

IODP Science Advisory Structure Terms of Reference – Revised 1 September 2011

Common to all Panels and Committees:

- 1. Chair nominations.** Candidates for panel chairs, other than SIPCOM and PEP, are recommended by the PMOs. The SIPCOM chair and CMO make the final selection based on the PMO recommendations and other considerations. Chairs are chosen for proven scientific leadership skills and their terms are 2 years.
 - 2. Vice Chair nominations.** Panel and committee chairs can appoint or nominate a vice-chair for individual meetings or successive meetings. The vice-chair position will not automatically carry over to the next appointment cycle of the panel.
 - 3. Conflicts of interest and meeting conduct.** The same rules apply for all IODP panels, committees and task forces. Conflicts of Interest (COI) and perceived COI shall be declared at the start of each meeting and resolved by the chair, and treatment thereof shall be recorded in the meeting minutes. Proponents must leave the room during any discussion of their proposal. If a vote is conducted, anyone with a COI will be excluded from voting. Robert's Rules of Order shall govern all meetings.
 - 4. Minutes of meetings.** All panels and committees will provide the CMO with minutes of the meetings, including detailed voting results, within one month following the meeting.
- All panels report to SIPCOM.** Panel composition is shown in Appendix A.

Proposal Evaluation Panel (PEP)

1. General Purpose. The Proposal Evaluation Panel (PEP) reports to the Science Implementation and Policy Committee (SIPCOM), and is responsible for evaluation of all proposals in the context of the themes and initiatives of the Science Plan. PEP shall be organized in four sub-panels in accord with the four main themes of the Science Plan. PEP is responsible for selection of the best and most relevant proposals for forwarding to the OTF and SIPCOM for development of annual and long-range schedules. PEP also advises SIPCOM on any shortcomings of the proposal pool with respect to themes and initiatives of the Science Plan and makes suggestions for stimulating proposal pressure in those areas. The Site Characterization Panel (SCP) will meet in conjunction with PEP and select SCP members will provide direct input to the proposal evaluations in the PEP sub-panels as needed.

2. Mandate. The PEP shall be responsible for evaluation of pre-proposals, identification of pre-proposals for development into full proposals, identification of full proposals for external review, and selection of the best proposals for forwarding to OTF and SIPCOM for development of annual and long-term platform schedules. The main proposal evaluations will be conducted within the thematic sub-panels, followed by a plenary review by the whole PEP. When proposals span more than one sub-panel, the relevant sub-panels should join for the review.

2.1 Proposal evaluation criteria. The primary evaluation criteria should include the following scientific, practical, and societal considerations:

- Are the scientific questions/hypotheses being addressed exciting and of sufficiently wide interest to justify the requested resources?
- Will the proposal significantly advance one or more goals of the Science Plan?
- Would the proposal engage new communities or other science programs into the drilling program?
- To what degree does the integrated experimental design of site characterization, drilling, sampling, measurements, and downhole experiments constitute a compelling and feasible scientific proposal?

2.2 Pre-proposal evaluation. PEP should be selective in determining which pre-proposals should be developed into full proposals, rejecting those that are clearly unlikely to succeed. For all rejected pre-proposals, PEP should provide clear justification to the proponents. For accepted pre-proposals, PEP should provide clear advice for submission of full proposals, which may include recommendation for a workshop to develop the proposal (see Workshop Guidelines in Appendix B).

2.3 Full proposal evaluation. The main evaluations of full proposals should be conducted within the thematic sub-panels, followed by a plenary review by the whole PEP to identify the group of proposals accepted for external review. Those proposals sent for external review will also be sent for simultaneous review by the Site Characterization Panel (SCP), and to the relevant IO for operator feasibility analyses. The Scientific Technology Panel (STP) may be asked by PEP to provide reviews of proposed measurement plans or technology components for any full proposal submitted for external review. The Environmental Protection and Safety Panel (EPSP) will review all full proposals, generally after scheduling by the Operations Task Force (OTF). EPSP may be called upon at any stage in the review process to evaluate specific environmental or safety concerns. Before external review, PEP may invoke a single round of revision of those full proposals that may need improvement of scientific objectives and/or strategies, assessment of technological aspects, improvement of site assessment interpretation, or other such reasons.

