

**ANNEX A
TO THE
MEMORANDUM OF UNDERSTANDING
BETWEEN
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AND
U.S. GEOLOGICAL SURVEY
CONCERNING COOPERATION IN SCIENCE AND TECHNOLOGY
PLANNING AND DEVELOPMENT**

I. PURPOSE.

The purpose of this annex is to establish an agreement setting forth the responsibilities of the National Aeronautics and Space Administration (NASA) and the U.S. Geological Survey (USGS) in support of the Earth Observing-1 (EO-1) Validation Program. This annex constitutes Annex A under the Memorandum of Understanding between NASA and the USGS concerning cooperation in science and technology planning and development dated May 28, 1996.

II. BACKGROUND.

NASA plans to launch its New Millennium Program's EO-1 mission in 2000, beginning a planned mission lifetime of 1 year. Among the NASA objectives for the EO-1 mission are: 1) to evaluate selected EO-1 technologies with respect to their ability to meet the needs for future Landsat-class observations at reduced cost and with enhanced quality, 2) to evaluate space-based imaging spectrometers for potential future scientific, applied, and commercial uses of hyperspectral data, and 3) to evaluate new ways of conducting space missions such as formation flying, approaches to inter-satellite and lunar calibration, and autonomous navigation/instrument operation. The National Mapping Division of the USGS has indicated its desire to use data from EO-1 to further its goals. In particular, the USGS has expressed an interest in using EO-1 data to explore: 1) instrument performance and data validation that document the extent to which EO-1 technologies might be applied to a Landsat 7 follow-on mission, 2) the role of hyperspectral data in geologic mapping and land management programs, and 3) environmental monitoring with particular emphasis on vegetation and land cover change, soil and vegetation degradation, and natural hazards.

III. SCOPE.

On April 2, 1999, NASA, with the joint sponsorship of USGS, released a NASA Research Announcement (NRA) "Opportunities to Participate in New Millennium Program Earth-Observing-1 Mission Instrument Performance Evaluation and Data Validation." This jointly-sponsored solicitation established the EO-1 Validation

4/2/99

Program, which sought proposals for scientific investigations to validate EO-1 mission technologies and to assess EO-1 spectral imaging for scientific research and applications. For its portion of the EO-1 Validation Program, the USGS will allocate funding in Fiscal Year 2000 with the possibility of additional funding in Fiscal Year 2001, subject to USGS management approval and the availability of funds. These USGS funds will be provided to NASA for distribution to projects proposed under the NRA that are of particular interest and relevance to the USGS.

IV. RESPONSIBILITIES.

For the purposes of this agreement, NASA will use reasonable efforts to:

1. Lead and conduct the solicitation process for the EO-1 Validation Program;
2. Involve USGS management personnel fully in the review of proposals received in response to the solicitation for the EO-1 Validation Program; and
3. Fund those proposals selected for support by the NASA/USGS review and selection process.

For the purposes of this agreement, USGS will use reasonable efforts to:

1. Provide personnel to participate, along with NASA personnel, in the evaluation process for the proposals received in response to the NRA for the EO-1 Validation Program, and in the development of the selection recommendation to the selecting officials;
2. Subject to USGS management approval and the availability of funds, provide \$400,000 in Fiscal Year 2000 to NASA to fund proposals selected in response to the NRA for the EO-1 Validation Program; and
3. Provide \$300,000 in Fiscal Year 2001, contingent upon USGS management approval and the availability of funds, to NASA for additional funding for proposals selected in response to the NRA for the EO-1 Validation Program.

V. FUNDING, POINT OF CONTACT, AND RISK OF LOSS.

All activities pursuant to this agreement are subject to the availability of appropriated funds, and no provision shall be interpreted to require obligation or provision of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341. NASA will collect funds from USGS through the U.S. Treasury's Online Payment and Collection (OPAC) system. NASA will cite USGS's Agency Location Code (ALC) 14080001 for all OPAC transactions. All payments and other communications regarding arrangements under this Annex will reference the NASA Reimbursable Agreement Number (RAN)

2813-001-000. The Appendix to this Annex contains an Estimated Price Report for this agreement.

The NASA program and administrative point of contact is:

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The USGS program and administrative point of contact is:

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Fax: 703-648-4722
E-mail: lpettinger@usgs.gov

Each party agrees to assume liability for its own risks associated with activities undertaken in this agreement.


VI. EFFECTIVE DATE, DURATION, MODIFICATION, AND TERMINATION.

This agreement is effective upon date of last signature and shall remain in force for a period of 3 years. Amendments to this agreement will be executed in writing and signed by a representative of each party. Furthermore, either party may terminate this agreement at any time and for any reason upon 30-days written notice to the other party.



Jack A. Kaye
Director, Research Division
Office of Earth Science
National Aeronautics and Space Administration

5 NOV 1999
Date



for Richard E. Witmer
Chief, National Mapping Division
U.S. Geological Survey

NOV 28 1999
Date

APPENDIX TO ANNEX A
ESTIMATED PRICE REPORT

Customer: National Mapping Division , U.S. Geological Survey

UPN: 622

Reimbursable Agreement Number: 2813-001-000

In Fiscal Year 2000:

<u>Cost Element</u>	<u>Fund Source</u>	<u>Full Costs</u>	<u>Waived Costs</u>	<u>Price</u>
Grant Funding	61	\$400,000		\$400,000
Contract Administration		\$0.00		\$0.00
Subtotal		\$400,000		\$400,000
Agency Overhead (6%)		\$24,000	\$24,000	\$400,000
Depreciation		\$0.00		\$0.00
TOTAL		\$400,000		\$400,000

In Fiscal Year 2001 (contingent upon USGS management approval and funds availability):

<u>Cost Element</u>	<u>Fund Source</u>	<u>Full Costs</u>	<u>Waived Costs</u>	<u>Price</u>
Grant Funding	61	\$300,000		\$300,000
Contract Administration		\$0.00		\$0.00
Subtotal		\$300,000		\$300,000
Agency Overhead (6%)		\$18,000	\$18,000	\$300,000
Depreciation		\$0.00		\$0.00
TOTAL		\$300,000		\$300,000

Basis for Exceptions from Full Cost:

The Agency Overhead charges of \$24,000 in FY2000 and \$18,000 in FY2001 are being waived because USGS is providing funding to support a NASA Research Announcement that will increase the science team for and encourage the use of data from a NASA satellite mission (Earth Observing-1). These funds will directly enhance NASA's Earth Science program.

Required Signatures:



Requesting Official

10/25/99

Date



Approving Official

10/26/1999

Date