

IODP-MI Operations Task Force Meeting Report

**Kyoto, Japan
October 24, 2005**

Operations Task Force (for October 24, 2005 meeting)

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Meeting Dates and Times

October 24, 2005: 09:00 – 13:00

Meeting Location: (Common Room)

Palulu Plaza #2 lecture room (4F)
676-13 Higashi-Shiokoji-Cho,
Higashino-Toin-Dori
Shichijou Sagaru, Shimogyou-ku
Kyoto Japan 600-8216

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1) Welcome, Introductions, and Review of meeting agenda and logistics

2) Funding agency updates

2.1 NSF/MEXT update

2.1.1 Monterey Environmental Issues

Rapid change in environmental law has resulted in federal agencies playing a greater role in completion of the Environmental Impact Statement (EIS) process. The current federal structure results in four different federal agencies engaged in the EIS process with an overlap of responsibilities. The potential EIS for Monterey will require a minimum of one-year. NSF is still determining the best way to proceed. Issues requiring action include bore-hole management, liability responsibilities and future use of the test facilities (overall project scope). It is recommended that the OTF does not schedule the Monterey Program until these issues are better understood. A stand-alone EIS will most likely be required for the Monterey program.

2.1.2 Vessel Operations

The Chikyu is scheduled for international operations commencing September 2007. SODV operations are scheduled for international operations August 2007. Mission specific platforms targeted for FY07 are unknown at this time.

2.1.3 Repositories

The Lead Agencies reminded OTF members that their mandate includes core repositories. OTF should designate the repository responsible for each scheduled expedition when it recommends a yearly schedule for SPC approval.

2.2 EMA

ECORD funding is secure at present level through FY07. However, funding levels are not adequate for a three-site New Jersey Margin program in FY06 given the significant expenditures required for both the Arctic and Tahiti expeditions. ECORD is currently working to secure adequate funding for an FY06 operation but there may be a need to move New Jersey operations to FY07. ECORD will go through an evaluation next year (2006). Results from the evaluation will determine membership and future funding

3) FY07/08 Operations – new issues since June 2005 OTF meeting.

3.1 Proposals Residing at OTF

Discussion began with a review of proposals residing at Operations Task force
Proposals residing with OTF include:

Riserless Proposals

<u>Prop No</u>	<u>Proposal Name</u>
477	Okhotsk and Bering Seas
482	Wilkes Land Margin
545	Juan de Fuca Hydrogeology
553	Cascadia Margin Gas Hydrates

589 Gulf of Mexico Overpressures
 600 Canterbury Basin
 621 Monterey Bay Observatory
 626 Pacific Equatorial Age Transect

Proposals with Riser and Riserless Operations

Prop No Proposal Name
 603 A, B, C NanTroSEIZE
 595 Indus Fan and Murray Ridge

Mission Specific Proposals

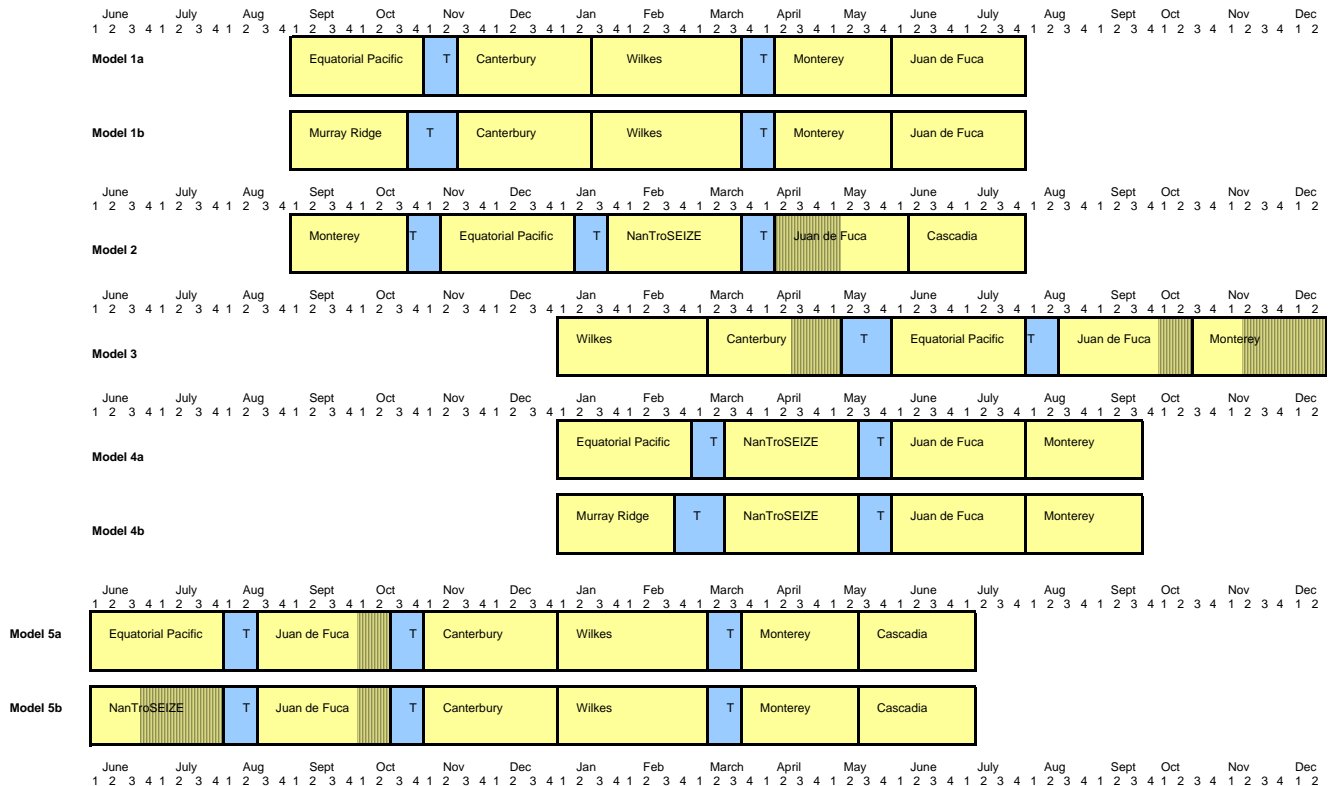
Prop No Proposal Name
 519 South Pacific Sea Level
 564 New Jersey Shallow Shelf

3.2 USIO-SODV

3.2.1 Initial USIO-SODV option from June, 05 OTF meeting

Figure 1 below summarizes the USIO-SODV options developed at the June 2005 OTF meeting. The models show “Southern Ocean” and “non-Southern Ocean” options for three potential starting times for the SODV (See June OTF report for details)

Figure 1. USIO-SODV options developed at June 2005 OTF meeting.



