



NATIONAL SCIENCE FOUNDATION

4201 Wilson Blvd.
Arlington, VA 22230

Division of Earth Sciences
Instrumentation and Facilities

July 31, 2005

Dr. William H. Prescott
President
UNAVCO, Inc.
6350 Nautilus Drive
Boulder, CO 80301-5554

Dear Dr. Prescott:

As you are aware, an NSF-conducted management review is stipulated in the cooperative agreement between NSF and UNAVCO, Inc. (see Cooperative Agreement section I.D.5). The interim management review is to be completed by December 31, 2005 and will provide input to Program for its required recommendation to the Assistant Director for Geosciences to either recomplete, renew, or terminate UNAVCO, Inc. management of the Earth sciences national GPS facility. That recommendation has to be completed by March 31, 2006.

Below I list the broad objectives of the management review:

- 1) assess the quality, effectiveness and efficiency of UNAVCO, Inc. management and leadership in, meeting the facility goals and responsibilities as set forth in the Cooperative Agreement Statement of Purpose, Work and Awardee Responsibilities, addressing the NSF Strategic Goals of ensuring a world-class science and engineering workforce (People), fostering new knowledge across the frontiers of science and engineering (Ideas), and providing the tools to get the job done efficiently and effectively (Tools);**
- 2) address the question: “Has UNAVCO, Inc. management and leadership carefully planned for future changes in GPS technology, geoscience applications of GPS, and community demands on the Facility?”**

I ask that UNAVCO, Inc. prepare a document that addresses these issues. In order to help guide the format I list below more detailed questions that might be addressed in the document.

Some examples of broad and more specific questions to consider that relate to the first objective include:

- Has UNAVCO, Inc. management been effective in its primary mission of supporting the acquisition, archiving, distribution, and application of high-precision Global Positioning System (GPS) data to study solid-Earth processes and hazards?
- Has UNAVCO, Inc. management been successful in carrying out all elements of its core programs including:
 - 1) the planning and conduct of various community efforts such as working groups and community meetings;
 - 2) maintaining and continuously upgrading a state-of-the-art pool of portable GPS receivers and ancillary equipment;
 - 3) ensuring quality and service-oriented project planning, operator training and field engineering support for campaign-style and continuous GPS data measurement projects;
 - 4) ensuring quality and service-oriented network engineering support for operational monitoring and support of a global network of permanently-installed, continuously operating GPS stations including the NASA global network; and
 - 5) ensuring timely, accurate and robust archival and public dissemination of GPS data and quality and timely assistance with GPS data processing.
- Has UNAVCO, Inc. management been effective and efficient in meeting the scientific and technical objectives of Earth sciences projects for which it has provided assistance?
- Has UNAVCO, Inc. management established policies and procedures to ensure a representative and responsive governance process on behalf of the U.S. academic research community using precise GPS techniques?
- Has UNAVCO, Inc. management been effective in expanding scientific interchange among multi-disciplinary investigators doing GPS-related science through its sponsorship and organization of community meetings, workshops and scientific working groups?
- Has UNAVCO, Inc. management demonstrated leadership in identifying and testing or developing new GPS technologies, improving GPS installation design, survey process, data management techniques and reducing the cost and difficulty in conducting GPS research?
- Has UNAVCO, Inc. management been effective in developing and conducting an appropriate education and outreach program?; If so, has it instituted a viable assessment program, evaluated its impacts, and are those impacts responsive to the NSF Strategic Goals?
- Has UNAVCO, Inc. management encouraged and facilitated the participation of underrepresented groups?
- Has UNAVCO, Inc. management been effective and compliant in monitoring the fiscal performance of all UNAVCO, Inc. activities, ensuring all NSF requirements have been observed?
- Has UNAVCO, Inc. management been effective and compliant in keeping NSF informed of all activities carried out under the Cooperative Agreement?

