International Ocean Discovery Program

# The IODP Drilling Proposal Submission and Evaluation Process

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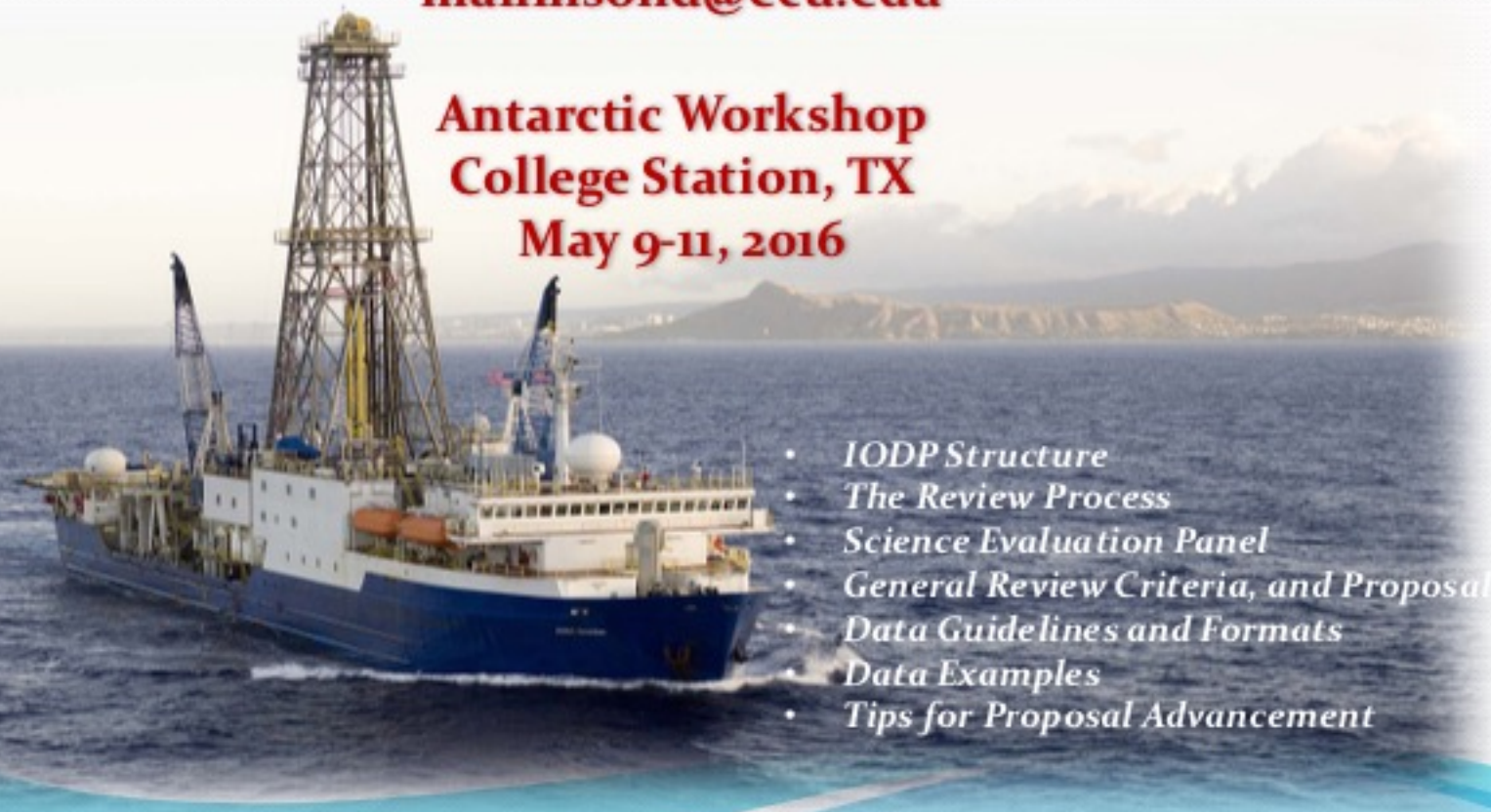
Antarctic Workshop
College Station, TX
May 9-11, 2016

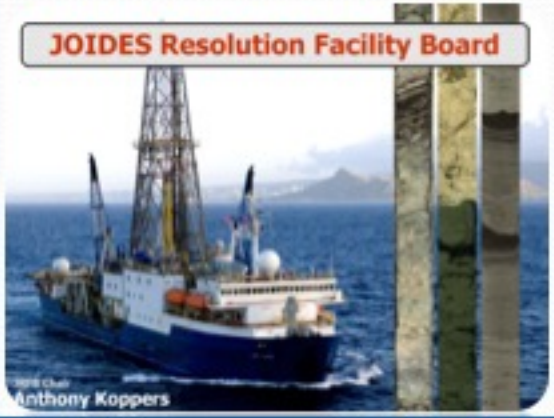


- *IODP Structure*
- *The Review Process*
- *Science Evaluation Panel*
- *General Review Criteria, and Proposal*
- *Data Guidelines and Formats*
- *Data Examples*
- *Tips for Proposal Advancement*

Forum – custodian of science plan and venue for ideas

Implementing Organizations (IO)

Facility Boards (JRFB, CIB, EFB)



Science Evaluation Panel (SEP)

Environmental Protection and Safety Panel (EPSP)

Science Support Office (SSO)