3.2.2 Long –Lead time Analysis by USIO

Following the June 29-30, 2005 Edinburgh OTF meeting, the USIO examined the long-lead requirements of the proposals in detail. Below is a summary of the results of that review. **NOTE:** *Pages 5-13 contain information that was discussed via email among OTF participants prior to the October meeting and is provided here as background for the reader.*

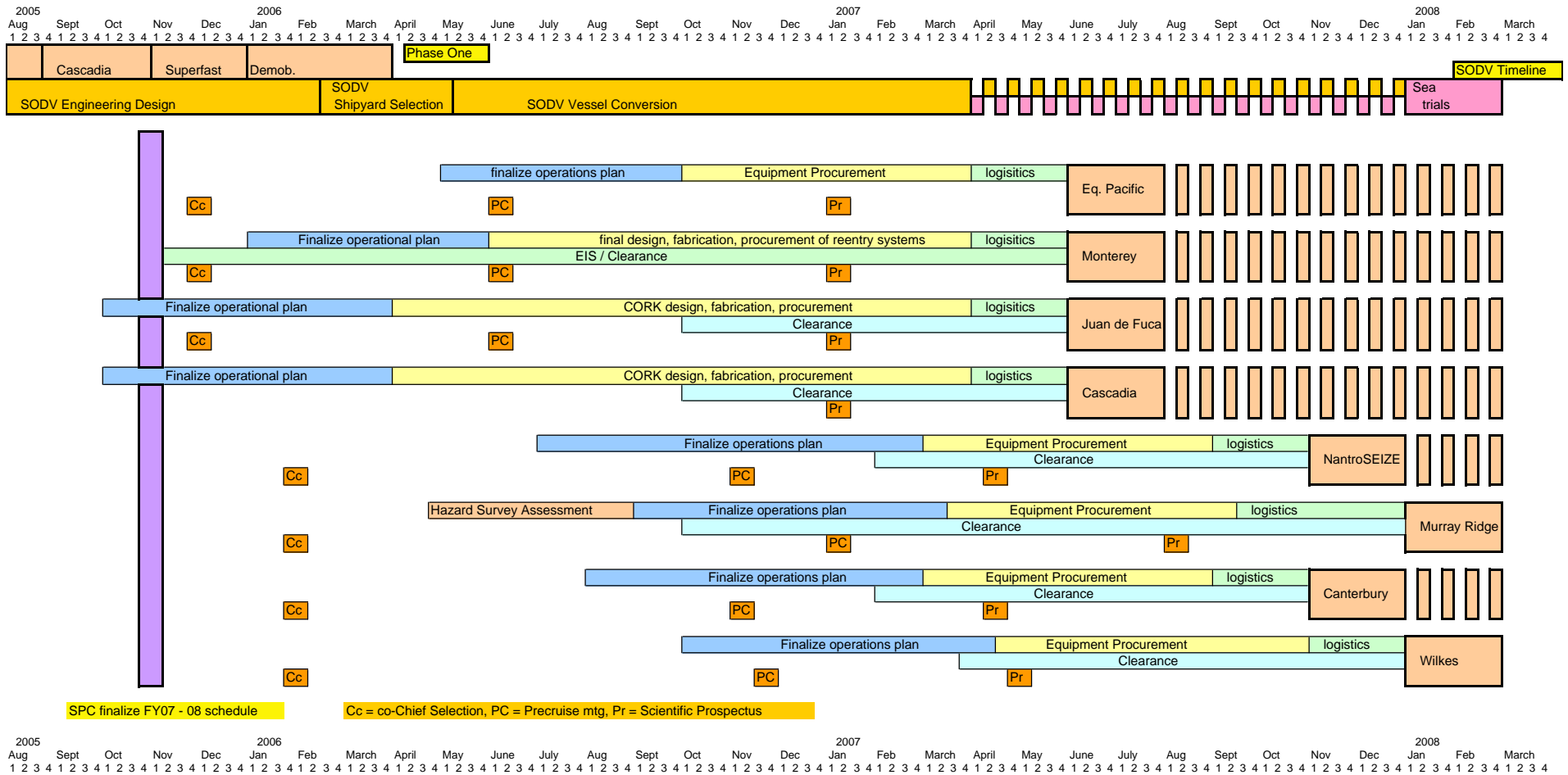
Figure 2 (next page) provides the results of this long-lead review. The upper two bars reflect current phase 1 operations (*as of summer 2005*) and the anticipated Scientific Ocean Drilling Vessel (SODV) conversion time line. This information is included to provide some insight as to resource requirements during the time frame the USIO are preparing for the initial phase 2 riserless drilling expeditions. The far right region of the SODV time line reflects uncertainty as to when vessel conversion will be completed. The sea trials will occur directly after conversion. They are anticipated to occur sometime between April 2007 and January 2008. This of course will, in part depend on the funding profile which will be better understood early in 2006.

Each proposed expedition is shown along the right side of the diagram. The start date of June 2007 reflects the earliest envisioned start date. In reality, the start date can move further to the right as reflected by the broken line pattern. The start date will be determined once the conversion/sea trials time line is resolved. Each proposal is plotted as if it would be the first riserless drilling expedition during FY07-FY08. This was done to determine the worse case scenario. Juan de Fuca is also included in this process even though the OTF models indicated that the earliest window for this cruise would be the second expedition during FY07-FY08. Note that the proposed NanTroSEIZE, Murray Ridge, Canterbury and Wilkes expeditions are offset from the others. This was done to reflect the specific weather window for Wilkes, the desired weather window for Canterbury, and the fact that NanTroSEIZE and Murray Ridge are not practical to complete during Typhoon seasons (see details provided below).

The critical elements driving the long lead time line are also shown in the diagram. These include; finalizing science operations, equipment procurement, logistics (shipping, travel, etc), hazard survey assessment, and clearances. Also shown are estimated dates for Co-chief selection (Cc), pre-cruise meetings (PC), and distribution of the prospectus (Pr). The purple bar on the left reflects the SPC meeting and selection of an operating model. Note that several proposed expeditions already are at an increase risk given the time available for implementation, such as Monterey, Juan de Fuca and Cascadia.

The conclusion of this exercise is that the first expedition should be simple. As shown in the diagram, planning for the complex programs such as Cascadia, Monterey and Juan de Fuca need to commence in the Sept - November 2005 time window (this assumes the earliest start date). USIO staff availability during this time will be a problem given that key staff members will be focused on completing phase 1, as well as working on the SODV engineering design phase. USIO staff availability will begin to relax following conclusion of demobilization and the SODV Engineering Design Phase, about April 2006. Assuming a start date for the first expedition in September 2007 rather than June helps the situation, but does not resolve it as planning for these cruises will still overlap with the phase 1 and SODV activities.

Figure 2. Long-lead time analysis review. The upper two bars reflect current phase 1 operations and the anticipated Scientific Ocean Drilling Vessel (SODV) conversion time line. The far right region of the SODV time line reflects uncertainty as to when vessel conversion will be completed. Each proposed expedition is shown along the right side of the diagram. The start date of June 2007 reflects the earliest envisioned start date. Each proposal is plotted as if it would be the first riserless drilling expedition during FY07-FY08. NanTroSEIZE, Murray Ridge, Canterbury and Wilkes expeditions are offset from the others and reflect the specific weather window. The critical elements driving the long lead time line are also shown in the diagram. These include; finalizing science operations, equipment procurement, logistics (shipping, travel, etc), hazard survey assessment, and clearances. Also shown are estimated dates for Co-chief selection (Cc), pre-cruise meetings (PC), and distribution of the prospectus (Pr). The purple bar on the left reflects the SPC meeting and selection of an operating model. Note that several proposed expeditions already are at an increase risk given the time available for implementation, such as Monterey, Juan de Fuca and Cascadia.



Discussion of Long Lead Review Analysis

Implementation of a simple expedition at the start of USIO phase 2 operations is by far the best way forward. This would suggest effort should be focused on the Equatorial Pacific, NanTroSEIZE, Canterbury or Wilkes as the preferred options. Below are the specific issues needing resolution.