2.4 Forwarding to OTF and SIPCOM. In plenary session, PEP will identify from the externally reviewed proposals a “select group” of the scientifically most compelling, operationally feasible full proposals to forward to the OTF and SIPCOM for potential scheduling. The “select group” should span all major themes of the new science plan if possible, but without any strict quotas. The expected number and balance may be adjusted based on implementation and long-range science needs identified by SIPCOM. The plenary review for defining the “select group” to be forwarded should not be a relative ranking by individual ballots, but should be on an absolute merit scale based on the evaluation criteria in 2.1. The select group of proposals will be forwarded to OTF and SIPCOM (or to holding bin) with the full proposal, summary of key discussion points and justification for the rating assigned by PEP, summary of external reviews. SCP and STP comments and reviews will be collated together with the PEP documentation by the CMO to form a complete proposal package for OTF and SIPCOM consideration.
(The absolute merit scale should be developed at the initial PEP meeting and approved by SIPCOM.)

2.5 Holding Bin. Full proposals that PEP identifies as among the scientifically most compelling, but needing further site characterization or technological development based on SCP or STP review, may be forwarded to a “holding bin.” When the site characterization or technological needs are determined by the PEP chair and OTF to be satisfied, such proposals would be released from the “holding bin” and included within the pool considered in developing annual and long-range science plans.

2.6 Advice to SIPCOM regarding proposal pressure. The thematic subgroups and PEP as a whole provide advice to the SIPCOM about any shortcomings in the proposal pool in terms of advancing the new Science Plan objectives and may suggest mechanisms for addressing these shortcomings.

3. Decisions. The PEP shall normally reach decisions by consensus. A quorum shall consist of at least two-thirds of the panel or sub-panel members. In cases for which a consensus is not

possible, decisions should be reached by a simple majority of all members present and eligible to vote. In such cases, voting records should be reported in the panel minutes.

4. Meetings. The PEP shall convene biannually, generally six to eight weeks after biannual proposal deadlines, and additional electronic meetings may be held as appropriate. This will allow for feedback to proponents within three months of the proposal deadlines. The CMO will produce draft minutes of PEP plenary sessions for approval by PEP.

5. Membership. Each PEP sub-panel should have a membership of 8-10 in order to assure sufficient breadth of expertise within the sub-panel themes. The PEP chair should work with IODP-MI and the national and consortia committees to maintain balance of expertise within the sub-panels and to ensure regular rotation of membership. PEP members shall normally serve for terms of three years and should not be members of other SAS panels. When appropriate, non-voting specialists may be invited to PEP meetings on an ad hoc basis to assist with evaluation of proposals.

6. Chair. An independent search committee reporting to the CMO, and approved by the Science Implementation and Policy Panel shall recommend the PEP chairperson for known leadership skills and broad scientific expertise. The role will require substantial dedicated time, and the chair should be provided with appropriate salary and logistical support by the CMO. Sub-panel members should select their own sub-panel chairs, in consultation with the overall PEP chairperson. The PEP chair and sub-panel chairs shall be SAS representatives to the Operations Task Force (OTF).

7. Liaisons. The PEP chair is a member of SIPCOM. Liaisons from the SCP, STP, and EPSP should attend PEP meetings to assist in evaluation of practical aspects of drilling proposals. Representatives from the implementing organizations should also attend PEP meetings for assessments of technological requirements for proposals under evaluation. Liaisons from other international geoscience initiatives should be encouraged to attend PEP meetings as appropriate for the proposal pool.

Science Implementation and Policy Committee (SIPCOM)

1. General Purpose. The Science Implementation and Policy Committee (SIPCOM) is the executive committee of SAS. It reports to the PGB and is tasked with delivering both annual and projected long-range science operations plans, assessing overall program success in meeting its scientific objectives, and approving program scientific policies as requested by the PGB.

