

**Report of the
NanTroSEIZE PSG**

**Yokosuka, Japan October
14th-15th, 2004**

Project Scoping Core members

Janecek, Tom	IODP-MI
Kimura, Gaku	University of Tokyo
Kinoshita, Masataka	IFREE, JAMSTEC
Kuramoto, Shin'ichi	CDEX, JAMSTEC
Larsen, Hans Christian	IODP-MI
Tobin, Harold	New Mexico Tech
Underwood, Mike	University of Missouri

Technical Implementation members

Ibusuki, Atsushi	CDEX, JAMSTEC
Kobayashi, Shomei	CDEX, JAMSTEC
Klaus, Adam	TAMU, USIO
Masago, Hideki	CDEX, JAMSTEC
Murayama, Tatsuya	CDEX, JAMSTEC

Science Advisory Structure Attendees

Katz, Barry	EPSP
Mori, Jim	SPC
Okino, Kyoko	SSP
Ogawa, Yujiro	SSEPs

Guests/Observers

Ashi, Juichiro	University of Tokyo
Becker, Keir	RSMAS, University of Miami
Brown, Kevin	Scripps Institution of Oceanography
Dugan, Brandon	Penn State University
Given, Holly	USSSP, JOI
Henry, Pierre	College de France
Ishii, Yoshitaka	CDEX, JAMSTEC
Ito, Hisao	AIST, Japan
Moore, Greg	University of Hawaii
Kaneda, Yoshiyuki	IFREE, JAMSTEC
Kawamura, Yoshihisa	CDEX, JAMSTEC
Okano, Tadashi	CDEX, JAMSTEC
Park, Jin-O	IFREE, JAMSTEC
Saito, Takao	CDEX, JAMSTEC
Screaton, Elizabeth	University of Florida
Saffer, Demian	University of Wyoming
Saga, Hajime	CDEX, JAMSTEC
Shinohara, Masanao	ERI, U. Tokyo
Stephen, Ralph	Woods Hole Oceanographic Inst.
Solomon, Evan	Scripps Institution of Oceanography
Suyehiro, Kiyoshi	JAMSTEC
Taira, Asahiko	CDEX, JAMSTEC
Tanaka, Hideki	CDEX, JAMSTEC
Tomomoto, Jun	CDEX, JAMSTEC
Yoro, Tamio	CDEX, JAMSTEC

Dates and Time:

October 14, 2004 08:30-17:30
October 15, 2004 08:30-12:30

Place:

Japan Agency for Marine-Earth Science and Technology
(JAMSTEC), Yokosuka Headquarters
2-15 Natsusima-Cho, Yokosuka-city, Kanagawa 237-0061 JAPAN

Agenda/Topics of Discussion

1. Mandate of NanTroSEIZE PSG
 - a. Long-term responsibilities – develop a mandate statement
 - b. Core Membership – size, necessary positions, how members are appointed, rotation, etc
 - c. Relationship with individual Expedition Chief Scientists, science parties, and operations managers
2. Brief Overview of Science Proposals –
 - a. Focus on new proposals 603C (Phase 3) and 603D (non-riser CORKs)
3. Site Survey Status and Future Plan
 - a. Review of currently available site survey data
 - b. Status of 3D seismic survey proposal and survey area options
 - c. IFREE wide-angle OBS survey, other planned or proposed geological/geophysical data collection
 - d. Kuroshio current meander developments and implications
4. Site-by-site Operational Scoping
 - a. For each proposed site, review and identify:
 - i. desired total depth, lithology, key target zones
 - ii. coring, logging, and downhole measurements objectives
 - iii. long-term monitoring objectives
 - iv. anticipated operational obstacles
 - v. as proposed for each site
 - b. Riser or non-riser? NT2-02? NT2-04? NT1-03
 - c. Identify critical technological development or acquisition needs to achieve goals
5. Strategy for Riser-less Drilling
 - a. Review potential FY2005 and 2006 drilling scenarios
 - b. Consensus on non-riser expedition breakdown
6. Preparation for Riser Drilling
 - a. When do site locations need to be specified and how closely (i.e., exact location? 1 km box? etc.) Before 3D survey (mid-2006 at best) or after???
 - b. Site order: NT2-03? NT3-01? NT2-02??