1) Equatorial Pacific - timing of the site survey has not been resolved and raises the question as to when is the earliest that the Equatorial Pacific program can be scheduled. *NOTE added in proof: Site survey now planned for early 2006 with an EPSP email review probably in August 2006*

2) Murray Ridge – Maximum frequencies for monsoons is from June to August. Tropical Storms can occur May through December. A hazard survey is required for this program. The data sets have been obtained, but the USIO will not commit resources until it is clear that this program remains as an option in the refined models. Initial discussions have commenced with the U.S. Embassy in Pakistan to determine the appropriate action(s) to obtain clearances as it has been numerous years since the U.S. has requested science clearance from this country. Also note that the proposed site and alternate sites are located in lease industrial blocks. The USIO has learned from the GOM experience that obtaining permission for operating in lease blocks will require time. Note also that the clearance process can not commence until the operational strategy has been finalized. Such a strategy can not be completed until the hazard survey has been completed, so getting this survey completed is a high priority.

3) Monterey - Discussions with the lead proponent have taken place in an effort to finalize the operational strategy. Resolution of the possible forthcoming APL proposal is required. This APL is based on a proposal to NSF that will be submitted on 15 August 2005 so the review and funding decision process will likely extend into 2006, when actual work could potentially begin. The USIO recommends that current cost and time estimates exclude the potential APL, as little information is presently available. Costing and time consideration for the APL could be developed once a strategy is defined. A prime issue for Monterey, and one raised by the Sanctuary, is that of borehole use and management. It is likely that this issue will need to be resolved prior to obtaining a *permit* (*See Lead Agency update –Section 2.1 of this report for more recent information*). The creation of an Observatories Task Force is essential to resolve this issue. This may further increase the necessary lead time given that the task force has not yet commenced discussions. The preferred weather window is June – September.

4) Juan de Fuca - Discussion will commence shortly concerning proposed operational strategy for cost and time assessment. The preferred weather window is July – August.

5) Cascadia - Discussions have commenced with the lead proponent to better define the observatory requirements for Cascadia. A specific implementation strategy is currently not available for the proposed CORKS. Costing will be based on what is known with assumptions identified. The preferred weather window is July – August.

6) NanTroSEIZE – The USIO is awaiting comments from the upcoming NanTroSEIZE task force meeting. The results of this meeting will define potential riserless operations for this program and

allow cost and time estimates to be determined. The preferred weather window is January – April. (*Note- NanTroSEIZE PMT meeting held in Aug 2005 provided details of Stage 1 operations*).

7) Canterbury - No change from the June 2005 OTF meeting

8) Wilkes - No change from the June 2005OTF meeting

9) Bering Sea - Although not presently included in the discussion, the issue of the Bering Sea proposal being reconsidered by the OTF has been raised. This is based on the proponent's response to EPSP issues. The prime concern from the USIO perspective is a minimum of 1 year will be required to obtain clearance from Russia.

3.2.3 Re-Analysis of Edinburgh OTF Models

With the above information in hand, proposed OTF models from the June 2005 OTF (See Figure 1; above) were reviewed in an effort to reduce the number of models to a manageable size for costing consideration. A critical need was for the final model(s) to provide flexibility to accommodate for the uncertainty of the operating start date. This flexibility is difficult to achieve given that most expeditions have weather constraints.

Model 1A

Risks - Timing for the Equatorial Pacific site survey needs to be resolved (*Note: Issue now resolved- survey scheduled for Spring 2006*). In addition, delivery of the Monterey program in the proposed timeframe could be at risk depending on the progress made with the borehole management issue. The schedule will need to be fixed around the ideal weather window for the Wilkes expedition. Operating in the Monterey Bay during April will most likely will result in waiting on weather.

Comments – This model starts with a simple cruise and provides the much needed flexibility concerning the actual start date of the initial cruise. The model would require a contingency plan in the event that the SODV timeline ends early requiring the Equatorial Pacific expedition to occur prior to the 1 September timeframe. There are several options here, insert a program prior to the Equatorial Pacific (possible an extended sea trials), insert a program between the Equatorial Pacific and Canterbury Basin, or provide additional time to the Equatorial Pacific program. The Canterbury and Wilkes timeframe should not change significantly from that shown.

Model 1B

Risks - There is little flexibility given the monsoon and tropical storm constraints. In this model Murray Ridge occurs in the September – October window, the same window for tropical storms (May – June, October – December). In addition, the timing of the required sequence for completion of the hazard survey, finalization of the operational strategy, clearance and lease block permission is a significant issue.

Comments - Murray Ridge was added as an alternative option in response to uncertainties in the completion of the Equatorial Pacific site survey and the location of the SODV

shipyard time line. Shipyard selection will most likely be made in March, 2006. This model is not appropriate and should be deleted given the weather constraints and the assumed start date.

Model 2

Risks – Monterey as the initial cruise is problematic as it limits the time available to resolve the borehole and permitting issues and provides no flexibility for delays in the initial start date. The timing for Juan de Fuca as proposed in this model will minimize the possibility of success as it will result in significant waiting on weather. The preferred weather window is summer.

Comments – Note that Model 2 as proposed consists of three complex expeditions (Monterey, Cascadia, and Juan de Fuca). Cost and staff resource requirements in delivery of three complex programs out of a total of 5 programs will have significant consequences (both budget and staff loading) and may not be possible. Scheduling the Equatorial Pacific rather than Monterey as the initial expedition is preferred, however it is unclear which other proposal can be inserted into the October – December time frame other than those proposed for the southern latitudes. The Juan de Fuca expedition identified for the April-May window is also a problem as this program needs to start later (prefer July – Aug). One solution may be to extend the proposed NanTroSEIZE expedition for an additional 0.5 to 1 expedition. This would allow Juan de Fuca to be scheduled for the preferred summer window. An alternative would be to reintroduce the proposed Bering Sea program into this model as a summer option.

Model 3

Risks – The weather windows for Canterbury, Juan de Fuca and Monterey are a problem. In addition, scheduling Wilkes as the first expedition provides no flexibility for changes in the SODV schedule given the narrow weather window available for operations in the Wilkes region.

Comments – Adjustments to this model are necessary. One solution may be to complete an abbreviated Canterbury Program. The alternative would be to continue the Canterbury program through the less desirable weather window knowing that this would result in a reduction in science while the vessel is waiting on weather. The USIO will need to explore further the potential implications of this approach for Canterbury. The one advantage of an abbreviated Canterbury expedition is that this would move the Juan de Fuca program into an improved weather window. The Monterey program would still be in a less preferred weather window. The solution would be to move both Juan de Fuca and Monterey programs into the summer window by relocating the equatorial program to the November – December window.

Model 4A

Risks – Timing of the equatorial Pacific site survey may be a problem, but this potential risk is reduced in this model by delaying the start of operations by about 4 months.

Comments – This is a preferred model as it provides flexibility with the timing of the start date.

Model 4B

Risks – The risks previously identified with Murray Ridge as the initial expedition still exist, but are reduced given a January-February implementation window. An earlier start date in November – December would move the expedition into the window for the maximum frequency of tropical storms and therefore is not recommended.

Comments – Model 4a would be preferred over Model 4B given the risks associated with implementation of the Murray Ridge Proposal.

Model 5A

Risk – Timing for the site survey for the Equatorial Pacific program and the weather window for Juan de Fuca are concerns. Scheduling Juan de Fuca in the proposed August-September window leaves no room for delays in the SODV schedule.

Comments - There will be a significant resource investment in Juan de Fuca. A delay of 30 days in vessel delivery would prevent Juan de Fuca from being implemented until the following summer. Juan de Fuca should be removed from this position in the model and be rescheduled for the following summer season. Identification of a different proposal to insert as the second expedition is a challenge. Note also that this model schedules three complex programs which will be a resource issue.

Model 5B

Risk - NanTroSEIZE and Juan de Fuca (in part) would occur in undesirable weather windows. This is a significant issue for NanTroSEIZE given that it would occur during Typhoon season. In addition, this model provides little flexibility with the SODV timeline.