Proposal submission

Proposal text, data, summary forms

Proponents

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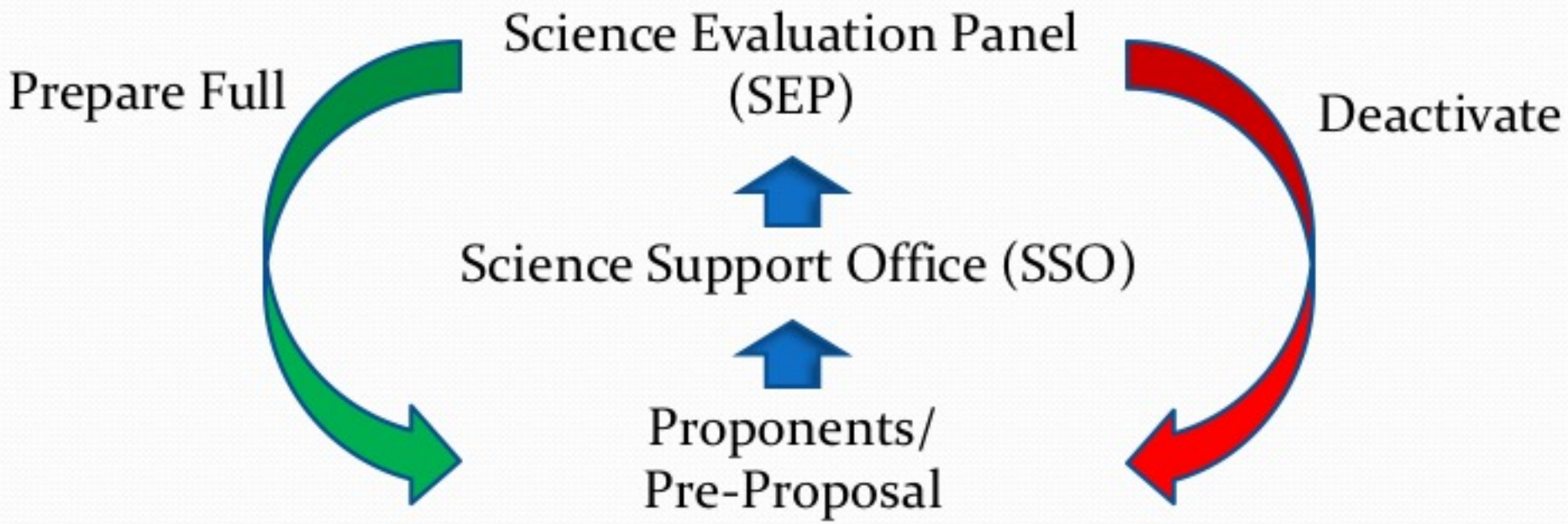
# Review Process



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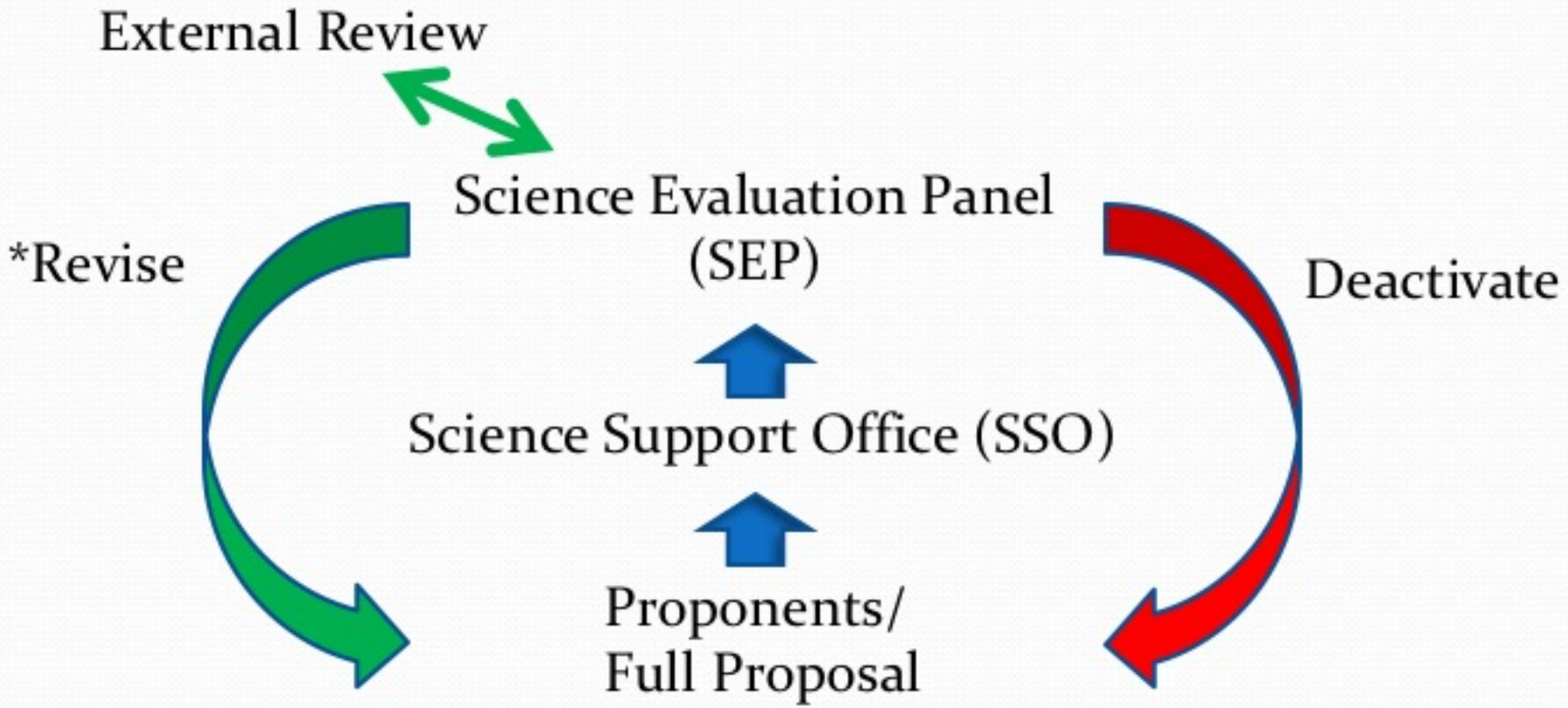
# Review Process




*Proponents are allowed only one revision of a Full Proposal (=Full2). The Full2 proposal must have all data submitted (**held confidential**)