- c. Pore pressure estimation: how to do it and how good does it need to be?
Over what depth range
7. Long-Term Observatory Development
 - a. Review results of mini-Workshop
 - b. Prioritize scientific measurements: high, middle, low priority
 - c. Identify critical technological needs and current state
 - d. Connection to seafloor observatory plans – e.g., A-GPS, OBS networks, fiber optic data network
 8. Operation and Management
 - a. Overall Goal: PSG should develop and oversee critical path to achieving NanTroSEIZE Science Objectives. How?
 - b. Nature of science parties in NanTroSEIZE
 - i. How will co-chiefs be named?
 - ii. Where does PSG fit into co-chief – IO relationship for expeditions?
 - iii. Data sharing policy among science parties?
 - iv. Riser expedition science parties – how to structure?
 - c. Develop science/engineering working groups
 - i. Logging and DHT technology
 - ii. Long-term observatory technology
 - iii. Lab measurements/geology
 - iv. Each group needs a clearly identified leader with responsibility
 - d. PSG responsibility to IODP-MI, IOs and SAS

Expected Outcomes of Oct 2004 NanTroSEIZE PSG Meeting

- Update community with PSG activities
- Establish procedures and protocols for making decisions about:
 - Prioritizing site objectives/operations
 - Observatory measurement priorities
 - Additional site surveys
- Create working groups/ leaders to address action items resulting from each Agenda item.
 - Develop a mandate statement
 - Develop an overall expedition staging plan, with general timeline for entire NanTroSEIZE project
 - Scope proposed sites for site-specific operational needs, challenges

NOTE: PPT presentations noted in each Agenda item are available upon request from Thomas Janecek at IODP-Management International (tjanecek@iodp.org).

Agenda Item 1: Mandate of PSG

<See PPT: NanTroAgenda.ppt (Janecek)>

The membership of Project Scoping Groups in general, the membership of the NanTroSEIZE PSG, The duties of the Chief Project Scientist(s) and the Mandate of the NanTroSEIZE PSG were presented and discussed.

Several issues resulted from this discussion

(1) Reporting: What group/panel/person does PSG report to?

PSG is constituted by OPCOM and thus reports to OPCOM. The current chair of OPCOM (T. Janecek) is also the chair of the NanTroSEIZE PSG so an inherent conflict is present. Janecek will step down as chair as soon as IODP-MI hires an Operations Manager (early 2005) who will then become the chair of PSGs.

(2) How does PSG interact with SAS?

Interaction with the SAS can occur in several ways. The official mechanism is that the PSG reports to OPCOM (which has SPC members). OPCOM provides updates to SPC at each SPC meeting and reports on the status and activity of each PSG. The SPC members on OPCOM and on the PSG can also report progress (or lack thereof) to SPC. However, it needs to be made clear, via the PSG Mandate that OPCOM is the official reporting pathway.

(3) What is the lifetime of PSG?

This issue was not fully resolved. Clearly, the duties of the Project Scoping will move toward implementation and management and thus the PSG may change into a Project Implementation Group or Management Group. The Mandate will need to address this issue.

The following Action Item resulted from discussion on Agenda Item 1

Action Item #1

Develop Mandate building on items presented in NanTroAgenda.ppt and including the following additional items:

- Time-frame of existence
- Clarify reporting lines to SAS
- Define SAS-IO-Management interactions
- Observatory Science

Lead: T. Janecek

Time line: Before next meeting

Agenda Item 2: Overview of proposals

<See PPT: Proposal, Tobin.ppt>

A brief overview of the science proposals for the 603 CDP was presented (Tobin) with an emphasis on new proposals 603C (Phase 3) and 603D (non-riser CORKs). The presentation included discussion of main scientific themes, history and scientific rationale, proposal 603 A, B, C, and D status, critical data sets and essential technologies.

Several discussion topics following the presentation included:

- How is contingency planning being addressed if drilling in any one hole or hole does not proceed according to plan?
- How are the critical data sets defined? How and when does the PSG develop this set of priorities in order to guide technical development?
- What are the critical technologies and how are these addressed, especially for proposals not yet ranked by SPC (e.g., 603C and 603D). This is an issue that will have to be addressed by SPC when designating a proposal a CDP. If the PSG cannot consider all aspect of the proposed science it cannot effectively plan for long lead time development.