Comments – This model proposed the implementation of three complex expeditions. As previously stated this will have resource implications. Delays to the SODV timeline would force the proposed Juan de Fuca expedition to be deferred until the summer of 2008. Similar to Model 5a scheduling Juan de Fuca this early in the model is also a resource concern. We recommend the deletion of this model given the problems with the weather windows and the limited flexibility. The option of moving Juan de Fuca to the initial expedition was considered, but risks increases significant given the complexity of the program.

3.2.4 Revised Models for SPC consideration

The conclusion of the above discussion is that the OTF is hampered from developing the ideal model given (1) the limited number of proposals having simple operations, (2) the significant number of proposals having weather constraints, and (3) the uncertainty in the SODV schedule. The weather window constraints will not change. We can improve on the number of simple programs being considered by SAS, but only slightly within the limited time available.

Three options that may be possible are the reconsideration of the

- Bering Sea (pending EPSP comments),
- Consideration of another proposal currently in the system (e.g., East Asian Monsoon should such a proposal be ranked highly at SPC March 2006 meeting) and/or
- Continuing efforts at Superfast Spreading (pending SPC comments).

The SODV timeline may be refined further early next year, but significant planning time is lost waiting that long to make a decision. What we can say now about the SODV schedule is that a start date of about 1 September is our best educated guess as to when the ship will be available for operations. A delay in that is possible, but the general consensus is that a delay until January 2008 is less likely. The early start scenario is also less likely given that the House, Senate, and Oval office currently agree on the initial SODV budget numbers. Given this information, the planning process should focus on a 1 September start date and provide adequate flexibility with the model to accommodate slight adjustment in this window.

OTF desired providing several models to SPC for consideration. In that effort three refined models are presented in Figure 3, below. These models are based only on weather and operating constraints, not on cost. The models presented provide the best implementation strategy in that each model has the same initial first cruise, and at a minimum the same 5th and 6th cruise. This minimizes problems with implementation.

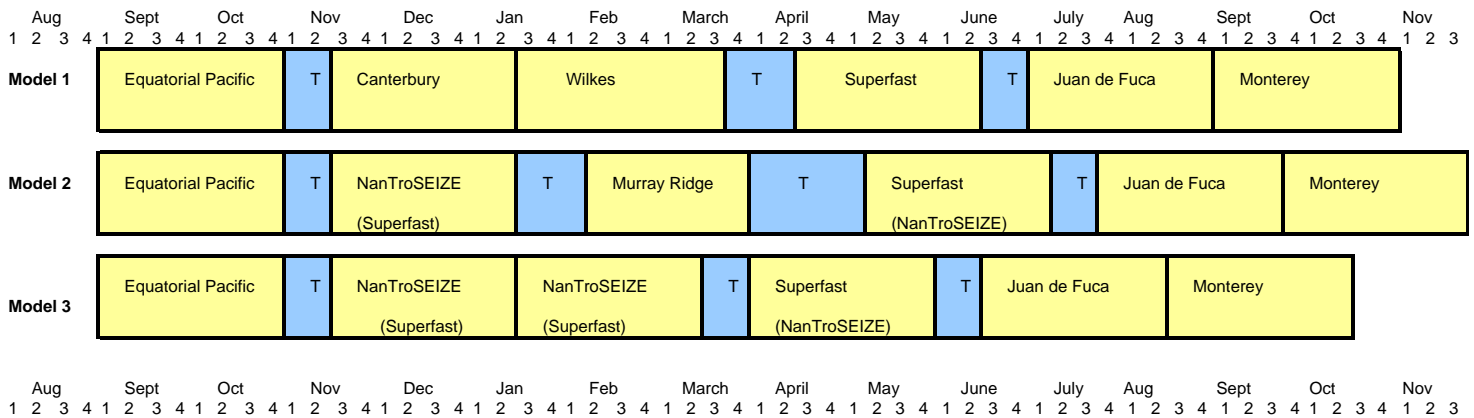


Figure 3. Riserless (USIO) scheduling options after consideration of long-lead review.

3.2.4.1 “Southern Ocean” Option

- SODV Model 1:

This is a good model with respect to operations, science and logistics as discussed above. Starting with the Equatorial Pacific provides maximum flexibility in the planning process both from operational and SODV perspectives.

Adjusting this timeline for an early start could be managed by expanding the Equatorial Pacific program (**note that the proposed operations may require more than 1 expedition**), extending the sea trial period, or adding an additional program (less preferred option).

Adjusting for a later start could be accommodated by either completing an abbreviated equatorial Pacific program or by starting with Canterbury Basin. If the Equatorial Pacific was removed it could be replaced in the schedule immediately following Wilkes Land. There are several possible options following the proposed Wilkes expedition. The preferred option would be to return to **Superfast** as this would provide the best option for maximum science delivery and minimal (if any) waiting on weather.

Alternate models are possible, but all will result in some operational downtime when waiting on weather and some will require significant transit. For example,

NanTroSEIZE – after Superfast, this option may have the least downtime for waiting on weather. However, note that typhoon season starts in May.

Monterey - scheduling of Monterey in the April timeframe is not ideal and would most likely result in an estimated 30% waiting on weather (*Note: Lead Agency update suggests this program not likely in near future- See Section 2.1 of this report*)

Bering Sea – This option may result in about 15% waiting on weather as the program is primarily an APC operations compared with Monterey (which includes borehole completions). The Bering Sea program would also require significant transit following completion of the Wilkes expedition.

3.2.4.2 “Non-southern Ocean” Options

OTF wanted to present SPC with a non-southern ocean option for consideration. Based on the above discussion there are two options.

- SODV Model 2

This model also starts with the Equatorial Pacific program. Following this expedition is a NanTroSEIZE program. The November – December window is not ideal, but there are few programs that are ideal to schedule during this time. It is estimated that completing NanTroSEIZE at this time could result in about 25% (w/ borehole completion), or 10% (no borehole completion)

downtime waiting on weather. One could substitute Superfast for NanTroSEIZE which would minimize any waiting on weather. Doing so would reduce possible options for the April – June window.

Scheduling Murray Ridge in the January – March window is possible. What expedition should follow Murray Ridge is problematic. Superfast is shown in the attachment and would be preferred. NanTroSEIZE also may be an option, but this would be scheduled during typhoon season. One other possibility may be East Asian Monsoon, but this also would be scheduled during tropical storm season. The lengthy transit time required for this option results late summer-autumn window for Juan de Fuca and Monterey

- SODV Model 3

An alternative to model 2 is to follow the equatorial Pacific with two NanTroSEIZE programs and 1 Superfast program or 2 Superfast programs and 1 NanTroSEIZE program. Juan de Fuca and Monterey would follow these expeditions. Adjustment to an early or late start for the SODV would be accommodated similar to that proposed in model 1a.

3.2.5 Further USIO-SODV model revisions (at October OTF meeting)

The preceding discussion (Items 3.2 – 3.4) formed the basis of the October 2005 OTF discussion for SODV FY07/08 options. The following is summary of the discussion and outcome (i.e., the SODV options to present to SPC for approval).

- Model 2 schedule is problematic as Murray Ridge transit to Murray Ridge would be substantial and there is not a viable program to follow this Program. Based upon this transit penalty issue the OTF decided not to forward this option to the SPC.
- Monterey clearance/permitting issue; – Based on comments from Lead Agencies (See Section 2.1 above) Monterey will not be integrated into a proposed model to SPC.
- Open slot
 - Superfast – It is unclear if current expedition would leave the hole clean and if the current expedition will recover gabbros. If expedition objectives are completed a new proposal would be required to ensure a program driven (science) process. A decision on scheduling Superfast will await a review of the results of the expedition 312 before making a recommendation.
- NanTroSEIZE discussion centered on the ability to support/ implement multiplatform operations concurrently. Numerous issues were discussed concerning the NanTroSEIZE program, including:
 - Issues associated with two platforms operating in the region at the same time and the need for detailed planning and coordination.

