not reported to STP on ORTF recommendations. STP requests IODP-MI to provide such ORTF recommendations routinely during future meetings. STP noted that the ORTF meetings were mostly conducted more than 6 months and up to one year after the completion of expeditions, although the IODP website states 'The ORTF convenes two-to-four months post-expedition. In the case of MSP operations, 2-4 months following the shore-based portion of the expedition.' STP considers that recommendations by ORTFs will be most useful if meetings are indeed conducted shortly after the end of the expeditions.

STP Consensus Statement 1102-18: EDP Report

The STP thanks Prof. Yoshiyasu Watanabe for his presentation of the EDP report. STP hopes to have continuous collaboration with EDP, including but not limited to, the roadmap development. STP also recognizes the importance of the new framework for engineering advice in the new program.

Vote: 14 Yes, 0 No, 1 Abstentions (Schmitt), 2 Absent (Hyun, Kulhanek)

Priority: Medium

STP suggests this be forwarded to EDP and IODP-MI

Background to STP Consensus Statement 1102-18: Prof. Watanabe gave a presentation on the upcoming EDP meeting in Grenoble. His presentation focused on the agenda of that meeting with particular note of the linkages to STP and the linkages of the roadmaps. Dr. Schmitt will attend this meeting as the STP liaison.

STP Consensus Statement 1102-19: Local hosts

The STP thanks Dr. Chris Hollis of GNS Science, and Professor Peter Malin and Jess Cherrington of the Institute of Earth Science and Engineering Aoteroa at the University of Auckland for helping to organize this 12th meeting of the STP under the auspices of IODP-New Zealand. The facilities were excellent. The dinner organized by Dr. Hollis following the scientific drilling lectures at the Auckland Museum were very much appreciated. As well, the STP thoroughly enjoyed meeting and interacting with the GNS and ESEA staff at the Monday reception. We hope that this interaction will assist IODP-NZ in their efforts to continue to work with us.

Vote: 15 Yes, 0 No, 0 Abstentions, 2 Absent (Hyun, Kulhanek)

Priority: High

STP Consensus Statement 1102-20: Hiroshi Kawamura

The STP thanks Dr. Hiroshi Kawamura for his long-term dedicated effort to support the STP for five years as a science manager at IODP-MI. Hiroshi was highly efficient making sure all of the STP meetings were organized and he quietly facilitated our activities. One good example of this is his service to the PCG. In addition to effectiveness, his fellowship in the social life of STP is one of the things that most distinguishes his tenure at IODP-MI. His hand in accelerating the capabilities of his successor, Dr. Michiko Yamamoto, is obvious. We can only wish him the very best of luck in his future endeavors in Germany and would like to let him know that he will be missed by the group.

Vote: 15 Yes, 0 No, 0 Abstentions, 2 Absent (Hyun, Kulhanek)

Priority: High

STP Consensus Statement 1102-21: *Sebastian Krastel*

The STP thanks Sebastian Krastel for his consummate professionalism and exemplary service on the panel. Over the last three years his in-depth knowledge of geohazards, physical properties, logging techniques, and practical matters in many varied categories has been invaluable to the panel. His calm and levelheaded demeanor has consistently helped to maintain a rational tone to the frequently hot topics that are routinely discussed by the STP. His seeming ability to, faster than anyone else, find any document produced by the STP since his tenure saved the STP countless hours and promoted our ability to reach for libations as early as possible each day. Sebastian has assisted greatly in the development of the STP roadmap, bringing up for discussion many fresh ideas on that important list. His diligent commitment to the mandates of the panel, his dedication to scientific drilling, and his unflaggingly kind temperament are going to be greatly missed. Sebastian certainly helped to make the STP experience highly enjoyable for all who were fortunate enough to get to know and work with him.

Vote: 14 Yes, 0 No, 1 Abstention (Krastel), 2 Absent (Hyun, Kulhanek)

Priority: High



STP Action Item 1102-22: Routine Microbiology sample curation

The STP would like to thank Lallan Gupta of the KCC for his presentation on the procedure for curation of Routine Microbiological Samples (RMS). The STP recognizes that these curatorial procedures are highly useful for implementation of RMS treatment on board and curation on shore. The STP will forward this RMS curation procedure document to the Subsurface Life Task Force (SLTF) for its comments. Also the STP will ask SLTF for its advice/action regarding sampling frequency, the way for advertisement, and the need for a microbiologist to sail to take RMS.

Priority: High

Leads: Morono, Yamanaka

Deadline: Next meeting

Background to STP Action Item 1102-22: This action item follows STP recommendation 0908-09 referencing relevant recommendations generated by the 2003 IODP Microbiology Working Group Report, the IODP Deep Biosphere Workshop held in Vancouver, BC (October 2006), the manuscript resulting from that workshop (D'Hondt et al. Scientific Drilling. No. 5 Sept. 2007), the Sept. 2007 report to IODP-MI from the Subsurface Life Task Force, and past STP consensus statements including 0708-14, 0807-12, 0807-17, 0807-18, 0903-06, and 0903-07. Following the Subseafloor Life Task Force (SLTF) report at the Edmonton 2008 STP Meeting, STP issued a set of recommendations for routine microbiological sampling on IODP expeditions (including those for which microbiology is the primary scientific objective) so that samples are adequately and consistently preserved for future microbiological analysis. At the STP meeting in Auckland, 2011 three concerns were raised. First, one of the IO's raised a concern about the amount of freezer space being consumed for RMS. A second concern was the lack of use of any of the RMS core materials thus far collected. Thirdly, microbiologists have not sailed consistently on expeditions and it was felt that this lack of appropriate personnel would affect the overall success of RMS

STP Action Item 1102-23: Thermal conductivity and Non-Contact Resistivity (NCR) Updates from USIO

The STP thanks David Houpt for the updates on problematic measurements with the TeKa TK04 thermal conductivity system and also with the NCR. The STP requests that the USIO follow up with their investigation of the thermal conductivity probe and testing a new NCR system for obtaining reliable, stable measurements. This follow up should include a presentation of results at the 13th STP meeting and dissemination of that information to CDEX and ESO because of their use of TeKa probes and NCR systems.

Priority: *Medium*

Leads: USIO

Deadline: Next STP meeting

Background to STP Action Item 1102-23: The USIO has removed the non-contact resistivity (NCR) from the JR because it has never performed adequately. The USIO has investigated options for determining resistivity (e.g., Olympus Nortec 2000 D+ flaw detector) for determining resistivity of cores. The USIO intends to purchase a new system and evaluate its performance for determining resistivity.

On Expedition 328 (Wilkes Land), the TeKa TK04 system used to determine thermal conductivity functioned well on the Macor standards, however it did not yield good results on core samples. This problem has been isolated as a software problem related to the vendor-supplied, complex model that has been used to interpret thermal conductivity from the acquired data. The old technique (slope-intercept method with extrapolation) appears to work well in instances where the complex model does not perform well. The USIO is investigating methods to obtain consistent, reliable results for thermal conductivity using the vendor software or perhaps with user-developed software.

In this 12th STP meeting, USIO updates on the TeKa TK04 system were presented within the USIO Data Quality Report for Expeditions 327 and 329. USIO thinks that the instrument is functioning, and the problematic measurements could be due to certain rock types. NCR has not been replaced.

STP Action Item 1102-24: Stratigraphic correlator/splicer software

The STP urges the USIO to end the third-party status of this software and integrate it into IODP-supported software as soon as possible. Chief scientists of paleoceanographic expeditions and scientists sailing as stratigraphic correlators must be made aware of the status of this software before sailing, so that optimal training before the expedition can be provided, with Expedition 339 the first expected to use this software.

Priority: High

Leads: Thomas, IODP-MI, USIO, Expedition 339 Co-chief scientists, staff scientist

Deadline: Pre-cruise meeting Exp. 339 (Mediterranean Outflow), 20 Nov. 2011 - 20 Jan. 2012

Background to STP Action Item 1102-24: Shipboard stratigraphic correlators sailing on paleoceanographic expeditions have complained about problems with stratigraphic correlator/splicer software, as reported by the ORTF of Expedition 323, the last high recovery paleoceanographic expedition. This software is of prime importance in determining drilling stratigraphy during paleoceanographic expeditions where full recovery in overlapping holes must be established (e.g., Recommendation 323-06, ORTF 323). Most problems probably arise from the fact that this software is a third-party development with limited support from USIO personnel and with the developer no longer providing support. There are several versions of the software on shipboard computers, with insufficient documentation of differences between versions, part of a more general problem with version tracking and documentation (External Assessment, June 2010). STP recommends that third-party status of this software be ended, so that the USIO will be able to fully support it and its integration into the database, and provide training to technicians to ensure continuity between successive expeditions. Therefore STP appreciates that Correlator Integration is on the 'Top 10 List' of USIO Project Prioritization. Stratigraphic correlators must be made aware of the status of the software before sailing as long as the software has not been fully integrated, especially because paleoceanographic expeditions in general recover large numbers of cores so that little time is available for on-the-job training.

STP Action Item 1102-25: New Publication Format

The STP thanks Angie Miller, a representative from the USIO Publications group, for her presentation on the publication issues regarding the IODP scientific publications, publication formats, publication archive, and data presentation. STP members will begin to investigate the issues outlined in Angie Miller's presentation and as outlined in more detail in the background information below. This issue will be an agenda item at the next STP meeting.

Priority: High

Leads: STP Members, USIO Publications

Deadline: Next STP meeting

Background to STP Action Item 1102-25: Data publication is of crucial importance to the IODP scientific community. During the STP #12, Angie Miller reported to STP on the many publication services changes since ODP times that includes for example the routine staffing of seagoing technicians for publications support, the development of plot database-driven summary graphics, the production of laboratory and engineering technical documentation, the management of a common publications server for program publications for all of the IODP implementing organizations, and the coordination and production of all required USIO Program reports (quarterly reports, annual program plans, annual reports). At this meeting, the three main formats of IODP scientific publications were presented: 1) Scientific Prospectus (normally published at least 6 months before an USIO expedition (NSF requires publication a minimum of 2 months before)); 2) Preliminary reports (published within 2 months after each expedition); 3) Proceedings of the Integrated Ocean Drilling Program (including both Expedition Reports (shipboard reports) published at the end of the 12 month moratorium and Expedition Research Results (data reports and synthesis papers) published on an ongoing basis from the end of the moratorium to up to 3 years after the moratorium).

Angie Miller also addressed the apparent lack of value of DVD products provided particularly as there is little to no demand based on disc requests and only limited use according to a survey of librarians affiliated with three organizations since 2005. This together with an annual cost exceeding \$50,000 annually for duplication/distribution suggests that, particularly given that these materials are all web available, it may be timely to cease publication of the DVD materials.

Questions were raised with regards to the role of publications oversight in the new program, and whether the IODP policy promoting journal publication over Program publication had been successful. In lean budget times, are there new approaches to track impact of Program research and how could the STP or its successor assist (see STP Consensus Statement 1102-02)?

STP Action Item 1102-26: Further investigations on the methods used in industry to measure formation factor

Due to the considerable uncertainties in making formation factor measurements, the STP will carry out some additional research as to the methodologies employed in industry towards the measurement of the formation factor on core samples.

Priority: High

Leads: Douglas Schmitt, Marc Reichow, Yuki Morono, with input by Mike Lovell

Deadline: Investigations carried out with Doug Schmitt reporting at the next earliest opportunity

Background to STP Action Item 1102-26: The formation factor is an empirically determined parameter that provides information on the pore space complexity. This information is required by the microbiological community as one component to estimation of the potential for biological activity within a given sediment. Previous consensus statements have recommended that this parameter be measured routinely on IODP Expeditions. However, the measurement remains difficult to carry out reproducibly. Both the USIO and CDEX have spent time attempting to determine how to best conduct these measurements but despite this careful work some concerns were still raised as to how these methods should be carried out.

As this is a measurement often made by the petroleum industry on core samples, the panel suggests that some additional research as to how these measurements are made by that community is warranted.

STP Action Item 1102-27: Magnetic Susceptibility Calibration and Standardization

Ongoing research for calibration and standardization of magnetic susceptibility measurements on all platforms was reported and will be updated during the next STP meeting.

