
International Agreements on Cooperation in Remote Sensing and Earth Observation

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This document responds to a request from the Office of Science and Technology Policy Divisions on Environment and National Security and International Affairs to report research results concerning international agreements for remote sensing and earth observation.

The request for this analysis continues research that has been conducted by the Critical Technologies Institute at RAND into U.S. sponsorship of international cooperation in research and development. Earlier RAND research on this topic resulted in a report entitled *International Cooperation in Research and Development: An Inventory of U.S. Government Spending and a Framework for Measuring Benefits*, MR-900-OSTP, 1997. This report will be of interest to a similar audience of policymakers and analysts concerned about efficient and effective use of U.S. government dollars spent on international cooperation in science and technology. In addition, this report will be of interest to businesspeople working in international remote-sensing activities, as well as policymakers concerned about environmental monitoring and the sharing of data being created by remote-sensing satellites.

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As of November 1997, a total of 490 international science and technology agreements (ISTAs) were in force to support some aspect of unclassified U.S. international cooperation in remote sensing and earth observation. These agreements have been signed with 76 countries and six multinational organizations and cover the operations of 32 active satellites conducting remote sensing as of the end of 1997. The sharing of weather data collected by satellites generates the largest number of international cooperative agreements in this field.

Information for this report was collected from government agencies in response to a question posed to RAND about the extent to which the U.S. government has signed international agreements to cooperate in remote sensing and earth observation. In addition, we sought to determine the extent to which agencies coordinate with one another when negotiating and signing agreements.

ISTAs result when representatives of the U.S. government negotiate and sign formal agreements with its counterparts to sponsor cooperation in science and technology. No agency within government collects and provides information about the full range of these agreements. (The Department of State systematically provides information on formal agreements that are reported to it, but does not record the many agreements that are not considered “formal.”) These agreements take a number of forms, with the most formal being a treaty-level government-to-government framework or umbrella agreement. Less formal agreements include memoranda of understanding and data exchange agreements. Some agreements are coordinated through the Department of State at an interagency level through a process known as “Circular 175.” The majority of agreements identified for this study, however, have been negotiated, signed, and approved at the agency level.

Five agencies account for more than 90 percent of the remote-sensing ISTAs identified for this project: in the Department of Commerce, the National Oceanic and Atmospheric Administration (NOAA); in the Department of Defense, the U.S. Air Force (USAF) and Defense Mapping Agency (DMA); in the Department of the Interior, the U.S. Geological Survey (USGS); the National Aeronautics and Space Administration (NASA); and in the U.S. Department of Agriculture (USDA), the Forest Service (USFS). NOAA, with 285 ISTAs, leads other government agencies in the total number of agreements in place to sponsor cooperative activities, followed by NASA with 99 and DOD with 56.

In addition to identifying U.S. government agency commitment to international cooperation, we assessed the extent of interagency coordination that takes place when ISTAs are negotiated and signed. We found that less than 10 percent of these agreements have been approved through a formal interagency process. However, U.S. government agency officials actively seek informal interagency coordination for international cooperative agreements. This coordination takes place between government agency officials, who report keeping active contact with their counterparts in other agencies.

Current governmentwide policy covering negotiating and signing international agreements allows the agencies considerable latitude to determine when to establish formal cooperative relationships with other countries. The current mix of formal and informal coordination works well, according to agency officials. Nevertheless, the lack of a clear policy on when to enter into an agreement and at what level of formality to establish relations results in inconsistency across the agencies about how, when, and why to agree to cooperate. Moreover, lack of a central location to collect these agreements and provide information about them leads to some duplication of effort among the government agencies. One government official suggested that the current process of informal coordination has grown up largely because of the cumbersome nature of the formal interagency process, which takes months to complete and often holds up important international cooperative activities.

Three possible policy actions emerged from this research. The first possible action would be to rationalize the terms of and descriptions for international agreements across agencies. Each agency uses its own names for agreements, making it difficult to compare the nature of U.S. activities across agencies. A second possible action would be to create a central clearinghouse for information on agreements, perhaps using the World Wide Web as the place to store and obtain information on government agreements. Third, streamlining the formal Circular 175 process, possibly using new information tools, such as electronic file transfer, may increase the frequency with which this process is used.

