

**IODP-MI
Operations Task Force
Meeting Report**

**BGS, Edinburgh, Scotland
March 26th, 2011**

March 26th Meeting

Location

BGS, Edinburgh, Scotland

Time

14:00-17:30

Agenda

1. Introduction, logistics, changes to the agenda
2. Background comments from IODP-MI
3. Reports from the IOs on ongoing work (brief), and status of future work (end of FY11 and FY12)
4. Perspectives for FY13, and possible effects on FY12 scheduling (IOs and funding agencies)
5. Confirming general FY12 schedules (IOs/all)
6. APLs and engineering tests in FY11 and FY12
7. Possible review of OTF nested proposals in relation to CF to new SAS
8. Review of (any) recommendations/action items for SPC meeting
9. Next OTF meeting (time and date)
10. Others

Operation Task Force – OTF

Barbara John	Science Planning Committee, University of Wyoming, USA
Bob Gatliff*	ECORD Science Operator (ESO), British Geological Survey, UK
David Divins	IODP-USIO, Ocean Drilling, The Consortium for Ocean Leadership, USA
David McInroy ^{a1}	ECORD Science Operator (ESO), British Geological Survey, UK
Gretchen Früh-Green	Science Planning Committee, ETH Zurich, Switzerland
Gabe Filippelli	Science Planning Committee (Chair), Indiana University-Purdue University Indianapolis, USA
Hans Christian Larsen ^{a2}	IODP Management International, Japan
Junzo Kasahara	Science Planning Committee (Vice chair), University of Tokyo, Japan
Kevin Johnson	IODP Management International, Japan
Nobuhisa Eguchi ^{a3}	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Susumu Umino	Science Planning Committee, Kanazawa University, Japan
Wataru Azuma*	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Yoshi Kawamura (Chair)*	IODP Management International, Japan

***Unable to attend**

a1 –Alternate for Bob Gatliff

a2 –Alternate for Yoshi Kawamura

a3 –Alternate for Wataru Azuma

Liaisons, Guests, and Observers

Mitch Malone	IODP-USIO, Texas A&M University, USA
Ian Ridley	National Science Foundation (NSF), USA
Issa Kagaya	IODP Management International, Japan
Jamie Allan	National Science Foundation (NSF), USA
Michiko Yamamoto	IODP Management International, Japan
Sean Toczko	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Shinichi Kuramoto	Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan
Singhvi, Ashok	Science Planning Committee, Physical Research Laboratory, India

PREFACE

This report provides a summary of the IODP-MI Operations Task Force (OTF) meeting in Edinburgh on March 26th, 2011. This meeting focused on scheduling options of *Chikyu*, *JOIDES Resolution* and *Mission Specific Platform* for late FY12 through FY13 and potential influence of *Chikyu* damaged on March 11th earthquake and tsunami disaster in north of Japan.

At the beginning of the March 2011 meeting, David McInroy introduced the logistics of the meeting and Hans Christian Larsen (IODP-MI, Meeting Chair) explained new version of the draft agenda and changed agenda item from previous version. He reported that Yoshi Kawamura the Operation Manager of the IODP-MI and OTF chair couldn't participate this meeting and he is going to chair the meeting. He also introduced new IODP-MI Science staff Kevin Johnson to the attendees.

1. Reports from the IOs on ongoing work (brief), and status of future work (end of FY11 and FY12)

CDEX

CDEX (Nobu Eguchi) reported situation of *Chikyu* after the March 11th M9.0 earthquake and tsunami disaster in north of Japan. At that time when the earthquake struck, *Chikyu* was on portcall at port of Hachinohe, in preparation for IODP Exp.337 Deep Coalbed Biosphere off Shimokita. *Chikyu* immediately evacuated from the pier after they got tsunami alert. But during the emergency evacuation at the port, one of the thrusters on aft-left side suffered severe damage and was lost in port. All personnel, visitors and support staffs ashore were safe on *Chikyu*.

CDEX showed some photo and video clips of the Tsunami taken from the *Chikyu* and damage of the thrusters and hull. There was also heavy damage on port of Hachinohe and also on ship supplies stored for the *Chikyu* at the port.