Priority: Medium

Leads: Joe Stoner

Deadline: Next meeting

Background to STP Action Item 1008-27: Magnetic susceptibility is measured in different ways, but at present is incompletely calibrated. Standardized and calibration between equipment (discrete sample, whole round, logging tool) and platform (Chikyu, JR, MSP) is needed.

**Draft Agenda for the 12th IODP STP Meeting
v.2.0**

Day 1: On-site assessment of shipboard system on JOIDES Resolution

1. Welcome, logistics, safety, introduction (0800-0830)
2. Quick tour through all the laboratories (0830-0930)
3. On-site observation/review
 - a) Whole core processes (0930-1200)
 - b) Split core processes (0930-1200)
 - c) Paleontology/petrology (1330-1600)
 - d) Geochemistry/microbiology (1330-1600)
4. Discussion (1600-1700)

Day 2: Regular meeting (0830-1700)

1. Welcome, meeting logistics, safety, introduction, Robert's Rules, COI
2. Approval of meeting agenda
3. Approve Minutes from STP Meeting #11
4. Preliminary discussion of next meeting locations and dates; panel rotations.
5. Review status of previous meeting action items and consensus statements (IODP-MI, Saito)
6. IODP program updates and New Science Plan: IWG+, SASEC, SPWC (IODP-MI)
7. SAS Report
 - a) SPC Report (TBN)
 - b) Other SAS activities: SSEP, EDP (IODP-MI, TBN)
8. IO Reports
 - a) ESO Report (Roehl/Morgan)
 - b) USIO Report (Myers/Miller/Anderson)
 - c) CDEX Report (Kubo/Moe/Gupta)
9. Review of expedition QA/QC reports for Expeditions 325, 327, 328, 329, 330, 331, 332, 333 (IOs, ALL)
10. Summary of JR laboratory visit and updates on DESClogik [AI 1008-30]
11. Report from recent ORTF meetings (IODP-MI)
12. Approval of Measurement Plans for the upcoming expeditions: Exp. 334, 335, 336, and 337 [AI 1008-37] (IOs, ALL)
13. Report on IODP-MI Scoping Studies (IODP-MI)
14. Report from Moho workshop (Johnson)

Days 3: Regular meeting (0830-1700)

20. Report from Depth Scale Task Force: discussion [CS 1008-01] (ALL)
21. Third party tool discussion [AI 1008-32] (ALL)
22. Core quality and contamination
 - a) Core Contamination Issues [AI 1008-33] (Yamanaka)
 - b) Use of Cells Alive System [CS 1008-17] (Morono)
23. Routine microbiology sample curation [AI 1008-34] (Morono, Yamanaka)
24. Measurement issues on cross platform consistency
 - a) Magnetic Susceptibility Calibration and Standardization [AI 1008-36] (Stoner)
 - b) Thermal conductivity and Non-Contact Resistivity [AI 1008-38] (USIO)
 - c) Formation Factor Issues [AI 1008-39] (Morono)
 - d) Taxonomic Name Lists for micropaleontology [AI 1008-29] (IODP-MI, Thomas)
 - e) Update on smear slide reference material [CS 1008-06] (IODP-MI)
25. New Publication Format [AI 1008-40] (USIO)
26. STP Roadmap update, link to NSP, implementation, and advertisement [AI 1008-31]

Days 4: Regular meeting (0830-1200)

27. Panel Rotation
28. Select Meeting Location
29. Finalize Recommendations/Consensus Statements and and Action items

12th IODP STP Meeting
Auckland, New Zealand
02/13/2011-02/16/2011
Minutes

Day 1 – February 13. Visit to the *JOIDES Resolution* for evaluation of the laboratories.

The STP members and others associated with the meeting visited and discussed a number of the different core flows, laboratories, and database issues. A number of discipline specific assessment teams were formed to carry out a ‘hands-on’ review of laboratory and core handling procedures and data base issues. The group was bused to the port at 8:30 AM. The day consisted of brief introductions followed by rotations of the various teams through the laboratories. The group meet to provide an initial overview at 3:00 PM, recorded in the minutes below. Each team later provided a more formal written response that is attached as an appendix to these minutes.

Assessment teams

- Core Description (sediments) – Yuzuru. Suggested that the software program has been very much improved. The ability to import the data was useful as were numerous modifications to the software to make it more flexible for adding unexpected features or for working with the display generally. Believed that a physical training time was necessary for learning this (1/2 to 1 day) prior to sailing. Jay believed that 1 day was not sufficient and they are thinking of developing screen-based tutorials. He also mentioned that this will depend on the length of the port call and transit times as longer periods will allow for this to happen. For the superfast expedition some of the scientists will be taken to College Station to develop appropriate templates. A training set would be good to have.
- Core Description (hard rock) – Take, Kevin. Noted some problems with respect to the length of time it might take once one found a glitch. However, there has been a great deal of improvement. Kevin noted that sometimes one may want to populate the ‘tabs’ more flexibly; in particular one may use all for a single thin section but might not be so useful for an entire core. Suggested that lithological units might be a better way to organize the data in DESClogik. Jay commented that DESClogik does not ‘interpolate’ for you, this may have to be done outside of DESClogik OR you directly assimilate this data directly as you input to DESClogik via the level of observation.
Kevin also noted that it would be useful to link images or other data to DESClogik.
Kevin noted that with regards to igneous petrology there are essentially a basic set of information that could form a template (that could be added to as needed) might be useful.
- Paleontology: Ellen and Denise. Impressed with the pictures collected and how they are stored in the database. The new imaging was ‘really a major step ahead’. Small issue in that the there are still not show heads in the sink (Jay noted that there is a portable one in the drawers). DESClogik still not particularly useful for

- paleontology as it remains more a data input device – as such it will likely be difficult to convert paleontology scientists to use it. Jay is looking for additional feedback to help more with this aspect. Ellen also suggested that having a ‘demo’ that could be used off ship would be a major step towards acceptance.
- P-mag: Joe, Masako: Noted that new labview software that was set up. Also liked the new database tags that made things easier. Suggests that it would be good to have the capability of flagging of the data for cleaning, the database data goes in without any ‘cleaning’ and it might be more useful to have this clean data set. Some of the new software has gained ability but has lost some of the visualization capabilities; you would have to process your data to get that. Adding some kind of instantaneous data visualization might be available in the future. The speed of scanning was nearly doubled but in some cases one may need to go slower; it would be good to have the option of slowing down the system. There are also issues of standards (although this is a community issue) and these are needed to ensure that data is good during a sail. There have been numerous new improvements to the data acquisition equipment (repairs, updates, new instruments).
 - Physical Property: Sebastian, Mike, Doug – looked through all of the loggers and all seems to be running good. The images were good as well as the NGR instrument. There has been major progress from the 2010 Victoria report. One issue was mentioned with respect to the lack of a uranium standard. The certification for the standards were false as no uranium was put in, David indicated that they are working on developing new standards. Jay also commented that they are working on U, Th, K absolute value measurements from the material.
Comment on whether there are standards that could be employed for the velocity over a longer range particularly at the lower ends. Currently have Plexiglas standards but could use some additional ones.
 - Inorganic chemistry: Jiang, Bill, Nathalie – Concerns about the limited lab space. As well, most of the instruments are very good for soft rocks, but the geochemical facilities for hard rocks are rather limited and this may be a problem in the future. Equipment for making rock powders, for example, may be useful (Dave indicated that there are a variety of rock crushing facilities in other places on the ship). Dave indicated that more bench space will be added shortly but again this will be limited. Jay indicated that there are shipboard limitations with regards to the crushing equipment in that tungsten carbide must be used, other types do not survive. Also, a rapid XRF portable machine was just purchased and was not implemented in the last expedition, this should see more use in the future. The quality of this measurement system gives excellent spectroscopy and good detection limits for many elements.
 - Organic geochemistry: Torhio – No negative comments in general.
 - Microbiology – Yuki: Yuki was on board 2 months ago and one problem was that 8 scientists were on board and the space for this many was too small even though they employed the paleontology lab. There were some problems with the carbon tracer but a new plan appears to be in place to solve this issue. Suggested that there would be an advantage to have a scientist to be a volunteer to test the

equipment and develop good protocols. Other issues were related to the photography under microscopic, there were issues because of the heave of the ship. USIO is working to overcome this issue of poor images at 1000 X. An antivibration table might be a good idea for these. A critical problem is having a 'clean' space in the ship. There is a clean bench in the cooler with UV light, having a hand held UV lamp for sterilization might be good to assist with this.

- Logging: Mike, Masako, Sanny. Mike indicated that the relocation of the logging has been very important and an incredibly positive outcome. The disadvantages appeared to be overcome. The heave compensation was looked at. Overall, there appeared to be good progress with regards to logging.
- Jay – concluding remarks. He was very appreciative of seeing the improvements both since Honolulu and since the Victoria review.

Conclude visit and leave the ship by 5:00 PM.

See APPENDIX for reports from the various assessment teams.

Day 2 – February 14 (Minutes by Kevin Johnson and Denise Kuhlanek)

08:30

Meeting called to order by Sanny Saito
Opening remarks and welcome from Peter Mallin and Chris Hollis
Introductions of new members
Review of Robert's Rules of Order

08:55

Review of Conflicts of Interest – No COI were identified by any members at the start of the meeting

09:00

Agenda review and discussion. Ellen noted that Day 3 Item 19 d and e AI and CS numbers should be switched. Yoshi Kawamura will add presentations on Day 2.

09:03

Agenda approved

09:04

Minutes from STP Meeting #11 approved

09:04

Discussion of next meeting location. Due to upcoming SAS transitions, the decision of the location of next meeting will be postponed until further information is available from IODP-MI

09:06

Panel Rotation – this is the last meeting for Sebastian Krastel, 2nd to last meeting for Ellen Thomas and Martin Young.

Review status of previous meeting action items and consensus statements (IODP-MI, Saito)

30 consensus statements, 12 AIs from last meeting; go over some

1008-01 – Depth scale document (agenda #15)

1008-02 – Role of STP in new SAS, forwarded to SPC, IODP_MI; ToR have been approved for new “TP”, but not finalized

1008-04 – STP representation at workshop on Moho (report by Kevin Johnson, #14)

1008-05 – CDEX data error report; followup by CDEX (#8c)

1008-06 – smear slide reference; Jamus will report (#19e)

1008-07 – SCIMPI, Yoshi will report

1008-09 – measurement plan for 329; response from USIO (#8b, 9)

1008-10 – template for measurement plans for non-standard measurements (template used by ESO), response from USIO (#12)

1008-12 – Scientific Technology Roadmap as appendix to new SP; hasn't happened, update on new science plan in agenda #6

1008-14 – preservation of cuttings from riser sites; updated by CDEX, items #8c, 12
1008-17 – use of cores after freezing using magnetic technique; update #17b
1008-18 – IODP-MI scoping studies, Yoshi will report #17
1008-22 – lab upgrades Chikyu (gas monitoring system), #8c, 12
1011E-01 – deployment of GBM for 330; done, report from USIO; #8b, 9
1008-29 – Taxonomic name list; IODP-MI has updates, status of PCG, #19d
1008-30 –DESClogik use by biostratigraphers (Ellen update #10)
1008-31 – Scientific Technology Roadmap pub and advertisement; discuss draft concept on agenda #21
1008-32 – Third party tool discussion; #16
1008-33 – Core contamination issue; updates from Yamanaka/Morono, CDEX, #17a; measurement plan for Exp. 337, #12
1008-34 – Routine microbio sample curation; updated from KCC, #16
1008-35 – Review of new science plan; done in Sept. 2010, update from IODP-MI, #6
1008-36- magnetic susceptibility calibration, Joe #16
1008-37 – measurement plans for CPP; 337 agenda #12
1008-38 – thermal conductivity and NCR updates from USIO, #19b
1008-39 – evaluation of infrastructure and devel. of standards for formation factor determination, Morono #19c
1008-40 – new publication format, USIO reports #20

09:20

IODP Program updates and New Science Plan. Presentation by Michiko Yamamoto IODP-MI on new SAS structure. Under the new structure, the new name for STP would be TP (Technology Panel); PEP is Proposal Evaluation Panel combines roles of SSEP and SPC; SCP is Site Characterization Panel is the site survey panel; EPSP is the same; EDP is gone, but there may be a role in the new structure as yet undefined. These panels report to SIPCom/OTF, Science Implementation and Policy Committee (rename of SASEC). They report to IODP-MI. Proposal review flow is PEP/SCP, who meet together. IOs do a pre-scoping before the PEP/SCP, and then the proposal is sent out to external review. After these reviews, the proposals will go through EPSP and TP. In this new system, TP must review all proposals that are being sent out for review. It was pointed out that the extra level of review by TP may be unnecessary because the detailed measurement plans, which the TP is responsible for commenting on, are usually not in the original proposal. At that early proposal stage, this review by TP would amount to an extra science review, which is the responsibility of the PEP and SCP. STP will draft a consensus statement in response to this new proposal review flow from IODP-MI.