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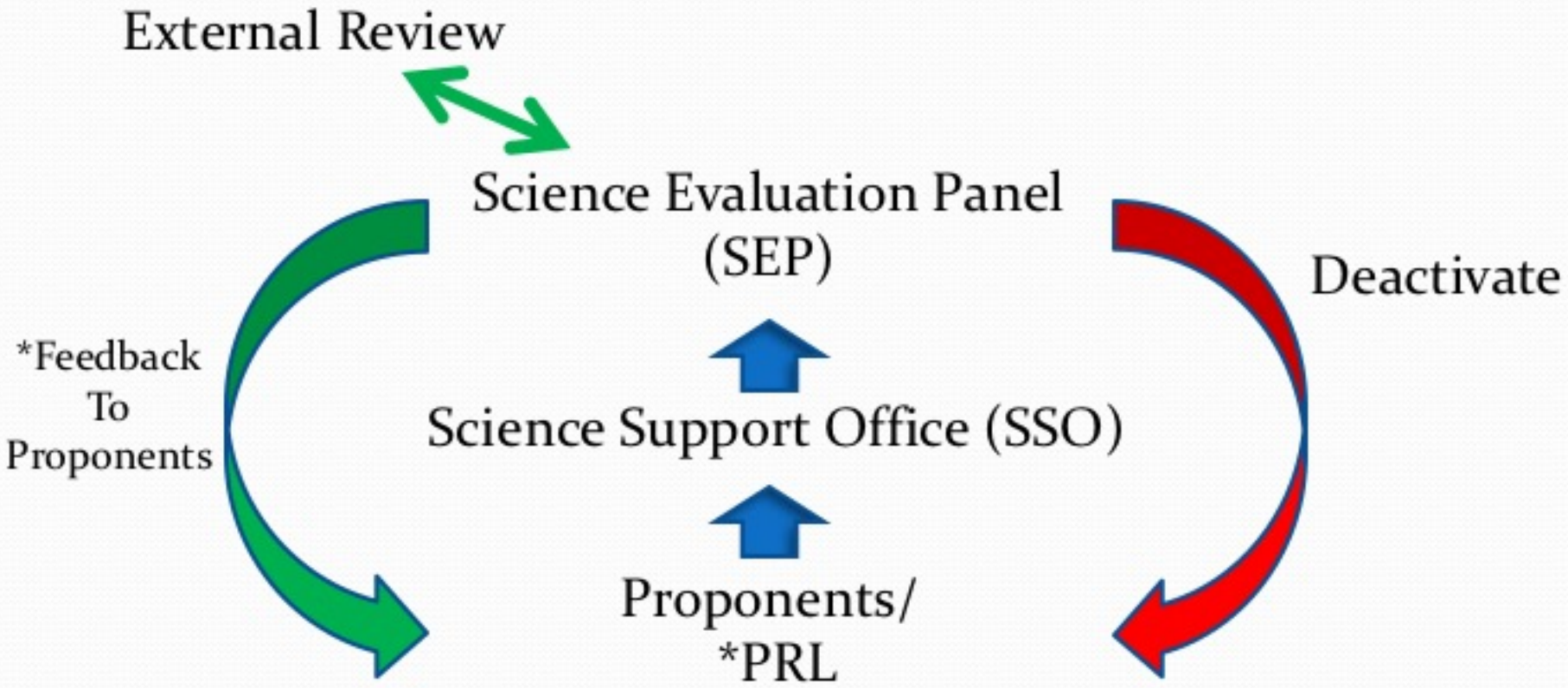
# Review Process




* Following external review and feedback from SEP, Proponents prepare a Proposal Response Letter (PRL)

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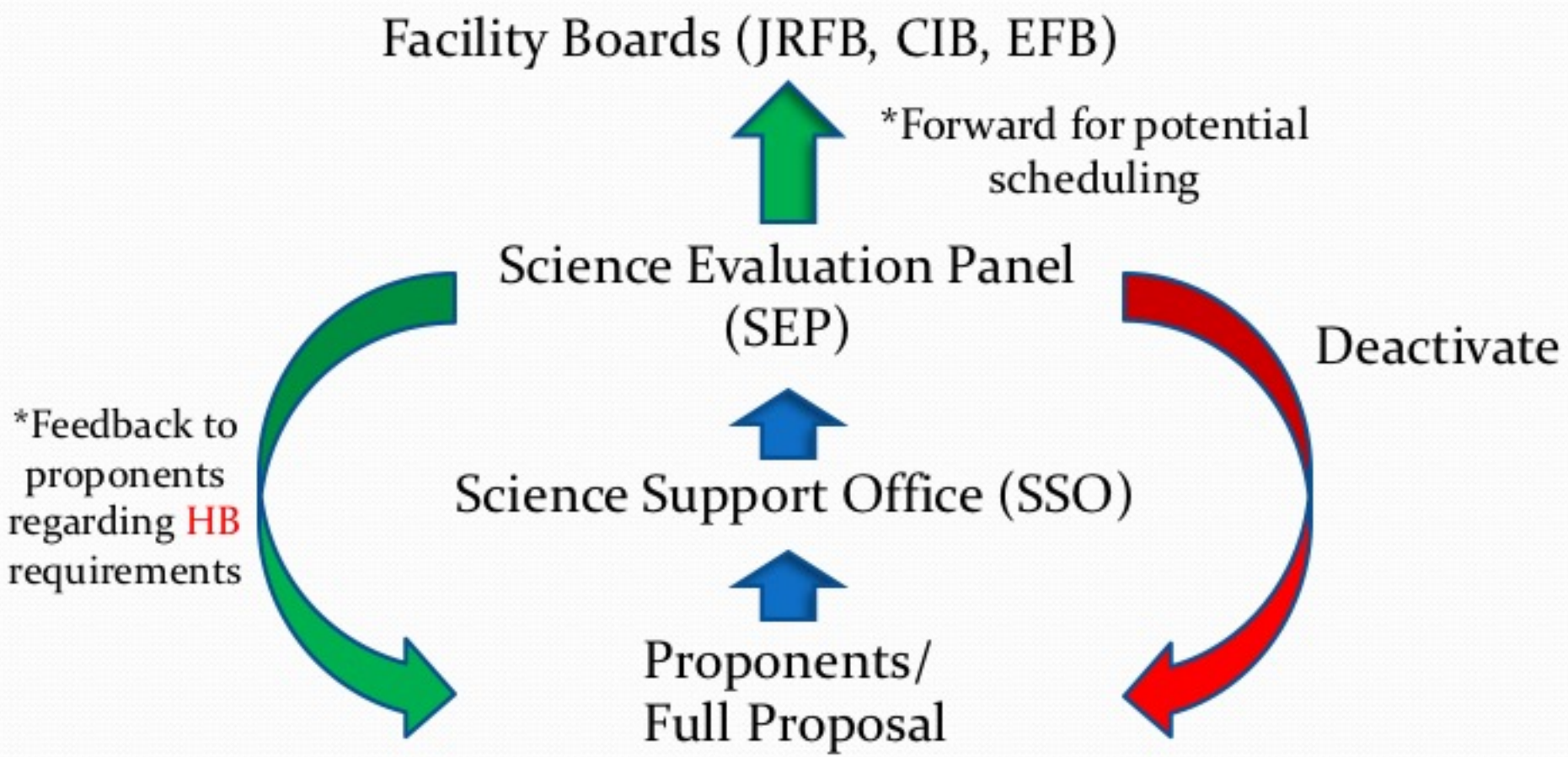
# Review Process