CDEX reported *Chikyu* moved to port of Muroran in Hokkaido Island in north of Japan for having damage inspection at the port temporary. After the inspection CDEX is planning to do more detail inspection and general repair work in dry dock at Yokohama near Tokyo. CDEX continued reporting that they are now investigating the possibility of operating *Chikyu* with the remaining five thrusters, because the replacement of damaged thruster is going to take nearly a year to develop on *Chikyu* after CDEX purchases a new thruster. It depends on result of simulation now ongoing but CDEX assumes it will be difficult to operate the *Chikyu* in high current areas with only five thrusters in operation, and so there might be effects on non-IODP work (Riser Operation) contract. If CDEX cannot conduct non-IODP work in FY11, the budget situation of FY12 *Chikyu* IODP operation might be affected. But CDEX reported there is no schedule change at this moment for 2 month and 7 month IODP operation window on FY12, except cancellation of Exp.337 Deep Coalbed Biosphere off Shimokita in FY11. Gabe Filippelli (Chair of SPC) asked if the Japanese government can allow CDEX to carry forward the budget for this CPP expedition to another year. CDEX replied that they don't know what the budget from the

government is going to be at this moment.

CDEX explained there are four operation options for the 2 month IODP operation window in early FY12 (Dec. 2011 – Jan. 2012) as follows:

- Option1: 603-Full NanTroSEIZE riserless observatory
 - Retrieve “genius plug” at C10, install long term riserless observatory
- Option2: 603-Full NanTroSEIZE inputs site LWD
- Option3: 601-Full3 Okinawa Trough Deep Biosphere (riserless)
 - Second expedition for remaining sites
- Option4: Engineering sea test at Nankai (SCIMPI, MDHD)

CDEX explained option 1 and 2 are difficult to operate with only five thrusters and there is also a fishing restriction at the area in this season. The option 3 has seven sites which remained from Exp.331 Deep Hot Biosphere in 2010 and 33 days are required to drill the remaining first priority sites (Three sites). But including transit, crew change and contingency time, a two month window is still not enough to finish all first priority sites.

Hans Christian Larsen reported that IODP-MI was contacted by one proponent who is planning to propose rapid response drilling at March earthquake site using *Chikyu*. He asked CDEX if there is any planning ongoing to have rapid response drilling on the Japanese side. Jamie Allan (NSF) commented that he heard high level discussion in Japanese government is ongoing to consider having rapid response drilling at the place. CDEX reported they also know the discussion is ongoing but seems it has not become a realistic plan yet. Hans Christian Larsen commented it is good timing for SPC to have a discussion during this SPC meeting about this issue, including the proposal evaluation process for rapid response drilling. Gabe Filippelli and other SPC members agreed to bring this discussion up at this SPC meeting next week.

CDEX presented preparation schedule of Exp.338 NanTroSEIZE Plate Boundary Deep Riser – 2 which was approved by Chief Project Scientists of NanTroSEIZE. But CDEX commented this was approved before the Mar 11th earthquake and there might be some changes on schedule.



Figure OTF-1 *Chikyu* long range operation schedule plan (FY11 – 13)

ESO

ESO (David McInroy) presented the ESO report and their future plans for FY12-13 *Mission Specific Platform* operations. In the report, ESO gave a summary of two Project Scoping Group meetings formed by IODP-MI in late 2010 for two *Mission Specific Platform* proposals at OTF.

A Project Scoping Group meeting for proposal 548-Full3 Chicxulub K-T Impact Crater was held in Oct. 2010 at BGS Edinburgh. ESO reported the proponents of this proposal Joanna Morgan and Sean Gulick have been selected as Co-Chiefs for this expedition. On this expedition operation, ESO is planning to use track loaded mobile type well drilling rig with jack-up platform as *Mission Specific Platform*, which has capability of approx 1,600 m penetration with CHD 134 drill pipe without riser ODP-style lined core. ESO and proponents are approaching several Mexican local government authorities for getting permission, and they having received some good feedback from them. The proponents submitted an ICDP proposal in February 2011, applying for up to US\$1.45M to co-fund this IODP proposal. A decision by ICDP is expected at the July 2011 ICDP meeting.