09:36

IWG+ Report – Multinational Program Architecture: 1. Lead agencies, 2. Platform Provider, 3. Member; Participants making a contribution of <\$1M will join via consortium

Participant level for expeditions: LAs 1/3 each, others 1/3. Potential future members can join meetings as non-voting observers, but will have no berth guarantees.

IODP-MI will continue as CMO with following task:

1. core activities

- planning including support of SAS
- Review of expeditions
- core sample curation, data management
- publications, outreach

2. other activities

- recruitment of new members
- linkages to other programs
- engineering development
- seeking new partnerships

All of the new structure is still subject to change. The new program will be managed by a Program Governing Board (PGB); PGB will be the Executive Body of the new program structure and is responsible for effective delivery of the Program's Implementation Plan with the available resources. PGB membership is the LAs.

Engineering development is not able to be supported by the CMO specifically any longer, but it is recognized that it is needed to be supported elsewhere in the structure, i.e. at the IO level.

09:48

New Science Plan - February 2011, Draft 3.0 expected. Name of new Science Plan is not determined yet, but includes the following themes:

- Climate and Ocean Change
- Biosphere Frontiers
- Earth Connections
- Earth in Motion

Timeline:

- February-March: Blue ribbon panel review
- Mid/late-March: Final SASEC and IWG+ comments
- Late March/early April: Final editorial meeting with IODP-MI, SASEC chair 4 theme leaders
- Late April/early May: Print-ready version
- Late May: US NRC review meeting
- Early June: Print and distribution

Ellen expresses great dissatisfaction with the entire process of Science Plan writing and community input. SPWC is the main writing group, and there are concerns about the product coming from the SPWC. Concerns center around the quality of writing and the omission of many key science elements from the drafts. The STP has no official mandate to address these concerns. Individuals can contact the SPWC, but there is no way to read the current version.

10:10 Coffee Break until 10:30

10:30

Review of new terms of reference for TP include advising PEP on the feasibility of measurements and technological plans. Also, they suggest meeting only once per year, which is not sufficient. Also vice chair has been deleted. Also “Scientific” has been deleted from the name of the committee.

A consensus statement will be drafted to address these concerns over the terms of reference.

10:36

SAS Report

SPC Report - SPC motion 1008-07 Cascadia pulled off FY12 schedule

more than 100 proposals are in the system, and they can't be accommodated in the current program. SASEC asked SPC to review this pool. SSEP has been tasked with conducting this review to prioritize to carry proposals forward

SPC will consider proposals to carry forward at their March 2011 meeting

Scientific Quality will be top priority, based on impact and filling in gaps. 3 Tiers will be assigned.

Ocean Observatory Subcommittee Report: Fruh-Green, Kasahara, Blackman. US will pursue cabled observatory. ECORD will continue working on cabled observatory. Japan has installed observatory between Guam and Okinawa and is working on DONET.

10:45

SSEP Report

53 proposals in SSEP, 29 in OTF, 18 in SPC. 3-tier system introduced to prioritize proposals. 7 tier 1 (highest), 17 tier 2, 16 tier 3. Tier 1 forwarded to the new system. At last meeting, 10 proposals forwarded to SPC, 3 sent to outside reviewers, 11 were sent for revision, 2 deactivated.

10:50

At-Sea Engineering testing – Yoshi Kawamura reporting

SCIMPI Update: Funded by IODP-MI for 3 years as a complement to CORKs. Measures T, P, resistivity. Bench tests and calibrations are done, but sea tests are scheduled for March. If successful they want to deploy SCIMPI in Ursa Basin in the Gulf off of Louisiana at site U1322 in 1320 m water depth with 21 cores and 210 mbsf total penetration depth. Six modules are completed.

MDHDS – Motion Decoupled Hydraulic Delivery System – U Texas and Mohr Engineering want to conduct a sea test for this new system in the Gulf of Mexico on the JR at U1322 in Ursa Basin, with 1324 (Cape Fear) and 1073 (New Jersey) as alternates. Requesting 3 days of ship time, six cores. The tool will enable rapid measurement of pressure and permeability in mudstones for gas hydrates, seismogenic zone study and other applications where precise measurements are needed, but are precluded by ship heave. Stage 1, prototype development is completed. Want to do Stage 2, field test in Texas, then a sea test on JR. They propose to combine the test with the SCIMPI sea test. Joe asked for more justification before approval. Jay and Greg pointed out that STP should be clear if they are approving the concept of conducting the test, but not necessarily linking this approval to the specific site proposed, and that the final test location should not be set at this time.

11:25 ECORD update

Exp 313 moratorium period is over, 2nd postcruise meeting scheduled for June in Utah.

Exp 325 ORTF upcoming in Edinburgh

Hopes to schedule at least one more MSP leg before the program finishes. Looking at Chixculub and Hawaiian Drowned Reefs.

Exploring sea bed rock drills for Hawaii. If feasible, it could enable 2 MSP programs before 2013 finish.

ECORD summer schools are ongoing.

ECORD Evaluation Committee met in Paris and will come to BCR-MARUM on March 4 to visit the core repository.

11:32 USIO Report

completed 4 expeditions since the last STP meeting

CORK installations in the Juan de Fuca hydrogeology expedition were successful.

Cascadia ACORK installed successfully.

Education and Outreach programs were very active on these legs.

South Pacific Gyre – drilled 42 holes with 82% recovery in water depths from 3500-5500m.

Louisville Seamount Chain – Gottingen Borehole Magnetometer third party tool was deployed successfully.

CRISP, Superfast coming up. Then ship tied up, then Mid-Atlantic microbiology, mediterranean outflow, lesser antilles, south alaska up through July 2012.

Multisensor magnetometer module is currently under development and hoped to be completed in 2012.

Magnetic susceptibility sonde is currently being built as a replacement and improved design of the lost sonde. Bench testing summer/fall 2011.

USIO publications: Scientific prospectuses complete through Exp. 337. Preliminary Results – USIO: 327, 328, 329; CDEX: NanTroSEIZE 319, 322, Deep Hot biosphere 331; ESO: Great Barrier Reef 325.

Pubs provides onboard support for the platforms as well.

Post-cruise meetings occur about once a month and take large proportion of resources.

Production of Proceedings volumes.

Addressing of Consensus statements:

CS 1008-09, Exp. 329: STP had concerns about the lack of information for scientific measurements plan. Communicated this to the sci party.

CS 1008-10, Scientific Measurement Plan template needs more communication between the different groups evaluating the plan.

12:00 Lunch Break until 13:20

13:20 CDEX Report

4 expeditions since last meeting: 326, 331, 332, 333.

Exp. 331 coring into hot hydrothermal area required aluminum core liner, but there was a concern about contamination. Sediments were too soft for coring by the BHI large diameter core.

332 – riserless CORK observatory.

schedule is for 337 March-May and non-IODP usage before and after that. Exp 337 is Deep Coalbed Biosphere will attempt riser drilling to 2200 mbsf.

Follow-up on data error report (CS1008-05). This has been corrected.

Installation of permanent observatory sensors in Exp 332 in C0002 and C0010 were successful.

Update on CDEX Roadmap on the Cuttings/Core-Log-Seismic Integration by Moe. He outlined the cycle of deep-riser drilling emphasizing integration of goals and results of the different components of the cycle each other, with data/sample types of logging, cuttings, and core will be 200%, 100%, ~50%, respectively.

Primary science missions: Moho, seismogenic zone, deep biosphere. Site survey for Moho site planned for this year. Others already well underway.

14:00 Review of expedition QA/QC reports for Expeditions 325, 327, 328, 329, 330, 331, 332, 333 (IOs, ALL)

ESO:

Exp. 325 QA/QC

MSP – acquisition of ephemeral properties offshore; most measurements taken at Marum in Bremen

Issues:

1. Whole-core MS; original loop (80 mm) didn't work – had intermittent sensor problem, had to use 90 mm; wasn't really an issue, but had to make sure it was mentioned in Qa/QC
2. NGR – downhole measurement very low or non-existent; not worth it to try to measure on cores
3. Diffuse color reflectance spectrophotometry – much more practical to collect data with handheld
4. moisture and content density – loss of two discrete samples (clearly noted in the QA/QC)
5. Spectral natural gamma probe (ANTARES) – ASGR probe failed; used abck up
6. Specialist sampling of massive corals – special sampling procedure for cores with massive stone corals; partial deviance from routine splitting. No action – focus on coralline material higher priority
7. No temperature measurements – lithology would have easily damaged tool; circulation of sea water also would have contaminated formation temperature

Joe – CT scanning of corals? UR – generally easy to ID corals through liners, but some were scanned before the start of the OSP

Loss of sensitivity with switch to 90 mm loop? Loggers – very little change

Joe – spatial resolution would have changed

comment – good format for the report – Consensus statement to be formulated

USIO

Reference materials haven't really changed; missing U standards, making some progress for that, but not resolved yet

Exp. 327 Juan de Fuca

1. Thermal conductivity – half-space needles didn't work well; manufacturer claims it was the nature of the material being sampled; it works with standards; don't have resources to make own, have to rely on manufacturer; since been issues with electrical, so need to check on that
2. P-wave discrete measurements – science party wasn't happy that the automated first arrival time pick wasn't good; changed to do manual (improved data quality)
corrective action – make pick manual
3. Moisture/density data error – windows update caused an error; problem corrected by staff and was data
4. Core description upload error – lithology not uploaded properly; USIO cannot determine if the values were entered correctly and upload failed or if the data was mis-entered; lithology values corrected. Trying to make DESClogik more user friendly (ongoing)

5. Thin section report

6. Color reflectance not recorded; some core sections from Site U1363 did not receive color reflectance measurements (sensor got turned off somehow); cores left on board and rescanned as soon as possible

Exp. 329 – South Pacific Gyre

1. Heavy sampling cause core section analytical challenges – microbio and chemical sampling of whole-rounds presented lots of challenges for core logger measurements. No corrective action needed, but data collection was just challenging

2. Natural gamma radiation – higher-than-usual data quality; got really good spectra to estimate K, U, and Th values (had more time due to low recovery)

3. Thermal conductivity – reported data problems, using full-space needle. Sample matrix not good for getting results

4. Flow cytometer data issues; couldn't get effective data due to extremely low cellular activity

5. Perfluorocarbon tracer issues – PFT was repaired after a previous failure, resulted in the science party being very disappointed that this was not working at the start of the cruise; one of the techs worked tirelessly and were able to get it working and run all preserved samples. Further methods developed during tie-up to avoid this in the future with microbio legs

6. Membrane filter problems – bad batch of filters was introducing fluorescent materials; was discovered and resolved

7. Air quality in laboratories; problem for potential source of contamination.

Measurements of air quality indicated microbial activity. USIO has no way to improve the air quality on the JR at this time

Microbiologist – suggests handheld UV light to clean surfaces etc. (going to report on it more in another agenda item)

Joe – suggests that with standards could easily figure out difference between 80 and 90 mm loop, and then apply a correction to the data

CDEX

331 – potential problem with AI core liner; ongoing work to determine if there is a problem

No major issues from 332/333

14:45 Summary of JR laboratory visit and updates on DESClogik [AI 1008-30]

Flexible table layout for core description – has been realized

DESClogik – see there has been improvements (can export/import data to/from excel using copy and paste); can change size of each cell, video-tutorial available; been improvements to processing speed; also can open different templates/graphics on same screen

Improvements needed:

- 1 – software crashes if we choose to download all tabs
- 2 – need zoom in and out on the window
- 3 – status bar would reduce frustration
- 4 – different users can open and use same template and data at same time, but the later uploading always overwrites previous; so big issue (Jay – needs ideas for how to handle this; maybe have a warning that this would overwrite other data that was saved)
- 5 – pre-cruise training is necessary to use software effectively. Formulate consensus statement.

