

IMPLEMENTATION AGREEMENT
BETWEEN THE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AND THE
U. S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
FOR
EXTENDED OPERATIONS OF THE EARTH OBSERVING 1 MISSION

I. PURPOSE

The National Aeronautics and Space Administration (NASA) and the Department of the Interior, U.S. Geological Survey (USGS) hereby agree to enter a partnership to extend operations of the Earth Observing 1 (EO-1) mission in order to:

- (1) Sustain and enhance NASA and USGS research and development efforts toward the scientific application of hyperspectral and push-broom optical scanner data for scientific and applications purposes;
- (2) Provide the broader remote sensing research community with opportunities for obtaining sample data of temporal and geographic relevance; and
- (3) Provide developers of a potentially commercial Landsat Data Continuity Mission with real-time insight into prototype mission operations, sensor performance, data capture and preprocessing, and product generation.

The joint activity covered by this Implementation Agreement consists of transferring several EO-1 mission data acquisition and handling tasks from the Goddard Space Flight Center (GSFC) to the USGS EROS Data Center (EDC). EDC and GSFC will then continue operation of EO-1 as a joint responsibility. In entering this agreement, both sides recognize the basis for the extended mission is to be cost reimbursement by data product users in the U.S. Government, public, and private sectors.

Further, both sides recognize that EO-1 will remain part of the NASA AM Constellation and will be bound by station keeping agreements in place with other AM Constellation partners. The parties understand this is a best-effort undertaking that could be terminated at any time by a critical failure of an on-board satellite subsystem or by a joint

determination that user-based funding resources are insufficient for continued operations. In addition, both sides recognize the need for an orderly termination of the EO-1 mission by mutual consent and that NASA shall be responsible for termination procedures. This effort is in keeping with the programmatic goals in the Land Remote Sensing Policy Act of 1992 and the Commercial Space Act of 1998.

II. RESPONSIBILITIES

The NASA and the USGS agree jointly to undertake the following responsibilities:

1. NASA and USGS will develop a detailed plan for establishing EO-1 order entry, data handling, and the management of all reimbursable agreements. The plan shall include a timeline for those responsibilities that are to be transferred from GSFC to EDC and identify hardware and software property to be transferred to EDC. Transition activities will begin in December 2001.
2. The transition plan is based upon the concept of USGS assumption of responsibility for major portions of the EO-1 ground segment, with NASA maintaining responsibility for the flight segment. USGS ground-segment responsibilities will include the data user interface (acquisition requests, data processing and product delivery, customer billing, payment collection, etc.), some or all data reception, data archive and information management, and transfer of data user fees to NASA to recover flight operation costs.
3. The responsibility to provide funds for extended mission operations will be shared by the two agencies in a true partnership. The extended mission will have duration of at least one year supported primarily by user fees. The agencies will have available resources to support approximately 90 days of operations to supplement extended mission operations costs.
4. The agencies will jointly review system performance and customer demand on a monthly basis. During the first 90 days of the extended mission, two thirds of user fees received by the USGS will be forwarded to NASA to offset flight segment costs, with the remainder applied to USGS ground segment costs. By mutual consent, adjustments to this ratio will be made after the first 90 days of extended operations if additional NASA mission tasks and associated costs are assumed by the USGS. A mutual decision that user fees are insufficient to support ongoing EO-1 flight and ground system operations shall be cause to terminate the mission. At a mutually acceptable date after mission termination, all user fees derived from sales of archive data will be applied by the USGS to offset ongoing archive maintenance and customer interface costs.

5. The USGS will establish and maintain an active EO-1 archive. After mission termination, the long-term archive for data obtained throughout the lifetime of the EO-1 mission will be the Department of the Interior's National Satellite Land Remote Sensing Data Archive (NSLRSDA) operated by the USGS under guidance provided by the NSLRSDA Advisory Committee, the members of which are appointed by the Secretary of the Interior.
6. NASA and USGS shall be responsible for providing financial support (including travel expenses) for their own personnel supporting extended mission operations.
7. NASA will retain ownership of the EO-1 satellite and NASA-owned ground equipment necessary for safe satellite communications and control. Given a decision to terminate the mission, NASA is responsible to carry out the termination.
8. For the activities conducted under this agreement, the primary points of contact at their respective Centers are John Boyd at EDC and Bryant Cramer at GSFC.

III. FUNDING

All activities pursuant to this agreement are subject to the availability of appropriated or reimbursable funds, and no provision herein shall be interpreted to require obligation of payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. 1341. This agreement is not a funding document and does not represent the obligation or transfer of funds.

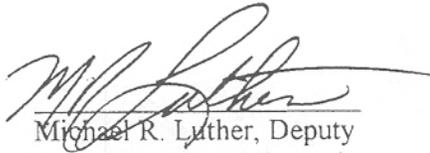
IV. AUTHORITY

This agreement is under the authority granted by the MEMORANDUM OF UNDERSTANDING BETWEEN THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AND THE U.S. GEOLOGICAL SURVEY CONCERNING COLLABORATIVE PROGRAMS, signed by the Director of the U.S. Geological Survey on December 8, 1999 and by the Associate Administrator for Earth Science of NASA on January 4, 2000. It shall be listed in Annex I thereof.