2. Mandate. SIPCOM shall receive the select group of top-priority drilling proposals forwarded by PEP. SIPCOM will also receive detailed logistical, operational, and cost advice, and preferred schedules options, for the same group of proposals from the Operations Task Force (OTF). SIPCOM will use this input to select and approve annual science schedules and develop provisional long-range operations plans that balance achieving overall program scientific objectives and implementation realities. SIPCOM shall approve an annual plan about 18 months before the associated fiscal year.

SIPCOM will also assess long-range program scientific performance. With advice from PEP, SIPCOM will identify important emerging new themes and shortcomings in the proposal pool in meeting the goals of the Science Plan. If necessary, SIPCOM should form working groups within SAS, or suggest other mechanisms to increase proposal pressure to address any imbalances and new fields of research. SIPCOM should approve proposals for program-funded workshops. SIPCOM will also recommend priorities for engineering development to achieve program goals.

Finally, SIPCOM will be responsible for reviewing and approving any changes to program scientific policies.

3. Decisions. The SIPCOM shall normally reach decisions by consensus. A quorum shall consist of at least two-thirds of the members. In cases for which a consensus is not possible, decisions should be reached by a 2/3 majority of all members present and eligible to vote.

4. Meetings. The SIPCOM shall convene once annually to approve an annual science plan about 18 months before the associated fiscal year. Additional meetings of subcommittees or electronic meetings may be held as appropriate. The CMO will produce draft minutes for approval by SIPCOM.

5. Membership. The membership of SIPCOM should consist of broadly experienced scientific leaders who reflect program participation (Appendix A). SIPCOM members should serve three-year terms. The chair of PEP is a member of SIPCOM.

6. Chair. The chair of SIPCOM should be selected for scientific and managerial leadership by an independent search committee reporting to the CMO, and approved by the Lead Agencies as part of the Annual Program Plan. The role will require some dedicated time, and the chair should be provided with appropriate salary and logistical support from program funds through the CMO. The chair is a permanent liaison to OTF and serves for two years.

7. Liaisons. Liaisons from other international geoscience initiatives should be encouraged to attend SIPCOM meetings.

Environmental Protection and Safety Panel (EPSP)

1. General Purpose. The Environmental Protection and Safety Panel (EPSP) shall provide independent advice to the OTF, CMO, and the implementing organizations (IOs) with regard to safety and environmental issues that may be associated with general and specific geologic circumstances of proposed drill sites. The EPSP shall also provide advice on appropriate drilling technologies for avoidance of drilling hazards and protecting the environment. The panel reports directly to the Operations Task Force (OTF) and the SIPCOM.

2. Mandate. This panel shall review all prospective drilling in the IODP and advise on safety requirements and appropriate technology needed to meet these requirements. All drilling operations involve safety and environmental issues. The principal geologic safety and a significant environmental hazard in ocean drilling is the possible release of substantial quantities of high-pressure fluids and volatiles including hydrocarbons from subsurface reservoir strata. IODP riser capability will permit the application of blow out prevention (BOP) technology to mitigate this hazard; for non-riser platforms, careful planning and appropriate site surveys reduce or eliminate the risk of hydrocarbon release. IODP proposal proponents are initially responsible to carefully assess proposed drill sites in terms of safety and environmental protection. The EPSP shall independently examine and review each proposed site, including site survey data and operational plans, to determine if and how drilling operations can be conducted to maximize safety and minimize environmental impact.

3. Decisions. The panel shall recommend among the following options:

- site approval as proposed, for riser/BOP or non-riser drilling,
- amendment of a proposed site with respect to location and/or depth of penetration,
- a specific drilling order for an expedition,
- a specific drilling platform or well program,
- acquisition of additional data to complete the safety review, or
- denying approval.

Approval shall be based on the judgment of the EPSP that a proposed site can be safely drilled in light of the available technology, information, and planning. Recommendations of the panel shall be based on consensus or voting, as decided on a case-by-case basis. Votes shall be decided by a majority of all members present and eligible to vote. A quorum shall consist of at least two-thirds of the voting members. Voting records shall be kept and reported in the meeting minutes.

4. Meetings. The EPSP shall convene at least once annually, and additional electronic meetings may be held as appropriate.