A Project Scoping Group meeting for 716-Full2 Hawaiian Drowned Reefs was held in Nov. 2010 at BGS Edinburgh. ESO reported there were two main outcomes from the meeting:

- 1) Penetration depths are revised and in many cases reduced. Majority of sites may be completed with 85-100m holes.
- 2) Exposures of the reef sequences in canyons suggest that the limestones are well cemented (algal material).

ESO is interpreting that these limestones may be suitable for standard API/JR-type drilling, and recovery may be improved by using a motorized core barrel (MCB). ESO explained four expedition operation scenarios:

- 1) Build a drill ship MSP with an API string and MCB capability.
- 2) Use the JR with its API string and MDCB or other compatible MCB (ESO started contacting with USIO).
- 3) Use a seabed drill operating from a local research vessel.
- 4) A mixture of options 2 and 3.

ESO introduced four types of Seabed drills options, including industrial type and MARUM developed type. Although Seabed drill penetration is improving, it is currently not enough for this operation. Also, full logging from seabed drills is not currently available. ESO reported that proponents proposed at the Project Scoping Group meeting not to do logging operations on this expedition if it is not required. Jamie Allan and Hans Christian Larsen commented IODP is not forcing logging operations at shallow holes and Gabe Filippelli reminded all about the usefulness of FMS logging in this environment. ESO continued reporting that they approached several Hawaiian authorities (The Office of Conservation and Coastal Lands, Department of Land and Natural Resources, The U.S. Army) in Dec, 2010 with a summary of the Hawaii proposal, including drill ship and Seabed drill options. Both agencies have given a clear permitting route for ESO to follow, which includes filing an environmental assessment. ESO is currently compiling materials for the permit

applications and environmental assessments.

Gabe Filippelli and Hans Christian Larsen requested that these new revised sites with new depths should review by SSP again and bring back to OTF for further discussion.

ESO reported that they have not started scoping proposal 581-Full2 Late Pleistocene Coralgal Banks officially at OTF. Proponents of this proposal are independently attempting to find co-funding support from industry and they received good feedback from FUGRO. FUGRO is looking at the possibility of co-funding less than \$1M U.S. Dollars to core five boreholes up to 100m deep through Southern and Baker Banks on this expedition. Also they indicated that they would drill test boreholes to test various coring methods for free. ESO didn't confirm this information to FUGRO yet, but if proponents are successful in securing external funds, proponents may approach IODP to turn this proposal into a CPP.

USIO

USIO (Mitch Malone) presented the highlight summary from recent *JOIDES Resolution* operations and their future plans for FY12-13 operations (Figure-OTF-2 and 3).

Exp.329 South Pacific Gyre Microbiology, which started on 8 October 2010 and finished on 13 December 2010, was the most extensive microbiology geochemistry expedition for USIO. This expedition ended up with 42 holes at 7 sites, deepest water depth was 5,700 mbsf, 12,000 km transited. Extensive reconfiguring/repurposing was made on laboratory and support areas for unprecedented geochemistry and microbiology program and deployment of 3rd party tools. They successfully documented many fundamental aspects of seafloor microbial communities.

Exp.330 Louisville Seamount Trail started 13th December 2010 and finished 12th February 2011. This expedition ended up with 8 holes at 6 sites located on 5 different seamounts and 1,114 m of sediment and igneous basement cored. The drilling condition was very challenging. It was the first time USIO lost two full BHA on an expedition in several years. They recovered generally well-preserved (including fresh volcanic glass and fresh olivine minerals) igneous rocks suitable to address all scientific objectives on this expedition. USIO used non-magnetic core barrel with RCB coring and successfully collected large quantities of high-quality, consistent paleomagnetic data with the shipboard magnetometers.

JOIDES Resolution is now on Exp.334 Costa Rica Seismogenesis Project (CRISP) and drilling at 2 slope sites (U1379 TD 962m and U1378 TD 455m) along a transect offshore the Osa Peninsula in Costa Rica with LWD at both sites. There were several logistical challenges with getting the logging tools and related hardware to the ship..