Additional direction is given in the AMENDMENT TO PRESIDENTIAL DECISION DIRECTIVE/NSTC-3, signed October 16, 2000 by President William J. Clinton, which directs the USGS and NASA to "...develop a strategy for maintaining continuity of Landsat-type data beyond Landsat 7 that is consistent with each agency's mission and expertise."

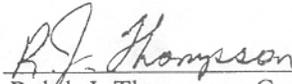
IV. EFFECTIVE DATE

This agreement shall be effective upon the date of the last signature below and shall be in effect until the EO-1 satellite fails or until 30 days after either party provides notice of termination of the agreement.



Michael R. Luther, Deputy
Associate Administrator for
Earth Science (Programs),
National Aeronautics and
Space Administration

Date 1/10/02



Ralph J. Thompson, Coordinator
Land Remote Sensing Program
United States Geological Survey
Department of the Interior

Date 12/20/01

MODIFICATION ONE

IMPLEMENTATION AGREEMENT

between the

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

and the

U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

for

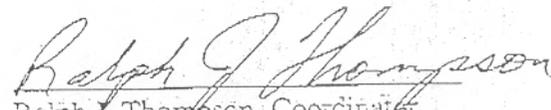
EXTENDED OPERATIONS OF THE EARTH OBSERVING 1 MISSION

1. Pursuant to Section II. RESPONSIBILITIES. Paragraph 4. Second sentence: Replace "two-thirds of users fees" with: "user fees collected for ALI and Hyperion image scheduling and acquisition".

This change will result in an increase in the portion of user fees to be forwarded to NASA.

2. Pursuant to Section III. FUNDING. After second sentence: Add the following: "In accordance with the Economy Act, funds will be transferred on a periodic basis to NASA-Goddard-Space-Flight-Center, based on sales of EO-1 image acquisitions. A separate fund transfer document will be executed between the USGS and NASA Goddard Space Flight Center for each of the periodic transfers.


Michael R. Luther, Deputy
Associate Administrator for
Earth Science (Programs),
National Aeronautics and
Space Administration


Ralph J. Thompson, Coordinator
Land Remote Sensing Program
U.S. Geological Survey
Department of the Interior

Date 6/27/02

Date May 29, 2002

MODIFICATION TWO

IMPLEMENTATION AGREEMENT

between the

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

and the

U.S. DEPARTMENT OF THE INTERIOR

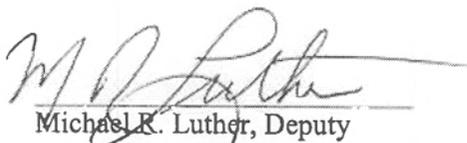
U.S. GEOLOGICAL SURVEY

For

EXTENDED OPERATIONS OF THE EARTH OBSERVING 1 MISSION

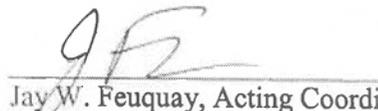
Pursuant to Section II., RESPONSIBILITIES, paragraph 4: Add, at the end of paragraph 4: "NASA and USGS continue to refine the EO-1 extended mission concept including consideration that a major new user profile has emerged for the foreseeable future. In this concept a variety of individual users will continue to use EO-1 data for focused applications. However, a user class has emerged that represents a number of investigators having somewhat common interests. In response, a management and funding approach is being put in place to accommodate this new class of users. Beginning in FY03, arrangements are being made to provide for bulk discount purchases of EO-1 data directly from NASA. Rather than provide only for image requests that are individually priced, the bulk customers will provide funds that can be used to offset the NASA and USGS ongoing operating expenses. Image tasking and archive requests will be handled as they are now but the total number of images delivered will be based on best efforts to meet the bulk customer sponsored requests. These bulk customer discount arrangements will change the financial model that forms the basis of the extended operations NASA-USGS partnership. Consequently, effective October 1, 2002, the USGS will retain all EO-1 non-bulk user fees received by EDC in an operating capital fund account. EDC will charge that fund for the USGS cost of operations up to \$95K per month. To ensure day-to-day EDC operating fund availability NASA will advance \$200K seed money to the account. EDC will notify NASA of operating account balances on a monthly basis. If USGS cannot carry out its extended mission responsibilities because of insufficient operating account balance, NASA will supply additional funding to the account from the bulk customer commitments received by NASA. At the end of

the mission, any balance in the account will be returned to NASA within 90 days after a full cost and revenue reconciliation is made at EDC.



Michael R. Luther, Deputy
Associate Administrator for
Earth Science (Programs),
National Aeronautics and
Space Administration

Date 12/30/02



Jay W. Feuquay, Acting Coordinator
Land Remote Sensing Program
U.S. Geological Survey
Department of the Interior

Date 12/31/02