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ABBREVIATIONS USED IN THE TEXT

ADEOS	Advanced Earth Observation System (Japan)
ARGOS	Advanced Research and Global Observation Satellite
CEOS	International Committee on Earth Observation Satellites
DMA	Defense Mapping Agency
DOC	Department of Commerce
DoD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
GOES	Geostationary Operational Environmental Satellite
ISTA	International Science and Technology Agreement
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
NSF	National Science Foundation
USAF	U.S. Air Force
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey (Department of the Interior)

INTRODUCTION: AGREEING TO COOPERATE

The U.S. government negotiates and signs formal and informal agreements with its counterparts to sponsor cooperation in science and technology. Although science and technology are widely acknowledged to have international scope, national governments often have political goals or mission requirements, such as sharing scientific data or cooperating on the construction of space equipment, that motivate establishing a formal relationship. The science and technology agreements, sometimes called International Science and Technology Agreements (ISTAs), range from legally binding treaties approved by Congress to letters of correspondence with no legally binding authority.

The formal agreements take many administrative forms and are signed at various levels of government, from the Executive Office of the President down to the program and project levels within a specific agency. The most formal agreements, usually referred to as “framework” or “umbrella” agreements, are generally negotiated at the executive levels of government and carry the names of the countries involved, such as “The U.S.-Japan Science and Technology Agreement.” The framework agreements often include references to broad areas of science, such as earth science or health research, in which cooperation between the two nations is desirable and encouraged.¹

In addition, the framework agreements usually include an “Intellectual Property Rights Annex and Guidelines,” which delineates how intellectual property will be handled in case activities carried on under ISTAs result in patents or other forms of intellectual property.

The Case-Zablocki Act of 1977 requires that the Secretary of State be consulted before any international agreement is signed or concluded on behalf of the United States (1 USC 112B). However, the guidelines as to when an agreement rises to this level of formality are purposely vague, as described in the United States Code (USC):

Minor or trivial undertakings, even if couched in legal language or form, are not considered international agreements within the meaning of the Act or of 1 USC 112a. In deciding what level of significance must be reached before a particular agreement becomes an international agreement, the entire context of the transaction and the

¹In 1996, the United States had framework agreements in place with 35 nations. These agreements are listed on the Department of State web site, www.state.gov/www/global/oes/science.

expectations and intent of the parties must be taken into account. It is often a matter of degree. . . . It remains a matter of judgment based on all of the circumstances of the transactions. Examples of arrangements that may constitute international agreements are agreements that (i) Are of political significance; (ii) involve substantial grants of funds or loans . . . ; (iii) . . . constitute a commitment of funds . . . ; (iv) involve continuing cooperation on a particular mission. . . . However, individual research grants and contracts do not ordinarily constitute international agreements. [2 CFR Ch. I Sect. 181.2(a)(2)]

The extent to which different agencies of government may enter into international agreements and cooperate internationally is also detailed in legislation. The Department of Defense (DoD), Department of Energy (DOE), and the National Aeronautics and Space Administration (NASA) have the broadest authority to enter into and conduct international cooperative science and technology activities.²

International agreements involving more than one agency of government, or which constitute a significant commitment of U.S. government resources, are circulated by the Department of State among relevant government agencies for approval according to procedures laid out in the Foreign Affairs Manual, Section 720. The process is referred to as “Circular 175.” Once approved by various government agencies, the resulting agreement is recorded by the Department of State, and, in the past at least, has been listed in the State Department’s “Title V” report.³

When determining whether to use the Circular 175 process, agencies are instructed to consider the following factors (*Foreign Affairs Manual*, 11 Fam 721.3):

- a. The extent to which the agreement involves commitments or risks affecting the nation as a whole;
- b. Whether the agreement is intended to affect State laws;
- c. Whether the agreement can be given effect without the enactment of subsequent legislation by Congress;
- d. Past U.S. practice as to similar agreements;
- e. The preference of the Congress as to a particular type of agreement;
- g. The proposed duration of the agreement, the need for prompt conclusion of an agreement, and the desirability of concluding a routine or short-term agreement; and
- h. The general international practice as to similar agreements.

