

Report of NanTroSEIZE Project Management Team Meeting

Honolulu - August 25-26, 2005

Attendance

Core Members

Tom Janecek	IODP-Management International, Washington, DC, USA
Gaku Kimura	Department of Earth & Planetary Science, University of Tokyo
Masa Kinoshita	JAMSTEC/IFREE, Japan
Shinichi Kuramoto	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Hans Christian Larsen	IODP-Management International, Sapporo, Japan
Harold Tobin	Dept of Earth & Environmental Science, New Mexico Tech, USA
Mike Underwood	Dept of Geological Sciences, University of Missouri, USA

Technical Implementation Members

Adam Klaus	JOI Alliance, Texas A&M University, USA
Hideki Masago	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Jun Tomomoto	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Hajime Saga	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan

Guests and Liaisons

Juichiro Ashi	Ocean Research Institute, The University of Tokyo, Japan
Toshihiro Ike	Dept of Geology and Geophysics, University of Hawaii, USA
Greg Moore	Dept of Geology and Geophysics, University of Hawaii, USA
Elizabeth Screaton	Department of Geology, University of Florida, USA

Agenda

1. Previous Meeting Action Items Review (from Santa Fe Meeting)
2. Updates
3. Stage 1 Planning
4. Stage 1 Expedition Organization
5. Long-term Monitoring and Observatories
6. Stage 2 and beyond
7. All other business

1. Previous Meeting Action Items Review (from Santa Fe Meeting)

Action Item 0502-1: Chair to discuss with EPSP how and when each site should be reviewed by EPSP.

Nothing specific to report. Still need generic template for CDPs. Chair will discuss this issue with EPSP at upcoming fall Operations Task force meeting in Kyoto

Action Item 0502-2: Chair to Contact Site Survey Data bank to determine status of proposals with respect to Site Survey data.

Discussion deferred to update on SSP (see Section 2 below)

Action Item 0502-3: The Chair will incorporate all the input and finalize the generic and NantTroSEIZE specific mandates.

Done: Posted on IODP-MI website in Meeting Reports (Project Scoping – NantTroSEIZE section).

Action Item 0502-4: Tamio Yohroh, Nathan Bangs, Shin'ichi Kuramoto, and Harold Tobin to discuss details regarding coordination of 3-D Survey and report back to PSG

Discussion deferred to Section 2 below

Action Item 0502-5: T. Janecek to inquire at Industry Workshop about industry representatives who could provide advice with contract 3-D Survey negotiations.

Done: Nathan Bangs in contact with Industry.

Action Item 05-02-6: PSG needs to develop standard presentation format of Site Scoping information that includes prioritized coring/logging/monitoring operations, seismic line (with interpretations), prioritized site science objectives.

In Progress : Will result as an outgrowth of this meeting.

Action Item 0502-7: Chair to engage SAS on prioritizing observatory engineering development needs.

In Progress. Engineering Development Panel to meet in fall to begin long-term prioritization. IODP-MI Observatory Task Force to be initiated in Fall (October). Input from San Jose meeting

Action Item 0502-8: Chair to request time estimates for Stage 1 operations to be prepared for the June29-30 2005 Operations Task Force meeting in Edinburgh

Done

NOTE: Individual presentations (in pdf format) are in appendices at end of report. Original Powerpoint Presentations are available from IODP-MI upon request (contact T. Janecek – tjanecek@iodp.org)

2. Updates

2.1 IODP-MI and OTF Update (Appendix 1)

The OTF evaluated 12 proposals for possible implementation late FY07 and early-mid FY08. The evaluation resulted (1) in a series of options for USIO operations for SPC to

consider (2) recommendation for Stage 1 NanTroSEIZE operations for the Chikyu and (3) No decision for MSP operations.

Of particular interest to the PMT was that NanTroSEIZE appears in several of the USIO riserless options. Thus the possibility exists for multiple vessels operating in the Nankai region in FY07 and FY08

FY07/FY08 Operations will be finalized at the Fall (October) SPC meeting in Kyoto, Japan

2.2 USIO Operations: (Appendix 2)

The schedule for remaining expeditions in USIO Phase 1 operations was presented (Cascadia -311; and Superfast 3 -312), followed by a short summary of the status of SODV planning. A decision on ship selection will be made this fall. Of particular interest to the PMT is that SODV Phase II operations will begin toward the end of FY07 (depending on funding, vessel selection and shipyard location) and these operations could include NanTroSEIZE operations.

2.3 CHIKYU OPERATIONS: (Appendix 3)

The Chikyu was delivered to CDEX in July 2005 with Sept 2007 as the likely time for the initiation of international IODP operations. A test cruise will occur in Oct 2005 off NE Honshu and will include two riser-less holes with APC coring to 50 mbsf. The Chikyu will then undergo an “annual inspection”. Riser drilling tests will be conducted in 2006-2007 (also off NE Honshu).

The PMT urged CDEX to make sure that an international group of scientists be involved in the shakedown cruises to help bring analytical systems online. The PMT needs to work closely with CDEX and National Program offices to make sure this happens.

The Chikyu will require a 2-month servicing (annual maintenance) every year. This annual maintenance will be conducted in the March-April time frame during the first year of operations. This timing is dictated by the need to use money spanning two Fiscal Years. It was noted that this was one of the best weather windows for Nankai area. In future years, this annual maintenance may be able to be shifted 2-3 months. Drilling and ship staff are limited to 1-month stretches. Transfers of staff can be accomplished by supply boat, helicopter, or port call.

2.4 3D seismic planning update (Appendix 4)

Greg Moore described the status of the cooperative Japan-US 3D seismic plans. This is a \$10M project with \$6.5M from CDEX, \$1M from IFREE and NSF providing \$2.75M. The project will consist of a commercial multi-streamer operation in March-April of 2006 covering a 20x70 km grid. The survey will use the “Ramform Victory” from PGS, which

can tow ten 6-km streamers A certain level of processing will be conducted onboard and then the tapes will be sent to a processing center. Pre-stack time migration processing should be available 6-7 months after cruise.

Particular PMT issues: Timing of data acquisition/availability and final Stage 1 site selection is still likely to be problematic. Interpretation will take time (also an issue for appropriate site selection).

2.5 Other site survey related activity (Appendix 5)

M. Kinoshita described the numerous site survey activities taking place in the drilling operations area as well as the development of internal NanTroSEIZE working groups in Japan.

Of particular interest to the PMT was the submission of a proposal to cover the entire area surrounding drill sites with a cable network for seafloor observatory and hazard monitoring. If funded and implemented, power and connectivity to NanTroSEIZE borehole monitoring systems may be possible.

2.6 Communication from Site Survey Panel (Appendix 6)

Significant issues have arisen with respect to SSP/PMT interaction including communication pathways, the role of SSP once a CDP is forwarded to the Operations Task Force, how should site change decisions be shared with SSP, etc (see Appendix 6).

The PMT members feel that since the PMT reports to the Operations Task Force, any changes by the PMT should go through the OTF to the Science Planning Committee (SPC). SPC will assess and request input from other panels (SSP) if necessary. Otherwise, SSP will not continue to review the operations.

ACTION ITEM 0508-01: *Hans Christian Larsen, T. Janeczek, and M. Underwood to further discuss SSP/PMT concerns with chair of SSP to ensure process is working properly.*

3. Stage 1 Planning (Appendix 7 and Appendix 8)

3.1 Draft Stage plans

The NanTroSEIZE PMT has organized the overall program into a series of Stages based upon definable goals and increasing complexity of operations. The plan for this meeting

was to confirm the prioritization of Stage 1 Sites and build a roadmap for Stage 2 and beyond.

Prior to the PMT meeting, the NanTroSEIZE co-chief project scientists developed a draft Stage 1 Prioritization of Sites for discussion:

1. NT1-01 to TD (694 mbsf) - core, LWD
2. NT1-06 to TD (1090 mbsf) - core, LWD
3. NT3-01 to TD (1339 mbsf) - Kumano basin sediments plus 300 m prism unit
Core + LWD + VSP
CORK-II style observatory installation
Install pore fluid pressure monitoring, temperature array, strainmeter, tiltmeter, seismometer
4. NT1-03 to TD (600 m) - core. LWD
5. Priority 2 = 1000 mbsf TD
6. NT2-04 to TD of 1200 (OR priority 2: 1400 m) - core, LWD
7. *NT2-01A to TD (~1000 mbsf) - core, LWD + VSP*

Logging priorities include:

- Density and porosity
- Resistivity (including imaging)
- Sonic velocity (waveform P and S)
- Gamma
- LWD
- Wireline to augment especially for sonic and FMS only at selected sites

The PMT discussed numerous issues surrounding the proposed State 1 sites including:

1. Installing a Packer at NT01-06
2. Drilling a Pilot hole at NT2-03 in Stage 1 instead drilling at NT2-01 so riser drilling can begin earlier (perhaps in FY08?)
3. Adding VSP operations at NT1-01, and NT1-06
4. Adding an Offset VSP at NT03-01 (two-ship operation)
5. Drop NT02-04 from Stage 1 (still may be valuable after NT03-01 to fill in details of recent uplift history)
6. Possibility of moving basement plain site off NT01-06 as lateral continuity may not be good.
7. Location and type of Stage 1 observatory (consider (NT3-01)
8. Substitution of NT1-07 for NT1-06 (see PPT8)

Based upon the discussion the PMT developed a new Stage 1 Plan (Table 1; below).