* If proposals still lack data or have technical issues, they may be placed into a **Holding Bin** until issues are resolved, before forwarding to the FB

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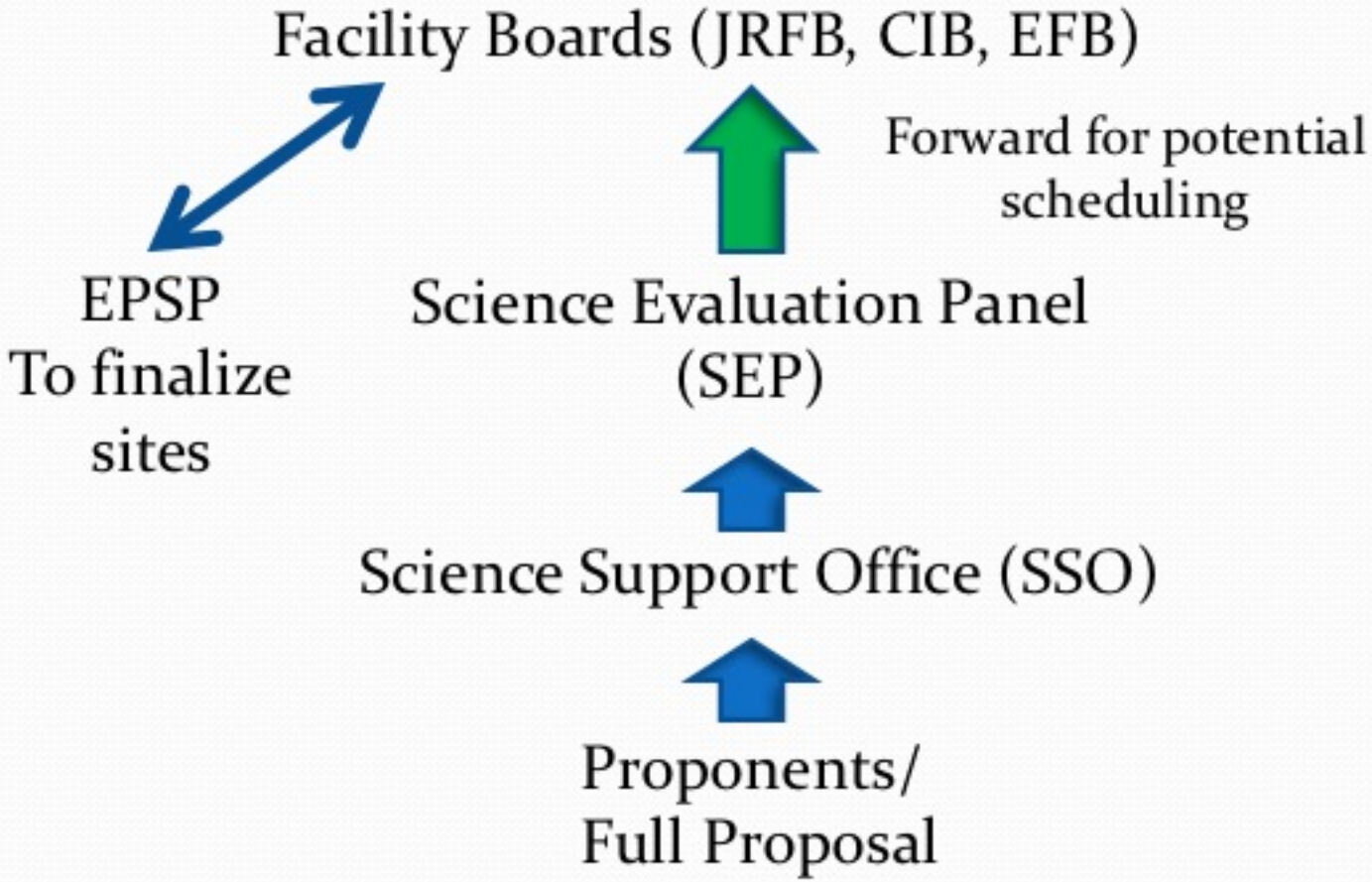
# Review Process



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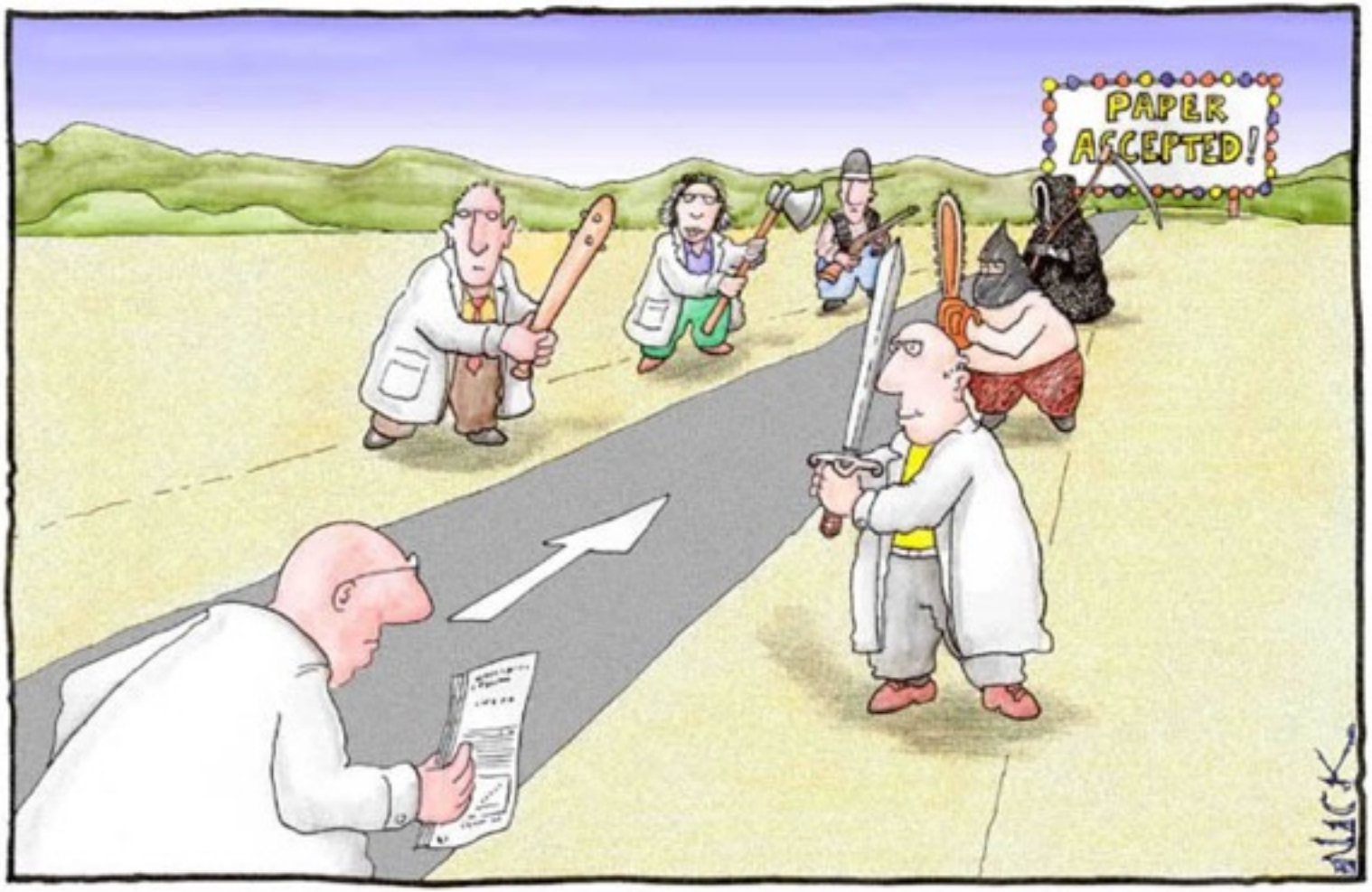


Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

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# The Science Evaluation Panel (SEP):

Consists of scientists from member nations;
5 watchdogs (WDs) assigned to a proposal.

Evaluates all proposals (Pre, Full, MDPs, CPPs, ADPs), identifying pre-proposals for development into full proposals, and deactivating those proposals unlikely to succeed;

Provides feedback to proponents regarding potential successful science and drilling strategies, early guidance about necessary site characterization data, and (with Full proposals) the degree of completeness and adequacy of the data submitted for each site;

Evaluates all provided data for the proposal, in the site survey data bank (SSDB).

Selects the best proposals for forwarding to the appropriate Facility Board for development of annual and long-term platform schedules.

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# Review Procedures: General Evaluation Criteria

- Are the scientific questions/hypotheses being addressed exciting and of sufficiently wide interest to justify the requested resources?
- To what degree does the integrated experimental design of site location, drilling, sampling, measurements, and downhole experiments constitute a compelling and feasible scientific proposal?
- 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?

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# Review procedures: Rating of the proposal (after external review)

**Excellent proposal:**

- The science plan proposed is **innovative, cutting edge**, aims at, or extends beyond, the vision of the new science plan
- Excellent, succinct and carefully planned scientific drilling and research plan
- In all probability, the expedition(s) **will be regarded as a major achievement of scientific ocean drilling**
- In all probability, the scientific and technical achievements **will have important societal impact in one way or another** (e.g., application of results, outreach, or public education)

**Good proposal:**

- Objectives are consistent with one or more themes of the new science plan
- In all probability, the expedition(s) **will result in important refinements of existing scientific concepts** and advance the science plan. Data are very useful to test the hypotheses as formulated in the proposal.
- Good and succinct drilling plan, feasible, carefully planned
- The science plan is likely to result in successful expedition(s) with a good effort to outcome ratio
- In all probability, the **scientific and technical achievements will be important for society** in one way or another.

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# Review Procedures: Site Survey Data

- Proponents are responsible for demonstrating the feasibility of the proposed science via their site characterization data and a carefully worked out drilling strategy.

- Site characterization **data requirements will vary according to objectives**, but should demonstrate that the proposed sites are correctly positioned, and that the drill targets are adequately imaged and lack structural complications.

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ssdb.iodp.org
ssdb.iodp.org/documents/proponents-info.php
Access to SSDB and guidelines

General Requirements from the *Guidelines for Site Characterization Data* (Rev. Nov. 2015). Please refer to these guidelines for accepted formats.

- Digital seismic data (SCS or MCS depending on objectives and targets) in SEGY format with header information to allow proper evaluation.
- Detailed information on acquisition and processing parameters.
- Velocity data (ASCII, color coded and/or contoured plots also recommended).
- Image files (jpg, pdf, tif, png) of seismic lines (interpreted and un-interpreted) with clearly annotated SP or CDP (the same as in digital files), scale, orientation and information on filters and/or gains applied. Interpreted lines should include the location, with proposed penetration depth, of proposed sites.
- Swath bathymetric data as image files (jpg, pdf, tif, png) as well as net-cdf or GMT grids with information on cell size, or Fledermaus SD or Scene.
- Navigational data in decimal degrees, as ASCII xyz-files with either SP or CDP number, which directly relates to the same parameter in the digital seismic data, seismic figures and location maps.
- Location maps annotated with lat/lon (decimal degrees) for each site with bathymetry across the proposed site and available seismic lines with annotated SP or CDP numbers (same as digital seismic data, seismic figures and navigational data).
- If available, information from nearby wells or cores.