Action Item #2

Develop contingency tree for on-site non-riser and riser operations

Lead: Co-Chief Project Scientists

Time line: Begin developing process for first non-riser by next PSG meeting

Action Item #3

Define critical data sets for:

- Core-based measurements
- Logging/Downhole
- Wireline, LWD, MWD, Packer, DVTP
- Observatories

Lead: Co-Chief Project Scientists

Time Frame; Develop Process for prioritizing data sets by next PSG.

Agenda Item 3: Site Survey Status and Future Plan

(See PPT: Site Survey, Yoro.ppt)

(See PPT: Site Survey: Ibuski.ppt)

(See PPT: PDSM, Tanaka.ppt)

(See PPT:IFREE Seismic, Kodaira.ppt)

(See PPT:Kuramoto.ppt)

CDEX personnel provide series of presentations showing the status of current site survey data, future Site Survey plans, and the current CDEX database to view and distribute site survey data. These presentations included

An Overview of CDEX engineering site survey (PPT: Site Survey, Yoro.ppt)
Specific Engineering site surveys (PPT: Site Survey: Ibuski.ppt)
2-D Post stack depth migration (PPT: PDSM, Tanaka.ppt)
Wide-angle seismic at proposed sites ((PPT:IFREE Seismic, Kodiara.ppt))
Future 3D site survey plans (PPT: 3-Site Survey, Yoro.ppt)
Database, information service presentation (PPT:Kuramoto.ppt)

Discussion:

The major discussion item to result from these informational presentations include centered around the need to better define the roles and responsibilities of the IOs, SAS panels, proponents and independent reviewers in the site survey evaluation process. In particular:

What is role of IO in collecting/interpreting data? Who should conduct hazards assessment (IO? independent review?). The responsibilities for interpretation between IOs, Proponents, and Independent reviewers are not well specified at this time.

There is need to define similar Site Survey procedures/requirements for all IOs. In addition, there are different data requirements for various entities (i.e., IODP-MI, EPSP, IO). How can these differences be reconciled

Timing issues of review process need to be resolved to be sure that EPSP reviews the survey data well enough in advance.

Action Item #4

Define Site Survey interpretation and review procedures including:

Interpretation Responsibilities

Operator, Proponent, Independent

Timing of Review process

Coordination with funding agencies (NSF/MEXT)

Coordination of Survey with simultaneous drilling operation in same area

Lead:

Time Line:

Agenda Item 4: Site-by-site Operational Scoping

The basic requirements and objectives were reviewed including:

- desired total depth, lithology, key target zones
- coring, logging, and downhole measurements objectives
- long-term monitoring objectives
- anticipated operational obstacles

Discussion ensued on the need for the PSG at an early stage to identify such things as (1) critical technological development or acquisition needs to achieve goals, (2) the minimum essential accomplishments to keep the program on track, (3) Coring vs. logging priorities, (4) the data requirements from proponents and operators and (5) staging plan to best utilize ship time for science.

Action Item #5

Determine Proponent and Operator Data Requirements (and time frame needed) for non-riser and riser holes. Utilize CDEX Data Requirements Worksheet as a model for each site.

Lead: Co-Chief Project Scientists, Shin'ichi Kuramoto

Time line: Develop appropriate worksheet templates by next meeting. At the next meeting, designate PSG members/proponents/ operators representatives to fill in worksheets.

Agenda Item 5: Strategy for Riser-less Drilling

<PPT: NanTroAgenda.ppt (Janecek)>

<PPT:non-riser, Klaus.ppt>

<PPT: Non-riser, Underwood.ppt>

<PPT; Scenario, Kinoshita.ppt>

Presentation were given describing the status of JOIDES Resolution phase 1 operations and the status of phase 2 planning <PPT:non-riser, Klaus.ppt>, a description of the potential FY06 NanTroSEIZE operations that resulted from OPCOM deliberations <NanTroAgenda.ppt (Janecek)>, and a plan of riserless operations should riserless operations be scheduled in FY06 and/or FY07 <PPT: Non-riser, Underwood.ppt> and <PPT; Scenario, Kinoshita.ppt>

Discussion issues included:

- how to proceed with the development of procedures and protocols that the PSG could use to put together detailed site plans.
- What to do about sites not yet forwarded to SPC. For example, One of the NanTroSEIZE sites discussed in the non-riser plan (NT3-01) has not been forwarded to SPC and cannot be officially discussed in any PSG plan at this time. SPC would need an addendum to argue for inclusion of a Phase 3 site into currently ranked programs.
- The timing of 3D site surveys for hazard assessment. This issue is critical. It is not clear of the necessary data sets will be ready for hazard assessment.