Table 1: Revised Suggested Stage 1 Plan Summary (new elements in yellow)

Site	Total Depth in Stage 1	Coring/LWD	Anticipated Geology	Wireline	CORKing
<i>NT1-01</i> (reference site: basement high)	694 mbsf	<ul style="list-style-type: none"> Core to TD LWD sediments only VSP 	a. 594 m hemipelagic sediments, turbidites b. 100 m basaltic basement	Basement only	No
<i>NT1-06 (or 07)</i> (reference site: basinal section; <i>see fig. 1 below</i>)	1090 mbsf	<ul style="list-style-type: none"> Core to TD LWD sediments only VSP 	a. 990 m hemipelagic sediments, turbidites b. 100 m basaltic basement	Basement only	No
<i>NT3-01</i> (planned for later 6km riser site)	1339 mbsf	Both core and LWD entire section to ~1300 mbsf	a. 1039 m turbidites and hemipelagic sediments b. 300 m accretionary prism of shale and sandstone	WL suite plus offset VSP survey	CORK-II style (see below): Strain, tilt, temp, pore pressure, seismicity
<i>NT1-03</i> (frontal thrust & toe region)	600 mbsf (Priority 2 is 1000 m)	Both core and LWD entire section to TD	600 m turbidites and hemipelagic sediments	WL suite and VSP survey	No
<i>NT2-01</i> (seaward part of mega-splay)	1000 mbsf	Both to TD	1000 m turbidites and hemipelagic sediments	WL suite and VSP survey	No
<i>NT2-03</i> (Pilot hole for mega-splay 3 km site)	1000 mbsf	Core and LWD to TD	1000 m turbidites and hemipelagic sediments	WL suite, VSP	No
OPTION: MAY DROP OUT OF STAGE 1					
<i>NT2-04</i> (Kumano forearc basin)	1200 mbsf (Priority 2 is 1400 m)	Both core and LWD entire section to TD	1200 m turbidites and hemipelagic sediments	WL suite through BSR interval	No

ACTION ITEM 0508-02: Co-Chief Project Scientists (Tobin/Kinoshita) to refine table to include completion/abandonment requirements, casing options, primary risks/hazards, and basic site objectives and success criteria.

ACTION ITEM 0508-03: IOs (CDEX and USIO) to supply PMT with first draft of detailed operational times for operations associated with Stage 1 by next meeting.

An item of particular importance to the PMT and the calculation of drilling times is the discrepancy between depth estimates/velocity models developed by CDEX and the

University of Hawaii. Differing assumptions and calibrations may in part be the cause but until the discrepancy in estimates is resolved the PMT will use the deepest Total Depth for planning purposes.

Based upon this Stage 1 plan, PMT members will need to begin working with engineers very soon to develop Observatory sensors and plan for 3rd party funding

4. Stage 1 Expedition Organization

4.1 Proposed Stage 1 Operation expeditions

The PMT attempted to break down Stage 1 operations into “Expedition-sized” programs. The following “four expedition plan” was proposed for discussion:

Expedition -A LWD for all sites
Expedition -B coring with focus on stratigraphic sites
Expedition -C coring with structural focus (faults)
Expedition -D observatory deployment

While LWD could come after coring expeditions it would be best to have LWD before coring operations. LWD prior to coring will have safety issues that EPSP (and perhaps SSP) will have to address.

The PMT will need to address in the near future a number of issues surrounding this expedition model, including:

- 1) Developing a “spill-over” model for unfinished tasks from any particular expedition or Stage
- 2) Determining the moratorium period on data use and sampling.
- 3) How will Prospectus, Preliminary Reports, Initial Reports, etc. be generated (one for entire stage or for each expedition or sub-expedition?)

4.2 Ship Operations, Staffing, and Measurement Issues

The PMT did not discuss which platform (i.e., Chikyu or SODV) would conduct any particular riserless operation. This will be an OTF issue. However, if there are continuous Chikyu operations and/or concurrent Chikyu and USIO SODV ship operations at NanTroSEIZE there may not be enough scientists to staff the labs. If this situation arises, the PMT will need to help devise an appropriate staffing strategy and all involved IODP entities (including member countries/operator)s will need to reach out to include more scientists

CDEX representatives informed the PMT that the Chikyu will operate on a 4-week change-over of drilling crew and lab staff on Chikyu (with overlapping groups). There is no such limitation for scientific staff but two months is probably the practical upper limit.

The PMT identified a slate of appropriate potential co-chief scientists for the four expeditions they have proposed Stage 1. These are being forwarded to OTF/SPC for consideration. The PMT only forwarded names for co-chiefs for Stage 1 operations. It will recommend and forward additional names for subsequent operations in the future. It is important for Co-Chief selection to begin as soon as possible once the OTF formally puts NanTroSEIZE on the schedule. Specific issues regarding length of expedition, costs, operations, etc., will require detailed interactions between the Chief Project Scientists, Expedition Co-chief Scientists, and IO operations/engineering staff. Interaction early on in the planning process could reduce potentially significant changes in plans, time, and cost that might negatively impact science deliverables.

With (perhaps) multiple ship and definitely multiple-expedition operations, it is imperative to develop a well-thought out minimum set of shipboard measurements. STP is beginning to address this issue but the PMT will also need to be pro-active (see below regarding “lead scientists) and provide input not only on this minimum set of measurements but for additional “NanTroSEIZE-specific” measurements.

The PMT recognized that it would be very beneficial to have international scientists sail on some of the shakedown cruises (for both Chikyu and SODV) to insure proper inter-calibration for NanTroSEIZE data. It was not clear if these scientists would need to be designated as JAMSTEC visiting researcher to participate in shakedown phase.

Staffing will initially utilize the normal 8-8-8-1 ratio for staffing and co-chief distribution. Of particular importance is the need to define “lead scientists” for each discipline to ensure consistency (and completion) of analyses and sampling strategies across expeditions and platforms. Several mechanisms were discussed to accomplish this task including the use of video conferencing between platforms and shore. The roles and responsibilities of these “lead scientists” and how they will work with the IOs and STP to insure data consistency needs to be addressed soon.

<p>ACTION ITEM 0508-04: Mike Underwood to develop draft of “Lead Scientist” roles, responsibilities and bring a draft to the next PMT for considerations</p>

5. Long-term Monitoring and Observatories (Appendix 9)

5.1 Observatory Workshops

This workshop (held July 17-19 in San Jose, Ca) identified the various systems, sensors, and technologies required for NanTroSEIZE. Also identified was what technology is

currently available, what technology will take only minor development, and what will require substantial development. A series of issues are being forwarded to the newly formed EDP.

CDEX representatives indicated that they intend to hold an observatory workshop. This would be intended to include all IODP and not just NanTroSEIZE observatories. A meeting date/time has not been finalized.

5.2 Observatory Funding model

The PMT discussed the current models for funding and support of Observatory sensors and technology (i.e, 3rd party). This model may be problematic for deep riser hole observatories where 3rd party funding is too uncertain for long-term planning. However, this is the only model that is available at this time so 3rd party proposals should continue to be pursued until new funding mechanisms (if any) materialize.

5.3 CDEX use of Stage 1 hole for testing/development

CDEX indicated that they are interested in using one of the boreholes drilled during Stage 1 for observatory testing. The PMT told CDEX that they will need to submit a plan for review. There is also another proposal being written to install a observatory test facility to the east of Nankai.

6. Stage 2 and beyond

Below is draft plan for Stage 2 (and beyond) based upon what has been decided for Stage 1 operations:

Revised Stage 2:

- 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 P,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:

- 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

Stage 4: final monitoring at NT3-01, NT2-03

- 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.

ACTION ITEM 0508-05: IOs (CDEX and USIO) to work with PMT to develop rough draft of detailed operational times for operations associated with Stage 2-4. If possible for presentation at summer 2006 OTF meeting.

7. All Other Business

7.1 Mission Freeze

The PMT began discussion of when NanTroSEIZE operations (and science input) are finalized. Is there a time when operations are “frozen” (i.e. finalized). If so, there is a concern as to how we (the PMT and SAS) can incorporate new exciting concepts?

Discussion revolved around how to handle and respond to proposals submitted to IODP that might impact NanTroSEIZE CDP activities. For example, Earl Davis and others have submitted a conceptual proposal (655-PRE) that could be accomplished at Nankai or Cascadia. If this proposal was ultimately forwarded for implementation what would the PMT recommend? No firm answers arose in the discussion but the PMT generally agreed that the CDP umbrella proposal is a good guiding science plan. In practice, the lead-time and planning for certain operational aspects, along with funding, will dictate “mission freeze” The PMT clearly recognized, though, that for proper operational planning we will need to identify specific “mission freeze” points for each stage.

7.2 Reporting to other groups.

The NanTroSEIZE PMT results and issue to date need to be reported to various IODP entities.

ACTION ITEM 0508-06: Mike Underwood to report on NanTroSEIZE stages and staffing issues to national committees at Kyoto meeting in October

ACTION ITEM 0508-07: Tom Janecek to provide regular NanTroSEIZE stage updates to SPC and OTF.

7.3 Next meeting

The next PMT will be Feb 1-2 at the IODP-Mi office in Sapporo.

Appendices

Appendix 1: IODP-MI and OTF update

Appendix 2: USIO update

Appendix 3: CDEX update

Appendix 4: 3D Seismic update

Appendix 5: General Site Survey Status

Appendix 6: SSP /PMT interactions

Appendix 7: Stage Plans

Appendix 8: NT1-06 issues

Appendix 9: NanTroSEIZE Observatory Workshop update.

APPENDIX 1

IODP-MI and OTF updates

IODP NanTroSEIZE Project Management Group

Honolulu, Oahu, HA
August 25-26, 2005



NanTroSEIZE PMT Agenda

1) Welcome, Introductions, Agenda and Logistics Review

2) Previous Meeting Action Items Review

3) Updates

- IODP-MI and OTF Update (Janecek)
- IOs update (Kuramoto/Klaus)
- 3D seismic planning update (Moore)
- Other site survey related activity? (Kinoshita)
- Communication from Site Survey Panel (Underwood)
- Proposal 603D status at SSEP (Underwood)
- Discussion of Project Scoping at SSEP (Underwood)
- Additional Nankai proposals to SAS (Tobin/Underwood)



NanTroSEIZE PMT Agenda - (cont)

4) Stage 1 Planning (Tobin/Kinoshita/Underwood)

- Proposed Stage 1 Prioritization of Sites
- Target Depths Stage 1
- Discrepancies between CDEX-Hawaii velocity models (Moore/Ashi)
- Operations and Logging Plans
- Proposed Stage 1 non-riser observatory plan

5) Stage 1 Expedition Organization

- Proposed breakdown of expedition into "Legs" [Sub-Legs?] (Kuramoto/Kinoshita/Tobin)
- Co-Chiefs: general plan and individual names (Kinoshita/Tobin)
- Science party organization (Janecek/Kuramoto/Klaus)



NanTroSEIZE PMT Agenda - (cont)

6. Long-term Monitoring and Observatories

- Summary of the San Jose workshop and report (Tobin)
- Recommendations from the PMT to IODP-MI, IOs, 3rd party developers

7. Stage 2 and beyond

- Discussion: Mega-splay sites – how many?
- Discussion: When do we begin the first riser operation and which site? How does this impact Stage 1 sites and operational decisions? (Tobin/Kinoshita)
- Defining the complete CDP – "Mission Freeze" – when and how? (Tobin/Kinoshita)
- Operator ideas/issues



NanTroSEIZE PMT Agenda - (cont)

8. Other Stuff

- Eos article plans (Kinoshita/Tobin)
- Planning for shipboard pore pressure and geotech (Underwood/Screaton)
- Standardized shipboard-shorebased XRD; start calibration during shakedown cruises; coordinate with Kochi/Missouri etc. (Underwood)
- Scientists participation in shakedown cruises; sampling (Underwood)
- Communication between PMT and national committees

9. Action Items Review

10. Next Meeting



Action Item Review

Action Item 0502-1: Chair to discuss with EPSP how and when each site should be reviewed by EPSP.

