



MEMORANDUM OF AGREEMENT

FOR

COOPERATION IN ENVIRONMENTAL AND EARTH SCIENCES AND APPLICATIONS

between the

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

and the

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

I. PURPOSE

The purpose of this Memorandum of Agreement (MOA) is to promote collaboration between NASA and EPA (“the Agencies”) to improve environmental and Earth science research, environmental management, and the application of Earth science data, models, and technology to environmental decision-making.

EPA and NASA recognize the importance of improving the use of Earth sciences and applications in environmental management and decision-making. EPA and NASA possess complementary missions to measure and monitor the environment, conduct environmental research, and extend data and information for use in environmental decision-making. EPA has experience with and knowledge of environmental conditions and changes, public health exposures, information dissemination and risk assessments. EPA also has significant connections with the environmental management community. NASA has experience working with Earth science research measurements and technology evaluation techniques that can address environmental management issues. In addition, both Agencies have collaborated successfully on a variety of basic and applied research and technology issues, and they recognize the importance of furthering this collaboration to leverage each other’s expertise. This MOA provides the structure and basis for meeting their shared goals.

II. AUTHORITIES

EPA enters into this MOA pursuant to Section 103 of the Clean Air Act, 42 U.S.C. § 7403 (a) and (b); Section 104 of the Clean Water Act, 33 U.S.C. § 1254 (a) and (b); Section 300j-1 of the Safe Drinking Water Act, 42 U.S.C. § 1442; and Section 311 of the Comprehensive

Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act, 42 U.S.C. § 9660. NASA enters into this MOA pursuant to Section 203(c) of the National Aeronautics and Space Act of 1958, as amended, 42 U.S.C. § 2473 (c)(5) and (6).

III. GOALS and JOINT IMPLEMENTATION PLANS

This collaboration is intended to focus initially on activities that provide information to the environmental management community, Earth science and environmental researchers, and other related communities. The Agencies intend to collaborate on applied research, development of application prototypes, and the benchmark and integration of Earth science information into environmental decision-making support tools and assessments. These activities are expected to include coordination of environmental research and the use of Earth science data, research results, models, visualizations, and remote sensing techniques.

Specific topics of interest include:

Environmental Management and Decision Support – Support assimilation of Earth science observations and predictions and assess information products as appropriate to meet environmental management applications and decision-making support requirements. Support activities are intended to evaluate, verify and validate, benchmark, and integrate Earth science measurements and products for:

- Air quality
- Invasive species
- Coastal management
- Homeland security
- Ecological forecasting
- Aviation
- Water quality
- Agriculture
- Carbon management
- Disaster management
- Public Health
- Energy management

Climate Change – Identify and support needs for information products from climate change research results to meet environmental management applications and decision support requirements.

Emergency Response – Examine applications of Earth science results to support emergency response activities.

Next Generation Requirements – Examine emerging applications requirements for Earth science observations, monitoring, modeling, observing systems, and predictions that relate to environmental research and management.

Environmental Indicators – Examine use of Earth science measurements, models, and technology to develop and enhance activities related to environmental indicators/change.

In order to enable advancements in the areas listed, the Agencies agree to share information and collaborate in enabling activities, such as:

Data mining and analysis
Dataset manipulation and dissemination
Statistical approaches
Monitoring techniques
Hierarchical, tiered, and integrated observation approaches
Integrated assessments
Visualization
Computation and modeling

The Agencies intend to encourage and engage in activities to promote public awareness and use of Earth science in environmental management and access to Earth science information. Subject to applicable laws and regulations, including the Federal Advisory Committee Act, the Agencies may convene panels of experts from EPA and NASA, from other relevant organizations, and/or from Earth science and environmental management communities to advise them on matters relating to this MOA.

The Agencies agree to develop Joint Implementation Plans (“Plans”) to pursue more specific activities that are consistent with their mutual interests, coordinate those activities, and further their common objectives. The Plans are expected to identify specific objectives and approaches, responsibilities, schedules and milestones, and expected outputs or results. The Agencies agree that the plans will comply with the applicable laws, regulations, and orders. Any commitments by the Agencies of their respective resources will be made in written implementing agreements signed by authorized officials in each Agency. Such agreements may provide for the use of facilities, personnel (including inter-personnel transfers/details), and/or transfer of funds, subject to relevant legal authority and regulations of each Agency. As needed, the Agencies will update the Plans to reflect additional projects. The Plans are intended to specify activities that accomplish the Agencies’ shared goals.

The Agencies agree to hold meetings and workshops as necessary to coordinate these activities and to communicate results to the environmental management and Earth science communities.

IV. RESPONSIBILITIES OF THE AGENCIES

Each Agency agrees to carry out its respective activities in a coordinated and mutually beneficial manner. In Section V below, each Agency designates an official point of contact (POC) for activities relating to this MOA. The Agencies agree to provide the POCs with the necessary program support to enable them to carry out the purposes and scope of the MOA, as specified by the Joint Implementation Plans and implementing agreements. The POCs and their designees will have overall day-to-day responsibility for carrying out this collaboration. Specific collaborative projects may have their own project leads appropriately drawn and supported from their Agencies.