Micropaleo:

Appreciate the capture system for photographic images (thin section, close up, microscopes) – great improvement

DESClogik – TLN will help with database management and quality control, but won't help with making the program easier to use for micropal people

Problem is that it takes longer to enter it into DESClogik than just putting it into an excel spreadsheet; need to: make program more user friendly; provide added value to using it

Possibilities:

Provide online, interactive training; rewrite shipboard handbook and microfossil-specific information on capabilities (PCG could do this)

Provide more filtering capabilities to select subsets of taxa.

Link capabilities between screens/tabs

Provide added value:

Be able to create range charts, and be able to display in combination with non-paleo data
Age-depths plots (depth scale issues have to be resolved first)

PCG meeting – extended taxonomic name lists should also include ranges and paleoenvironmental information; Jamus – that was not added to the contracts, need to go back to PCG to figure out what is most important with funding available

Microbiology:

Good to have dedicated space, BUT the space is limited, will need flexibility for the future microbio cruises

PFT analysis – USIO has started to address this, Subseafloor life task force (SLTF) should help with methodology development

taking microscopic images at highest magnification is difficult because of heave; employment of high sensitivity camera and/or anti-vibration stage is encouraged
secured clean space is of high importance on board – have another clean cabinet with functioning UV and/or hand-held UV lamp for sterilization inside the lab

Jay – if anyone knows of a clean lab in a container, then could potentially rent it for expeditions that it is needed for

Organic geochem facilities:

Excellent – many instruments have been used without any reported problems; manuals are provided

Do need SOP for newly installed DOC and DIC analyzer

Paleomag Lab:

Gone through a lot of transformation, resulting in improvements in equipment (significant improvement to capabilities)

Geometry of the lab has changed a lot – now you load magnetometer on the opposite side from where you work (not optimal); camera is a fix, but not ideal. One possible solution would be to have a computer with a mirror of the main instrument control computer on the small space above the load; would also be used to take notes on pmag quality of the section that could be uploaded into the database (this information is often not captured...just written down)

New software for magnetometer (really improved data acquisition speed); there could be some issues when collecting data that fast – need way to include a delay or set slower acquisition time; software has also lost some capabilities from previous version

Uploading data is easier

Bar code reader is nice, mid-term data analysis options to flag data that need to be cleaned is good

Need capability to output data in a format that could be easily read by 3rd party programs

Real time data visualization and analysis software

Standards have always been an issue; IODP provides proper framework for interlab comparison and standard analysis; should be developed as a project between IODP and community that could be facilitated through magIC or IRM

Phys Props:

All systems fully operational and easy to use; numerous are support (NGR, lightning system of SHIL)

Several problems have already been addressed (improvements are obvious)

Standards can be improved (ie., no U standard for NGR logger), no standards covering typical ranges of p-wave velocities

Interfaces could be standardized

There was a lot of concern about system stability during 329

Fixing mistakes in data entry requires intervention of developer (are trying to get some capability to make changes to things that just happened by some) (this is for instrumental data)

Lack of flexibility to adapt the system to new and different situations

Core description (hard rock):

Overall positive impression by the changes that have been made.

DESClogik is arranged in terms of core sections, not lithologic units; might be useful to organize data in terms of lithologic units for search and output.

Barrel sheets are much improved and more consistent; automated procedure for barrel sheet production would be good.

Core scanning imagery is very detailed and good; digital annotation would be good if possible.

Individual sample imaging capabilities are very impressive, metadata link is great; would be nice to have this linked with DESClogik where appropriate.

Set of igneous sample description templates should be established for use in volcanic and plutonic settings (this could be the template starting point to add to (but not subtract from) so that standard info would go in for every leg.

Inorganic Geochemistry:

New instruments are good improvement.

Old instruments not replaced – need to be sure they are kept robust and reliable. (Don't fix what isn't broken, but make sure they keep working!).

Bar code scanner is really good.

QA/QC – in-house software developed to export and correct ICP data.

Pore water extraction – more presses helps speed up the processing and improves workflow.

Needed improvements:

Benchtop space .

Long-term record of instrument performance; standard analyses don't need to be part of the database, but kept as a compendium for tracking long-term performance.

Chlorinity – adding autotitrator would improve reproducibility and speed

Internal rock and pore water standards (sr, Ba, Ca).

Instrument guides need detailed instructions.

Logging:

Much improved communication between science party and logging scientists and between co-chiefs and logging scientists/Schlumberger

Minor issues:

Loss of access control of the winch and tool testing (seems to have been solved)

Ongoing topics

Heave compensation, old age of logging tools

Possible developments

How to capture ideas and feedback

Encourage access to simple log analysis software for shore-based participants (before and after moratorium)

Sanny Saito – Resubmit as formatted text for tomorrow

Jay Miller – report on what is going on with these improvements: USIO Project Prioritization

This prioritization is needed because this is a long list, but resources are limited.

Timeline:

Nov. 2010 – staff submit projects of interest (~120)

Dec. 2010 – projects categorized by complexity/dependencies, ranking matrix (impact to science community, fixes known problem, breadth of customer impact, impact to operations) developed, and then projects were ranked

Jan 2011 – top priority projects assigned scoping, scoping docs reviews, some of highest priority have to be put on hold

Feb 2011 – project teams assigned to projects, implementation schemes are under development

Management –

Established lab working groups (curation/geology/geophysics/geochem and microbio)

Mandate: review QC, review documentation, review project prioritization, suggest/promote/vet new projects, interact with STP

Top 10:

1. LIMS data retrieval
2. DESClogic fixes/enhancement
3. Lab QC
4. Replace vibration isolated tv system
5. software test facility
6. correlator integration
7. hard rock core orientation (on hold)
8. depth modeling implementation
9. splice section automation
10. DESClogik web reports

DESClogik:

Basically there is an update for each expedition.

Working group reviews issues (work on bug fixes, enhancements, etc.); completed ~12 major bug fixes, ~25 feature enhancements.

Working list has 20 bugs and 45 features to improve performance, make software easier to use, need about 640 programming hours and about 400 support hours; PM assigned this work (personal target of Sept, but can't promise that).

16:00 Report from recent ORTF meetings (IODP-MI)

4 ORTF meetings

Exp. 313

313-05

Re-clarify and re-announce clear IODP depth policy (Jamus will report tomorrow).

313-12: IODP-MI request STP review the value and demand of IODP minimum and standard measurement to improve future scientific achievements and efficiency operation – response: we could review the IODP-MI document as action item for next meeting (Ellen – notes that they should have brought it up before the measurements were being done; Mike Lovell – send back to ORTF asking why they think they

didn't need to do this, because we need to have minimum measurements for future work).

Exp 319/322

319/322-14: ORTF recommends that J-CORES have third-party evaluation (e.g., STP) for better future operation – response: what kind of problem is there? action item for CDEX.

319/322-18: ORTF recommends that IODP-MI assign appropriate persons (e.g., STP member) as external reviewers for future ORTF meetings considering expeditions reports – SS notes that a mtg compared data on cuttings vs. core from bottom portion of hole, and there was consistent offset; why? (Don't know yet) No action item at this moment.

319/322-19: ORTF recommends that IODP-MI assign speciality coordinators to study how to better utilize cuttings for science and the result/report will be examined by STP to be an IODP guideline for future riser operations.

Exp. 323

323-03: IO should provide pre-cruise training to the shipboard scientists so they are familiar with LIMS and other software.

323-04: A clear, organized and living system to document past and current problems is needed. For each science system (hardware/instrument and software/program) there should be documentation of problems as they occur.

323-05 QA/QC protocols be made available in shipboard manuals. Procedures should be implemented routinely for all shipboard measurements and collected data. Calibrations performed regularly. Suspect data should be flagged immediately. QA/QC reports completed before end of the each expedition. –

323-06: recognizes the importance of a fully functional stratigraphic correlator/splicer software program that is fully compatible with IODP database – being discussed in the USIO what to do; there is no longer support for it; LDEO is now the holder of it, but have no one to make updates/ changes; last version doesn't work seamlessly with the software on the JR; over the summer the changes needed to get it to work with JR software, but won't be checked before Med. Outflow, which will be a heavy user. There will be no support for the software to fix any issues that may come up. Action item to identify what kind of program and how to move forward? It is open-source software, so the stratigraphic correlator could download it and play with it before the cruise to ID issues.

Need to find someone who is willing to adopt this and take it over; USIO can't afford to hire someone to do this; possibly hire a staff scientist that programming is their specialty.

Ellen suggests that the cochiefs for MedOutflow need to be warned about this and that the strat correlator needs to be warned ahead of time (careful selection of this person should occur) – need action item/consensus statement

Future ORTF meetings:

Exp. 318 Wilkes land (LDEO, 8-9 March)

Exp. 325 GBR (Edinburgh, 18-19 July)

Ellen commented that the ORTF meetings need to occur more quickly (not one year after); could make a consensus statement; Yoshi noted part of the problem was the office relocation, also sending forms to co-chiefs before the cruise so that those can come back more quickly; Moe asked what the biggest hold up is; Yoshi notes the biggest problem is getting the co-chiefs both together; Miller notes that it should be booked before the expedition. **Formulate consensus statement**

Sanny – notes that this is the first time that STP has received ORTF report, asked Ellen to write a consensus statement about this continuing.

17:00 Meeting adjourned for Day 2; proceed to reception at U of Auckland - IESE

Day 3: (Minutes by Masako Tominaga and Douglas Schmitt)
February 15, 2011

8:30 Commence – assignment of consensus statements

8:45

Start time was slightly delayed due to the problem with the screen setting in the lecture room. Sanny-san called meeting to order with an introduction about agenda of the day. Designated minutes taker was switched from Stoner to Tominaga.

Vice Chair Schumitt briefly reviewed the consensus statements and the designated describer on each statement thus far. Those include: A) TP committee title, responsibility, etc.; B) testing MDHDS tool and SCIMPI tool should be considered with the future ship track; C) new magnetic tools for Alaska (Stoner); D) QAQC template (Seb); E) standard measurements (Lovell); F) improvement for the strat correlator software though further research on the improvement may be necessary (Thomas); G) ORTF should happen more quickly (Thomas); H) the overview of ship assessment (Saito and Schumitt)

<< Agenda item 12

Miller summarized the approval of measurement plans for the upcoming expeditions of 334,335, and 336 (USIO). JR will transit from Auckland to Costa Rica for Exp.334. Miller summarized the anticipated efforts during the Costa Rica expedition, including LWD/MWD tool string and its safety protocols prior to coring; anelastic strain measurements that were used in Exp. 315, 316,, 319, and 322); Minor microbiological sampling (cell counts, microspheres, samples for postcruise analysis). On the Exp. 337, a microbiologist will be responsible for the measurements (note: if technical staffs for microbio sampling are properly trained, technicians may offer to complement the microbiologist's shipboard measurements; historically, this has been dictated by scientists). Upon the completion of the Costa Rica expedition, JR will operate Superfast 4. For this expedition, science party asked whole core imaging (which has not yet been successful in 1256D, but 735B could use it successfully. TAMU implemented the whole core scanning by using onboard imaging system; thus, there was no necessary to invest \$ 70K (rental+ insurance for 2 month) for the core scanner. Image processor for the imaging system, probably with Photoshop application, will be soon fabricated by TAMU. This scanner is slow. The dimension of the machine is 1.5 m long. Scientist will be responsible to run the imager. Superfast 4 requests complete logging suites including TC, Temp., FMS, UBI, and Vertical

seismic imager at the beginning and end of the expedition. Water sample of the equilibrium state of the hole will be taken prior to the conduction of any other activity in 1256D. Miller predicted the coring speed in the Superfast 4 expedition: it maybe very slow drilling due to the metasomatism in the high level gabbro; or, similar to the drilling in ODP Hole 735B, it may be high-recovery leg. Because the contingency plan is CRISP, anelastic strain tool will stay on the ship. The schedule after the Superfast 4 is currently TBA, but the path is already determined; transit for microbiology drilling at Mid Atlantic Ridge.