Action Item 0502-2: Chair to Contact Site Survey Data bank to determine status of proposals with respect to Site Survey data.

Action Item 0502-3: The Chair will incorporate all the input and finalize the generic and NanTroSEIZE specific mandates.

Action Item 0502-4: Tamio Yohroh, Nathan Bangs, Shin'ichi Kuramoto, and Harold Tobin to discuss details regarding coordination of 3-D Survey and report back to PSG



Action Item Review

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Action Item 05-02-6: PSG needs to develop standard presentation format of Site Scoping information that includes prioritized coring/logging/monitoring operations, seismic line (with interpretations), prioritized site science objectives.

Action Item 0502-7: Chair to engage SAS on prioritizing observatory engineering development needs.

Action Item 0502-8: Chair to request time estimates for Stage 1 operations for the June 29-30, 2005 OTF meeting.



Operations Task Force -update

Scheduling of Riser, Riserless, and MSP Operations

- Late FY07
- 6-8 Months of FY08

Evaluated 12 Proposals

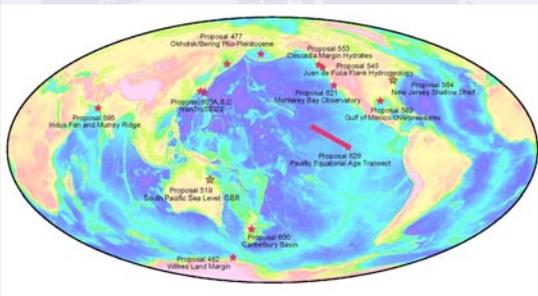
- 8 Riserless
- 2 Riser/Riserless
- 2 MSP

Developed:

- Multiple Options for Riserless Southern Ocean vs Non-Southern Ocean
- NanTroSEIZE for Riser
- No Decision for MSP operations



Proposals Residing with Operations Task Force



- 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

Riserless

- 603 A, B, C NanTroSEIZE
- 595 Indus Fan and Murray Ridge

Riser and Riserless

- 519 South Pacific Sea Level
- 564 New Jersey Shallow Shelf

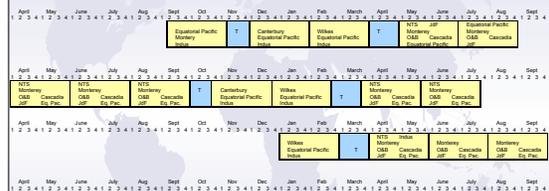
Mission Specific

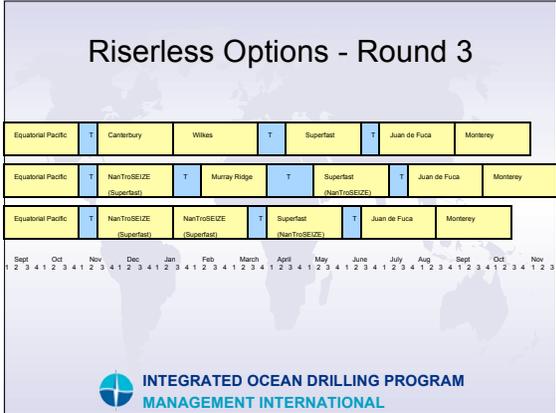
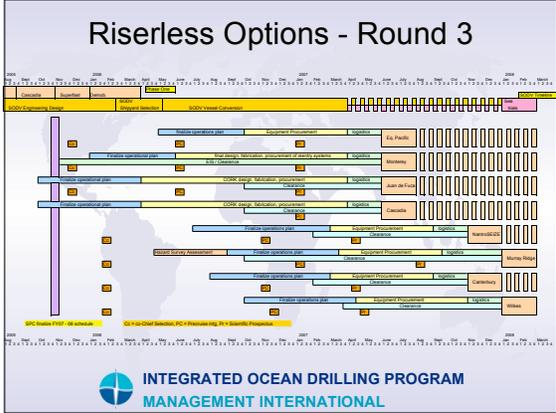
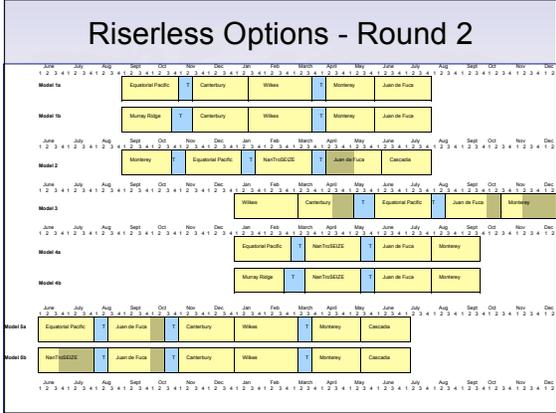


Science Objectives	<ul style="list-style-type: none"> • Test gas hydrate formation models and constrain model parameters • Determine the origin and mode of formation for the hydrate gases • Determine the source of the fluids carrying the gases sequestered in the gas hydrates • Complete microbiology/molecular biology experiments to help determine over what depth range biogenic methane is produced. • Determine what microbes are associated with the gas hydrates, which microbes directly take up methane, which microbes are responsible for other anaerobic processes within the gas hydrate environment • Determine whether any groups of microbes associated with anaerobic methane oxidation can be cultured in the lab
Operational Strategy	<p>Drill to 300 – 600 mbsf (hole dependent), VSP, Deploy temp. sensor CAS-01B, -2C, -8, -SD, -6A</p> <p>APCOVB to 800 – 600 mbsf (hole dependent), APCT, DVTPP, MWD CAS-4B, -7A</p> <p>PCS, CORRS CAS-01B (C), -7A</p> <p><i>Note: 2 APCORRS to be installed</i></p>
Time Estimate	<p>On site: 67 days (5/5)</p> <p>Transit: 3 days (2/1)</p> <p>Post: 5 days</p> <p>Estimated Total: 75 days</p>
Operational Risks	<ul style="list-style-type: none"> • Hydrates, H2S • Hole Stability
Environmental Constraints	<ul style="list-style-type: none"> • Weather window (summer)
Limitations/Assumptions	<ul style="list-style-type: none"> • ACORR design not well defined • Cross hole testing not well defined • Microbiology undefined
Special Considerations	<ul style="list-style-type: none"> • Canadian clearance required • Sailing ACORR, Engineer • Marine Mammals (VSP) • Modular Formation Dynamics tester (MDT) – formation pressure and in situ fluid sampler, larger diameter pipe • Reconcile with Expedition 311 adjustments

Cascadia Margin Hydrates
Proposal 553

Riserless Options - Round 1





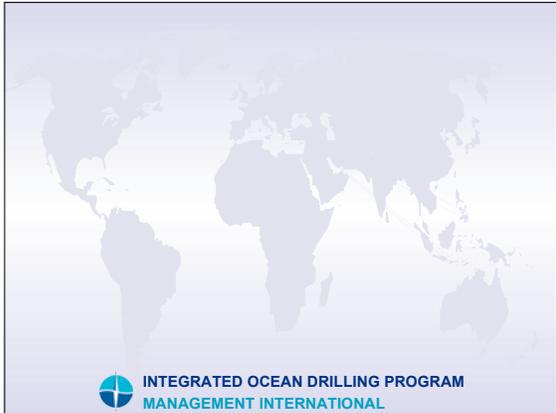
- ### MSP Options for FY07
- New Jersey
 - Currently Scheduled for FY06
 - If not run in FY06 - prime candidate for FY07
 - Great Barrier Reef
 - Site Survey
 - Permitting/Clearance issues
 - Monterey
 - SPPOC –High Priority
 - Timing/funding of MSP operations not conducive for permitting
 - Canterbury
 - MSP operators consider it a “JR” operation
 - Portions of program possible w/ MSP if weather problems for USIO
- SUMMARY-** No MSP Operation chosen for FY07

Riser Options For FY07/FY08

NanTroSEIZE “Stage 1” Operations

CDEX and the USIO will work with the NanTroSEIZE Project Management Group to determine a more definitive schedule of operations. This schedule of operations will be available for SPC to consider prior to its fall meeting.

The Project Scoping Group will also suggest scenarios to divide up operations between CDEX and the USIO should SPC approve a scheduling scenario for the USIO that has NanTroSEIZE operations.



603B Full 2
NanTroSeize Mega-splays
2A/2B

The primary concern of the SSP (and also echoed in SSEP reviews) was the ability to clearly image the 3-D geometry of the splay fault system. Therefore, we congratulate the initiative of the proponents in organizing a 3-D seismic survey as requested.

New HR seismic data now in the data bank are also a useful contribution, but are currently neither annotated nor interpreted. We invite the proponents to do this.

We further understand a **submersible survey** of the submarine canyon at 33°02' N, 136°03' W which cross-cuts the mega-splay morphologic high is **scheduled**. We welcome this complementary investigation which should permit characterization of the structural complexity (e.g. - bifurcation) and deformation style of these faults in cross-section and may offer the possibility of observing associated hydrological features (venting sites).

