

IIC and PI Responsibilities

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Task	When	Responsibility
Request sufficient ship time	Proposal time (UNOLS request)	PI
Plan and run the cruise	Cruise	PI
Ship and deploy instruments	Cruise	IIC
Provide support personnel	Cruise	PI
Determine OBS locations	Passive deployment	IIC
Determine OBS locations	Active-source deployment	PI
Submit data to IRIS	Post-cruise	IIC
Nominate open site	Post-cruise (passive)	PI
Submit cruise evaluation form	Post-cruise	PI
Submit data evaluation form	Post-cruise	PI
Acknowledge OBSIP in publications	Post-cruise	PI
Send publications to OBSIP Management Chair	Post-cruise	PI

PI Information--Updated July 26, 2010

Introduction

The U.S. National Ocean Bottom Seismic Instrumentation Pool (OBSIP) provides and operates seismic instruments to support research on the structure and tectonics of the ocean basins, their margins, and the dynamics and structure of the Earth's interior. Funded through the National Science Foundation (NSF), the Pool makes ocean bottom seismic equipment available to NSF investigators, and to investigators at research or educational institutions with other government, private or industry funding.

The intent of these guidelines is to describe the OBSIP instrument request and funding process, to provide proposal and cruise planning information, and to clearly state the responsibilities of both principal investigator (PI) and OBSIP from the proposal preparation to data archive stages. The complexity of OBS experiments means that efficient use of the instruments requires close cooperation among all parties involved. Although significant information is provided on this website, prospective users are strongly encouraged to contact the Chair of the OBSIP Management Group (John Collins) during the proposal development phase for more information about OBSIP policies and procedures.

Requesting OBSIP Instruments

The typical procedure for requesting and using OBSIP instruments is as follows:

1. PI submits online instrument request form to OBSIP
2. OBSIP provides PI with 1-page informational budget
3. PI submits science proposal and informational budget to NSF
4. NSF funds science proposal
5. OBSIP schedules instruments (depending on instrument/ship availability)

Requests for OBSIP instrument use should be submitted using the online instrument request form. This form is automatically forwarded to the OBSIP management committee; OBSIP will then generate an informational budget (1 page, pdf) that will be sent to the PI and must be included with the PI's science proposal. Instrument requests are required at least two weeks before a proposal deadline to give sufficient time for budget preparation.

All of the information on the request form is required in order to generate an informational budget. Instrument types should be chosen based on the OBS specifications. Deployment times can be estimated using the information below. Risks to instruments should be understood and taken into account and stated in the form. Other special circumstances (e.g., simultaneous land deployments; hazardous location) should be included. Additional questions should be addressed to the OBSIP Management Group Chair.

Informational budget and costs

The 1-page OBSIP Informational Budget will include a summary of instrument mobilization and demobilization costs, instrument drop charges, technical and engineering support costs, and travel and shipping costs. It must be included with the NSF science proposal submission and the .pdf file should be uploaded to Fastlane in the "supplementary documentation" section.

None of these costs should be included in the NSF science proposal budget. The three Institutional Instrument Centers (IICs: LDEO, SIO, and WHOI) provide complete engineering and technical support and their operations are funded through cooperative agreements with NSF. The PI's proposal budget must, however, include all costs for non-OBSIP personnel (see PI Responsibilities, below) and any other costs not specifically covered in the OBSIP Informational Budget, such as miscellaneous cruise fees, communications charges, etc).

For resubmitted proposals, a new request form should be completed and a new Informational Budget should be used.

Instrument scheduling

The OBSIP Management Group, in consultation with NSF, is responsible for the scheduling of OBSIP instruments. The OBSIP Management Group will typically meet in June or July of each year to schedule experiments for the following calendar year. Only experiments with confirmed funding and ship time will be entered into the schedule.

Scheduling priorities will be set in the following order:

1. Programs funded by the Ocean Sciences Division of NSF
2. Programs funded by other divisions of NSF
3. Programs funded by other US government agencies
4. Other funded programs

Instruments are allocated on a "first funded — first priority" basis. All other conditions being equal, the highest scheduling priority will go to experiments with the earliest funding dates, then to the earliest request dates. The goal of the scheduling is to optimize the use of the instruments, and to accommodate as many experiments as possible. Therefore, it will sometimes be necessary to negotiate with the PI the exact type and number of instruments, or to move the scheduled time of an experiment.