Kubo-san updated new lab facilities of Chikyu (also see the pdf provided prior to this STP meeting). For the mud-gas issue, a new set up of the degassing system on Chikyu will be located in the most upstream area of mud circulation system where the flow splitter and gambo separator are located and minimize the air contamination. This is a degasser system that extracts gas component from drilling mud. Because CDEX has no experience so far with the facility, the immediate priority would be finding out the optimal condition for scientific drilling, which will only be attained based on trial/error experiments. At the end of this line, extracted gas will eventually be collected and measured in off-line gas analyses.

Kubo-san introduced CO₂ isotope analyser and reduced gas analyzer that were requested as third party tools for Exp.337. For future improvements in sampling gasses on Chikyu, the gas sample line for higher (60-70 degree C) temperature; better gas sample bottle; H₂ and noble gases sampler; and, data integration software will be necessary. Yamanaka-san commented on this progress by CDEX that gas monitoring during the riser drilling is very important component.

Kubo-san also introduced that CDEX is looking into a possible radioisotope lab container to seal highly reactive materials onboard (Perkin Elmer Liquid Scintillation Analyzers 2910TR) with proper user registration and safety assessment that must meet law. Along with the detailed explanation of Exp. 337 measurement plan (with lab overview, see provided pdf.), Exp.337 anticipate methane hydrate and microbio mat sample materials including: A) 30 spot cores from 600-200 mbsf; B) large diameter cores (x3 of 81m) in unconformity; C) pressure cores x 10; D) cuttings, mud gas, formation fluid sample; and E) sidewall core by wireline tool. Currently, 3rd party tool is under CDEX review. As supplemental measurements, biomarker (liquid) analysis by GC-MS and contamination test by PFC tracer are anticipated. CDEX will advertise to invite student trainee funded by sub party support. CDEX also consider deploying pressure coring that are available as a hybrid pressure coring system used by e.g. JOGMEC, FURGO. There is no biostratigrapher onboard assigned for this expedition yet. Denise pointed out that this is becoming a global problem in drilling expeditions –there are not enough paleontology education in academia anymore, thus it is VERY difficult to find biostratigrapher/paleontologist with proper experience.

Moe-san also summarized the approval of measurement plans for the upcoming expedition 337 (CDEX), focusing on the extensive logging plan. Expedition 337 is funded mostly from non-IODP (government) support.

Large coring needs to be reported to STP/DEP for future engineering efforts.

Saito coordinated CS writers: Seb for 3 USIO and Toshiro and Denise for 1 CDEX.

<< Agenda # 13 IODP-MI Scoping studies

Kawamura-san presented recent development of a few scoping studies lead by IODP-MI: A) Ultra deep drilling scoping study based on a few potential deep drilling (i.e. Knazawa Mohole; DCO-mantle). This study includes Mohole initial feasible study (start from spring 2011/end of April) by making a contracted law firm to investigate the feasibility of such ultra-deep drilling. IODP-MI is preparing contract with BLADE Energy Inc.: achievable or not, financial assessment, to provide a recommendation of the most efficient most viable strategy. After the feasible study, maybe the project will launch; B) Coring Scoping Study – to investigate what is the best way to recover core

technologies both within and outside of scientific ocean drilling. John Tauxe (Neptune, Inc.) is reviewing this and will provide suggestions for potential improvements of the methodology and data selection for consideration to the EDP. (Moe-san: when would be the coring scoping study workshop come up? not at this moment); and C) IODP Drilling and coring technology. No additional input from IO since last August EDP meeting. Phase 2 final report will be posted on IODP website soon.

10:30-10:45 Break

<< Agenda # 1?

Johnson presented DCO workshop report. The workshop was sponsored by DCO and IODP-MI. Slone foundation. Mutual interest to IODP and DCO, on Moho. Discussed common scientific goals of DCO and IODP comprehensive budget, strategy, etc.. Start to make concrete organizational plans for how to proceed with scoping a Moho drilling program in IODP. A series of Moho workshop since 2006 (Portland, mission Moho proposal, Southampton, INVEST, Kanazawa, and DCO. DCO is 10 yrs with 1 billion. Projected to have 1000 co-investigators in 50 countries. Large scope and interdisciplinary. Modeled after the census of marine life; deep carbon reservoirs and fluxes; deep life; energy, climate, and environment. Current state of affairs toward Moho drilling: potential drill sites; nomination committee; leading agencies decided to do a feasibility study before scoping could proceed; This initial feasibility study will put IODP-MI, SASEC, and IWG+ in a position to determine if Mohole is really technically and fiscally feasible for a new drilling program (note that SASEC, IWG+ were apparently well-disposed toward BEFORE seeing results of the feasibility); There is a decision point when the feasibility report is completed. Technological limitations with Chikyu and its logistics.

<< Agenda # 14

Collier updated a report from depth scale task force. Scope of meeting (9/30-10/2/2010) was limited to consideration of depth scales & revision of terminology document. Started from IODP Depth scale terminology version 1.1; Discussed the method and meaning of measurement for each of the depth scales in version 1.1. --completed table of depth scale term's definitions; Wrote draft text description for each depth scale, including description sources of error, etc.; IODP-MI drafted guidelines for use of IODP depth scale terminology in IODP publications after the depth scale task force meeting. Collier also presented topic of discussion for this STP: Possible topics for discussion (CCSF, WSSF: wireline speed corrected below sea floor); combining depth scale terminology document with guidelines for use document; graphical illustration for incomplete core recovery-- hang from top of cored interval; graphical illustrations generally; IODP-MI received so many comments, including conflicting ones; wireline related "speed corrected" ones should be dropped? Saito made a comment that combining the guideline and terminology doc is good idea. Collier explained the document draft v.2_STP_15Feb2011 prior to the discussion. Lovell appreciated that the document is well done and to avoid people assume the depth--that is the primary purpose of the document. Table is good and accompanying detailed description of each unit, particularly with the magnitude of uncertainty. At the same time, Lovell also expressed his concern that people might have been confused about CSF-A (~mbsf) and/or CSF-B (with compression factor); instruct people to realize which one they will use prior to using them; people assume what you used to know the MCD. A discussion on which scale could be a default (e.g. CSF-B should be done after the cruise?)

CCSF is not depth scale, but a created component. People should know what consequences are depending on which one they choose. Is CSF-A suggested for general onboard and CSF-B after?). Important remarks: prior to sail, people should be trained for these new components. Particularly, educate co-chief scientists (together logging staff scientists) at EPM before science party onboard. This would be good idea because co-chief will anyway lead the decision on which scale they would use throughout the expeditions.; Explanation of abbreviation needs to be close to the figure 2; Guideline should be upfront. Another caution of making CSF-A as a default? As a user, wireline

speed correction and match for FMS anyway -- new depth scale? Onboard, scientists usually use wireline data processed by logging scientists (i.e. user don't usually care other detailed logging depth scales....).

Guideline with minor revision: combining the two documents.

Logging depths WSSF.

Position of the abbreviation by IODP-MI.

CSF-A as a recommended default scale -- but entirely dictated by science party's decision.

Consensus Statement: pre-expedition meeting, co-chief scientists should be educated.

Include an example of how figures should be looked like.

<< Agenda # 16

Saito, Kawamura, and Mayer jointly explained the draft of 3rd party tool guideline by reviewing the current draft.

3rd party is a completely new method or own tool onboard, safety, computer, infrastructure should be provided of which should be assessed. Yoshi explained a figure made by IODP_MI to show a flow of the 3rd party tool requests and assessment. Draft concept of STP wants to adopt or revise. If one has a 3rd party tool which never has not sea tested, then pre-cruise planning has to include the engineering time to load the tool and use it. Geottingen during Luisville is "3"? in the guideline. Lab measurement part may need to be modified (or, even separate section for that because it is not affecting the shiptime). Lab instrument which is requested AFTER the pre-cruise meeting, there can be proper arrangement -- not exactly following the guideline. When a tool is developed, and sea trial is needed, it should be decided depending on ship schedule. The flow chart should be corrected for accuracy. Borehole observatory is 3rd party tool; if so, this should be included in the guideline, too...(AI)? used to be that 3rd tool was that users took away the data without sharing the data; therefore, the guideline is necessary to make sure the data taken with the tool should be remained and in IODP. This guideline is VERY important for IO to make sure everybody understand that this is a policy. What is the relationship of this document and IODP sample and data policy? The policy infers the 3rd party tool. Observatory data should be shared as an IODP data set?... have to a bit careful about this suggestion because one data are declared, then archiving cost will emerge to IODP-MI. This draft cannot be accessed from the IODP web site. OR, so hard to find (currently under the engineering development).

Collier will change he diagram by the end of today.

12:00

Lunch Break

13:21

Reconvene

<< Agenda # 17

AI 0612-20

Yamanaka-san presented the STP investigation on chemical and microbio contamination of from the riser drilling mud. Historically, STP and EDP have concinued discussing about this issue since Jeju, Korea, lead by Morono. Sydney STP took a AI 1003-33 to discussion on core contamination issue. In Geneva STP, the stip will supply CDEX with a draft plan for the use of tracers in the detection of core contamination during riser drilling. The STP asks this as an action item that CDEX keep in contact with STP regarding this issue and try to test the tracers in future riser drilling expeditions.

Kubo-san reported current CDEX assessment/investigation of the contamination; the contamination is detected by the PFT tracer in the mud in riser drilling. Morono summarize the interaction between STP and EDP that there has not been any investigation on the contamination issue during the riser

drilling. EDP has been negative about preventing the contamination by the drilling mud. Question from USIO was raised and Morono answered his experiment in the Bering sea cruise, which had not success in the detection of the contamination. Kubo-san asked Morono san that how much should the microsphere and PFT be added to the mud? Morono's experience from the Ex329 suggests that the frequency is depending on science party's decision- microsphere are occasionally and PFT has been added all the time. Natalie raises the question of the riser mud contamination in riser drilling --KUBo-san asks what specifically pass the test in chemically to Natalie? chemical contamination for trace element analyses. USIO described the riser-less case chem contamination assessment, and pointed that it is very challenging because interstitial water is almost equal to the ambient seawater.

Yamanaka-san states that a plan is that collecting the mud and investigate the contamination. CS (Toshiro, Yuki, and Natalie) will formulate the CS.

<< Agenda # 18

Morono-san presented "Use of cores after freezing using the magnetic technique". CAS (cell alive system): alternative field vivrate the molecule, without destroying cells. FOr non-destructive freezing of core material. Usual freezing will form water crystals, destroying microstructure of the cores including microbial cells. but CAS freezing does not. With this technique, we can cut the core while its freezing. Test results were presented: samples with several preservation condition dugin CHiky training cruise exp.904. Summary is best preservation of microbial cell Core volume has no detectable change. Remanent magnetization level slightly decreased but why? The next step will be microbial cell

survival after freezing; observation of the core microstructure/ Update of the microbial cell survival after freezing: E coli culture (metabolic activity) was frozen in multiple conditions (different magnetic field strength temperature for preservation). Survival rate (colony formation activity) vs. magnetic field. Update on the magnetic property change after CAS? cube core samples were magnetized in lab. Maybe freezing sample influences the sample. Preservation may be affected by cooling capacity> as well as magnetic field remanent magnetization level slightly decreased apparently because of freezing itself. Next step would be observation of the core microstructure, observation of microfossils (Ellen could help); Cryosplitting of easily broken core samples (Hirose could help).

Stoner commented that cell viability suggests that the best condition is 0-magnetic field with 160C. However, 160C is very energy consuming of the freezer. Magnetic field acts to fasten the freezing speed? Is magnetic field really necessary? This part should be assessed. Hirose and Yamamoto (Y) pointed about that for phys prop, because it is useful for structural geology because of no volume change. Thomas suggested that paleontological point of view, the preservation of the microfossils need to be investigated. Ula suggests that an investigating for the clay mineralogy. Saito encourage Morono to publish these results.