The planned 3-D seismic survey improves the Site survey classification ranking slightly (from 2C to 2B).

Site Characterization Completeness Classification:

2A/2B Substantial items of required data are not in the Data Bank. Some are not believed to exist, but site survey is planned.



INTEGRATED OCEAN DRILLING PROGRAM
MANAGEMENT INTERNATIONAL

603C Full
NanTroSEIZE Phase 3: Plate Interface
2A & 2B

We express the following reservations regarding the proposed alternate site at the western edge of the new 2-D grid (along Line B).

- The p-wave velocity model (and thus all estimates of target depth) is less well constrained than on Line L, as the Nakanishi et al., 1997 OBS velocity model is situated east of Line L (and approximately 30 km from Line B).

- Drilling an alternate site along line B would no longer correspond to the reference sites at the toe (as described in proposal 603A).

- The image quality along Line B does not seem to be superior than along Line L and the splay fault geometry is significantly different.

- Heat flow data would have to be recompiled for the western transect.

Site Characterization Completeness Classification:

For NT3-01A, the SSP classification remains the same as the last review, because there are no changes to the data in the data bank.

For NT3-02A, **based on the information that new seismic survey is planned, the classification is upgraded from 2C to 2B.**

NT3-01A; 2A: Substantial items of required data are not in the Data Bank but are believed to exist.

NT3-02A; 2B: Substantial items of required data are not in the Data Bank and not believed to exist, but **site survey is scheduled.**



INTEGRATED OCEAN DRILLING PROGRAM
MANAGEMENT INTERNATIONAL

APPENDIX 2

USIO Update

APPENDIX 3

CDEX Update

CDEX Report

March – August 2005

Hideki Masago



CHIKYU
Delivery
29 Jul. 2005

29 July 2005 @Nagasaki

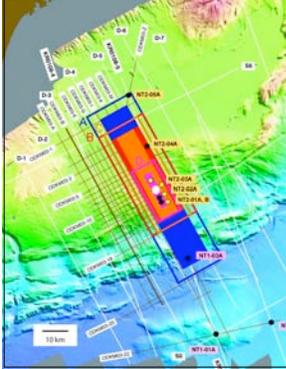
SCHEDULE

- 2005.7** Delivered to JAMSTEC
- 2005.9** Openhouse
[@Yokohama, Yokosuka and Nagoya]
- 2005.10~** Test cruise (@Shimokita Area)
Drilling test (riserless)
- 2006–2007** Drilling test (riser & riserless)
- 2007.9** IODP in t1 operation

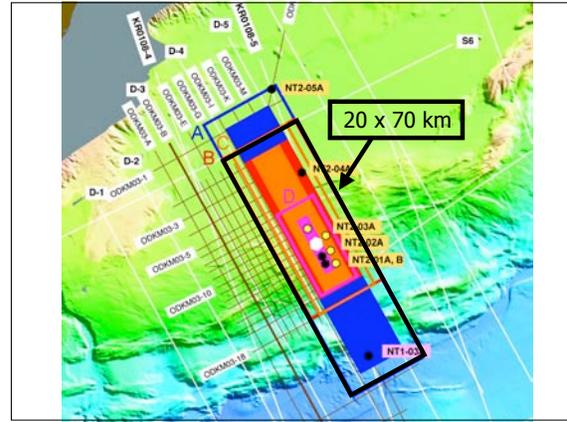
APPENDIX 4

3D Seismic Update

Planned 3-D Seismic Reflection Survey



- Japan - US collaboration
- ~\$10M total cost (~6.5M from CDEX \$1.0M from IFREE \$2.75M from NSF)
- Commercial, multi-streamer acquisition in March-April 2006
- Goal is 20 x 70 km = 1400 km²



Major Issues

- COST
- Currents
- Shape/location of survey
- Length of streamer

Ramform Victory



APPENDIX 5

General Site Survey Status

2. Updates Site Survey and related activities

Masa Kinoshita
IFREE-JAMSTEC

Aug. 25-26, 2005

3rd PMT

Current Status in Japan

- Site selection for Stage 1 (May, 2005)

Aug. 25-26, 2005

3rd PMT

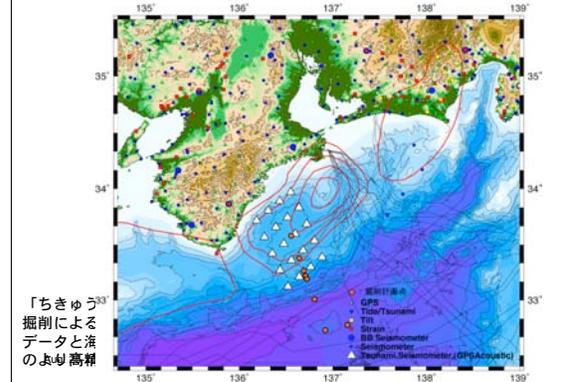
NanTroSEIZE Working Groups in Japan

- WG based on disciplines, not thematic
- Overall
 - Scientific navigation of NanTroSEIZE
 - Modeling using numerical simulation
- Site Selection / Site survey
- Material Sciences
 - Core description
 - Lab. Exp. On rock mechanics/friction
 - Analog study onland
- Downhole measurement/logging/exp.
- Observatory

Aug. 25-26, 2005

3rd PMT

Concept of intensive seafloor cable network

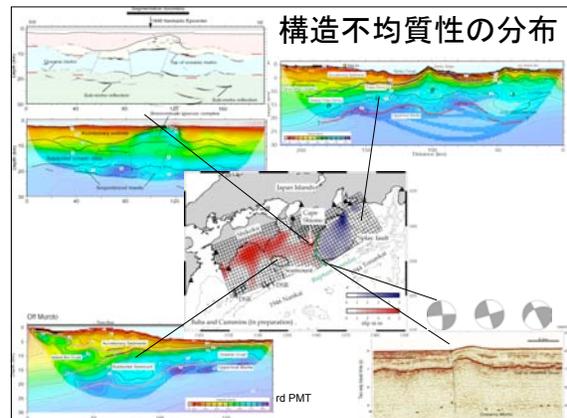


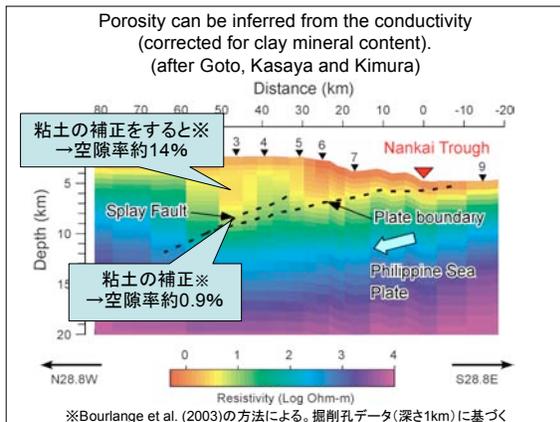
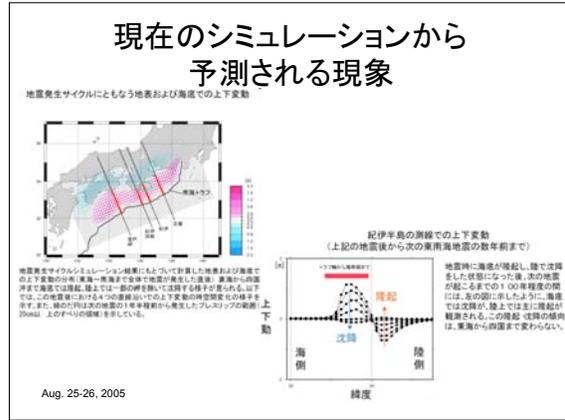
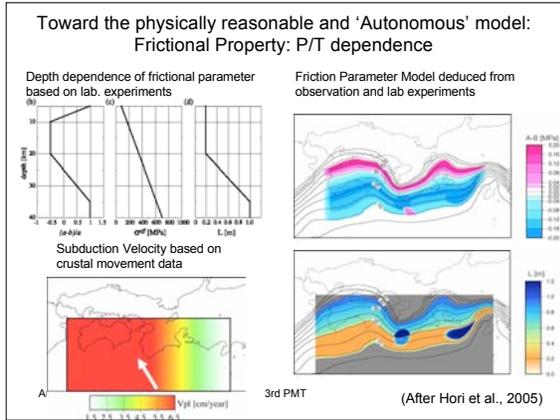
Conducted surveys -05

- Seismic reflection / refraction
 - IFREE cruises
- Sampling
 - Kaiyo NSS (OOST/04 EQ/FT)
- Heat flow
 - Kairei (Kumano LT/FT)
- Dives
 - Shinkai (Shionomisaki, etc.)