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# Classification System

- Hinges on whether WDs feel that the data reviewed:
  - Are sufficient to support drilling (i.e., objectives are likely to be achieved, and there are no, or minimal, scientific concerns).
  - Are not sufficient to support the drilling (i.e., targets are not imaged properly, data are not annotated properly, sites are mislocated, more data are needed, data are not interpreted correctly, structural complications, etc.).
- *Ask yourself, given the data, are you convinced that you are drilling in the right locations to achieve the scientific objectives.*

**Objective: to develop the data package so that the proposal may be forwarded to the Facility Board (FB)**

Forward to FB

1. Data reviewed by SEP are sufficient to support the scientific objectives of the drilling effort and there are no further concerns
2. Data reviewed by SEP are sufficient to support the scientific objectives of the drilling effort, but minor concerns require follow-up by proponents (specify in text)

---

Holding Bin, Revise or Deactivate

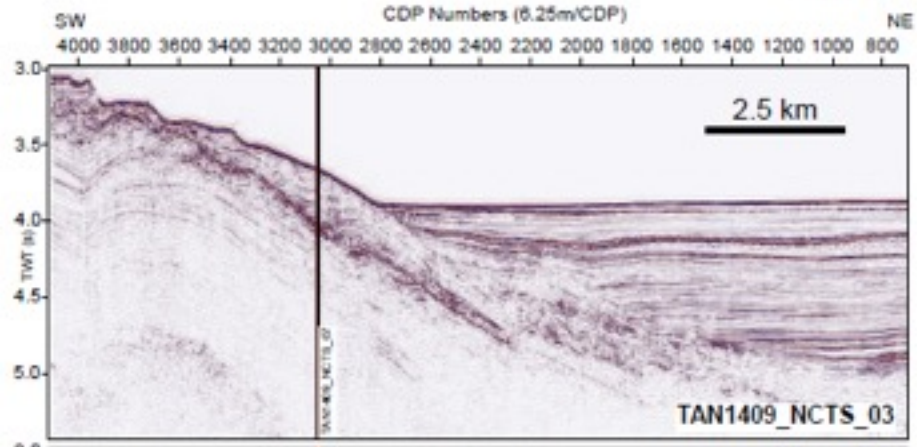
3. Data reviewed by SEP are insufficient to support the drilling effort, but other data are believed to exist; and/or data are not annotated or organized sufficiently to fully review, or there are scientific concerns
4. Data reviewed by SEP are insufficient to support the drilling effort, and additional data are not believed to exist
5. No data have been reviewed by SEP

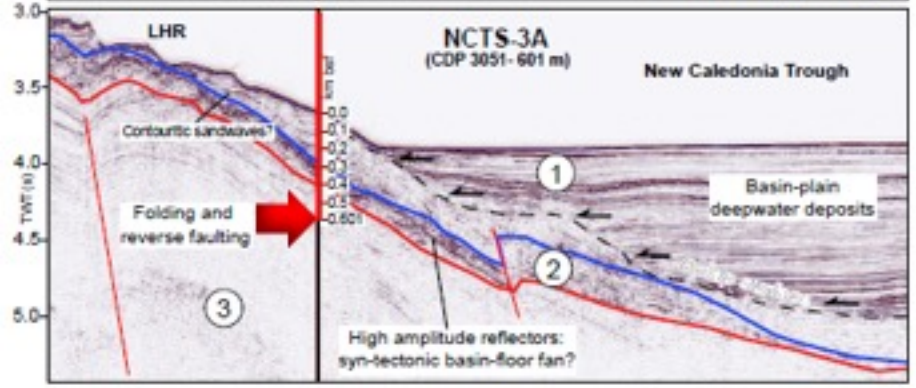
"Insufficient" indicates that the data package is not sufficient to convince the SEP that the scientific objectives can be addressed. For example: 1) the data package may lack items that are fundamental to determining the correct site location or target depth; 2) the data may be of insufficient resolution to demonstrate the existence of targeted strata; 3) the data may not demonstrate unequivocally that the proposed locations are correct (e.g. sites are not plotted correctly or mismatches exist between navigation files and proposed locations); 4) site locations are deemed to be inadequate for addressing the objectives (e.g. missing critical sections, misinterpretations, science or safety concerns, etc.).

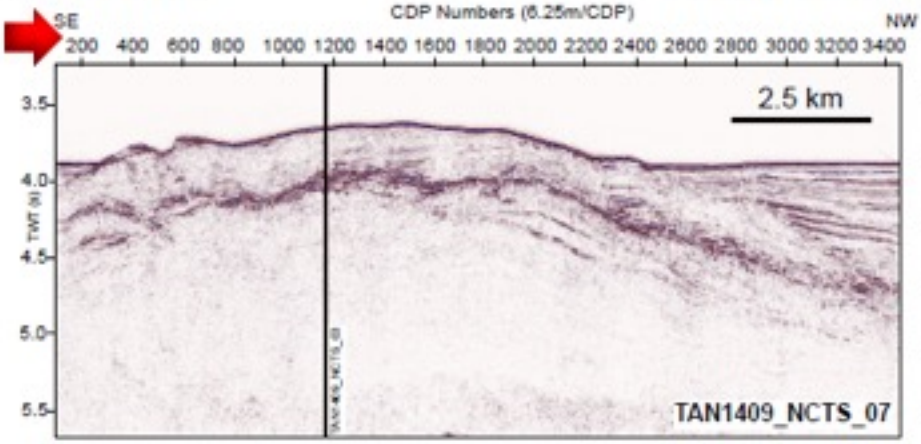
"Minor concerns" may include missing items or questions that do not affect the assessment that drilling is warranted at proposed sites, meaning the objectives can be met based on existing data despite the concerns. Examples include: 1) missing image files (e.g. bathymetry); 2) minor issues with velocity that may slightly affect the proposed depth of penetration; 3 minor navigation issues. These can be addressed while proposal resides at the FB.