CS: (Hirose and Morono, Joe)

<< Agenda #20

Gupta-san updated routine microbiological sample (RMS) curation onboard recommended by STP. Outline of RMS curation procedure was presented at last STP meeting. Sample flow and decision making tree as well as cartoons for quick reference of the procedure are presented. At Kochi Core Center, aliquots of RMS from W(hole)RC are being studied to track and manage the RMS. RMS can be taken with 3x 30 cc syringe or as 10 cm WRC or H(alf)RC. KCC is concerned about how to divide RMS into "working" & "archive" halves? Particularly when the moratorium is over, this would be a problem. Some kind of curatorial advisory board for the archive half is necessary.

Miller commented that considering the large number of RMS, two -80°C 2 freezers are necessary per expedition. Morono echoed to Miller that one RMS per IW is maybe too frequent; one per core would be sufficient. Archiving pore water for microbiological purpose over 10years may not be feasible. Recommendation indicates RMS samples should be taken. Gupta clarified that over past three

expeditions, 100 RMS were taken. Historically, either at Bremen and GCR, there has been only one sampling request for such archived pore water existed (Miller/Ulla).

STP will endorse this as an action item.
CS: (Morono)

<< Agenda # 19-a

Interlab calibration presented by Stoner. This is mainly for global cross calibration amongst various platforms and labs. Magnetic susceptibility is a measure of how magnetic an object becomes under the influence of a magnetic field. The susceptibility can be corrected for either weight or mass of the material. To calibrate the susceptibility values, the physical property handbook by Peter Blum (1997) indicates correction factors from Bartington correction factors or Kopperbridge as a calibration with laboratory measurements. As another option, calibration with core standard is recommended. Thomas et al. (G3, 2003) suggested that the 99.6% pure MnO₂ powder in a 50 cm u-channel with a standard 8.23×10^{-4} (SI). The correction factor obtained from this study seems to be very good. IN Japanese STP meeting (SEN032-P04), Yamamoto et al. presented ultimate material to build a standard. From this study, conditions for standard would be paramagnetic, powder, chemically stable, known susceptibility value, and ---. They use rare Earth element. They conducted the susceptibility measurements with these materials and different susceptometer to detect the varies (Yamamoto, Fukuma and Torii san). Inexpensive materials. It is recommended to use several types of rare earth oxides for calibrations. On calibrations, size and shape of the standard should be the same as those of actual samples measured by instruments. What would be the ratio of the matrix (or, alignment) effects to the susceptibility. Blum calibration is also carefully considered in the case of hard rock: the volume for the hard rock cores varies because of different grinding due to the drilling effects. How much material it really needs to make this material? Sonter will keep in touch with Japanese colleagues while his service on this panel.

15:05 coffee break

<< Agenda # 19-b

USIO non-contact resistivity not yet tested. thermal conductivity (QAQC report). Not much activities on this. See QAQC report. Continuous AI for USIO.
Action Item (Tominaga)

<< Agenda # 19-c

Presented by Morono. Morono explained Formation Factor ($F = \text{resis_sed} / \text{resis_water}$). Determination of formation factor has been a long standing issue through STP/ODP history. From Sydney meeting, Dugan presented the cross-latform comparison and Qz/QC of formation factor issues. Morono and Raichow have lead the standardization procedure of the F. Proposerd plan for Qz/QC on chikyum JR, MSP: 1) obtain theoretical values for water resistivity at various temperatures and salinities from freshwater to twice seater; 2) obtain theoretical values for sediment resistivity for various lithologies (clay, sand) at multiple porosities saturated at with standard sw. 3) construct at least three water samples with various salinity and measure resistivity with vessel specific resistivity system; 4) construct at least four sediment samples (ideally 2 different porosities of 2 lithologies) with standard sw and measure resistivity with vessel specific resistivity system, 5) Compare theory (1,2) with observations (3,4) noting measurement device and frequency; 6) present results to STP; move forward developing manual plan for (routine) measurement. (2) and (4) are recognized very challenging to achieve. Archie's law (1942) is empirical law that has been a huge foundation of the oil/gas industry. Since DSDP attempts F using various approaches. Sw resistivity can be measured by, e.g. a bench top

712 conductometer (resistivity + temp measurements), as used in x329. This procedure can be standard measurements. Standard sw was measured during x329. Routinely DC is used. Contrary to on land contact-potential field measurement? Or, this two-probe system works in the water saturated sediments. How about discrete sampling measurements? IO's information of equipment (existing/will purchase); Data standardization status; Availability of the problem for the routine measurement could be discussed. While these measurement standardization would be further pursued, Lovell raise an important question: before the concept standardization of F, there must be investigation of any successful standardization in shore lab.

<< Agenda # 19-d

Kubo-san presented the F on water samples using impedance analyzer. A report is submitted on Nov. 3rd, 2010.

There is no significant differences in industrial standard KCl, NaCl, IASPO solution. No sufficient explanation from CDEX. Standard instrument calibration of cross-platform is very important. May need expert's advice? Microbio community need to estimate FF to investigate microbio growth. We propose to plan to test this and CDEX. Fundamental issue in measuring resistivity. Schumitt (and Lovell) will work on AI.

<< Agenda # 19-e

Thomas presented taxonomy data base issue. David Lazarus (USIO) was chair for the Sep. 24-25 2010 Paleontology coordination group meeting. Status of TNL: Planktic foram, nanno and dianoflagellate TNLs are complete; Rad and diatom TNLs: expected by end feb 2011; Delivered product: April/May; Lazarus-Furtherwork should be done: TNL's for other fossil groups: benthic foraminifera, silicoflagellates, ostracods, bolboforma, pollen.spores; PCG members looking into possibility of obtaining funding for workshop of benthic foram experts; extended TNLs for better filtering (geological age, biogeographic information); reference catalogs: PCG members look into exploring external funding to create digital taxonomic dictionaries (e.g. add images); STP roadmap A2-1. PCG recommendation is that age models generated onboard ship should be stored in database. Key data items are age model (line of correlation), stratigraphic data file used to create the age model (bui, magstrat, datum levels top-bottom and depth scale information; ages assigned to datum levels; which time scale used). Guideline for database/TNL maintenance should include shipboard scientists add names to name list; need review of additions in order to decide whether to add to TNL; External experts (PCG or PCG-recommended)/editing at regular intervals (e.g. after set number of expeditions involving paleontologists). Can be done on-line, don't have to be as a meeting. Some formal protocol should be set for this. There are some issues not relevant to STP, such as activities at ocean Leadership updating the CHRONOS tax atlases for planktic foraminifera. Thomas stated is it not shipboard, so not much relevant to STP.

<< Agenda # 19-e-contd.

Collier presents status of Taxonomic Names Lists (TNLs) works. IODP-MI secured FY10 Carry-forward funding for some additional TNL work; loading of TNL Database with 2 taxa lists; PCG required TNL DB front-end for updating TNL lists, lookup of synonyms, etc.; PCG requested extended TNL taxa lists as high priority to allow better filtering of names; age ranges, geographic ranges, FO/LO, etc.; PCG recommended adding additional taxa to TNL; benthic foraminifera, silicoflagellates, ostracods, bolboforma, pollen/spores(<-this one is in debate because they are not oceanic); limited funding; priorities? Community needs to agree on the list. simple mechanical replacement of existing DB from existing literatures currently onboard may cause erasing lot of historical records.

Thomas can incorporate PCG recommendation with JR visit. Saito points out that PMI and IODP_MI on TNL's

Communication.

Saito suggested Thomas should identify paleontologists to replace Thomas and Denise.

<< Agenda 19-f (1008-06)

Collier presented the progress on smear slide: digital & physical reference for sediment analysis. IODP_MI invest for Smear-slide reference set and Atlas for IODP shipboard sedimentologists (including DVD consisting of searchable Adobe document, software, images, text, image atlas, and 100 of smear slides showing examples of components and different proportions of components) will be expected to be delivered in summer 2012.

Who does CS for this?

<< Agenda

A. Miller introduced the mission and activities of publication services in the current IODP system. Also, presented publication issues. The mission for the service is publication support services for all IODP drilling expeditions; editing and producing, as well as archiving scientific prospectus, preliminary report, proceedings, quarterly and annual reports. Publication services changes since ODP-- routinely seagoing staff for publications support; plot database-driven summary graphics; produce laboratory and engineering technical documentation; manage a common publications server or program publication for all IODP implementing organizations; and coordinating and producing all required USIO Program reports (quarterly reports, annual program plans, annual reports). Currently, scientific prospectus, preliminary report, and proceedings of the IODP are published according to expeditions. Findings of external review team includes that evolution of expert to publications specialist better serves the immediate shipboard needs and benefits the construction of postcruise publications and adherence to IODP policies; multiple levels of review result in a highly professional and scientifically and technologically consistent series of documents; workload of publication services has increased dramatically with the advent of more extensive drilling operations within IODP and implementation of Stratater across three platforms; Signs of frustration and anxiety from ever-increasing workload -- if there is any corner they can cut without cutting down the quality. The reviewers also point out value of DVD product: little to no demand based on disc requests since 2005; cost > \$50K annually for duplication/distribution; survey shows that the limited use according to survey of librarians affiliated with three organizations, including that they didn't use DVD version. Secondly, there are issues of permanent publications archive. These needs assessment for future solution required; not all archives are equal/ issues with providing level of interactivity that our live web publications provide/migration considerations/long-term archive considerations. Maybe IODP_MI or NSF's help? Thirdly, data presentation issues on reproduction of shipboard data extracted from the database in proceedings volumes. Miller raise a series of potential issues/questions for reconsideration. These items include: Are tables needed in the proceedings volume? Or, figures can be ultimate alternatives? Is operation table needed to be in the volume when scientists can access LIMS? Is URL enough guide for users to link themselves to the database or pages? Any minimum requirements for publication of results? Problems related to "prior publication" (journal is getting more strict about how data are previously published; preliminary report should be internal report instead of the publication? IODP-MI thinks that proceedings cannot be extended -- if there is such a high-impact science, that can be done within the moratorium period); USIO publication timeline do not work well for CDEX and ESO. Planning for the future: As next-generation drilling program is planned, where does publications oversight fit in?-publication products/publication content/preferred formats/archive solutions; Has IODP policy promoting journal publication over program publication been successful? In lean budget times, are there new approaches to track impact of program research? ESO is improving the publication system; however, CDEX has not yet made the USIO timeline. ESO platform is probably more challenging to build in reporting time because of the nature of the expeditions can be constant coring. Collier presented the list of cumulative number of publications. During ODP, scientists mandatorily had to publish in the proceedings. Switching to the IODP regime, the number of publication is reduced, but the quality increased -- in tier 1 & 2 category journals. Guideline for holding the preliminary results is written in the sampling policy. DVD publication was switched Bremen library sent to Ula all the DVDs

17:30 end of the 3rd day

Day 4
Wednesday, 16 February 2011

30. New Publication Format [AI 1008-40] (USIO - Angie)

Discussion continued from Tuesday

Sanny Saito reminded everyone that Angie Miller brought up a lot of important issues on Tuesday regarding publication services within IODP, including a permanent archive and data presentation. He noted that at the current meeting there is not time to discuss all of these issues in detail and so it would be hard to reach consensus. He asked A. Miller about the urgency of these topics. Miller replied that the real urgency was that the current meeting is likely the last meeting of the STP in its current form, and that she wanted to make sure these topics were transferred to the new panel. Saito indicated that an action item should be made to include these topics in future STP/TP meetings.

Angie Miller also noted that publications are not specifically listed within the Terms of Reference (ToR) of STP. Ellen Thomas indicated that if much of the publication work is done on the ship, then it would be within the purview of the panel. Jay Miller added that publications are part of the data, which is included within the ToR of the panel. Sanny Saito concluded the discussion by noting that publication is a very important topic for the science committee, and asked that before the next meeting, each panel member contact others to discuss issues raised by Angie, to be reported back to the panel at the next meeting (STP Action Item 1102-25).