The OBSIP Management Group will allocate projects among the three IICs based on instrument requirements and availability, and will make the final decision on which IIC supports a given experiment.

Funded programs that cannot be scheduled will be placed on a waiting list for scheduling at the earliest possible date consistent with the scheduling criteria outlined above. In some cases, especially for work in remote areas, ship scheduling may drive OBS scheduling.

Requests can be made for OBSIP instruments at any time of the year. Instruments will be made available to users for rapid response studies as the schedule permits.

Proposal and Cruise Information

The maximum deployment time (without recovery) will be 12-15 months depending on sampling rate. The maximum deployment water depth is 6000 m.

The following estimates should be used as a guideline for planning the duration of a cruise, as well as for estimating the time required for OBS shipboard operations:

Cruise planning duration guidelines: h = water depth, km				
Activity	time, hours	h = 1 km	h = 3 km	h = 6 km
Deploy	1	1	1	1
Fall	$h/1.8$	0.6	1.7	3.3
Survey	$0.6+0.2h$	0.8	1.2	1.8
Rise	$h/1.8$	0.6	1.7	3.3
Recover	1	1	1	1

These times do not include the transit time between instrument sites. Active-source experiments may not require "Fall" or "Survey" times. Assumptions include a rise/sink rate of 30m/min, and 10-min surveys at four points each 0.5 times water depth from the drop location, with a ship speed of 10 knots. The instruments should be surveyed in directly after deployment.

Multiple-deployment experiments with a fast turn-around time may require slightly more time between deployments for data recovery and instrument preparation. We strongly encourage that PI's talk to the Management Group Chair to discuss additional questions or concerns regarding cruise logistics.

Instrument surveying

Seafloor instrument locations can often be determined for active-source experiments using water-wave arrival times, in which case the PI should provide them to the IIC before the data are submitted to IRIS. Otherwise, instruments need to be surveyed in by acoustic ranging, in which case the IIC will determine locations and provide them to the PI.

It is preferable to do the instrument survey immediately after deployment. If the ship has a hull-mounted transducer, a minimum survey pattern is a 3/4 circle at ~ 0.5 water depth and at 5 knots. If a dunking transducer is required, the minimum pattern is ranges at three cardinal points at ~ 0.5 water depth.

The azimuths of horizontal seismometer components can be measured using airguns or Rayleigh waves. In both cases they are not the responsibility of the IIC and are not included in the data headers submitted to IRIS.

PI Responsibilities

1. Request sufficient ship time for all OBS operations. Although guidelines for estimating ship time are given above, it is strongly recommended that each PI consult with the OBSIP Management Group chair to ensure that adequate ship time for OBS operations has been requested.

2. Plan and run the cruise, which may include marine mammal permitting, foreign clearances, port locations, schedule changes and personnel issues. Many of these issues are dealt with by the research vessel operators, but the PI should take overall responsibility for coordination and communication among OBSIP, the ship operator, the science party, and in some cases, other organizations (e.g., [PASSCAL](#), foreign ship operators). It is expected that OBS operations will normally take place from [UNOLS](#) vessels; use of a non-UNOLS vessel requires prior approval of the OBSIP Management Group (and possibly in-port assessment) and certification in writing from the Captain that the vessel meets [UNOLS safety standards](#).
3. Provide support personnel for instrument recoveries and deployments. Although OBSIP engineers and technicians handle most of the deployment/recovery responsibilities, two additional people per shift are needed. A dedicated watchstander is necessary to record deployment/recovery information (instrument locations, times, etc) and to communicate with the bridge. Another person is needed to assist with deck operations, sometimes two in extreme conditions. If instrument locations need to be surveyed in, then these personnel will also be responsible for operating the acoustic ranging equipment. The preferred plan is to bring enough people to handle a two-person shift on a rotating schedule. This typically requires 4-6 cruise participants in addition to the PI and OBSIP personnel, although the involvement of more people is always encouraged. Certain cruise scenarios may require more or fewer personnel; we recommend contacting the OBSIP Management Group Chair to discuss cruise logistics before proposal submission.

- Calculate seafloor instrument locations from airgun data (if active-source experiment) and give them to the IIC

OBSIP Responsibilities

OBSIP and the IICs will be responsible for all operations and equipment relevant to seagoing operations involving OBSIP seismic instrumentation. This includes:

- ocean bottom seismic instrumentation and related equipment
- expendables (e.g. anchors, batteries, etc.) for instrument operations
- technical and engineering support personnel for instrument operation
- shipping of instruments and ancillary equipment to and from ship
- travel of OBSIP personnel to and from ship
- calculation of seafloor instrument locations for passive experiments (but not component azimuths)

OBSIP will provide everything needed to collect seismic data, but see part (3) of PI responsibilities, above.