- Identification of which holes/elements would be completed by each platform (NanTroSEIZE PMT meeting established in San Francisco during AGU to refine a joint operational plan)
- The requirement for 2-3 months of vessel maintenance each FY for the CHIKYU.
- The status of the Kuroshio current and the need for alternate sites for either or both vessel(s).
- Potential staffing concerns given the number of scientists required to deliver the scientific program generated by two ship operations concurrently.
- CORK and LWD strategies will need to be determined if a two platform program is implemented.
- Approximately 6 months of lead time is required to process the information collected from the reference sites prior to completion of the deep hole programmatic elements.

Addressing these issues will be a challenge to implement and complete Stage 1 operations in FY07/FY08 but OTF (and the NanTroSEIZE PMT) feel such an operation is feasible.

3.2.6 Revised SODV options to forward to SPC

Figure 4 (below) provides a graphical summary of the revised options developed at the October OTF meeting. These two revised models remove Monterey and Murray Ridge taking into account problems surrounding the permitting process for Monterey and the long transit times associated with the Murray Ridge expedition. The OTF felt that scheduling of Murray Ridge would be more appropriate logistically when (and if) other highly ranked science programs in the area are forwarded to the OTF.

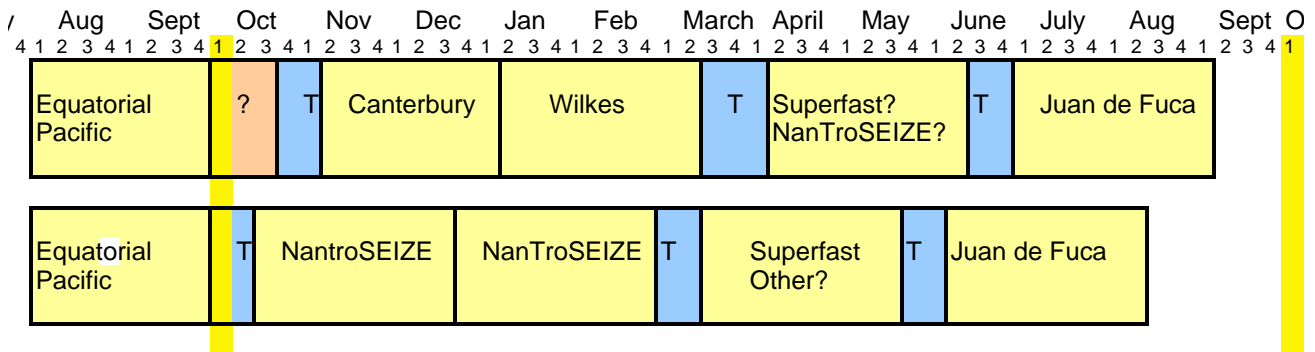


Figure 4. Revised USIO-SODV options from October 2005 OTF meeting to forward to SPC.

3.3.6.1 Comments/issues regarding revised (October) OTF schedule

- 1) The “NanTroSEIZE” model in combination w/ Chikyu operations (See Section 3.4) provides the opportunity to complete the majority (if not all) of the NanTroSEIZE Stage 1 operations in the first year of Phase 2 operations (also allowing for riser drilling at NanTroSEIZE to begin in FY08). However there are significant (but not insurmountable issues) to be addressed by SPC, the NanTroSEIZE PMT, the IOs, and the National offices to make this option a reality. These issues include:
 - NanTroSEIZE Community Resources (enough participants?)
 - Cross Platform data calibration issues
 - Timing of Coring/LWD operations between two platforms
- 2) In the “Southern Ocean” model, Canterbury operations are problematic in that there will need to be a shallow hazard survey by the IO and review by EPSP. It is possible that not all of the proposed sites can be drilled to the proposed depths without riser capability.
- 3) Both models have undefined expedition in March-May 2008 time window. There are few options residing at OTF for this time period. The OTF has put forth continued operations at Superfast as a logistically feasible (and fundable) operation. However, continued operations would depend on the outcome of Expedition 312. If that expedition does not reach its lithologic objectives then the Superfast proposal would still reside at OTF (and continued Superfast operations could be strongly considered by OTF/SPC). If Expedition 312 reaches its lithologic objectives then this particular program is completed and another expedition would need to be inserted in this time period.

Other possibilities for the “TBN” include (1) additional Equatorial Pacific operations (there are more sites in the proposal than can be drilled in one expedition), (2) finishing Cascadia (this may not be feasible in FY08 given the complexity (cost) of observatory operations), (3) Portions of Bering Sea (high transit penalty for a minimum number of viable sites in that weather window), (4) New program arising at the March 2006 SPC rankings.

3.3 CDEX-Chikyu

3.3.1 NanTroSEIZE Project Management Team update

A presentation of the latest NanTroSEIZE Project Management Team Staging plan was provided to the OTF members (see Appendix 1). This plan outlines the four separate “Stages” for the NanTroSEIZE operations. These stages are logistically feasible operational sequences and not the same as individual proposals (i.e., 603A, B, C, D). Of particular interest to the OTF was the NanTroSEIZE PMT Stage 1 prioritization of sites which define the operations that could be

developed for FY07/FY08 (see Appendix 1 [this report] and <http://www.iodp.org/project-scoping-groups> for more details of the NanTroSEIZE operation).

3.3.2 Proposed CDEX-Chikyu FY07/FY08 Operations

CDEX presented its drilling time estimates for Stage 1-3 of the NanTroSEIZE operations (see Appendix 1) along with a proposed operational scenario for Chikyu from January 2006 – Dec 2008 (See figure 5 below). In this scenario Chikyu would be available for riserless NanTroSEIZE operations in Sept 2007 – Dec 2007 (and possibly Jan –Feb 2008) and riser operations beginning June 2008.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	Training			Annual Maintenance Dock		Training			Riser Drilling Exercise			
2007	Riserless Drilling Exercise		Annual Maintenance Dock		Riser Drilling Exercise				NT2-03A & NT3-01A (Riserless)			
2008	NT1-01A? NT2-01A? NT2-01B?		Annual Maintenance Dock		NT2-03A (Riser, 215 Days)							

Figure 5. Chikyu operations for calendar years 2006-2008.

3.3.3 Chikyu Operations to forward to SPC

Based upon the availability of the Chikyu, the OTF consensus was that CHIKYU operations should begin with the NanTroSEIZE Stage 1 in late FY07 and early FY08. However, the operational model proposed by CDEX is not in alignment with that proposed by the NanTroSEIZE project management team. Stage 1 operations can be completed prior to start of Stage 2 operations only if the SPC chooses the “NanTroSEIZE” SODV scenario (See Section 3.2 discussion).

Depending on the scenario chosen by SPC for FY07/FY08 SODV operations, the OTF (in conjunction with the NanTroSEIZE PMT) will need to review possible riserless drilling scenarios for NanTroSEIZE during the Dec 2005-Feb 2006 time frame to optimize operations between platforms and ensure the scientific objectives of NanTroSEIZE are adequately addressed given the financial and logistical constraints of the operators.

Also of concern to the OTF is that the Kuroshio Current is currently in region of sites. Alternate sites/program will need to be defined if current remains over sites. This is a topic for the NanTroSEIZE PMT to address and report back to the OTF in March 2006.