7b. Other SAS Activities (EDP – Watanabe)

Yoshiyasu Watanabe reported on the upcoming Engineering Development Panel (EDP) meeting to be held in Grenoble France in February. He noted that there were three main topics (with correlating agenda items) being discussed at the meeting:

- Discussion and function of the new engineering models to be emplaced after the disbandment of EDP. He noted that EDP sent letters to SASEC and IWG+ before their January meeting, and that a response had been returned from SASEC.
 - Agendum 7 – discussion of feedback from SPC and SASEC concerning engineering development in the new SAS
 - Agendum 20 – presentation about the IWG+ meeting and the future of the ocean drilling program
 - Agendum 21 – discussion of IWG+ and SASEC plans for the future program
 - Agendum 22 – possible implementation models for engineering development in the future drilling program
 - Agendum 26 – changes to the SAS panel structure and function

- Agendum 27 – discussion of engineering development integration into the new science plan
- Discussion of engineering development and the EDP Technology Roadmap.
 - Agendum 8 – STP report
 - Agendum 9 – discussion of the potential merger of the STP and EDP Technology roadmaps
 - Agendum 23 – legacy of the combined STP-EDP roadmaps
 - Agendum 24 – Final discussion of the combined roadmaps
- Joint Deep-Sea and Sub-Sea-floor Frontiers (DS3F) meeting, a European project with the next meeting coinciding with the EDP meeting in Grenoble as well.
 - Agenda 10-12 are include the agenda and objectives, the scientific targets, and the engineering needs for the DS3F meeting

Yoshiyasu Watanabe noted that a subcommittee within SASEC (chaired by Keir Becker) was formed to look at engineering development in the new program. This subcommittee has sent a letter to EDP, recognizing that engineering development is very important. They propose four different models for integrating engineering development in to the new science plan; however, those will not be revealed until the EDP meeting.

During discussion, the observation was made that the EDP agenda is dominated by discussion of engineering development in the future program, rather than addressing current engineering development needs. This could make it appear that the panel is not really necessary. Watanabe noted that this meeting was atypical because of upcoming end of the current program and the start of a new program and new SAS structure. He also added that engineering development plans are reviewed during the summer (mid-year) meeting.

Sanny Saito noted that following STP agendum 21, the panel would discuss and formulate a consensus statement to forward to EDP regarding the STP and EDP technology roadmaps. He also indicated that STP has worked with EDP in the past (through action items or consensus statements) and thus are very interested in the fate of EDP in the future program.

31. STP Roadmap update, link to NSP, implementation, and advertisement [AI 1008-31]
 Sanny Saito gave a brief introduction to the STP roadmap. He noted that it had been developed over the last 3-5 years to improve science conducted using cores and boreholes. He added that it was completed through coordination with EDP, who developed an engineering technology roadmap at the same time. Work began on roadmap development during the 5th STP meeting in Beijing; version 1.0 was released following the 10th STP in Sydney, with updates occurring at subsequent meetings. Version 1.0 is available on the STP page of the IODP website. In addition to the excel spreadsheet, a word document that includes a list of the most pressing items is available.

Following the introduction to the roadmap, STP members broke out into three working groups: core description, petrophysics/paleomagnetism, and geochemistry/microbiology. Each group was tasked with looking through the roadmap to see if any new items needed to be added, to update the status and priority of items already on the list, and to see if any changes should be made to the Top 10 list. Each group spent approximately 1.5 hours reviewing the roadmap, before reconvening to report the results.

Core Description (CD)

Ellen Thomas presented the results from the Core Description working group, which made the following observations:

- A1-9 (sediment grain-size and shape analysis): Why has the PP group not ranked this?
- A1-15 (volume imaging): What is the present status of this item? She noted that David indicated that it could be possibly used on split as well as whole cores, but that the issues were cost (\$500k-\$1M) and availability of space on the *JOIDES Resolution*. The groups also wondered why the CMB group had not ranked this item.
- A1-17 (improvement of whole-round surface core logger): Has this already been implemented? Jay Miller noted that during Exp. 327 a digital camera was used to take four images of the core (which had to be manually rotated). The images were then stitched together using photoshop. The Expedition 335 co-chiefs have seen these and indicated that it might work, but the USIO is exploring options for using the linescan imager to be able to do this and that hopefully this technology will be in place for Exp. 335.
- A2-3 (integrated VCD system with multi-data browsing system): Should this item be changed to automated (instead of integrated)? The group also felt it should be upgraded to priority 1. Additionally, why has the PP group not ranked it?
- A2-4 (digital catalog of smear slides and thin sections): IODP-MI has started on this, but it should remain on the roadmap until more has been completed; IODP-MI should give a status report at the next meeting.
- B2-4 (non-magnetic core barrel): Why has this item achieved a low ranking? Is it a cost issue or due to low probability of success? Joe Stoner noted that he was not sure, but that the technology was available.
- B2-7 (sidewall coring): This technology exists, but should a protocol be developed for use?
- B2-8 (cuttings analysis for riser drilling): Protocols have been put into place for this item, but there should be continued monitoring for the effectiveness of the protocols and to see if anyone is requesting cutting samples following the expeditions.

Ellen Thomas noted that the core description working group would like to add Category A2 (software/database issues) to the Top 10. No items within this category are included

in the Top 10, despite the database being an important issue for all groups. Of the subcategories, Item A2-5 (Unified Ocean Drilling Database with tracking system of literature) is the most urgent. Jamus Collier noted that IODP-MI has a database with access to information from all three IODP platforms. Thomas added that the working group also questioned the presence of the X-ray CT scanner system for the JR in the Top 10 list.

Physical Properties/Paleomagnetism (PP)

Sebastian Krastel-Gudegast presented the results from the physical properties and paleomagnetism working group. He noted that a number of items could be removed from the roadmap:

- A1-11 (anelastic strain recovery (ASR)): This has already been completed and the system is portable so that it can be taken to other platforms.
- A1-13 (small-bore Cryomag): A half core magnetometer is already available on the JR. Joe Stoner added that this technology could help determine if taking a U-channel would be useful.
- A1-14 (Thermal demagnetizer): This item is on the purchase list for the JR.
- A1-21 (SQUID magnetometer on Chikyu): This item is still in development, but will soon be available.
- B2-8 (cuttings analysis for riser drilling): Protocols for cuttings analysis have already been implemented, although the success of implementation still needs to be monitored.
- C1-3 (downhole magnetometer (GHMT)) and C1-4 (vector (3 axis) magnetometer): A downhole magnetometer is being implemented.

He also noted a number of changes to be made to the roadmap:

- A1-10 (formation factor): Updates about this technology from industry need to be requested.
- A1-12 (thermal conductivity meter): This tool exists, so the availability needs to be updated to “E”. He noted that there are a number of questions to answer about it, including if it can be integrated on a half section logger, how much time is needed for the measurements, and if it can be used on both sediments and hard rocks.
- A1-17 (improvement of whole-round surface core logger): There is an in-house solution for this on the JR; the STP should receive a progress report on it.
- B2-3 (oriented cores): There is a flex-it tool for APC, which needs to be updated on the roadmap.
- B2-4 (non-magnetic core barrel): This technology exists for the JR, but what about for MSPs and the *Chikyu*? Ursula Röhl indicated that they are available, but very expensive. Moe Kyaw Thu did not think they were available for the Chikyu.
- B2-7 (sidewall coring): This technology is planned to be used on the Chikyu in Exp. 337 which is now postponed.

- C1-1 (logging while coring): This technology has already been developed, but it needs to be deployed.
- C1-6 (slim line logging tools from other vendors): Schlumberger has launched a suite of these tools, but more information is necessary.
- C1-8 (open-water re-entry logging): Open water logging is already done. Additional comments from EDP about environmental controls need to be included.
- C2-2 (stress measurements): These measurements were taken during Exp. 319. Yusuke Kubo noted that there were no complaints from the scientists regarding the technology and that the data might have already been published.

Geochemistry/Microbiology (CMB)

Yuki Morono presented the results from the geochemistry and microbiology working group. This group suggested a few changes:

- A1-2 (laser optical mass spectrometer for oxygen isotope ratio of H₂O): Add a comment that this technology was used on the Chikyu in 2009, and that CDEX could provide an update.
- A1-5 (laser optical mass spectrometer for carbon isotopic ratio of methane, CO₂): This technology will be used during Exp. 337.
- A1-6 (real time, on board evaluation of contamination of cores): This also needs to include contamination tracking for geochemistry.
- A1-7 (novel contamination tracer): There is a need for future consideration regarding trace element geochemistry.

In addition, the working group highlighted several items for the Top 10 list:

- Core contamination (A1-6, A1-7)
- Large diameter core pipe (B1-1, B1-2)
- Automated sample preparation and analysis (A1-1, A1-8, A1-9, A2-2)
- Enhance core recovery and quality (B2-1, B2-2, B2-3)

Sanny Saito indicated that he will take all comments and create version 1.1 to send to everyone. He noted that he might need additional information from the panel to do this. He asked if everyone was okay with adding the two new items (software/database and automated sample preparation and analysis) to the Top 10 list. With no objections, it was agreed that those items would be added to the list.

Sanny Saito identified a number of steps that needed to be taken by STP regarding the roadmap: (1) continuous development of the roadmap as a living document; (2) identifying strong linkages to the new science plan; (3) publishing the current roadmap in Scientific Drilling, and (4) potential merger of the STP and EDP roadmaps. Saito noted that he and Doug Schmitt had distributed a document regarding potential merger of the roadmaps. There is significant overlap between the two documents; however, the different formats make combination difficult. In addition, both roadmaps need to be

archived prior to the restructuring of SAS later this year. A number of issues that affect the archiving and merging of the documents are:

- Would merging the two documents better serve the community?
- How can the different formats be merged effectively?
- If merged, an integrated executive summary needs to be formulated.
- Many items in the roadmaps may need to be regrouped and renumbered.
- Where should the new roadmap be published? (Scientific Drilling?)
- How will the new roadmap be updated during the new phase of IODP?

Sanny Saito noted that he, Doug Schmitt, and members of EDP discussed procedures for merger during the AGU Fall 2010 meeting, and came up with a timeline, beginning with discussion and formation of a plan and a Joint Working Group (JWG) during the February STP meeting. Saito opened the floor for discussion.

Jamus Collier noted that only the executive summary/Top 10 should be published in Scientific Drilling, with a weblink to the spreadsheet document. Sanny Saito agreed. Joe Stoner questioned whether the roadmaps should be merged, especially since a merged document would still have separate callouts for engineering and technology anyway. Greg Myers added that since the fate of EDP is still not known, merging the roadmaps might be premature. Saito noted that the current SAS exists until the end of the current fiscal year (end of September 2011) and that before this STP needed to archive all of the roadmap efforts. He added that merging the STP and EDP documents would be a very large undertaking, but perhaps the groups could work together to create a coordinated executive summary that refers to the two separate roadmaps. Stoner and Ellen Thomas agreed that this was a good idea. Saito noted that someone would need to work on the executive summary, so a JWG was still necessary. He indicated that he and Doug Schmitt would form the JWG and contact others if more help was needed. STP Consensus Statement 1102-16 refers to these decisions.

15. Panel Rotation

Panel member Sebastian Krastel-Gudegast will rotate off after the current (12th) STP meeting. After the next (13th) STP meeting, the following panel members will rotate off: Ellen Thomas, Martin Young, Marc Reichow. The terms of membership and reappointment are still unclear at this time, so the panel is awaiting guidance from IODP-MI regarding this. It was noted that both micropaleontologists are rotating off of the panel, and that expertise will be needed from a new panel member.

16. Select Meeting Location

The next meeting will also be the last STP meeting within the current SAS. At this time, IODP-MI is suggesting that the meeting will be held via email in the July/August 2011 timeframe. Sanny Saito noted that he will be speaking with IODP-MI to hopefully negotiate a physical meeting, as the STP has too many things to discuss to make an email meeting practical. A physical meeting could be held in the US.

The following meeting will be the first meeting of the new Technology Panel (?) in the new SAS structure. This meeting will be held in February/March 2012, like in Japan either at Kochi Core Center or near the *Chikyu*.