USIO reported they are thinking that engineering at-sea testing of SCIMPI and MDHDS is not feasible in FY11 non-IODP period after Exp.335 Superfast 4, because both engineering projects are still in progress and they will not be ready to test in that period immediately after Superfast. Also their proposed sites for at-sea testing are in Ursa Basin in the Gulf of Mexico where the Exp.308 Gulf of Mexico Hydrogeology drilled. This will be more challenging to get permission for drilling after oil spill accident in 2010 and, more importantly, would require a significant deviation in the

ship track. This is important given the high price of fuel.

JR OPERATIONS SCHEDULE

Expedition	Exp #	Dates	Total Days (port/at sea)	Co-chief Scientists
Transit		12 Feb.–15 March 11	31 (6/25)	
CRISP	334	15 March–13 April 11	29 (2/27)	P. Vannucchi K. Ujiie
Superfast	335	13 April–3 June 11	51 (4/47)	D. Teagle B. Ildefonse
Non-IODP		3 June–16 Sept. 11		
Mid-Atlantic Mbio	336	16 Sept.–17 Nov. 11	62 (2/60)	K. Edwards W. Bach
Mediterranean Outflow	339	17 Nov. 11–17 Jan, 12	61 (5/56)	J. Hernandez D. Stow
Lesser Antilles	340	17 Jan, –18 March 12	61 (5/56)	A. Le Friant O. Ishizuka
Non-IODP + APLs		18 March–15 July 12		
South Alaska Margin		15 July–14 Sept. 12	61 (5/56)	J. Jaeger S. Gulick



Figure OTF-2 The *JOIDES Resolution* operation schedule plan (FY11 – 12).

DRAFT JR OPERATIONS SCHEDULE — FY13

Expedition	Exp #	Dates	Total Days (port/at sea)	Co-chief Scientists
<i>Non-IODP</i>		Mid Sept - Mid Jan 13		
<i>Transit</i>		Mid Jan - 1 Feb 13		
<i>IBM</i>	TBD	1 Feb - 1 Apr 13		
<i>Asian Monsoon</i>	TBD	1 Apr - 1 June 13		
<i>Bengal Fan</i>	TBD	1 June - 1 Aug 13		
<i>TBD</i>	TBD	1 Aug - 30 Sept 13		



Figure OTF-3 The *JOIDES Resolution* draft operation schedule plan (FY13).

2. Perspectives for FY13, and possible effects on FY12 scheduling (IOs and funding agencies) & confirming general FY12 schedules (IOs/all)

USIO (David Divins) reported that USIO is in process for first draft of FY12 Annual Program Plan and they are recognizing that FY12 budget for *JOIDES Resolution's* fuel is dramatically increased above FY11. The fuel price level in market is increasing more than 30% above the FY11 level and seems this high level is going to continue for a while. This is considerably higher than the projected 10% increase above FY11 that USIO expected for the FY12 price level and might cause a significant impact on USIO FY12 operations. USIO is looking at options to complete the current scheduled FY12 operation, but it will depend on the budget situation from NSF and U.S. government. USIO continued that if the USIO budget level in FY12 is going to be the same as FY11, then they might need to change operation schedule and reduce some transit costs. For example, re-schedule expeditions closer together to avoid making long distance transits. Hans Christian Larsen asked about transit of *JOIDES Resolution* scheduled in FY13. USIO answered if this budget situation continues, then they have to say it is not realistic to make such long distance transit from east-Pacific to west-Pacific and go to Indian Ocean at end of FY13. Hans Christian Larsen commented this will be a very significant issue and IODP will need to discuss to find balance between science and expedition transit costs when the USIO budget situation becomes clearer.

Gabe Filippelli asked about possibility of shifting non-IODP work on FY12 to FY13 and borrowing some FY13 budget to FY12 to schedule some extra expeditions in the Atlantic Ocean in FY12 from the point of view of saving transit cost. For example, two expeditions at Newfoundland (659-Full Newfoundland Rifted Margin, 661-Full2 Newfoundland Sediment Drifts). USIO answered that idea of borrowing the FY13 budget is not practical. But if budgetarily possible, at least one of the Newfoundland expeditions might be possible to schedule by shifting second non-IODP period in FY12 closer to summer and scheduling after Exp.339 Mediterranean Outflow and Exp.340 Lesser Antilles Volcanism & Landslides. USIO commented there are also a few proposals in OTF for which the locations are along transit routes from Caribbean Sea to South Alaska in west Pacific Ocean. Some of these proposals have budgetary issues for CORKs deployment.