Below the level of formal intergovernmental ISTAs, a range of vehicles exists for establishing the details of cooperation. Memoranda of understanding (MOUs) or memoranda of agreement (MOAs) are less formal than “framework” agreements (they are not treaty-level agreements, for example), but they are considered binding international agreements. These agreements are negotiated at both the executive

²Caroline S. Wagner, “International Cooperation in Research and Development: An Inventory of U.S. Government Spending and a Framework for Measuring Benefits,” Santa Monica, Calif.: RAND, MR-900-OSTP, 1997. Appendix A contains a listing of legislative authority for space and technology agencies.

³The 1995 Title V is available at www.ta.doc.gov/bilat. The Title V reports will no longer be compiled by the Department of State in this format.

and agency levels of government and may be signed with a corresponding government official or with a private entity. Often, these agreements are negotiated to cover a specific activity or set of activities that involve the commitment of funds or the sharing of equipment, such as space satellites.

Other, less formal agreements are negotiated and signed at the agency level. These can include agreements called, variously, *agreement of cooperation*, *collaborative agreement*, *data exchange agreement*, *letter of agreement*, or *project agreement*. During a negotiation phase, the parties may sign a *preagreement* or an *interim agreement* to establish guidelines for an activity that needs to move forward before a formal agreement is in place. These agreements usually cover activities being sponsored and conducted by the agencies themselves but can cover the activities of government contractors or grantees.

Many government-sponsored international cooperative efforts in science and technology go on without the benefit of or reference to a formal agreement, particularly when the activity is informal or when the agent conducting the research is outside of government, such as an academic researcher working on a government grant. In a previous RAND report, we identified that, in FY95 alone, the U.S. government spent at least \$3.3 billion on international cooperation in research and development.⁴ It is not clear to what extent these activities are covered by formal agreements. In theory, where a framework agreement is in place and unless otherwise negated, all science and technology activities with this counterpart take place under the formal agreement. There is no requirement, however, that these projects “register” or otherwise reference existing ISTAs when establishing operations.

PURPOSE OF THIS PROJECT

In an effort to identify the extent to which agreements covering remote-sensing cooperation are signed at different levels of government, a survey was undertaken to determine the extent and nature of U.S. agreements signed to enable these activities. The subject of remote sensing and earth observation is becoming increasingly important as the United States seeks to cooperate internationally in environmental science and monitoring activities. International cooperation in remote sensing and earth observation allows nations to share the costs and benefits of expensive equipment and encourages the exchange of important weather data, as well as earth science and biological data. As global climate change and other environmental monitoring issues grow in importance, finding ways to use resources optimally and to share data collected by different instruments in different parts of the world will become increasingly important. Understanding the extent to which the U.S. already cooperates with others, what mechanisms are in place to enable additional cooperation, and where we may need to establish new relationships is key to moving ahead on this front.

⁴Caroline S. Wagner, “International Cooperation in Research and Development: An Inventory of U.S. Government Spending and a Framework for Measuring Benefits,” Santa Monica, Calif.: RAND, MR-900-OSTP, 1997.

METHODOLOGY

To provide a baseline for U.S. government-sponsored international cooperation in remote sensing and earth observation, this report catalogs and describes the international cooperative agreements currently in place to govern this activity. From various sources within the U.S. government we collected data that detailed agreements in force to support cooperative activities. (A full list of agencies contacted is provided in the appendix.) With these data, we were able to identify the government agencies most active in international cooperation in remote sensing as input for the second part of this project, which involved contacting government agency officials to obtain additional information about how and why these agreements are entered into, and the extent to which government agency officials coordinate with one another when pursuing international cooperation.

SCOPE

Agreements-in-force were collected with an emphasis on identifying activities related to the use of remote-sensing equipment to provide data on earth observation and global climate change. Accordingly, some agreements that were collected as part of the initial sweep were eliminated upon examination, particularly agreements relating to

- classified military applications and activities
- remote sensing of the planets and the sun
- data collection on crustal dynamics
- Global Positioning System satellite activities and equipment
- magnetospheric and ionospheric studies
- space geodesy.

After eliminating these, the list of agreements included remote sensing and other agreements that, although they were not directly involved in remote-sensing activities, either supported remote-sensing satellites or used data collected from remote-sensing sources. Thus, such activities as balloon-to-satellite calibration are included in the data set we collected, as are mapping and charting activities when it appears that remotely sensed data will be used to create maps and charts. Data were not collected on the actual project-based activities being sponsored by the U.S. government; we only included *agreements* to conduct activity, regardless of whether the activity is actually being conducted.