Masako Tominaga noted that Ocean Leadership has facilitated email meetings before. Denise Kulhanek added that IODP-MI could set up a discussion board to assist with the meeting as well. Jay Miller added that he has used online software that allows for a virtual meeting to be held on the internet, but that it does take someone to organize it (and there are also issues with time zones). He noted that a message board may be possible, particularly for a few main agenda items. Joe Stoner noted that a virtual meeting of any kind would be far from ideal, and hoped that this would not be used to set a precedent. Following this discussion, Sanny Saito noted that STP should form a consensus statement (STP Consensus Statement 1102-02) asking IODP-MI for guidance about how to operate email meetings.

17. Finalize Recommendations/Consensus Statements and Action items

The STP reviewed and finalized consensus statements and action items. See above.

Meeting Adjourned at 4:30 PM

APPENDIX to STP 12 Minutes

Detail Reports from Assessment Teams after Hands On Visit to the JOIDES Resolution, February 13, 2011.

I. Data Base Assessment Team

Short version

We confirmed considerable improvement of DESClogik. Many things pointed out in the documents entitled “External assessment of R/V *JOIDES Resolution* shipboard science systems” conducted on 27-29 June, 2010 have been improved. To use the software more effectively, demo software we can download and/or pre-cruise physical training are necessary.

Full version

We confirmed considerable improvement to DESClogik. It is now possible to copy and paste from DESClogik to Excel and vice versa. Size flexibility of each cell and template has been acquired. Frequencies of software/data crash and processing speed of the software have possibly been improved. A video-tutorial is currently available on the website. It is possible to open different templates and graphics on the same screen if we start up DESClogik on multiple windows. These are all pointed out in the “External assessment of R/V *JOIDES Resolution* shipboard science systems” conducted on 27-29 June, 2010 and all have been improved.

We found, however, several points that should be improved. Different users using different computers can open the same template at the same time. The problem is that they can upload the data without any alert. Since the latter update always overwrites the former, the former data would be lost easily. “Read only” open mode and expression of current user who has opened the template potentially settle the problem.

Although a video-tutorial is available on the website, the audiences can't use the software. To use the software more effectively, demo software we can download and/or pre-cruise physical training are necessary.

In the case we have several tabs in a template, we have to download data for each tab since the software always crashes if a user chooses “all tab”, the tool to download data for all tabs simultaneously. This bug causes wasted time.

The following two minor points are requested for improvement: one is “zoom-in” and “zoom-out” tools are necessary on the window for users working with laptop computers. Another one is a status bar indicating that the software is working, which would reduce user's frustration during long processing times.

II. Core Description (Hard Rock) Assessment

Overall we had a very positive impression of the onboard hard rock core description activities and systems, including the sample imaging, core description, DESClogik, LIMSPEAK and core flow.

DESClogik is arranged in terms of core sections, not lithologic units. It would be useful to be able to organize data in terms of lithologic units, or any other property, for search and output. A direct option for this type of across-core section sorting and output should be available and would make DESClogik useful as an interpretive tool, not only a data entry tool.

The barrel sheet production is improved from older systems and now produces more consistent output. We'd like to see a more automated procedure for barrel sheet production that gathers information from DESClogik to populate template categories that may be defined as needed by each scientific party.

The core scanning imagery is very detailed and vivid, and is very true in its color fidelity. The core scan images are very useful for annotating features for inclusion in core descriptions and barrel sheets. Currently these annotations are done by hand on large printouts, which is fine for some needs. However, it would be useful to make it possible to import these annotations to the electronic core image files linked to the interval being described. We support the efforts of the IO to implement digital annotation of core scans.

The sample photography capabilities in the petrography lab (core pieces, whole thin sections, and thin section petrography) are very impressive. The metadata are automatically linked to the photographic images, which is crucial. It would be nice to be able to dynamically link these images with DESClogik data tables if desired by individuals, such as thin section images in thin section descriptions.

A set of basic igneous sample description templates should be established for use in different settings, i.e., volcanic, plutonic, etc. Scientific parties can add to these templates depending on specific needs of a leg, but a common set of basic descriptive observation categories should be collected from all igneous legs. Categories for descriptions of thin sections and cores will differ between coarse-grained plutonic rocks and aphyric, fine-grained lavas. Whether this is accommodated by different templates or by value lists is open for discussion.

III. Micropaleontology Assessment

The micropaleontologists appreciate the advances made in the digital imaging systems onboard the *JR*, including development of the new camera system for capturing images of thin sections. The incorporation into the database of images, together with their metadata, taken with any of the camera systems is an important improvement.

The sample processing laboratory and the microscopy laboratory generally receive positive evaluations by shipboard scientists, and we did not look in detail at the laboratories. We concentrated on the evaluation of DESClogik, which generally does not

receive favorable evaluations by shipboard micropaleontologists. The External Assessment of the *JOIDES Resolution* (June 27-29, 2010) included the following in its executive summary: “DESClogik for biostratigraphers and sedimentologists: It appears that this tool is still mostly used as data entry tool, rather than as descriptive tool, and lacking the usability required for real-time data work. Critical components are lacking that make it non-functional for the descriptive work (easy entry and retrieval of paleontological abundance charts etc.)”, and **STP Action Item 1008-30** asked for information on the nature of the problems with DESCLogik.

We came to the following conclusions: Future inclusion of Taxonomic Name Lists (TNLs) will help in database management and quality control, but will not solve the problems with DESClogik. The main problem is that micropaleontologists are requested to enter data into DESClogik, and can then receive output as an Excel spreadsheet. It is much easier for the shipboard party to enter data into Excel directly. Either way the end-product is the same, so that there is no added value. We suggest a two-pronged approach:

- Make DESClogik more user-friendly for micropaleontologists
- Provide ‘added value’ (functionality) to DESClogik

DESCLogik could be made more user-friendly by:

- Providing more information/training:
 - Implement an online, interactive self-training module that can be accessed by scientific parties when they accept the invitation to join the expedition (Paleontology Coordination Group (PCG), recommendation by ORTF 323)
 - Rewrite the shipboard handbook to provide information on data input and provide microfossil-specific information on capabilities (PCG could assist).
- Improving the software:
 - Provide more ‘filtering capabilities’ to select sub-sets of taxa (e.g., tropical Pliocene planktic forams’: ~ 4000 names/fossil group (twice JANUS); typical user 5% per expedition (also recommended by the PCG)
 - Link filter capabilities between ‘template tabs’ (also recommended by PCG)
 - Explore options for templates that could make data entry more user friendly

Providing ‘added value’ could include the following:

- Automatic generation of range charts (display data for hole/site, sort by lower and upper occurrences), especially if the charts could be displayed in combination with non-paleo data
- Age-depth plots

Age models generated onboard ship should be stored in the database together with their metadata so that post cruise workers can evaluate the age models. Key data items that should be included are the age model itself (line of correlation), as well as the stratigraphic data used to create it (bio- and magnetostratigraphic datum levels with depth

of top-bottom, depth scale information, numerical ages assigned to datum levels, and timescale used).

IV. Paleomagnetism Laboratory Review

Here we summarize observations made on the Paleomagnetism Laboratory as part of a tour of the JOIDES Resolution during the 12th IODP STP meeting.

Overview

Through refit and the Victoria tie-up, the Paleomagnetism Laboratory has undergone a significant transformation in both layout and capability. New equipment and database accessibility have substantially improved the Laboratory's capabilities. These upgrades were much needed and will be well received by shipboard scientist. The new Laboratory configuration that results in significantly improved core flow, however, presently separates the operator from the pass-through cryogenic magnetometer. Though unavoidable, this separation is not optimal and therefore some modifications (described below) should be considered. Additionally, a few software improvements would essentially complete what is now an exceptional magnetics facility.

Equipment

New equipment including a JR6 Spinner Magnetometer, a Kappabridge KLY-4 magnetic susceptometer, an ASC thermal demagnetizer and upgraded electronics for the AF demagnetizer provide much needed improvements in discrete sample capabilities. The 2G Enterprises pass-through cryogenic magnetometer, after more than 10 years, is still the workhorse of the Lab and hopefully will continue to function well into the future. The Laboratory is now optimally equipped with no major additions required.

Cryogenic Magnetometer and Lab Space

The refit has changed the geometry of the Paleomagnetism Laboratory. Compared with the old Core Lab configuration, the current design substantially improves core flow; however, as a result the pass-through cryogenic magnetometer is loaded on one side of a wall, with the operator's computer on the other. A camera allows visual confirmation of measurement initiation. Though a nice 'fix', this set up is not optimal for efficient data acquisition and/or quality control. This could be improved, without significant changes to the Lab's configuration, by installing another computer mirroring the main magnetometer control computer mounted above the magnetometer's load position with a keyboard on an extendable arm. Such a computer could also be used for notes taken on paleomag quality, which are presently not, but then could be captured in the database. Eventually a tablet computer could serve this purpose.

Software

A series of new software applications have been developed. Uploading pass-through cryogenic magnetometer data to the database is now significantly easier and a bar code reader provides a nice option for entering section information. Mid-term data analysis options for visualization of magnetic data with other data types provides database cleaning potential, where compromised data could be flagged, is another improvement.

New pass-through cryogenic magnetometer software increases the speed of data acquisition more than 2 times faster than the previous software. However, there may be significant issues related to data quality when collected at this rate. We suggest that substantial testing of data quality be undertaken before this becomes a default setting. The software should also give the operator a choice of settling times (as in the old software) that would provide flexibility under different operating conditions to help obtain optimal data quality. A useful data visualization window is no longer available after each run. This should be re-included or better integrated with third party data visualization and analysis software.

Standards

Standards that could be used to check results after unexpected operational issues would provide added confidence in data quality; however, the development of standards is a non-trivial issue. Rather than being provided by individual scientists, we strongly recommend that the IO should provide this standard that should be developed in consultation with the magnetics community. This could potentially be facilitated by the Institute for Rock Magnetism at the University of Minnesota and/or by the Magnetism Information Consortium (MagIC) (Constable, Koppers, PIs).

V. Physical Properties Measurements Assessment

The assessment of the systems used for acquiring Physical Properties was very positive. All systems are fully operational and 'easy to use'. Some of the systems allow collecting data of extraordinary quality, e.g., the new NGR Logger and the Section Half Imager Logger.

We want to point out that numerous concerns expressed during previous assessments (e.g., Victoria June 2010 External Assessment) are solved. The ongoing improvement of the systems is impressive.

We only want to raise a few points, which might be improved in the future.

- Proper standards are missing for a few measurements (e.g. no uranium standard for the NGR-Logger, no standards covering a proper range of p-wave velocities).
- User Interfaces for the individual systems should be standardized. The different designs of the user interfaces might result in mistakes during operation of the systems.
- At the current stage, data entry errors require the intervention of a developer. For some data (e.g., MAD) immediate data input errors should be easier to fix.

Concerns about problems with system stability during past expeditions could not be assessed during the one-day visit to the *JOIDES Resolution*.

VI. Inorganic Geochemistry Assessment

The STP recommends that the upgrade and replacement of several instruments (EA, ICP, IC and DA) in the geochemistry lab was a much needed and welcomed improvement, and the associated autosamplers also improve work flow. In-house software developed to export and correct ICP data, which produces lots of measurements. More presses (4) and the use of Rhyzones helps speed up IW processing and improves work flow. However, improvements are also needed, such as, more benchtop space is needed, a long-term record of instrument performance should be provided, adding a Cl autotitrator would help improve reproducibility and speed up analyses, more reliable internal rock and pore water standards are needed, and instrument guides (not manuals) would be helpful for sample preparation, data acquisition and processing of each individual instrument.

VII. Organic Geochemistry Assessment

The STP recognizes that the laboratory facilities regarding organic geochemical study (CNHS analyzer, GC, GC/MS, and SR analyzer) on the *JR* are kept in perfect condition. Those facilities have not reported any serious problems previously and no further problems have been identified. Each cookbook for the facilities contains sufficient information and is helpful for all onboard organic geochemists. Such documentation does not exist, however, for the newly installed Dissolved Organic Carbon (DOC) and the Dissolved Inorganic Carbon (DIC) analyzer. DIC data is important for cross checking the alkalinity data and also DOC data is useful for evaluating the diagenesis of the core samples. The STP requires preparation of the cookbook for the DOC & DIC analyzer as soon as possible.