Several OTF members expressed concern as to the limited number of riser proposals in the system and the lack of planning for the next riser target. Options discussed include Canterbury, Murray Ridge, and CRISP. Given that a minimum of 4 years is required for planning and implementation of any program we are already behind in the planning process for any of the other riser options.

3.4 ESO - MSP Operations

The selection of FY07/08 MSP operations was deferred at the June 2005 OTF meeting because of (1) some uncertainty as to the starting time for Tahiti operations (which might have resulted in a delay of proposed FY06 operations (New Jersey) until FY07, and (2) a lack of viable MSP operations after New Jersey.

As of the October 2005 OTF, the Tahiti expedition was underway and thus the OTF could focus on the preferred FY06 options and the ramifications that these operations may have on the selection of an FY07 MSP operation. In particular, ESO has requested input from the OTF and SPC on the concept of 2 vs. 3 holes for New Jersey operations. Currently ESO cannot conduct a 3-hole operation in FY06 because of financial constraints and would like OTF input as to whether a 2-hole operation would be adequately complete the science objectives outlined in the proposal. OTF will ask this question to SPC. If SPC deems a 3-hole project is required OTF would move New Jersey operations to FY07 (utilizing combined funds from FY06 and FY07 to fund the project).

3.5 Final Proposed Scheduled

The combined set of scheduling options for FY07/FY08 presented to SPC at its October 2005 meeting are graphically shown in Figure 6.

The SODV options include either (1) going to southern ocean (Equatorial Pacific, Canterbury, Wilkes, TBN, Juan de Fuca) and or (2) a more northerly "NanTroSEIZE" option (Equatorial Pacific, two NanTroSEIZE expeditions, TBN, Juan de Fuca) . The "TBN" expedition will be defined in December following the results from Expedition 312 and further discussion with SPC.

OTF has recommended the Chikyu proceed with planning for riserless stage 1 NanTroSEIZE operations. The exact sites to be drilled would be identified at a later date once SPC has identified the specific SODV operations (i.e., NanTroSEIZE or Southern Ocean).

OTF recommends that ESO move the New Jersey program to FY07 if SPC deems that three holes are required for the New Jersey Margin operation and ECORD cannot secure funds in FY06 for a 3-hole program.

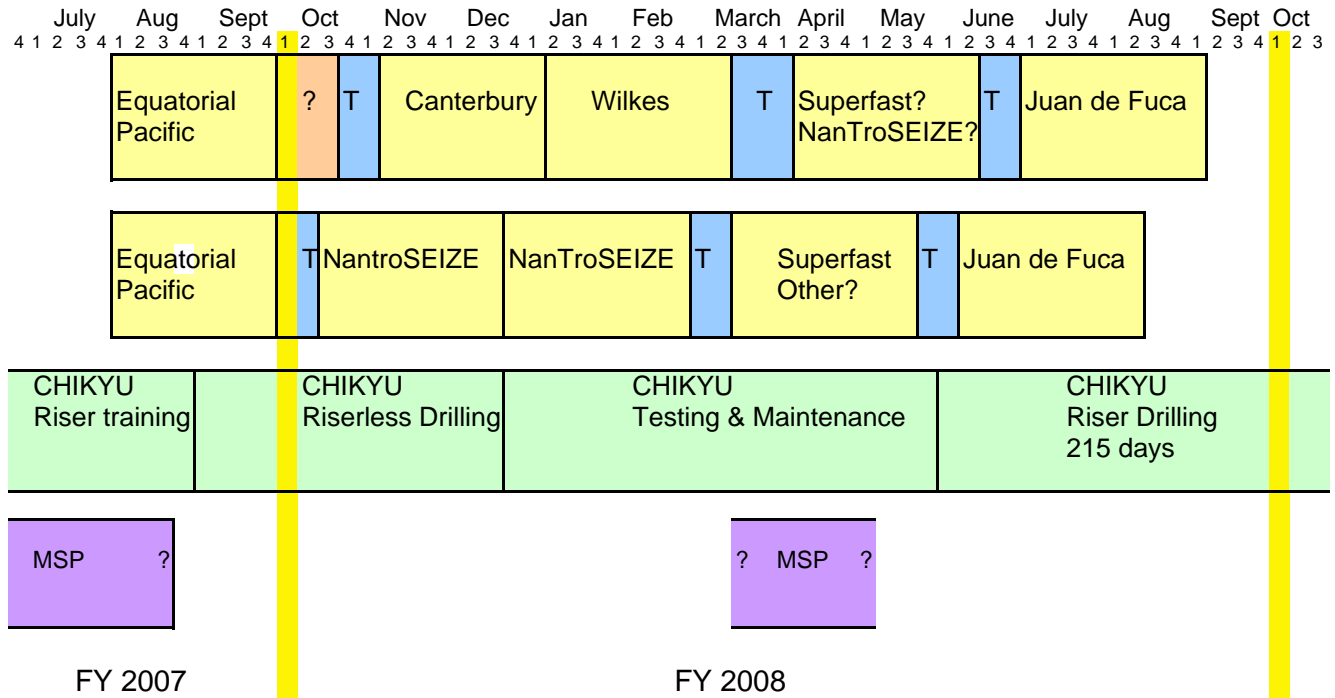


Figure 6. Proposed FY07/08 Operations forward by the OTF to SPC for discussion and approval.

4. Other business

4.1 Next meeting dates

The next OTF meeting will be a ½ day meeting to be held 1 day prior to the March the SPC to discuss any new operations or changes to the schedule that need to be conveyed to SPC.

Following the ranking exercise by SPC at its March 2006 meeting, OTF will meet in May or June to prepare a FY08/09 schedule for SPC consideration.

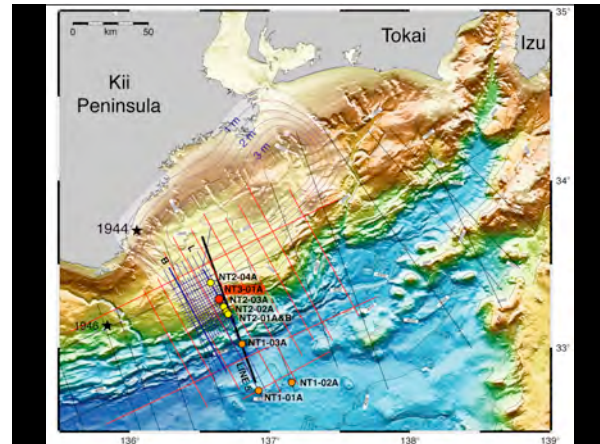
OTF Appendix 1

NanTroSEIZE Stage Operations

NanTroSEIZE Operational Stages

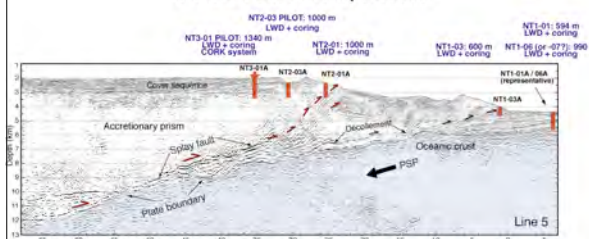
The Project Management Team has divided the NanTroSEIZE project into discrete Stages

- ♦ “Stages” are an operational sequence – they are NOT the same as the individual proposals (603-A, B, C, and D)
- ♦ Stages are also NOT individual legs