ORGANIZATION OF THIS REPORT

Chapter Two presents an overview analyzing the list of remote-sensing agreements identified for this project. This includes a description of the type of activities being sponsored, the agencies sponsoring activity, the country with whom agencies have agreed to cooperation, and the hardware in place to support these activities. Chapter

Three provides the results of the informal survey conducted to determine the reasons agencies enter into these agreements and the extent to which agencies coordinate with each other when doing so. Chapter Four outlines our recommendations. Finally, the appendix contains the full list of agreements identified during the course of this study.

AN OVERVIEW OF REMOTE-SENSING ISTAs

As of November 1997, a total of 490 ISTAs entered into by the U.S. government were identified as supporting some aspect of U.S. international cooperation in remote sensing and earth observation. These agreements, sometimes called ISTAs, take a number of forms ranging from formal diplomatic treaties signed by Cabinet officers and approved by Congress to informal letters of agreement signed by U.S. government agency officials with no intragovernmental coordination. ISTAs vary in the specificity with which they identify areas for cooperation: *framework* or *umbrella* agreements are signed to support broad cooperation between nations, often without specific reference to subject areas; MOUs (or MOAs) support cooperation in a more specific area of science and technology, but also often lack details. Letters of agreement (or intent) and data exchange agreements are often more specific about the cooperation being sponsored and are generally negotiated and signed at the agency level.

Five agencies account for more than 90 percent of the 490 ISTAs identified for this project: in the Department of Commerce, the National Oceanic and Atmospheric Administration (NOAA); in the Department of Defense, the U.S. Air Force (USAF) and Defense Mapping Agency (DMA); in the Department of the Interior, the U.S. Geological Survey (USGS); the National Aeronautics and Space Administration (NASA); and in the U.S. Department of Agriculture (USDA), the Forest Service (USFS) (see Table 1). Of the total number of agreements identified, less than 10 percent were approved through a formal interagency process coordinated through the Department of State, known as Circular 175. Of the 490 agreements identified, 45 were listed in the 1995 Department of State Title V report.

Within the catalog of 490 agreements provided here, many agreements clearly specify remote sensing and earth-observation operations or data sharing. Some agreements, however, sponsor activities related to or supporting remote sensing and earth observation but do not reference remote-sensing activities directly. Nevertheless, we judged that these types of agreements should not be eliminated from the catalog, since they constituted important activities that occur within the realm of remote-sensing or earth-observation activities. Accordingly, we split the catalog into two lists: the “A list” includes agreements covering remote-sensing satellite equipment or collection and exchange of data resulting from remote-sensing sources, and the “B list” includes agreements covering supporting activities or activities that appear to rely on remote-sensing sources for data, although this is not explicitly stated.

The A list contains 340 activities, such as the Landsat satellite deployment and ground station activities, the Earth Observing Satellite System, and the ARGOS and GOES weather and ground tracking satellite programs; agreements to launch and deploy satellite hardware technology, to share data under an international satellite-data collection program; and agreements to use remote-sensing data to create maps and charts or to collect weather, biological, and ecological data. Agreements are in place to cover the operations of and data sharing from 32 active satellite systems. NOAA and NASA top the list of agencies with agreements relating to these satellite systems, with 273 and 50 agreements, respectively, as detailed in Table 1. The U.S. Geological Survey is the third agency on the A list, with eight remote-sensing agreements; DoD falls to fourth place under this configuration, with four remote-sensing agreements. Four agencies—the Environmental Protection Agency, USDA/Forest Service, the National Science Foundation (NSF), and the Smithsonian Institution—have one remote-sensing agreement on the A list.¹

Table 1 also shows the delineation by agency of the B list, which contains 150 agreements covering such activities as mapping and charting; balloon launches to calibrate satellites; and data collection to support biological, global climate studies, and weather data when it appears that the data comes from remote-sensing sources. DoD leads the agencies on the B list, with 52 agreements, followed by NASA with 48 and USGS with 25. Four agencies—DOE, State, DOT, and FAA—have only B-list agreements.