Aug. 25-26, 2005

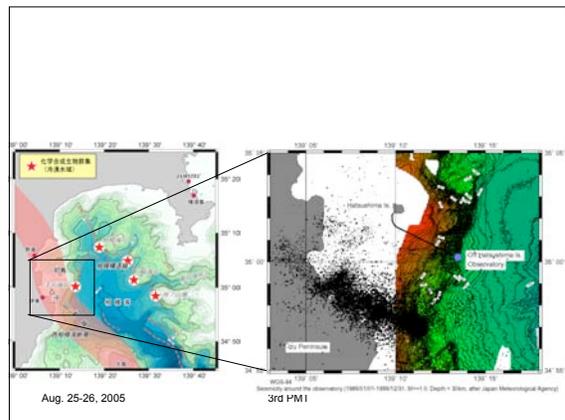
3rd PMT

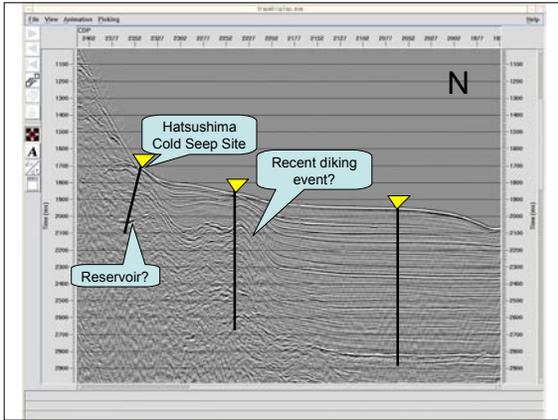




- Survey Plan in Kumano
- Scheduled cruises
 - Sep-05: Heat flow/core sampling (Kaiei)
 - Dec-Jan-06: NSS + EM survey
 - Sep/Oct-06: NSS (Hakuho-Maru)
 - Proposed cruises in 2006JFY
 - Shinkai dives (ACORK + Kumano)
 - Kaiei (HF/core)
 - Jason-II dives (2007?)
 - Kaiyo (Deployment of SF benchmarks)
 - 3D Seismic surveys
 - AUV dives? (SSS/SBP onboard Urashima)
 - Chikyu Training Drilling ???
- Aug. 25-26, 2005 3rd PMT

- IODP Proposal in western Sagami Bay –
Borehole Observatory Experiment Field
- Volcanoes, swarms, cold seeps, collision of Izu Peninsula
 - JAMSTEC Hatsushima Cabled Observatory
 - Mature site survey data (SCS grid, heat flow, gravity and magnetics, dives, seismic/geidetic monitoring)
 - Close to JAMSTEC
- Aug. 25-26, 2005 3rd PMT





Aug. 25-26, 2005 3rd PMT

Co-chiefs

	NT 1-1	NT 1-6	NT 1-3	NT 2-4	NT 3-1	NT 2-1	NT 2-3	Co-chief Nomination
S11-1 LWD	s594/ b100	s990/ b100	600	1200	s1039 /b300	1000		LWD leg: Tobin, C. Moore, G. Moore, Saito, Nakamura, (Mikada), (Europe)
S11-2 Corelog	s594/ b100	s990/ b100		1200	s1039 /b300			Sedimentary leg: Underwood, Flemings, Ashi, Kopf, Lallemand, Henry
S11-3 Corelog			600			1000		Fault leg: Saffer, Kimura, Ujije, Ashi,
S11-4 Obs				Alt	Pri			CORKing leg: Becker, Sreaton, Davis, Kinoshita, Araki,
S12							3km	First RISER leg: Saffer, Kinoshita, Henry

Notes:
Observatory for 603D (including 1-4/1-5) was originally planned as a part of Stage 2.
Chikyu operation Staff change at every 4 weeks interval.

Aug. 25-26, 2005 3rd PMT

Logging and Downhole Measurement Plan for Stage 1

		NT1-1	NT1-6	NT1-3	NT3-1	NT2-4	NT2-1A
LWD	GVR (feasibility design - new version of RAB?)	Yes	Yes	Yes	Yes	Yes	Yes
	As deep as possible in basement	As deep as possible in basement	As deep as possible in basement				
	Proton (MNR)	x	x	x	x	x	x
	LWD (GR)	x	x	x	x	x	x
Wireline Logging	ADN (neutron image)	x	x	x	x	x	x
	SEI/NC (P-wave)	?	?	?	?	?	?
	DSI	Statement only at either one of these sites		Major Quality will be bad	Yes	Down to BSR	Yes
	GR				Interval Down to BSR	Down to BSR	Quality will be bad
VSP	Checkshot	-	-	Yes	Yes	-	Yes
	Offset	-	-	?	?	-	-
Downhole Measurement	LWD	Yes	Yes	Yes	Yes	Yes	Yes
	13P or D/TP .P down to -300m						
	Packer Exp. with OBS obs.	-	-	Yes	-	-	Yes

Aug. 25-26, 2005 3rd PMT

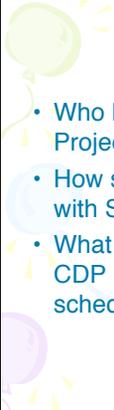
APPENDIX 6

SSP/PMT Interactions



Interactions with SSP

- All 603 Proposals reviewed again during 02/23/05 meeting of Site Survey Panel
- Searle described to Underwood some watchdog concerns at SPC/PANCH (03/05)
- Letter from Underwood to Searle (04/07/05)
- Response from Searle to Underwood (07/21/05)
- Copies to T. Janecek, H-C. Larsen, K. Becker, M. Coffin
- Coffin: "Need to discuss and reach consensus on the overarching issues."



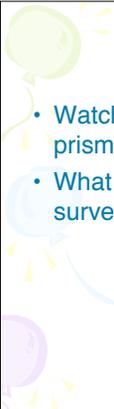
Issue #1

- Who has oversight responsibilities once a Project Scoping Group (PMT) is formed?
- How should decisions of PMT be shared with SSP?
- What role should SSP play once parts of a CDP have been forwarded to OPTF for scheduling?



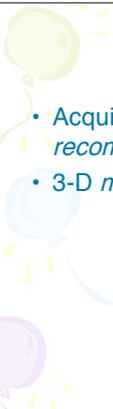
SSP Response

- Involvement (i.e., recent reviews) continued at request of SPC/OPCOM.
- Different type of review form might be more useful (more mature CDP)
- Clarification of SSP role is needed.
- Someone (panel) needs to comment on changes to site locations, new data, etc.
- Could send SSP watchdog to PMT.



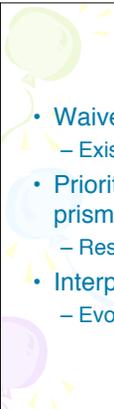
Issue #2

- Watchdogs requested 3-D seismic at prism toe (NT01-03)
- What are SSP expectations for 3-D surveys at non-riser sites?



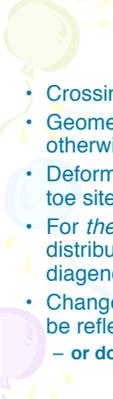
SSP Response

- Acquisition of 3-D seismics was a *recommendation*
- 3-D *mapping* of prism toe is a requirement



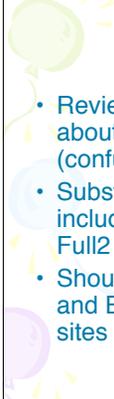
Issue #3

- Waive crossing line through Site NT01-03
 - Existing line ~2 km to N
- Prioritization of objectives and targets at prism toe
 - Responsibility of PMT
- Interpretation of structure at prism toe
 - Evolving among proponents and PMT



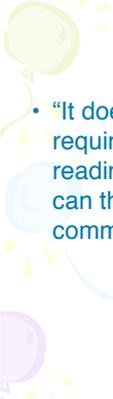
SSP Response

- Crossing line *STILL IS required*
- Geometry of structures cannot be understood otherwise
- Deformation has advanced outboard of prism-toe site
- For *the* reference site to capture earliest distributed strain and strata unaffected by diagenesis and fluid-flow, site must be moved
- Changes to scientific priorities (by PMT) need to be reflected in revised *proposal*
 - or do they mean written updates to *SSP*?



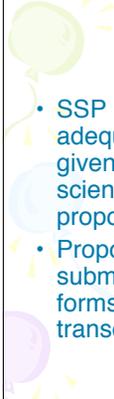
Issue #4

- Review of 603A contained comments about new sites in Proposal 603D (confusing)
- Substitution of NT01-06 for NT01-02 included in Safety Package and 603D-Full2 (no change in objective)
- Should PMT communicate with *both* SSP and EPSP when considering alternate sites that accomplish the same objective?



SSP Response

- “It does not make sense for us to be required to comment on the site survey readiness for a particular site if that site can then change without our being able to comment on the new one.”



Other Points

- SSP responsibility: “to ensure that adequate survey data exist for imaging given targets and for achieving the scientific objectives as stated in a proposal.”
- Proponents created confusion at SSP by submitting inconsistent site locations and forms (i.e., 603A-Full2, 603D-Full2, old transects vs. new transects)



Interaction with SSEP

- Project Scoping Group: approved by SPC
- Funding for Activities: IODP-MI
- **Role:** Project Management Team for Complex Drilling Project
- Report to: Operations Task Force (OPCOM)
- Work closely with IOs to organize multi-phase science plan
 - Sequence of activities, organization of expeditions, site-by-site scoping, maintain continuity of science, etc.
- **Question:** How should SSEP interact (if at all)?
- **Question:** Should SSEP send liaison to all meetings?
 - Probably 3-4 per year per PSG during peak activity
- **Question:** Progress reports at SSEP meetings?
 - Invite PSG member, IO representative, SSEP member
- **Question:** Does SSEP want to send messages to PSG?
 - Is such oversight any of our business?



SSEP Response

- Would like to see minutes of PMT meetings
- PMT activities could be included in reports from IODP-MI to SSEP
- SSEP liaison: only when a new proposal enters SAS and scoping is ongoing for mature (ranked) proposals

Status of 603D-Full2

- Solid support from SSEP
- Proponents addressed all panel comments
- Sent to external review
- External reviews will be considered during November meeting

Additional Nankai Proposals

- 655-Pre: Juan de Fuca Observatories
- Lead Proponent: E. Davis
- Conceptual, not site-specific
- Could be moved to Nankai
 - Discussed at Observatories Workshop (San Jose)
 - Impacted by funding for NEPTUNE
- Should this remain outside CDP or be merged into CDP?
- How will SAS react?