- Has UNAVCO, Inc. management been effective in developing appropriate programs and methods of informing the Earth science community about the potential uses of the UNAVCO, Inc. Facility and the Facility accomplishments?
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Some examples of questions to consider that relate to the second objective include:

- Has UNAVCO, Inc. management developed a clear vision for the evolution of facility services and responsibilities?
- Has UNAVCO, Inc. management developed a plan to continuously improve upon the quality, timeliness and cost-effectiveness of GPS data collection by a broadening scientific community?
- Is UNAVCO, Inc. management well positioned to provide community leadership in identifying and preparing for future uses of GPS for geoscience applications that will take advantage of planned improvements and additions to the constellation of GPS satellites, carrier frequencies and modulation codes?
- How has and how will UNAVCO, Inc. balance the management pressures of the EarthScope MREFC Plate Boundary Observatory project while maintaining excellent service to the scientific community not directly involved in EarthScope?

I ask that your written response be completed and returned to me via email by 6 September, 2005. I would suggest that the document not exceed fifteen pages in length. Figures may be included.

Upon receipt of this document, the intended review process will be as follows:

1. Independent mail review of the management document,
2. Special emphasis panel review and site visit at UNAVCO, Inc. headquarters resulting in a written panel summary with recommendations,
3. Review of all documents by NSF/EAR staff and recommendation to AD/GEO.

Appointed members for the UNAVCO, Inc. management special emphasis review panel are provided below. Panel members include representatives from the U.S. academic research and education community, government agencies, and a foreign research institution. Panel expertise includes science and facilities management, GPS geodesy and geophysics. The panel dates have been set at 20-21 October 2005 so please mark your calendars at this time.

UNAVCO, Inc. Management Review Panel
20-21 October 2005

Dr. Robin E. Bell [geophysics]
Director ADVANCE Program at the Earth Institute
Doherty Senior Research Scientist
Torrey Cliff
Lamont-Doherty Earth Observatory of Columbia University
Palisades, NY 10964-8000

Dr. William E. Carter [geodesy]
Chief Scientist, Geosystems Engineering and Mapping (GEM) Center
Department of Civil and Coastal Engineering
P.O. Box 116580, 365 Weil Hall
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Dr. David S. Chapman [geophysics]
Associate Vice President for Graduate Studies
and Dean of The Graduate School
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Salt Lake City, UT 84112-9016

Dr. Ruth E. Neilan [geodesy, management]
Director , International GPS Service (IGS) - Central Bureau
Jet Propulsion Laboratory (JPL)
M/S 238-540
4800 Oak Grove Drive
Pasadena, CA 91109

Dr. Robert N. Schock (**Chair**) [mineral physics, management]
Senior Fellow
Center for Global Security Research
Lawrence Livermore National Laboratory
P.O. Box 808
Livermore, CA, 94551-0808

Dr. Tonie van Dam [geophysics]
European Center for Geodynamics and Seismology
19 Rue Josy Welter
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The panel chair will set the agenda but I expect it will include a presentation from UNAVCO, Inc. staff and governance on the first day of the panel. I would also be prepared to answer any and all questions of panel members and to provide any relevant UNAVCO literature (e.g., original facility proposal, quarterly and annual progress reports, financial reports) at the panel. For your preparation, I will provide anonymous copies of individual reviews of the UNAVCO, Inc. management summary document prior to the meeting dates. The Chair and/or panel members may ask for additional information during the review process and those requests would be forwarded through Program.

Lastly, I provide below a summary timetable of the process:

| Action | Date |
|---|-------------------------------|
| UNAVCO, Inc. management summary submitted to NSF | 6 September, 2005 |
| UNAVCO, Inc. management summary sent out for mail review | September 2005 – October 2005 |
| Management summary and mail reviews sent to panel | October 2005 |
| Panel meeting at UNAVCO, Inc. HQ | 20-21 October 2005 |
| Panel report submitted to NSF/EAR by Chair | December 2005 |
| Panel report sent to UNAVCO, Inc. for comment | December 2005 |
| UNAVCO, Inc. response to panel report sent to NSF | January 2005 |
| Recommendation to AD/GEO regarding renewal, recompetition, or termination | February 2006 |
| UNAVCO, Inc. informed of outcome of management review | March 2006 |

Sincerely,

Russ Kelz

Russell C. Kelz
Program Director