EPA agrees to:

1. Have primary responsibility to:

- a. Identify, organize, and present the relevant existing and future planned capabilities (including decision support tools) of EPA to support this MOA; and,
 - b. Identify environmental management priorities, requirements, and opportunities that are relevant to support this MOA;
2. Identify and communicate to NASA the current and prospective uses of Earth science observations, data and models in environmental management, including Federal, State, tribal, and local uses;
3. Collaborate with NASA on the development, evaluation, verification and validation, benchmark, and integration of Earth science results in environmental management activities and decision support tools;
4. Identify impediments to the use of Earth science knowledge, data, and technologies in the environmental community and engage NASA, as appropriate, in addressing these impediments; and.
5. As needed and at its discretion, seek support of collaborative projects and strategies that further the goals of this MOA, including the contribution of additional EPA resources to such collaborations.

NASA agrees to:

1. Have primary responsibility to identify, organize, and present the relevant existing capabilities of NASA to support this MOA;
2. Acquire and communicate to EPA its relevant experience, plans, programs, and systems that may support the MOA;
3. Articulate science directions and evaluate, verify, validate, and benchmark practical uses of NASA Earth science data and models for environmental management applications; and
4. As needed and at its discretion, seek the support of collaborative projects and strategies that further the goals of this MOA, including the contribution of additional NASA resources to such collaborations.

NASA and EPA agree to:

1. Comply with National Spatial Data Infrastructure (NSDI) standards regarding data documentation and accessibility;
2. Support the exchange of technical information – through databases, Web services, information systems, clearinghouses, conferences and other means – on research, development, demonstration, and technology transfer opportunities;

3. Pursue prototypes of Earth science applications to priority environmental management issues and decision support systems to evaluate and transfer capabilities, as appropriate;
4. Consult, as necessary, to further this MOA and associated program content;
5. Contribute to annual and other reports or assessments as needed or requested; and
6. Monitor the approaches and results of activities under this MOA, and prepare a concise annual joint evaluation of relevant progress and results as a basis for senior management to adjust the purpose, scope, or direction of this collaboration.

V. POINTS OF CONTACT

The following individuals are designated points of contact for this MOA:

EPA: Lawrence W. Reiter
U.S. Environmental Protection Agency
Office of Research and Development
National Exposure Research Laboratory (D305-01)
Research Triangle Park, NC 27711
reiter.larry@epa.gov Telephone: (919) 541-2106

NASA: Ronald J. Birk
NASA Headquarters
Applied Sciences Program
Science Mission Directorate
300 E Street, S.W.
Washington, DC 20546
Ronald.j.birk@nasa.gov Telephone: (202) 358-1701

VI. INTELLECTUAL PROPERTY AND DATA RIGHTS

Unless otherwise agreed by the Agencies, custody and administration of inventions made as a consequence of, or in direct relation to, the performance of activities under this MOA shall remain with the respective inventing Agency. In the event that an invention is made jointly by employees of the Agencies or an employee of an Agency's contractor, the Agencies shall consult and agree as to future actions toward establishment of patent protection for the invention.

VII. LIMITATIONS

This MOA sets out the Agencies' intentions and objectives. It does not create any right or benefit, substantive or procedural, enforceable by law or equity against NASA or EPA, their officers or employees, or any other person. This MOA does not direct or apply to any person

outside NASA and EPA. All activities, responsibilities, and commitments made under or pursuant to this MOA (as well as Joint Implementation Plans and implementing agreements) are subject to the availability of appropriate funds and each Agency's budget priorities, as determined by each Agency, and neither NASA nor EPA is obligated in any way under this MOA to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or other financial obligation. No provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. 1341. This MOA is not a funding document and does not represent the obligation or transfer of funds.

VIII. PERIOD OF AGREEMENT AND MODIFICATION/TERMINATION

This MOA will be effective when signed by both NASA and EPA and shall remain in effect for a 5-year term from the effective date. The MOA may be amended at any time by the mutual written consent of the Agencies. The Agencies agree to review this MOU annually to determine whether it should be revised, renewed, or canceled. Either Agency may terminate this MOA by providing 90 days written notice to the other Agency. This MOA does not involve the exchange of funds nor establish any obligation on the part of either Agency to make payment now or in the future to the other Agency. This MOA constitutes the entire agreement between the Agencies for its stated purpose, and no modification or addition will be valid unless signed by the Agencies' authorized representative.

Signed on behalf of:

U.S. Environmental Protection Agency

National Aeronautics and Space Administration



Stephen L. Johnson, Administrator



Michael D. Griffin, Administrator

OCT 31 2005

Date

11/28/05

Date