APPENDIX 7

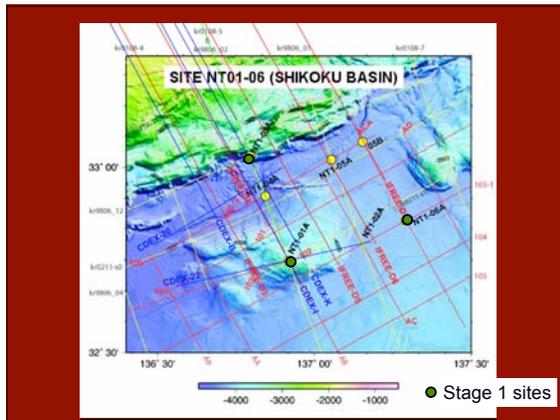
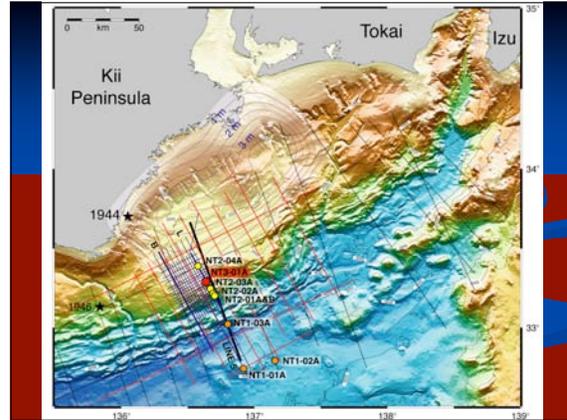
NanTroSEIZE Stage Plans

Stage Breakdown of Operations

Project Management Team began process of dividing project into discrete Stages (February 2005)

We need to confirm and improve this plan here:

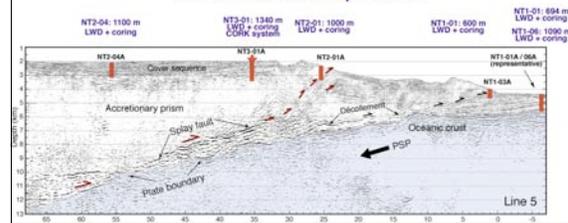
- Agree on detailed Stage 1 plans
- Build road map for Stage 2 +



Suggestion for Stage I

(as sent by email last week)

STAGE 1 Sites and Operations



6 sites (maybe need to reduce by one?)

LWD, coring, and downhole measurements at all sites

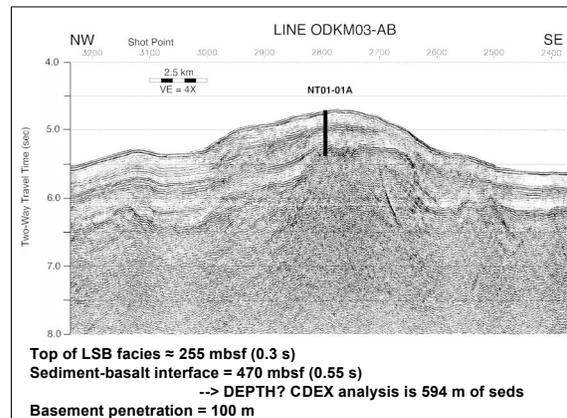
VSP at 3 sites

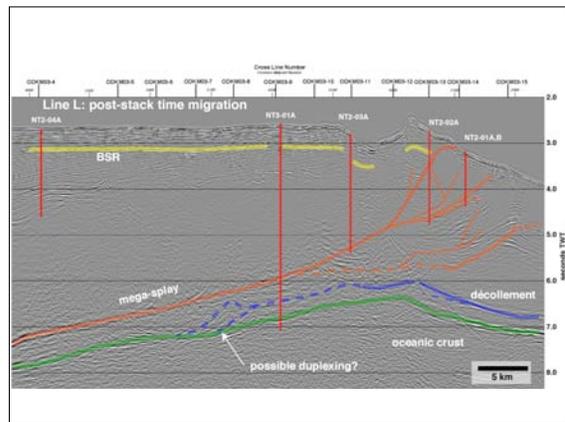
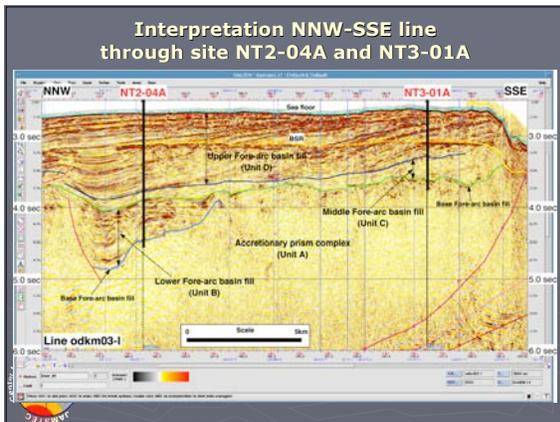
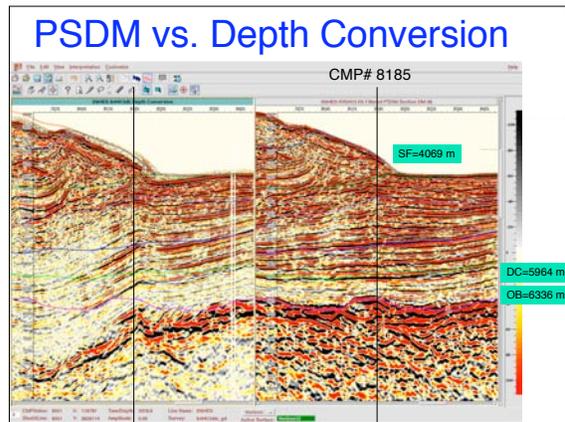
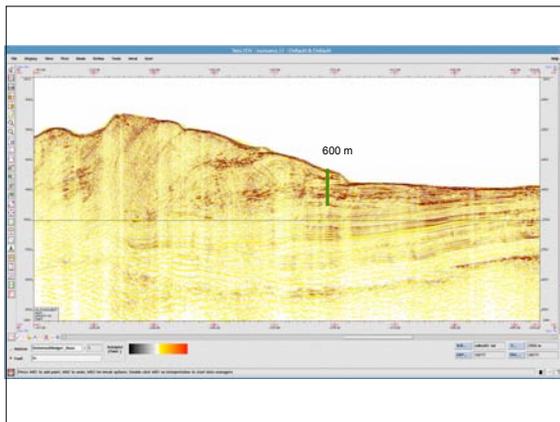
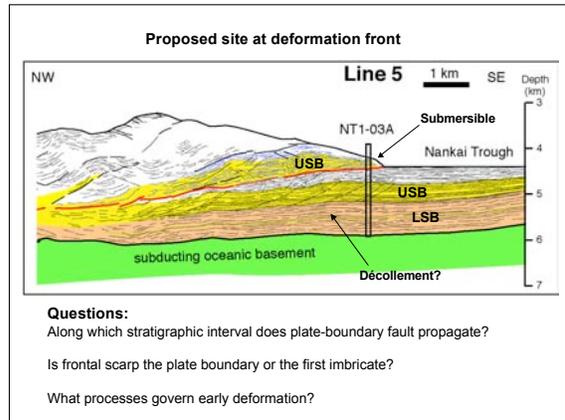
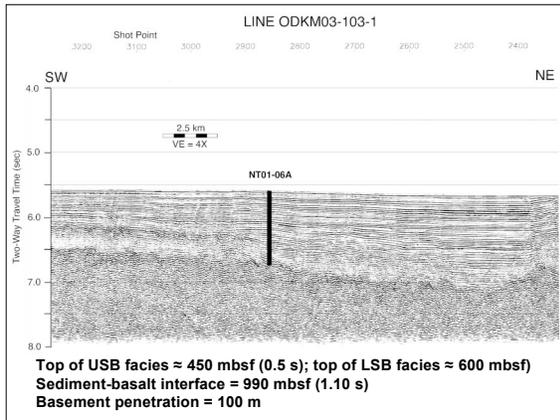
Observatory (CORK) at 1 site

Suggestion for Stage I

(as sent by email last week)

1. NT1-01 to TD (694 mbsf) - core, LWD
2. NT1-06 to TD (1090 mbsf) - core, LWD
3. NT3-01 to TD (1339 mbsf) - Kumano basin seds plus 300 m prism unit
 - a) core + LWD + VSP
 - b) CORK-II style observatory installation
 - Install pore fluid pressure monitoring, temperature array, strainmeter, tiltmeter, seismometer
4. NT1-03 to TD (600 m) - core, LWD
 - a) Priority 2 = 1000 mbsf TD
5. NT2-04 to TD of 1200 (OR priority 2: 1400 m) - core, LWD
6. NT2-01A to TD (~1000 mbsf) - core, LWD + VSP





Stage I Summary Table

Site	Total Depth in Stage I	Coring/LWD	Anticipated Geology	Wireline	CORKing
NT1-01 (reference site: basement high)	694 mbsf	1. Core to TD 2. LWD seals only	a. 594 m hemipelagic seds, turbidites b. 100 m basaltic basement	Basement only	No
NT1-06 (reference site: basal section; see fig. 1 below)	1090 mbsf	3. Core to TD 4. LWD seals only	a. 990 m hemipelagic seds, turbidites b. 100 m basaltic basement	Basement only	No
NT3-01 (planned for later 6km riser site)	1339 mbsf	Both core and LWD entire section to TD	• 1039 m turbidites and hemipelagic seds • 300 m secretory prism of shale and sandstone	WL suite plus VSP survey	CORK-II style (see below): Strain, tilt, pore pressure, seismicity
NT1-03 (frontal thrust & toe region)	600 mbsf	Both core and LWD entire section to TD	600 m turbidites and hemipelagic sediments	Attempt WL suite and VSP survey	No
NT2-04 (Kumano forearc basin)	1200 mbsf	Both core and LWD entire section to TD	1200 m turbidites and hemipelagic sediments	WL suite through BSR	No
NT2-01 (seaward part of mega-splay)	1000 mbsf	Both to TD	1000 m turbidites and hemipelagic sediments	Attempt WL suite and VSP survey	No

Logging

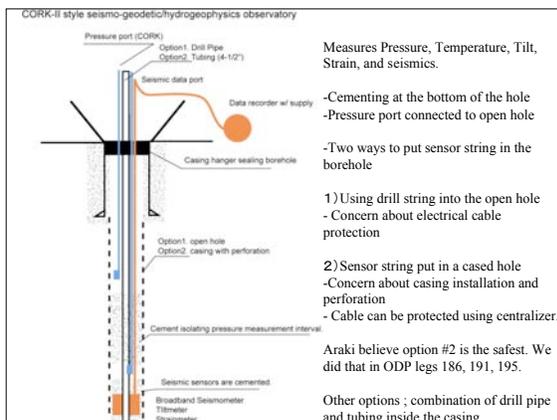
- High Priority to get good quality logs
 - Density and porosity
 - Resistivity (including imaging)
 - Sonic velocity (waveform P and S)
 - Gamma
- LWD requested for all sites because of past experience with difficult logging conditions in similar settings.
- Wireline to augment LWD, especially for sonic and FMS/FMI -- only at selected sites.