Barbara John (SPC Member) asked how IODP is going to respond when we get approached from some groups who wanted to submit rapid response drilling proposal of Mar 11th earthquake in Japan. Shinichi Kuramoto (MEXT) commented that Japanese government has just started to realize to have rapid response drilling there, but there is no detailed discussion yet. Hans Christian Larsen commented that is one of the major issues at this moment, how IODP can deal with rapid response drilling, what platform can be used and how we evaluate when we receive the proposal. Hans Christian Larsen continued that we should clear the unknown issues of *Chikyu* repair situation and USIO budget situation to discuss more about this issue, and it may take more time to clarify and get reports to IODP-MI, OTF and SPC from both IOs. CDEX reported that most of *Chikyu* repair works details and its schedule will be clearer by this May. USIO reported that their budget situation will also be clearer by this May.

Hans Christian Larsen commented that we will need to reassess both platforms scheduling to the end of the program to have economically, physically, operationally feasible scheduling to defend the program. OTF needs to continue discussion by email and set another OTF meeting around end of May to June after the all situations at both IOs get clearer. All other OTF members agreed with this conclusion of having another OTF meeting to discuss more detail for late FY12 (after March 2012 non-IODP period) – FY13 scheduling and rapid response drilling. Hans Christian Larsen added in conclusion that today’s discussion about rescheduling should be entirely for this group here and not to be communicated outside.

3. APLs and engineering tests in FY11 and FY12

USIO (David Divins) reported the engineering at-sea testing may be possible to schedule on *JOIDES Resolution* non-IODP period in FY12, but proponent might need to propose an alternate site for testing. CDEX commented the at-sea testing is in one of the options for the 2 month IODP operation window of *Chikyu* in early FY12. Hans Christian Larsen confirmed to USIO and CDEX, that there is enough time and can discuss at-sea testing scheduling at the next OTF meeting in late May or June. Gabe Filippelli commented that those APLs (Figure-OTF-4) are going to be reviewed at this SPC meeting and should be discussed at the next OTF meeting after the SPC review. USIO reported there is a pre-expedition meeting scheduled early this May for Exp.341 Southern Alaska Margin Tectonics, Climate & Sedimentation include 786-APL Alaskan Glacial and Ocean History. Hans Christian Larsen and Gabe Filippelli commented there is no reason that this APL should not be forwarded.

Them	Numbers	Titlye	Ocean	P-type	SSP	EPSP	Drilling	CORK	3rd-Party	Other
2	757-APL	South Pacific Eocene-Oligocene	Pac	RL	3Aa	No review				Exp.329? missed?
3	769-APL2	Costa Rica Crustal Architecture	Pac	RL	1Bd	No review				Hole: 504B FMS only
3	772-APL2	North Atlantic Crustal Architecture	Atl	RL	2Ad	No review				Hole: 418A FMS only
2	775-APL	West Pacific Warm Pool Paleocen	Pac	RL	3B	No review				Transit 595-Full?
3	779-APL	Atlantis Massif Lithosph. Hydration	Atl	RL	1Aa	No review				758-Full? W.A VSP
2	783-APL	Indian Monsoon history	Ind	RL	1Ba	No review				Transit 595-Full?
1	785-APL	Gulf of Mexico SCIMPI field trail	Atl	RL	3A	No review				Maint. Period? SCIMPI
2	786-APL	Alaskan Glacial and Ocean History	Pac	RL	1Ac, 2Cc	No review				Exp.341

Figure OTF-4 APL proposals status on SPC.

4. Possible review of OTF nested proposals in relation to CF to new SAS

Gabe Filippelli explained there won’t be the same type of SPC that there is now in the new program SAS structure, so there won’t be the same model for transferring proposals from SPC to OTF. There is a model to transfer from PEP to OTF and

SIPCOM in the new program, but not same as now. SPC has some concern of transferring current OTF proposals (Figure-OTF-5) to the new program, and SPC is thinking there are two types of models for transfer;

- 1) Just simply transfer all current OTF proposals to the new SAS structure.
- 2) Review all OTF proposals on next SPC meeting and reconsider some way to transfer to new SAS or not.