INTERNATIONAL PARTNERS

The United States has remote-sensing agreements in force with 76 countries and six multinational organizations or groups. When all 490 agreements are considered, France, Japan, Canada, Australia, and the United Kingdom are the United States' most active partners. Figure 1. shows the distribution of agreements by country, with designations made by A list (dark bar) and B list (light bar). Of the 340 A-list activities, the number of international partners drops to 50 countries and five multinational organizations. On the A list, the ordering of our most active partners changes only slightly: France (72 A-list agreements) is the most frequently cited partner. This is largely due to the preeminence of the ARGOS project and the many agreements to conduct research with ARGOS-collected data. Canada, Japan, and Australia (50, 49, and 39 A-level agreements, respectively) are the next most common partners, followed by the United Kingdom (35) and Norway (19).

SUBJECTS OF COOPERATION

The descriptions provided by the agencies of the activities sponsored under ISTAs range from less than a sentence to several or more pages. The agreements them-

¹RAND recently shed additional light on the use of remote sensing data by U.S. Government agencies through a briefing by Scott Pace and Liam Sarsfield entitled "National Polar Orbiting Environmental Satellite System: Cost and Risk Issues" and a report by Scott Pace, *Using Intelligence Data for Environmental Needs: Balancing National Interests*, Santa Monica, Calif.: RAND, MR-799-CMS, 1997.

Table 1
Directly and Indirectly Related International Science and Technology Agreements by Agency

Agency	A List ^a	B List ^b	Total ISTAs
NOAA	273	12	285
NASA	51	48	99
DoD (USAF and DMA)	4	52	56
DOI (USGS)	8	25	33
USDA (FA)	1	5	6
Department of State	0	4	4
DOE	0	1	1
EPA	1	0	1
Smithsonian Institution	1 ^c	0	1
DOT	0	1	1
FAA	0	1	1
NSF	1	1 ^d	2
Total	340	150	490

^aDirectly related agreements.

^bIndirectly related or supporting agreements.

^cWith USGS.

^dWith NASA

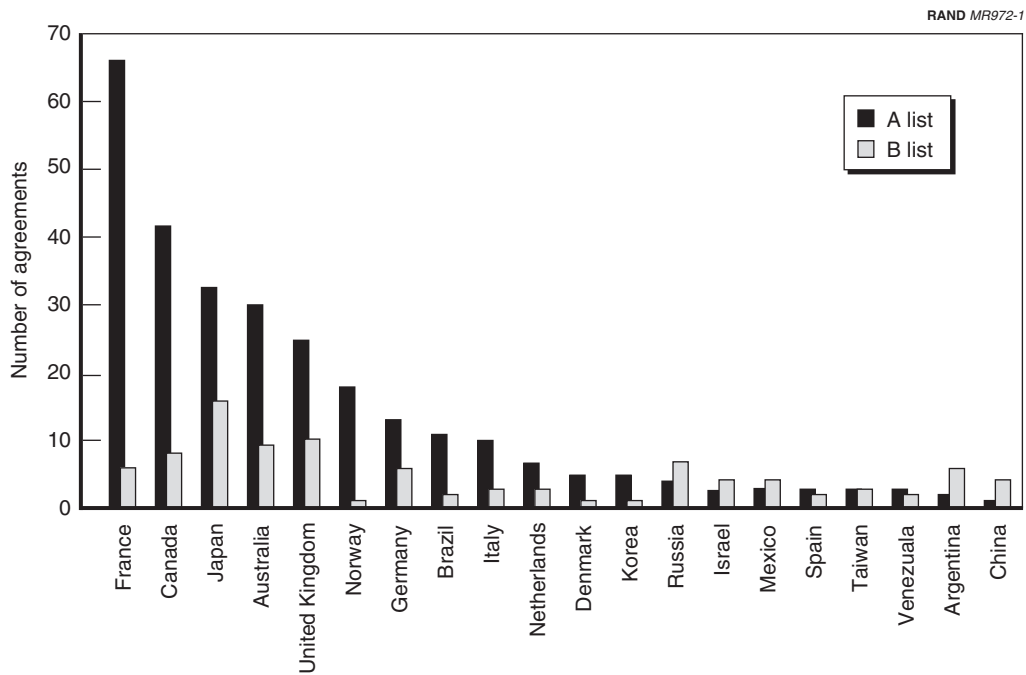


Figure 1—International Partners

selves do not name a “subject” of cooperation. Reading the various agreements, however, revealed some trends that enabled us to create a list of subject areas. Using this list, the ISTAs were classified, to the extent possible, by tagging them with a subject representing the cooperative activity intended by the ISTA (the full subject list is provided in the appendix). Meteorology is the largest single activity being sponsored, followed by wildlife tracking, ocean studies, and water management. Figure 2 shows the distribution of agreements by subject, with designations made for A list (dark bar) and B list (light bar).

