

**Report to the NSF B&O Committee
by the
Subcommittee on Recompetition of Major
Research Facilities**

MAY 9. 2012

SUBCOMMITTEE CHARGE

The charge to this Subcommittee from the Business and Operations Committee states that our purpose “is to recommend to the Committee ideas for implementing the National Science Board’s Policy on Recompetition, particularly as it pertains to NSF’s major facilities.” ...

Some findings

- The 18 major facilities are a very diverse set
- This diversity requires flexibility in the recompetition process; e.g., varying the time between recompetitions
- Nevertheless, there should be a consistent set of principles for recompetition across NSF
- Despite the diversity and despite the encumbrances to recompetition in some cases, we find no facilities for which recompetition is not eventually appropriate

LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY



LIGO

- Interferometers at Hanford, WA, and Livingston Parish, LA
- Managed by Caltech, with MIT a major subawardee
- Major associated research facilities at, and owned by, Caltech and MIT
- LIGO Science Collaboration 61 institutions, 13 countries, 830+ scientists
- Many key personnel hold academic appointments at Caltech or MIT
- Initial NSB approval of LIGO construction 1990
- Advanced LIGO scheduled for operation 2014, then data
- Recompetition set by NSB to be no later than 2018
- A Big Science experiment, from design to construction to upgrade to data

Incorporated Research Institutions for Seismology (IRIS –PASSCAL)



Incorporated Research Institutions for Seismology

- Global seismic networks
- Managed by IRIS Consortium: 114 U.S. universities, 22 educational affiliates, and 108 foreign affiliates.
- If IRIS Consortium = entire universe, who will compete?

LARGE OPTICAL and IR TELESCOPES



LARGE OPTICAL and IR TELESCOPES

- GEMINI:
- Two 8-meter telescopes, Hawaii and Chile
- US, UK, Australia, Canada, Chile, Argentina, Brazil on Gemini Board
- Managed by AURA (37 US members, 7 international affiliates)
- Chilean statute conveys special status to AURA

LARGE OPTICAL and IR TELESCOPES (Cont.)

- NATIONAL OPTICAL ASTRONOMY OBSERVATORY (NOAO)
- Kitt Peak, Arizona and Cerro Tololo, Chile
- Managed by AURA
- 90,000 acres of land in Chile owned by AURA
- Chile has been unwilling to allow US government agencies to own land

LARGE OPTICAL and IR TELESCOPES (Cont.)

- NATIONAL SOLAR OBSERVATORY
- Sacramento Peak, Global Oscillations Network, Kitt Peak
- Leads development of Advanced Technology Solar Telescope
- Managed by AURA

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Flexibility in Timing of Recompetition

- Five years is too short a time for recompetition after the initial award, provided that the awardee is found by a rigorous review to be performing well.
 - Preparation for a recompetition typically begins two or three years before the end of the award period. In the case of a recompetition after only five years, not enough time has elapsed to demonstrate improvements the awardee has proposed to implement; e.g., an enhanced user base.
 - Recompetition every five years results in less time spent by the awardee in enhancing the science and more in preparing for recompetition.

Flexibility ...

- An initial operating period that is too short could create a disincentive to innovative proposals like the one that led to the move of the National High Magnetic Field Lab to Florida, leveraging an NSF investment of less than \$100M with nearly \$400M in state funds.
- Ten to fifteen year interval would be a reasonable norm; not more than 20 without truly exceptional considerations

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Recompetition or Renewal?

-- Checklist, Sec. III

- Continuing scientific merit?
- Past performance of incumbent
- Feasible to recompete? –
encumbrances, time interval, ...
- Goals of recompetition clearly defined?
- Potential competitors?
- Minimize incumbent's advantage

Recompetition Process Checklist, Sec. IV

- Need well-defined, NSF-wide, transparent process
- Assign to one person at NSF the responsibility to manage the *process* for all recompetitions of major facilities, a “recompetition manager”

Recompetition Manager

- Works with responsible program manager
- Assures consistency of approach and policy
- Assures that goals, schedules, criteria clearly articulated; ensures transparency
- Lessons learned, corporate memory

Summary

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