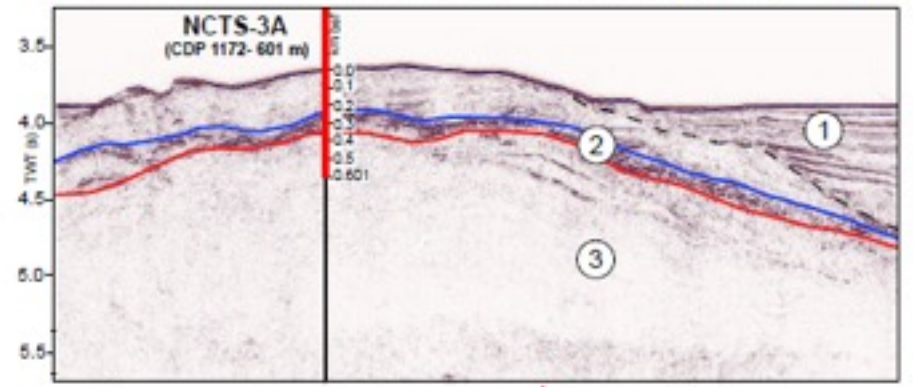
# Site Summary Figure

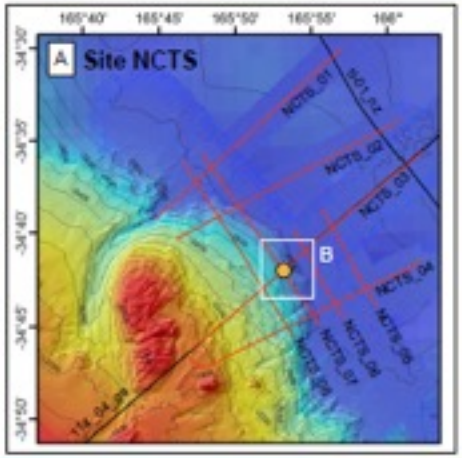
# Site NCTS-3A

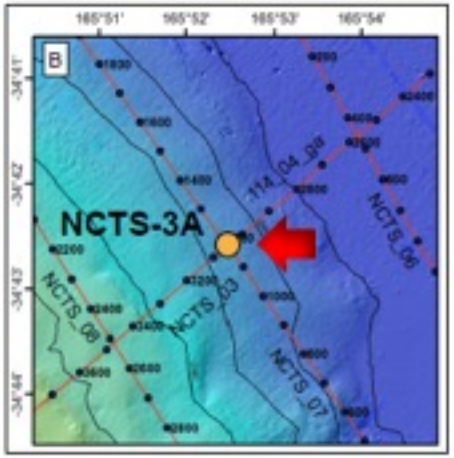



## Files in SSDB

*Location map*
NCTS_site_sum_fig_map.tif
NCTS-3A_site_sum_fig_map.tif

*Seismic data figures*
NCTS-3A_site_sum_fig_TAN1409_NCTS_03.tif
NCTS-3A_site_sum_fig_TAN1409_NCTS_03_interp.tif
NCTS-3A_site_sum_fig_TAN1409_NCTS_07.tif
NCTS-3A_site_sum_fig_TAN1409_NCTS_07_interp.tif

*Segy data*
TAN1409-NCTS_03_MIG.SGY
TAN1409-NCTS_07_MIG.SGY
114_04_ga.sgy

## Interpretation

1. Late Eocene? - Quaternary
   *Blue* - End of deformation
2. Eocene syn-tectonic clastics?
   *Red* - Onset of deformation
3. Cretaceous to Early Eocene?

## Well location

CDP 3051 on TAN1409-NCTS_03
CDP 1172 on TAN1409-NCTS_07
Lat: -34.711508
Long: 165.872625

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# Tips for Rapid Proposal Advancement

1. Carefully consider the drilling plan.
   - Can the scientific objectives be achieved by drilling fewer
   - Are there sufficient alternate sites?

2. Provide exciting and well developed hypotheses or scientific questions, and an explanation of how each will be tested using the proposed drill sites.

3. Provide data to demonstrate that the objectives can be addressed with the proposed drilling plan.

4. Follow the data guidelines (correct formats, figures properly annotated, well-organized, interpreted).
   - Reviewing the data is a VERY time-consuming task. If data are not in the correct format (e.g., navigation is in meters instead of decimal degrees; unclear if SPs or CDPs are being used, etc.), it only slows down and complicates the review process.

5. Triple check all of the site locations (lat/lon position). It is common for sites to be mislocated on maps and on seismic data. Be sure the locations agree between maps, navigation files, seismic data, AND the site summary form (Form 2).

6. Place sites on or near crossing seismic lines.

7. If asked to revise the proposal, follow all of the suggestions provided by the SEP watchdogs (WDs). If you're not clear on a suggestion, contact the WDs.

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# iodp.org
# General IODP info

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iodp.org

NBC News - Breaking

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INTERNATIONAL OCEAN DISCOVERY PROGRAM

*Exploring the Earth Under the Sea*

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EXPLORING OUR PLANET | FOR SCIENTISTS | PROGRAM INFORMATION | MEDIA | QUICK LINKS

## Exploring Our Planet

The International Ocean Discovery Program: Exploring the Earth under the Sea (IODP) continues over five decades of international collaboration to recover geological data and samples from beneath the ocean floor to study the history and dynamics of Planet Earth. IODP is guided by the science plan Illuminating Earth's Past, Present, and Future.

## News

## Current Expeditions

## For Scientists

Ask me anything

# Proposals.iodp.org
# Portal for proposal submission

Mallinson, David J - Outlo | PDB system

https://proposals.iodp.org/index.php/

NBC News - Breaking

IODP Proposal Database

Proposal Guidance | Contact | My Proposals | Logout

Home / Proposals

Next proposal deadline is 2016-04-01 23:59 GMT | mallinsond

## Welcome to the PDB

The online proposal submission system of IODP

### Proposals

Go to proposals

**Recent changes**

- Solicited PRLs responding to SEP external reviews and unsolicited PRLs (accepted only for FB proposals) are now submitted through PDB.
- A designated Data Lead is required, even for proposals not submitting data.

### User Info

Update your user information

The contact information section in your proposal will be taken from your user information. Please verify that it is current and complete.

### New Features

- Registration is now automatic and immediate after email validation, instead of requiring manual approval.
- Site list can be re-ordered after entry.
- Pages no longer time out or need reloading for edits to appear.
- The proposal Copy tool now copies over PDF documents, as well as form information, into a new proposal.
- Word counts are more accurate.
- On Site Form 2, site position on a seismic line can be provided as SP, CDP, or CMP, not just SP.

PDB has undergone a major rebuild of the back-end software for stability, security, maintainability, and future integration with SSDB. The forms and workflow will look different, but the information required is the same as before (with the exceptions listed above.) If you experience any difficulty, or have questions or comments, please contact

Ask me anything

81%

ssdb.iodp.org

ssdb.iodp.org/documents/proponents-info.php

Access to SSDB and guidelines

IODP - Site Survey Data B

org/documents/proponent-info.php

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# Site Survey Data Bank

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*Basic User Menu*

SSDBquery
SSDBlegacy

*Quick Links*

Login
Unsecure Login
Register
Information for Proponents
IODP Proposal Submission Guidelines

Home › Information for Proponents

## Information for Proponents

### Submission Deadline

Data Submission Deadline: **Monday, May 2, 2016, 23:59 GMT** .
Proposals with data submitted before the deadline will be reviewed at the next panel meeting.

### Guidance Documents for Proponents

:: In-Depth Guide for Proponents
:: Overview of the data submission process
:: IODP Site Characterization Data Guidelines (PDF)
:: Details of the types of site survey data ***usually*** required by the Science Evaluation Panel to judge if the scientific objectives of the site can be achieved.
:: How to Submit Files to SSDB
:: Step-by-step instructions for using the SSDBupload tool to submit your files to SSDB.