TYPES OF AGREEMENTS

Agencies use a variety of terms used to classify ISTAs; during the course of this project, we identified at least ten, including the following:

- agreement of cooperation
- collaborative agreement
- data exchange agreement
- interim agreement
- letter of agreement
- memorandum of agreement
- memorandum of understanding

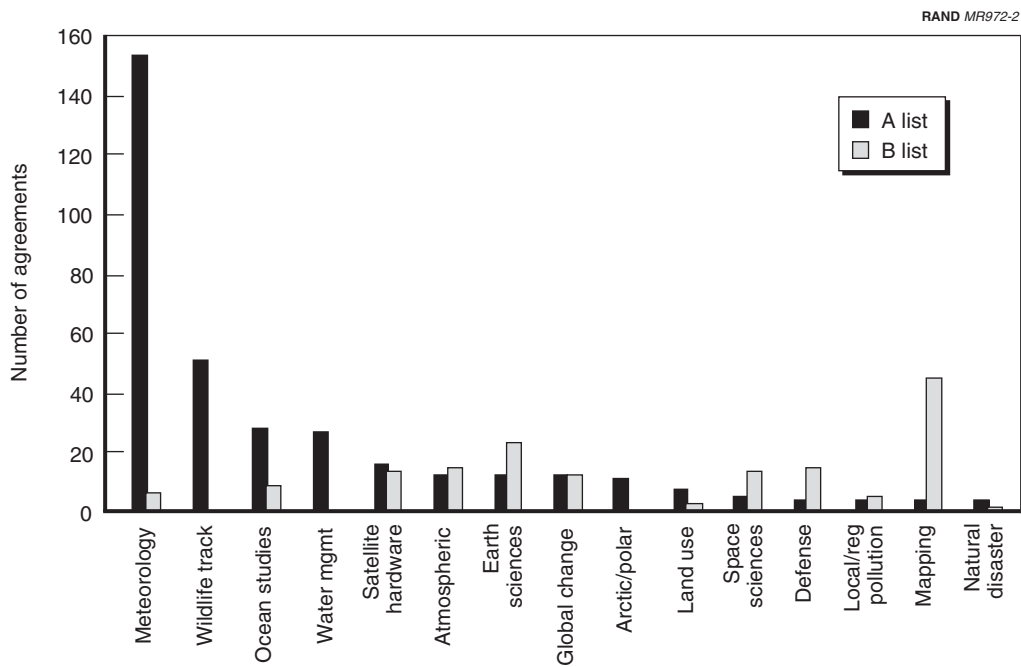


Figure 2—Agreements by Subject

- preagreement
- project agreement.

The majority of agreements identified for this project are classified as Memoranda of agreement (MOAs); the predominance of MOAs is due to the large number of agreements governing cooperation under the ARGOS and GOES programs. Memoranda of understanding (MOUs) appear to be the most formal of the types of agreements the agencies use. MOUs are the most likely to have undergone the Circular 175 process (the formal process for approving international agreements) and are therefore more likely than other types of agreements to be listed in the Department of State's Title V report. NASA uses the term *agreement of cooperation* to refer to joint agreements. A number of agencies, particularly DoD, use the term *data exchange agreement* to cover agency-to-agency data sharing arrangements.

AGENCY ACTIVITIES AND INTERAGENCY COORDINATION

Government agency officials coordinate with their counterparts in other agencies in many, if not most, cases when their own agency enters into an international remote-sensing agreement. Agency officials do this by exercising a network of informal professional contacts. To assess the extent and nature of this coordination, we conducted a series of informal discussions with ten government officials in six agencies actively involved in negotiating these agreements. Each of the six agencies contacted for this part of the study was chosen because of the extent of its involvement with remote-sensing ISTAs or because its mission is relevant to remote sensing. Agencies contacted were:

- National Oceanic and Atmospheric Administration (NOAA) (Department of Commerce)
- National Aeronautics and Space Administration (NASA)
- U.S. Geological Survey (Department of the Interior)
- U.S. Air Force (Department of Defense)
- U.S. Forest Service
- Environmental Protection Agency.