NanTroSEIZE Stage I

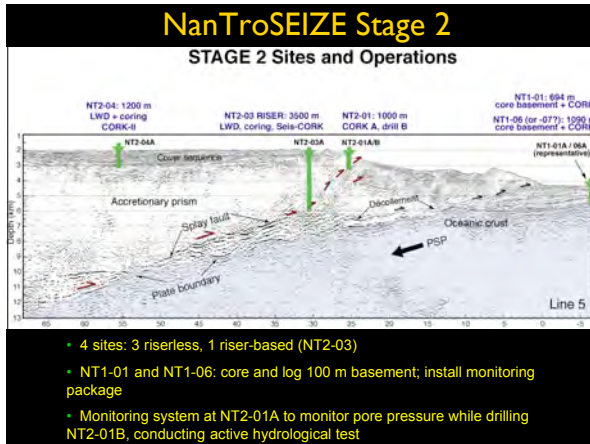
STAGE 1 Sites and Operations



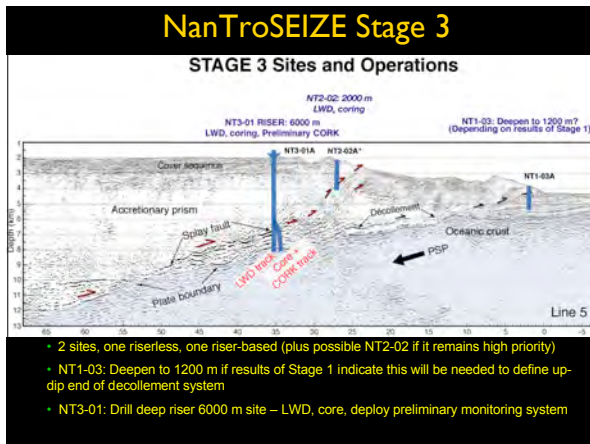
- 6 sites, all based on riserless drilling
- LWD and coring of sediment section at all sites
- CORK-type system at one site (NT3-01) to monitor pore pressure, seismicity, strain

Stage I Prioritization (not necessarily order of operations)

1. NT2-03 pilot hole coring and logging (~1000 m)
2. NT1-01 coring and logging
3. NT1-06 coring and logging (substitution of NT1-07?)
4. NT1-03 coring and logging
5. NT2-01 coring and logging (of 1 hole in pair)
6. NT3-01 pilot hole coring and logging (~1340 m)
7. NT3-01 preliminary CORK operation



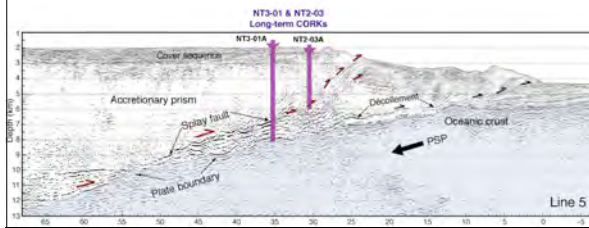
- ### Stage 2 Summary
- NT2-01 A/B (riserless)
 - Install observatory system in previously-drilled hole 1 of pair
 - Drill, perform wireline packer test in hole 2 of pair
 - NT2-03: (riser)
 - Drill, log, core to mega-splay (~3250 m)
 - Install casing to TD
 - Install initial, simple observatory - perhaps T and seismic array only (!)
 - Precise location remains to be determined with 3D seismic
 - Choose mega-splay target at ~3000 mbsf depth (for appropriate R,T), plus crossing by ~250 m (3250 total target)
 - NT1-01, NT1-06 (might be replaced by NT1-07) (riserless)
 - Return for CORK observatory installations (and basement coring/logging?)
 - NT2-04: (riserless)
 - Core, LWD to ~1200 m TD
 - Install monitoring system
 - Any carry-over of other high-priority science from Stage 1
 - NT1-04 (riserless) (might be replaced by NT1-07)
 - Core, log, install CORK



- ### Stage 3: Riser 6000 Site
- NT3-01: (riser)
 - Deepen to ~6000 m TD with LWD, casing
 - Sidetrack to take continuous core across faults (bottom - cement strainmeter?)
 - Install removable preliminary observatory (seismic array and pore pressure)
 - NT1-03 (riserless)
 - Deepen to ~1200 mbsf in sed package
 - Contingent – only if Stage 1 results and seismic survey results show it to still be high science priority
 - NT2-02*
 - Contingent – will be re-evaluated and drilled if justified by results of previous stages and 3D seismic survey

NanTroSEIZE Stage 4

STAGE 4 Sites and Operations



- Install "final" monitoring systems in riser holes
- Long-term data gathering

Stage 4: Install Full Deep Monitoring System

- ♦ NT2-03 and NT3-01:
 - ♦ Deploy "final" monitoring system in boreholes.
- ♦ Revisit and complete riser-less operations at any unfinished sites that still have high priority for drilling, observatories.

(Very) Notional timeline

Year	Operations
2007	Stage 1
2008	Stage 2
2009 / 2010	Stage 3
2010 / 2011	Record borehole arrays; finalize monitoring package
2012 (?)	Stage 4

Stage I Summary Table

Site	Location and Water Depth	TD in Stage 1 (mbsf)	Coring/LWD	Anticipated Geology	Wireline	Stage 1 Observatory	Potential Challenges & Drilling Risk
NT1-01	32° 44.8878' N 136° 55.0236' E 1186' basement 2540m	600m	• Core to top of basement • LWD • VSP	hemipelagic sed., turbidites	No	No	None identified
NT1-06 (or 077)	Choosing precise location for site: basinal section site NT1-07	-1000m	• Core to top of basement • LWD • VSP	hemipelagic sed., turbidites	No	No	Possible unstable sands in LSB facies
NT3-01 PILOT	33°13.6'N, 136°38.6'E (planned for later 6km riser site) 1950m*	1339 m	Both core and LWD entire section to ~1340 mbsf	a. 1039 m turbidites and hemipelagic sed. b. 300m accretionary prism shale and sandstone	WL suite plus offset VSP survey	CORR-II style; Strain, fill temp, pore pressure, seismicity	1. Possible free gas zone associated with gas hydrate reflector at 0.3 sec bcf. 2. Possible unstable sands in upper 100s of m bcf.
NT1-03	31° 12'22.58" N 136° 47'54.85" E 4125m	600 m	Both core and LWD entire section to TD	600 m turbidites and hemipelagic sediments	WL suite and VSP survey	No	1. Possible unstable hole conditions due to fractured rock 2. Possible unstable sands beneath frontal thrust 3. Possible water overpressures in fault zone(s)
NT2-01	33°13.6'N, 136°42.6'E (seaward part of megasplay) 2300 m	1000 m	Both core and LWD to TD	1000 m turbidites and hemipelagic sediments	WL suite and VSP survey	No	1. Possible free gas although no BSR recognized 2. Unstable hole conditions due to fractured and brecciated rock, possibly with water overpressure at fault zones (0.3s and 1s)
NT3-01 PILOT	33°13.6'N, 136°41.4'E (planned for later 3.25 km riser site) 2200 m	1000 m	Core and LWD to TD	1000 m in turbidites and hemipelagic sediments	WL suite, VSP	No	1. Possible free gas although no BSR recognized 2. Possible unstable hole conditions due to fractured and brecciated rock, possibly with water overpressure at fault zones.