Details of Stage I Logging Request

		NT1-1	NT1-6	NT1-3	NT3-1	NT2-4	NT2-1A
LWD	Resistivity imaging	Yes	Yes	Yes	Yes	Yes	Yes
	Question: basement?	?	?	?	?	?	?
	NMR porosity, permeability estimation, etc	A	A	A	A	A	A
	MWD (GR)	A	A	A	A	A	A
	CDN (density, neutron porosity)	A	A	A	A	A	A
Wireline Logging	FMS	Basement only at either one of these sites		Maybe	Yes	Yes	Maybe
	DSI			Likely to be difficult	Attempt Whole Interval	Only through BSR interval	Likely to be difficult
	GR				Down to BSR	Down to BSR	
	CMR (NMR log)	-	-	-	Down to BSR	Down to BSR	-
	VSP	Checkshot (vertical)	-	-	Yes	Yes	Yes
Downhole Measurement	TIP or DVTP-P Soft-sed section	Yes	Yes	Yes	Yes	Yes	Yes
	PackerExp. with OBS obs.	-	-	Yes	-	-	Yes

Long-term Monitoring System in Stage I

- Agreed at Santa Fe meeting that we want one observatory installation in Stage I.
- Agreed at San Jose meeting that a strain-focused system would make a good test-bed for future NanTroSEIZE monitoring.
 - Temp, pore pressure (1 level), strain, tilt, possibly seismic array, possibly osmo-sampling.
 - Low-permeability, low hydrologic activity is target
 - NT2-04 was agreed as good place to do it
- Suggested last week by HT and MK that we should consider Site NT3-01 for this system.

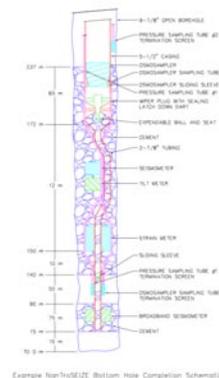


Concept for CORK-II downhole assembly

Primary objective is STRAIN. Pore pressure measurement in low-permeability formation (Davis et al.).

Also temp, volume strain meter and BB seismometer OR short-period array, possible osmo-sampler.

Possible with existing technology -- (CORK-II exists at Juan de Fuca Ridge - IODP Leg 301)



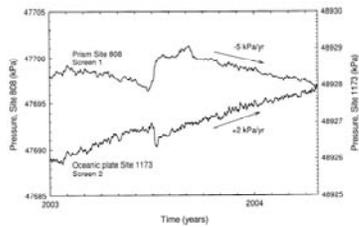


Fig. 3. Recent history of pressure recording at Nankai Trough Sites 808 and 1173, drilled into the toe of the Nankai accretionary prism, and 13 km seaward in the incoming Philippine Sea plate, respectively. Data from impermeable parts of the formation are shown, where pressures are inferred to reflect accurately the undrained response to strain. Long-term trends are tentatively interpreted as the interseismic strain accumulation in the incoming plate and post-seismic relaxation of the prism. An episode of aseismic deformation, seen as pressure offsets in mid-2003, reverses the trends. Detailed information about the holes can be found in Mikada et al. (2002).

Stage I Issues

- ♦ Is NT1-06 the best choice to address the lower Shikoku basin stratigraphy? **Alternate site needs to be considered**
- ♦ Adding NT2-01 to the Stage I plan has significant time impact.
 - ♦ Are we happy with this idea? **YES**
 - ♦ What priority does it have compared to other sites?
- ♦ Is the CORK at NT3-01 (not NT2-04) ok? **YES**
- ♦ How will the CORK be done? Should individual scientists build 3rd party systems, as in the past? **YES**
- ♦ NT2-03 pilot hole? **YES -instead of NT2-04**
- ♦ Is it too much for Stage I to try 6 sites plus 1 CORK? ... Chotto...
 - ♦ **We don't know until we develop some estimates. We could drop NT2-04, and (what?) out of Stage I.**

Suggested Stage I Site Priorities (from Harold and Masa)

- ♦ We propose that NT2-04 is the lowest priority site in this stage.
- ♦ Two choices:
 - ♦ Keep NT2-04 in the Stage I plan, but limit depth or days-on-site.
 - ♦ Eliminate NT2-04 from Stage I, do it later.

Suggested Stage I Site Priorities (from Harold and Masa)

1. NT2-03 pilot coring 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
 6. NT3-01 coring and logging
 7. NT3-01 CORK operation
1. (NT2-04) coring and logging - leave out completely? **YES**

Stage 2 and beyond

Stage 2: What we said in the Santa Fe meeting, February 2005

- ♦ NT2-01 A/B:
 - ♦ case and install basic pore pressure, 1 seismometer observatory in A hole
 - ♦ Drill, wireline packer test in B hole
- ♦ NT2-02: *possible merge with NT2-03???*
 - ♦ Drill; core and log (LWD?) no observatory (?)
- ♦ NT2-03:
 - ♦ Drill, log, core upper ~1000 m (prep for riser)
- ♦ NT1-01, NT1-02:
 - ♦ Return for observatory installations

Stage 2: Issues to consider

- ♦ Strong desire to begin deep penetration of mega-splay fault, and to begin riser drilling for science in FY2008.
- ♦ Drill NT2-03 (3-3.5 km depth) in Stage 2?
- ♦ NT2-02: *do we need this intermediate splay fault site??*

Revised Stage 2

- ♦ NT2-01 A/B (riserless)
 - Install observatory system: pore pressure, temperature, short-period seismic array (!) in A hole
 - Drill, perform wireline packer test in B hole
- ♦ NT2-03: (riser)
 - Drill, log, core to mega-splay
 - 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 P,T), plus crossing by ~250 m (3250 total target)
 - Could change to shallower depth -- i.e., 2.5 km fault (see NT2-02 comment below)
- ♦ 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
 - CORK-II system ??
- ♦ Any carry-over of high-priority science from Stage 1.

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 "simple" observatory
- ♦ NT1-03 (riserless)
 - Deepen to greater depth in sed package?
 - Only if Stage 1 results and seismic show it to still be high science priority

Between stages: time needed

Go Away! Think about data. Record on seismic array. Wait. Think some more. Lay out final instrument configuration for 2 deep observatories (3+ km and 6 km holes)

Perhaps 1 year?

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.

What is the "complete" NanTroSEIZE Mission?

- ♦ How to define?
 - One choice:
Use CDP umbrella proposal as the guiding "science plan."
What about new concepts that are exciting?
- ♦ When to define "Mission Freeze?"

APPENDIX 8

NT1-06 Issues

NT1-ers (NT1-02 => 06 => ...)

Aug 2005, Honolulu, HI

Dept of Geology & Geophysics
Univ. of Hawai'i at Manoa
Toshihiro Ike

From NT1-02 => NT1-06

These sites will examine interconnection between basement relief, sand packet deposition, and fluid flow and fluid pressures seaward of the deformation front.

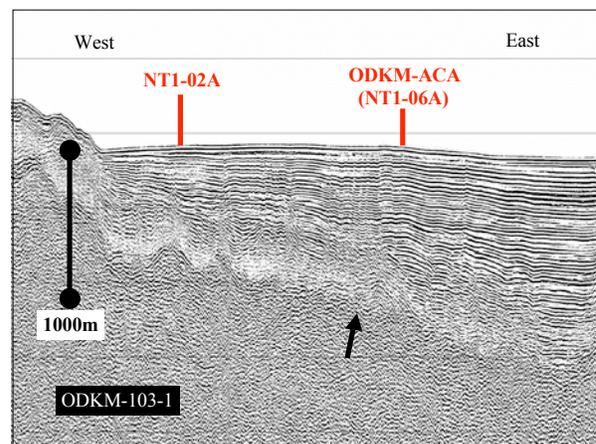
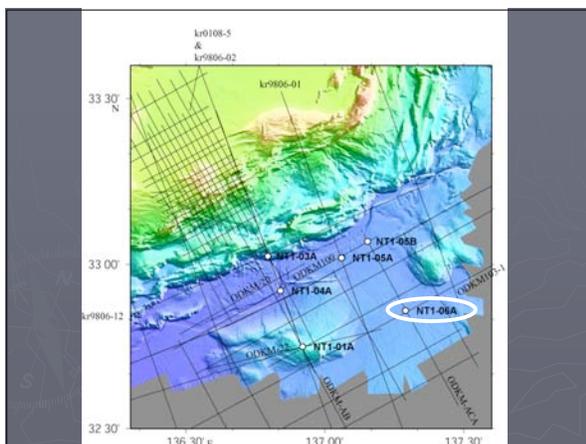
Advantage:

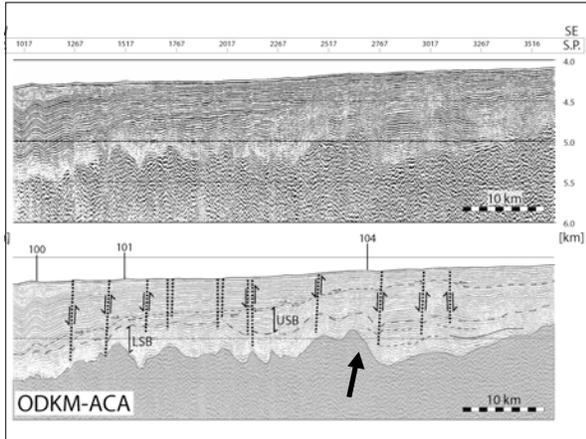
1) representation of the subducting turbidite facies.

Disadvantage:

- 1) greater distance from Sites NT1-01A and NT1-03A, which could hamper regional-scale interpretations of transient fluid-pressure signals
- 2) contains a spill-over lobe of trench-wedge sediment

(603D proposal)





NT1-06:

- 1) Substituted for NT1-02 in 603D proposal;
- 2) Had agreed at previous PMT meeting that this site is better for Shikoku basin section sampling off the basement high.