PI and OBSIP authority

The PI/Chief Scientist has ultimate responsibility for the safety of OBSIP personnel and the return of all OBSIP instruments and equipment. The PI/Chief Scientist should consult with the senior OBSIP engineer/technician on the leg regarding all OBS operations. If the senior OBSIP staff member determines that conditions represent undue risks to OBSIP personnel or instrumentation, or if there is not an adequate plan for instrument recovery, they may terminate OBS operations.

All OBS operations are under the control of the senior OBSIP engineer/technician.

OBSIP technicians and engineers will not normally be available for other shipboard duties (e.g. watchstanding) during non-OBS operational periods. If OBS personnel are needed for other operations, written approval must be obtained from the OBSIP Management Group prior to the leg and additional costs (e.g. overtime) must be paid by the PI.

Instrument loss risks

OBSIP has suffered instrument losses as a result of deployment in risky locations. PIs planning OBS operations in areas with unusual risks (e.g., severe weather, currents or seas; unusually shallow (<1000 m) or deep (> 5000 m) water depths; intensive bottom trawling activity; ice; foreign waters in areas of political unrest; probable volcanic activity or debris flows) should include this information in the online instrument request form, and should be prepared to work with OBSIP in identifying and mitigating these risks. The OBSIP Management Group will be able to advise on high-risk proposed instrument locations.

Post-cruise Information

Instrument Responses

Instrument responses for passive-source instruments are included in the SEED headers that are submitted to IRIS by the IIC. SEG-Y data headers do not include instrument responses, however, and they can be obtained from the IIC.

Data Policy

All data collected on research projects by OBSIP will be archived at the IRIS Data Management Center as well as the OBSIP IIC that provided the instruments. The PI must provide all necessary ancillary data (instrument locations, shot times, etc) to the OBSIP IIC, prior to the end of the recovery leg when possible. Upon completion of a cruise, OBSIP will provide one data set to the project PI. Depending on cruise logistics and quantity of data collected, this may occur several weeks after the ship has reached port. Requests for additional copies should be made at the time the instruments are requested in order to allow for the additional costs to be budgeted.

Short-deployment data will be archived in PASSCAL-SEG-Y format, and long-deployment data will be archived in SEED format. Data will be submitted to IRIS within six months of the end of the last recovery cruise.

In accordance with NSF requirements, the IRIS DMC data can be restricted to the PIs for 24 months from the date of the end of the instrument recovery leg. However, for long-term broadband experiments, data from one instrument (selected by the PI) will be made publicly available immediately as part of the Oceans Observing Initiative.

Evaluation Forms

Evaluation forms provide crucial feedback to the IICs, NSF and the OBSIP Oversight Committee. The PI is expected to complete and return OBSIP evaluation forms and data assessment forms after the end of a cruise.

Acknowledgements

In any publications or reports resulting from the use of OBSIP instruments, please include the following statement in the acknowledgements section:

"The instruments used in this field program were provided by the U.S. National Ocean Bottom Seismic Instrumentation Pool (<http://www.obsip.org>). Seismic data are archived at the IRIS Data Management Center."

Please provide the Chair of the OBSIP Management Group with copies of any publications related to your experiment.

Non-NSF funded projects

Any research or educational institution may request the use of OBSIP instruments for experiments of scientific merit, and requests from non-NSF investigators are welcome. The use policies and guidelines are the same, except for the following:

1. For non-NSF funded projects, the costs are the same, but with the addition of a Facility Use Fee to supplement some of the base funds that NSF supplies to maintain the OBS IIC facilities. This Facility Use Fee will depend on the number of instruments and length of deployment.
2. The costs for the projects are handled by the assigned IIC on a subcontract basis. Typically, a subcontract will be negotiated between the non-NSF user and the IIC designated to support this experiment.
3. The Informational Budget is used to outline the expenses for a subcontract to be included in a proposal budget. It is not to be considered the final cost.
4. NSF-related projects have priority for instrument usage and scheduling.
5. Non-NSF users will be informed that the normal OBSIP policy is to submit data to the IRIS DMC and are requested to comply with the same data distribution procedures.