Action Items#6

Develop procedures and protocols for prioritizing sites into a drilling plan.

Lead: (do not have to designate this now because of delay in ship schedule??)Time Line:

Agenda Item 6: Preparation for Riser Drilling

<PPT: Kuramoto.ppt>

<PPT; Pore pressure Tomoto.ppt>

<PPT: Tech Requirements, Murayama.ppt>

<PPT: Kuroshio, Ishii.ppt>

Presentations included the overall timeline for Riser drilling (Kuramoto.ppt), estimation of Pore Pressure (PPT; Pore pressure Tomomoto.ppt), the technical requirements for well planning (Tech Requirements, Murayama.ppt) and operational issue with the Kuroshio current.

Discussion included about what to do if objectives are not realized, the need to develop a series of contingencies and how to determine if drilling should be stopped in case of problems

Action Item #7

Designate group of scientists to work with engineers to synthesize data to devise best geological reality for well planning (i.e., geology, pore pressure prediction)

Lead: Co-chief Project Scientists and S. Kuramoto.

Time line: Determine group of scientists by next PSG meeting.

Agenda Item 7: Long-Term Observatory Development

See PPT: Monitoring, Becker.ppt (and all Mini-workshop ppt's)

Keir Becker provided a summary of the mini workshop on NanTroSEIZE observatories held the previous day. The objectives of the workshop were to :

- Review borehole observatory technology and NanTroSEIZE science objectives for proposed non-riser and riser sites
- As appropriate, refine NanTroSEIZE observatory plan as input for Oct 14-15 PSG

Two main consensus items resulted:

Consensus 1:

Integration of long-term borehole observatories is crucial to the overall success of the NanTroSEIZE IODP program. Therefore, the NanTroSEIZE Project Scoping Group should specifically include in its mandate the planning, prioritization, and oversight of an integrated, cross-platform programmatic approach to implementation of the

NanTroSEIZE observatory efforts

Consensus 2

An international working group or task force of IODP observatory scientists and engineers should be formed to (1) assess IODP observatory proposal pressure and recommend prioritizations for the overall IODP borehole observatory effort, (2) specifically assess possibilities to standardize science instrumentation components for IODP borehole observatories, and (3) work with IODP-MI and IODP funding agencies to develop feasible funding models for the SOC's, instrumentation costs, and engineering development needed to support the IODP borehole observatory effort.

Action Item#8

Explore the establishment (by IODP-MI) of international working group or task force of IODP observatory scientists

Lead: T. Janecek

TimeLine; Report on membership and meeting timelines at next PSG meeting

Agenda Item 8: Operation and Management

<See PPT: NanTroAgenda.ppt (Janecek)>

Discussion included issues and problems associated with the management of the NanTroSEIZE project, including the nature of science parties for riser drilling, how does the PSG fit into the Co-chief Scientist-IO relationship (i.e. designating co-chiefs), data sharing during the lifetime of the project, how to interact with national offices and funding agencies, how to designate Expeditions/Legs/Sub legs, coordination of measurements across expeditions.

The PSG is the best group to move these project management issues forward and the PSG needs to begin to work closely with the SAS and the IOs in defining the issues.

Action Item # 9

Designate PSG "Task Forces" to begin to address the following:

- *Pore Pressure/Geology Prediction
- Long-term Observatory Science Priorities and Sensors
- Develop non-riser Operations plan for SPC
- Seismic Interpretation/cooperation
- On-site contingency plan(s)
- Develop Mandate
- Data needs from Proponents to Operators

Lead: Co-Chief Project Scientists

Time Line: Designate task forces and issues to be addressed by next meeting