### SSDB Tools for Proponents

There are a variety of tools to support proponents submitting data to and retrieving data from the SSDB. The left-hand menu provides links to most of these, though you must be logged on as a proponent to see and access some of them.

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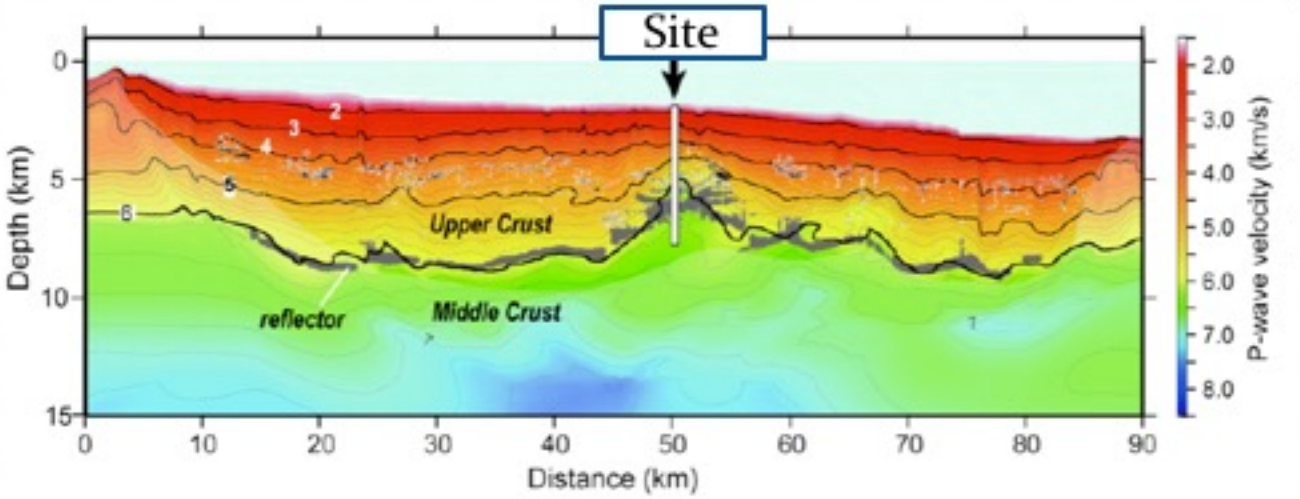
# Data Examples

Velocity figures




- Stacking velocities
  - Semblance plots
- Interval velocities

Tables

ProMAX Data 6283geoscience Export: Parameter Table
Area: CDP Line: TIME line001 VEL_RMS

| | | | |
|---|---|---|---|
| | 330 | 3255.6 | 1492.7 |
| | 330 | 3547.6 | 1523.6 |
| | 330 | 3858.1 | 1593.7 |
| | 330 | 3955.5 | 1614.3 |
| | 330 | 4331.8 | 1750.4 |
| | 330 | 4494.9 | 1766.9 |
| | 330 | 4629.1 | 1822.5 |
| | 330 | 4765.9 | 1898.8 |
| | 330 | 4905.4 | 1952.4 |
| | 330 | 5092.2 | 2092.6 |
| | 330 | 5255.3 | 2263.8 |
| | 330 | 5386.9 | 2348.3 |
| | 330 | 5986.8 | 3142.1 |
| | 330 | 6244.7 | 3421.1 |
| | 330 | 6847.3 | 3919.3 |
| | 330 | 8307.7 | 4894.9 |
| | 330 | 9697 | 5511 |
| | 330 | 10139 | 5717.2 |
| | 330 | 11657.3 | 6009.9 |

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# Data Formats

| | |
|---|---|
| Digital Seismic | SEG-Y with byte locations and EBSDIC header information |
| Echosounder or subbottom profiler | SEG-Y with byte locations and EBSDIC header information, KEB |
| Images (Graphics) | JPEG, TIFF, PDF, PNG |
| Tables and Documents | PDF, ASCII/plain text, RTF |
| Video | MPEG, Quicktime movie (MOV) |
| Digital Maps | NetCDF, GMT GRD, Fledermaus SD or Scene |
| Logging Data | LAS, LIS, ASCII/plain text in delimited columns |
| Navigation | ASCII/plain text in delimited columns, UKOOA (data in decimal degrees) |
| Velocity | ASCII/plain text in delimited columns and semblance plots (JPEG or PDF), profile images |

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# Review procedures:
# Rating of the proposal (after external review!)

**Fair proposal:**

- Objectives show a fair consistency with thematic priorities in the new science plan
- The science plan is not clear, and deficiencies are identified
- The expedition(s) could possibly result in some non-trivial achievements, but mostly of incremental nature, perhaps a partly relevant data set to test the hypotheses as formulated in the proposal, or the expedition(s) will not be successful.
- Insufficient drilling plan with unfavourable effort to output ratio
- The potential societal impacts from scientific and technical achievements are not high, or are poorly documented.

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# Nagoya Protocol

- Part of the Convention on Biological Diversity
- Covers access to genetic resources and the fair and equitable sharing of benefits arising from their utilization
- Impacts all biosphere-related objectives for sites in EEZ, ECS, and territorial waters
- Prior informed consent required
- Requirements evolving and differ from country to country
- Could require individual investigators agreements
- Most challenging for non-biosphere-oriented expeditions, where microbiological interests are not defined at the time the clearance application to conduct research in the EEZ is submitted.

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# Clearance

- US State Department, Office of Ocean and Polar Affairs (OPA), formulates and implements US policy related to research in **territorial seas, exclusive economic zones (EEZ), and extended continental shelves (ECS)**
- A standard marine scientific research (MSR) application, plus any required country-specific supplemental documentation, is submitted to the US State Department online system no later than 7 months precruise
- Site locations must be finalized
- OPA reviews and passes on to US embassy, which produces diplomatic note and submits to coastal state no later than 6 months precruise
- Nagoya Protocol: Covers access to genetic resources and the fair and equitable sharing of benefits arising from their utilization.
  - Impacts all biosphere-related objectives for sites in EEZ, ECS, and territorial waters
  - Most challenging for non-biosphere-oriented expeditions, where microbiological interests are not defined at the time the clearance application to conduct research in the EEZ is submitted.