5. Membership. Members of the EPSP shall be specialists who can provide expert advice on maximizing safety and minimizing environmental impact associated with drilling of proposed sites, including sites in hydrocarbon prone and biologically sensitive areas. Members of the EPSP shall be primarily selected on the basis of this specific expertise. EPSP members shall serve for terms of three years, renewable at the discretion of the EPSP chair/vice-chair and the relevant national/consortia program.

6. Liaisons. The EPSP chair or alternate shall be liaison to the PEP, SIPCOM, and Site Characterization Panel (SCP). Representatives from the implementing organizations (IOs) shall also attend EPSP meetings.

Site Characterization Panel (SCP)

1. General Purpose. The Site Characterization Panel (SCP) advises the PEP and OTF. The panel shall advise drilling proponents on the degree of completeness of the drill site characterization data package, and on its assessment of whether or not the scientific objectives of each drill site can be effectively achieved on the basis of the proposal and data package.

2. Mandate. The SCP shall:

- Review site survey data packages submitted by proponents to the IODP Site Survey Data Bank.
- Verify data quality and identify data gaps for each proposal's site survey data package.
- Provide early guidance to proponents and the PEP regarding necessary site characterization data.
- Make recommendations regarding the degree of completeness of each drill site characterization data package to the proponents and the PEP.
- Advise the PEP, on the basis of the proposal and data package, whether or not the site characterization package enables effective achievement of the scientific objectives of the proposal.
- Examine and encourage opportunities for use of new site survey technologies.
- Foster cooperation and coordination for site survey data acquisition.

3. Classification Decisions. The site characterization completeness for each proposed drill site shall be classified by general consensus of the SCP members. Modifications of the site classification shall be by consensus of the SCP at a meeting or by e-mail. Site classifications shall be recorded in the meeting minutes. The SCP site classification does not include safety considerations.

4. Meetings. The SCP shall convene biannually in association, but not necessarily concurrently, with PEP meetings, and additional electronic meetings may be held as appropriate.

5. Membership. SCP members shall normally serve for terms of three years.

6. Liaisons. The SCP chair and up to three additional SCP members shall be liaisons to the PEP meeting and the SCP chair will be a liaison to OTF. A liaison from the EPSP shall attend each SCP meeting. Representatives from the implementing organizations (IOs) and IODP-MI shall also be invited to attend the meetings.

Scientific Technology Panel (STP)

1. General Purpose. The Scientific Technology Panel (STP) advises PEP, the IOs, and the CMO. The STP may communicate directly with IOs and other panels and with SIPCOM in matters directly involving data and publications policies or other policy issues. The panel shall contribute information and advice with regard to handling of IODP data and information, methods and techniques of all IODP measurements, sample handling, curation, laboratory design, downhole measurements and experiments, and observatories. The STP shall also advise PEP on the technological feasibility of selected proposals as requested by the PEP chair.

2. Mandate. STP recommendations shall be sent to the CMO, PEP, and IOs as deemed appropriate. The STP shall provide advice on scientific measurements made onboard IODP platforms, within and around boreholes, and on samples collected by the IODP and associated programs. The STP shall develop guidelines concerning said measurements and shall furnish advice about scientific measurements, equipment, and on certain policies and procedures in the IODP. Specific responsibilities for the panel shall be to advise on databases, sample handling, curation, shipboard equipment usage and needs, as well as borehole and observatory measurements, equipment, usage, and needs. In addition, STP will conduct QA/QC reviews of data collection procedures on IODP platforms to ensure consistent high quality data across the program. The panel may also advise on specific questions of publications and data dissemination policies and procedures and provide feedback to the SIPCOM, CMO, and IOs.

3. Decisions. Decisions shall be made either by consensus or voting, as decided on a case-by-case basis. Votes shall be decided by a simple majority of all members present and eligible to vote. A quorum shall consist of at least two-thirds of the voting members. Voting records shall be kept and reported in the meeting minutes.

4. Meetings. The panel shall convene at least once annually, and additional subcommittee or electronic meetings may be held as appropriate.

5. Membership. STP members shall normally serve for terms of three years and shall have expertise in areas required to adequately cover the panel mandate. With CMO approval, the panel may augment the expertise required to address its mandate by setting up *ad hoc* advisory committees.