Stage I: Possible Expedition Breakdown

- ♦ *Expedition A*
 - ♦ LWD only for all sites (Co-chiefs 1 and 2)
- ♦ *Expedition B*
 - ♦ Coring/DM/WL for 'stratigraphic focus sites' NT1-1/NT1-6/ NT3-1/NT2-3 (Co-Chiefs 3 and 4)
- ♦ *Expedition C*
 - ♦ Coring/DM/WL for 'structural focus sites' NT1-3/NT2-1 (Co-Chiefs 5 and 6)
- ♦ *Expedition D*
 - ♦ Observatory Deployment – CORKing (Co-chiefs 7 and 8)

NanTroSEIZE PMT Recommendations for Co-Chiefs

Pool for all Stage I expeditions

- ♦ **Japan:** J. Ashi, M. Kinoshita, S. Saito, G. Kimura, W. Soh
- ♦ **USA:** M. Underwood, H. Tobin, G. Moore, D. Saffer
- ♦ **Europe/Canada:** A. Kopf, E. Davis

OTF Appendix 2

Proposed CDEX FY07/FY08 Operations



CDEX **D/V CHIKYU Operations Plan** **For 2006 - 2008**

For IODP OTF Meeting
Kyoto, Japan
October 24, 2005

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D/V CHIKYU For NanTroSEIZE

- **Science and Society**
 - Understand Plate Boundary Earthquake and Tsunami Process
 - Contribution to Natural Disaster Prevention
- **SAS**
 - Top-Class Ranking by SPC
 - First CDP in IODP
 - Riser Drilling Proposal

October 24, 2005

For IODP OTF Meeting, Kyoto

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NanTroSEIZE CDP Overview

- **603-CDP – NanTroSEIZE Overview**
 - Umbrella proposal for all 603-series proposals
 - 603A - Phase 1: Reference Sites
 - 603B - Phase 2: Mega-Splay Faults
 - 603C - Phase 3: Plate Interface
 - 603D - NanTroSEIZE Observatories
 - Under the external review

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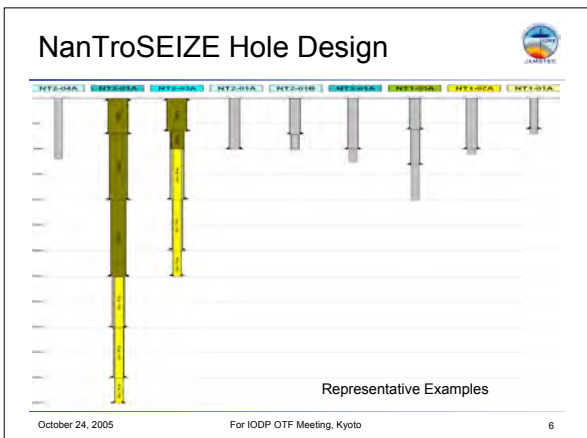
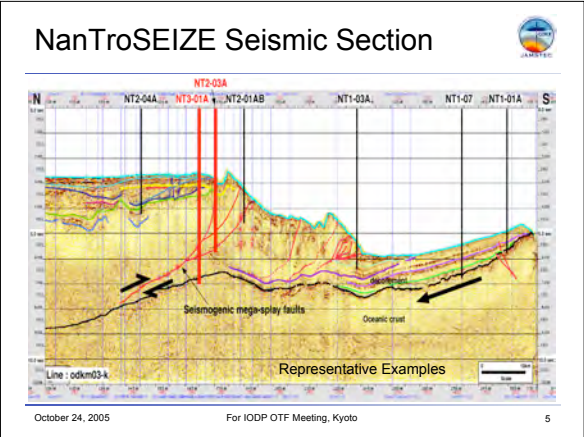
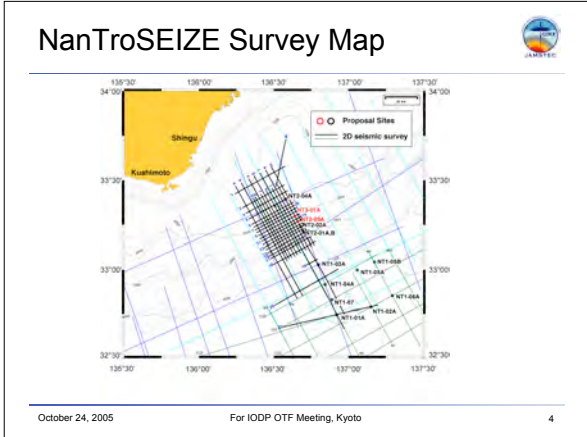
NanTroSEIZE CDP Proposals

- **603A - Phase 1: Reference Sites**
 - Determine stratigraphy and physical properties of marine sediments
- **603B - Phase 2: Mega-Splay Faults**
 - Drilling into splay fault system; monitoring
- **603C - Phase 3: Plate Interface**
 - Investigate into seismogenic zone; monitoring

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PMT Staging Preliminary Plan

	Hole Name	Water Depth (m)	Total Penetration (m)	Drilling to TD (days)	Completion/Observatory (days)	Contingency (days)	Site total Days
Stage 1	NT1-01A (Riserless)	3,452	594	18		3	21
	NT1-07A (Riserless)	4,015	990	29		3	32
	NT1-03A (Riserless)	4,069	600	20	5	3	28
	NT2-01A (Riserless)	2,476	1,000	28		3	31
	NT2-03A (Riserless)	2,240	1,000	23		3	26
Stage 2	NT3-01A (Riserless)	1,930	1,339	44	7	5	54
	NT1-01A (Riserless)	3,452	694	9	6	1	16
	NT1-07A (Riserless)	4,015	1,090	9	11	1	21
	NT2-01A (Riserless)	2,476	1,000	0	5		5
	NT2-01B (Riserless)	2,476	1,000	13	6	1	20
Stage 3	NT2-04A (Riser)	1,925	1,200	21		3	24
	NT2-03A (Riser)	2,240	3,500	152	33	30	215
	NT1-03A (Riserless)	4,069	2,000	52		2	54
Total	NT3-01A (Riser)	1,930	6,000	386	39	60	485
Total							1,032

Results from PMT on Aug. 05 in Hawaii

October 24, 2005 For IODP OTF Meeting, Kyoto 7

PMT Requested Services



	Hole Name	Science Support Services	Coring Services	LWD Logging	Wireline Logging	Downhole Measurement	Observatory Installation
Stage 1	NT1-01A (Riserless)	X	X	X			
	NT1-07A (Riserless)	X	X	X			
	NT1-03A (Riserless)	X	X	X	X		X
	NT2-01A (Riserless)	X	X	X	X		
	NT2-03A (Riserless)	X	X	X	X		
Stage 2	NT1-01A (Riserless)	X	X	X	X		X
	NT1-07A (Riserless)	X	X		X	X	X
	NT2-01A (Riserless)	X				X	
	NT2-01B (Riserless)	X					X
	NT2-04A (Riserless)	X	X	X	X		
Stage 3	NT2-03A (Riser)	X	X		X		X
	NT1-03A (Riserless)	X	X	X	X		
	NT3-01A (Riser)	X	X		X		X

Results from PMT on Aug. 05 in Hawaii

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CDEX Proposed Drilling Scenario



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	Training		Annual Maintenance Dock		Training			Riser Drilling Exercise		US FY2007		
2007	Riserless Drilling Exercise		Annual Maintenance Dock		Riser Drilling Exercise			Riser Drilling Exercise		US FY2008 NT2-03A & NT3-01A (Riserless)		
2008	NT1-01A? NT2-01A? NT2-01B?		Annual Maintenance Dock		NT2-03A (Riser, 215 Days)			US FY2009				

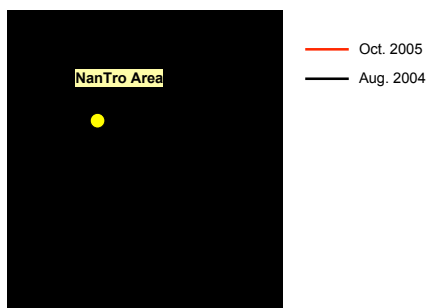
Note: 3 Riserless holes (30 drilling-days/hole) in Sep. 2007 ~ Feb. 2008.
NT01-01A/NT02-01A/NT02-01B should be selected by SAS/PMT/OTF.

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Kuroshio Current



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