David Divins commented that there is no reason to cut those unscheduled proposals at OTF and better transfer all to the new program and put in their holding bin. Gretchen Früh-Green (SPC member) commented if there are no or very less possibilities of scheduling expeditions for OTF proposals with requiring several CORKs deployment and long range transit, then IODP needs to send some signal to the science community what can we afford and what we cannot. USIO agreed it is not realistic to schedule expeditions requiring CORKs, at least to the end of this program, until their budgetary situation improves. Jamie Allan (NSF) commented there is not enough resources to support all of CORKs right now and we are hoping to have a little bit different funding situation in the next program.

Hans Christian Larsen commented it is good to give some comments or statements on those OTF proposals by SPC (and OTF) to the new program, so they can understand the background of proposal situation at current IODP.

Sean Toczko (CDEX) commented another problem with CORKs is there is no clear policy in IODP for handling and accessing measurement data from 3rd party tools on CORKs. We started to discuss this again with IODP-MI after CDEX deployed LTbms at NanTroSEIZE and request them to create some policy for this.

	Numbers	Titlye	Ocean	Schedule	P-type	SSP	EPSP	Remarks
2	477-Full4	Okhotsk Plio-Pleistocene	Pac		RL	1Ca	approved	Permit: Russian
1	505-Full5	Mariana Convergent Margin	Pac		RL	1Bc, 2Cc	no concerns	3 CORKs
3	537B-Full4	Costa Rica Seismogen Phase B	Pac		R	2C 3D surv.	No review	CORK?
2	549-Full6	Northern Arabian Sea Monsoon	Ind		RL	1A	approved	
3	551-Full	Hess Deep Plutonic Crust	Pac		RL	1Aa	No review	Hardrock
2	581-Full2	Late Pleistocene Coralgal Banks	Atl		MSP	1A	No review	MDCB, MMS
1	601-Full3	Okinawa Trough Deep Biosphere	Pac		RL+R	N/A	approved	Remaining Sits
3	603B-Full2	NanTroSEIZE Phase 2	Pac		R		approved	low priority: not drill
1	633-Full2	Costa Rica Mud Mounds	Pac		RL	1Aa, 1Ab	approved ROV?	4 CORKs
3	659-Full	Newfoundland Rifted Margin	Atl		RL	1Aa	No review	Deep > 2,120m
2	661-Full2	Newfoundland Sediment Drifts	Atl		RL	1Bb, 2Ab	No review	
1	693-APL	S. Chamorro Seamount CORK	Pac		RL	3A	No review	CORK (replacement)
2	705-Full2	Santa Barbara Basin Climate Chang	Pac		RL	1Aa, 1Ab	Previewed	
2	724-Full	Gulf of Aden Faunal Evolution	Ind		RL	2Cc, 2Cb	No review	Security
2	732-Full2	Antarctic Peninsula Sediment Drifts	Ant		RL	1Ba	No review	

Figure OTF-5 Non scheduled OTF proposals status.

5. Review of (any) recommendations/action items for SPC meeting

OTF agreed to make following three statements at the conclusion of this meeting and report to SPC in the meeting next week.

OTF Statement 1103-1:

OTF based on SPC ranking during March 2011 SPC meeting will meet in June 2011 to discuss scheduling to end of program. This will involve review of the feasibility of the SASEC long-range plan as well as changes caused by damage to Chikyu and possible scientific opportunity following the M9.0 earthquake of March 11.

OTF Statement 1103-2:

OTF recognizes the need to start operational planning for FY14+ and requests SPC to address long-range planning in the SPC summer 2011 meeting.

OTF Statement 1103-3:

OTF asks that SPC review proposals currently residing at OTF at the summer 2011 meeting, provide short updates on science and operational realities, and forward these reviews to the proponents, the new SAS, and the new OTF.

6. Next OTF meeting (time and date)

OTF agreed to hold next meeting June 10-11, 2011 at BGS Edinburgh right before the SASEC meeting in Amsterdam (June 14-16, 2011).