6. Liaisons. The STP chair or alternate shall be liaison to the PEP. Representatives from the IOs and IODP-MI shall attend the STP meetings.

Operations Task Force (OTF)

1. General Purpose and Mandate. The OTF is a hybrid committee between SAS, the CMO and the IOs, and works as an integrated part of the SAS on expedition implementation. Its prime mission is to formulate the most efficient expedition schedules, including details of science operations, and the required budgets. It will address drilling schedules on an annual basis as well as on a multi-year, long-range planning basis. It conducts its work in this regard on the: (1) basis of the long-range and overall programmatic priorities determined by SIPCOM; (2) science assessment made by PEP; (3) site characterization readiness as reported by SCP; (4) technical feasibility as reported by the STP; and (5) within the fiscal and operational constraints provided by the funding agencies (NSF, on behalf of the lead agencies and IWG+). Its recommendations for annual expedition schedules are reported to SIPCOM along with a safety evaluation by the EPSP for final selection (if multiple scenarios) and approval of the science plan to be included in the Annual Program Plan (APP). It also prepares background material on long-range drilling plans to be developed by SIPCOM on an annual basis.

2. Decisions. Decisions preferably will be made by consensus. If consensus is not possible, decisions will be by simple majority and recorded in the minutes.

3. Meetings. At least one physical meeting per year to prepare expedition schedule scenarios prior to SIPCOM review of science plans and draft APPs. Additional meetings may be held as convenient or required, or be conducted electronically. The OTF keeps minutes of all its activities.

4. Membership. The OTF is hosted by the CMO, but differs from other SAS entities by CMO and IO membership. Members from SAS are the PEP chair and its four thematic sub-chairs. Members from IOs are one senior manager from each IO appointed by the IO Executive Manager. The CMO chairs the OTF and has two members (including the chair) representing science planning and operations.

5. Liaisons. The SIPCOM chair is a permanent liaison to the OTF. Additional liaisons and observers include the SCP chair and additional IO representatives as required by the agenda of the meeting, lead agencies representatives, and others deemed relevant to conduct OTF business in the most efficient manner.

Appendix A. SAS Committee and Panel Population

Population of SAS	SIPCOM	PEP	STP	SCP	EPSP	TOTAL; observers excluded
USA	5	10	5	5	7	32
JAPAN	5	10	5	5	7	32
ECORD	4	8	4	4	4	24
Associate Members	0	0	0	0	0	0
PEP chair	1	0	0	0	0	1
ANZIC	0	2	1	1	0	4
KOREA	0	1	1	1	0	3
CHINA	0	1	1	1	0	3
INDIA	0	1	1	1	0	3
TOTAL	15	33	18	18	18	102

HISTORICAL

Appendix B. Workshops in IODP

With the new Science Advisory Structure and proposal process in IODP, the demand for workshops (WS) will increase, in particular for WS aimed at producing full proposals that address the themes of the New Science Plan. Moreover, effective, long-term scheduling of platforms will require an improved mechanism to secure a critical mass of mature proposals in different oceans. Workshops with a regional focus assist such a planning effort.

IODP will therefore accept three types of WS proposals:

(1) Unsolicited or solicited proposals that will address scientific opportunities in a particular region, with or without specific scientific theme(s) in mind,

(2) Unsolicited WS proposals for thematic WS that have potential to develop new scientific approaches,

(3) Solicited by the Proposal Evaluation Panel (PEP) WS proposals to develop a full drilling proposal.

Ad (1): The need for regionally focused WS is significant. There is a growing concern about lack of a critical mass of proposals in different regions, making fiscally efficient scheduling difficult. Long-range planning to develop strong scientific proposals that justify sustained expedition activity in a geographic region will overcome this quite fundamental problem.

Ad (3): Solicited implies that a pre-proposal has been submitted and favorably reviewed by PEP, with review comments of a nature that will make it natural to further develop the scientific rationale, technology, or group of proponents through a WS.

Budget guidelines:

(1) Up to 30K USD from IODP

(2) Up to 30K USD from IODP

(3) Up to 15K USD from IODP