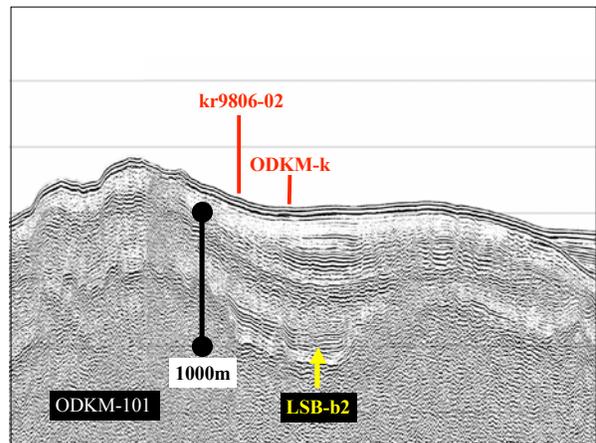
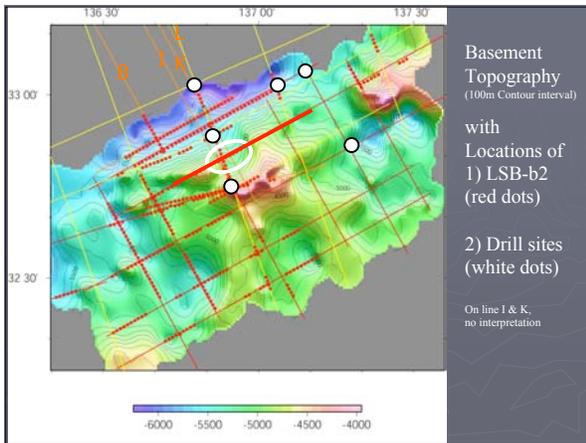
But

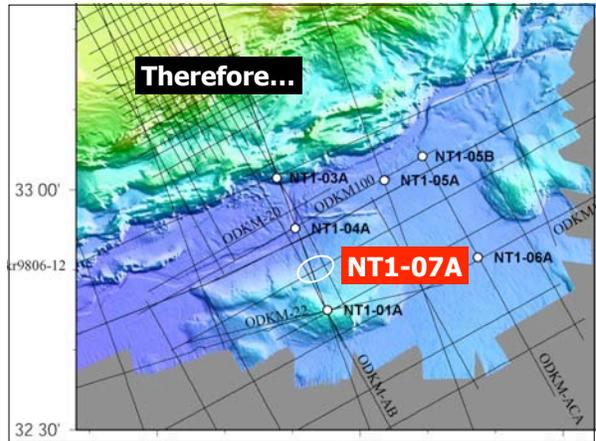
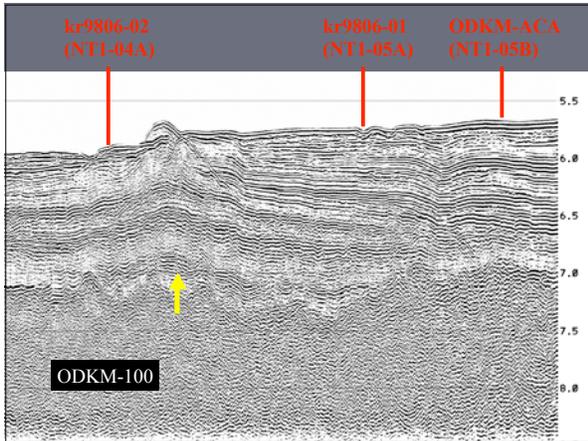
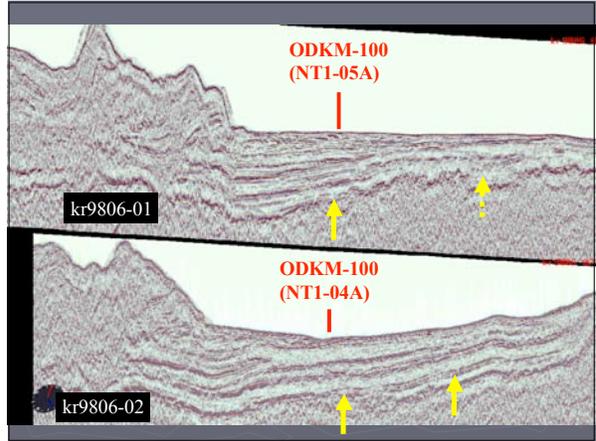
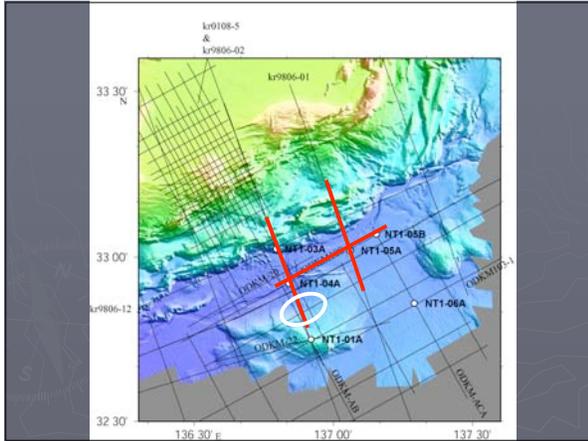
- 1) **Thick trench sediments**
- 2) LSB-b2 is not clear, reflections **could be a side echo from the basement**
- 3) **Less lateral continuation** with other NT1-ers

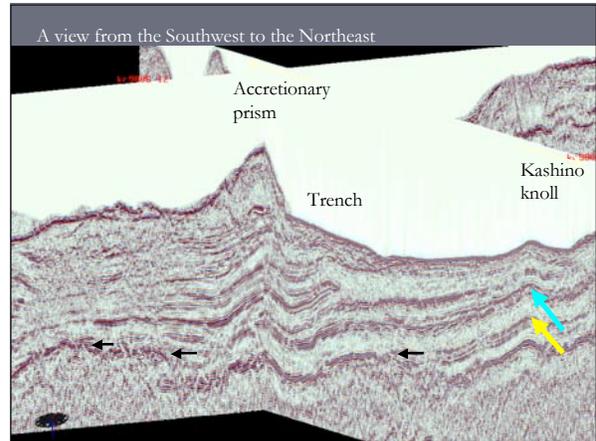
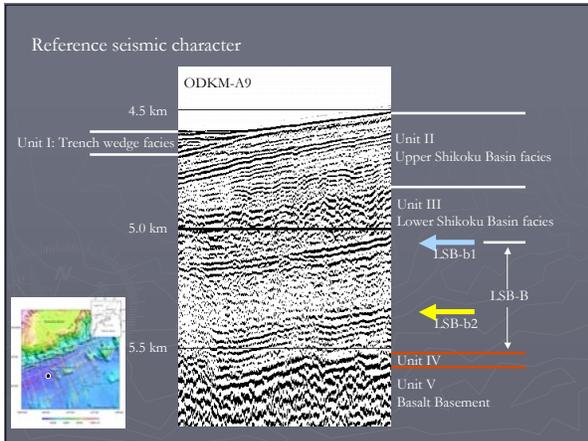
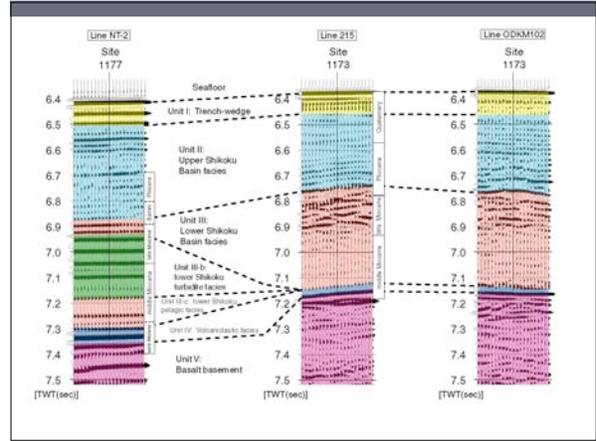
Then, where can we...

- avoid trench sediments
- have clear LSB-b2 visibility
- have better connections with others

LSB-b2:
Lower turbidite unit within the lower Shikoku Basin (LSB) sequence







APPENDIX 9

NanTroSEIZE Observatory Workshop Update

NanTroSEIZE Long-Term Observatories Workshop

July 17 - 19, 2005
San Jose and Parkfield, CA

Thanks to
Joint Oceanographic Institutions, U.S. Science Support
Program
for Meeting and Field Trip Support!



Why are we here?

- ♦ To *refine* and *prioritize* the scientific goals of long-term monitoring in NanTroSEIZE.
- ♦ To *assess* the technology and strategies needed to achieve these goals.

To refine and prioritize the scientific goals of long-term monitoring in NanTroSEIZE.

- ♦ Proposals are the starting point.
- ♦ The result should be a document stating our consensus on these goals and priorities.

To assess the technology and strategies needed to achieve these goals.

- ♦ Identify methods to measure parameters of interest
- ♦ Assess feasibility of technology, for example:
 - ♦ A. Off the shelf, ready today
 - ♦ B. Minor development and engineering needed. Could be feasible by adapting existing or emerging technology.
 - ♦ C. May be possible, but requires substantial engineering effort to become ready.
 - ♦ D. Unclear or not likely to be possible over project lifetime.

Assessment of high-priority engineering

- Recommendations for EDP, IOs, and Observ Task Force early attention:
 - High-temperature sensing systems (range of ~100 to 180 C) for seismic/accel, pore pressure, strain, tilt devices; packer integrity at high-temp
 - Feasibility of hydraulic porting across casing seals in riser-drilled holes to permit volumetric strain and/or pressure measurement outside casing?
 - Feasibility of simplified wellhead for riser holes, in cases where no overpressure was found during drilling
 - Short-period seismic array strings for deepwater boreholes?
 - Leak-free casing (complete cementing) completion
 - Anchoring/coupling techniques for deformation instruments (strain, tilt, seismic) and packers
 - Long-term packer integrity (?)

Observatory development and management in IODP

- 3rd party vs. PMT-directed top-down approach
- Both have merit
 - We ask for clarification of which parts of observatory system are responsibility of 3rd party scientists (consistent rules USIO/CDEX/ECORD?)
- Recommendations to IODP-MI, SPPOC, etc.
- PMT has oversight/coordination responsibility for ALL observatory experiments
 - Platform (USIO, CDEX, ECORD) compatibility in constructing borehole observatories