Typically, agency officials report that they know their colleagues in other agencies; when they do not know the right person to contact, a few phone calls usually produce the name of a person appropriate for interagency coordination. Government employees contact their counterparts by phone and e-mail, sometimes requesting a meeting and often faxing paperwork for comment. All agency officials report that this process works well and serves their agencies' needs for coordination.

In addition to asking government officials about the extent and nature of coordination, we also asked them six questions. The questions and the aggregated responses follow.

- **Are there any significant international activities in which your agency is involved that are not captured by an international agreement?**

Government agency officials report that most significant international activities being sponsored by their agencies take place under some kind of international

agreement. In some cases, the referenced agreement is the bilateral framework agreement between the United States and another country (such as the U.S.-Japan Science and Technology Agreement); such agreements are quite broad in scope and have been in place for several decades. In a few cases, activities take place with long-standing partners; even in the absence of an agreement on a specific project, reference can be made to an older, established agreement.

- **Are the agreements listed for your agency sponsored, on the U.S. side, solely by your agency, or are there other U.S. agencies involved in sponsoring one or more of these agreements?**

In several key cases, notably France's ARGOS, Japan's Advanced Earth Observation System (ADEOS), and the International Committee on Earth Observation Satellites (CEOS), agreements are entered into by more than one U.S. agency, usually NOAA and NASA, but also by NASA and NSF and by NASA and USDA/USFS. Meetings and project-level activities are often handled through an exchange of letters.

- **When a decision is made at your agency to enter into an international agreement in remote sensing and/or earth observation, how is the determination made as to classifying the agreement (i.e., memorandum of understanding, letter of intent)?**

The decision by an agency to enter into an international agreement in remote sensing varies by agency and by the nature of the activity. Across the board, agencies report that, when a commitment of funds is required or when countries exchange or agree to share hardware, they enter into an international agreement. The level of formality of that agreement is determined by one of several factors: (1) the "level of risk" to the U.S. government agency associated with this activity, (2) the request by the foreign partner to enter into a particular type of agreement, and (3) the novelty of the subject of cooperation. If the proposed topic has not been the subject of a previous agreement, the agency is more likely to enter into a new, formal agreement on that subject. In some cases, agencies have their own internal guidelines about how to enter into an agreement and what type of agreement to use; in other cases, agencies refer to guidelines associated with the Department of State Circular 175.

- **How is the determination made when to use the Department of State's Circular 175 process?**

Agency officials report that they usually try to keep international cooperative agreements as informal as possible. If a letter of agreement will suffice, the agency will usually opt for this before engaging in a process to sign an MOU. Agency officials report that they avoid using the formal Circular 175 process whenever possible. This finding is borne out by the low percentage of agreements collected and reported by the Department of State. Each of the agencies contacted reported that the Circular 175 process is slow and cumbersome; unless formal government approval is judged to be needed to support an ISTA, the agencies seek less formal means of coordination and less formal agreements.

- **Do you think the current process for initiating and coordinating international agreements of this kind is adequate to meet the needs of your agency?**

The officials interviewed believe the current procedures are adequate. As noted, despite the low level of formal coordination, agency officials frequently coordinate with their counterparts in other agencies when entering into an agreement. Except for the DoD (which tends to coordinate internally) the other agencies active in remote-sensing report checking with and coordinating with each other when a new opportunity for cooperation arises. The most active coordination goes on between NASA and NOAA—the two government agencies most actively involved in international remote-sensing activities. USDA and DOI/USGS also contact their counterparts in NASA and NOAA when entering into agreements relevant to these agencies. The contact generally takes place via telephone and e-mail. Agency officials often fax copies of proposed agreement language to each other for comment. Program officers know their counterparts in other agencies as a result of meetings, networking, and referrals.

- **Does a signed agreement influence the extent to which agency resources are committed to relevant activities? In what way?**

An ISTA usually does not, in and of itself, directly influence the commitment of agency funds. The agreement is more likely to reflect the agency's priorities at the time. An agreement is not signed unless it supports a core mission, reports one agency, so that the mission, not the agreement, is what determines funding priorities. While an ISTA does little to influence the commitment of funds on the U.S. side, it often helps the foreign partner to influence the commitment of funds on its end, according to several government officials.

**POLICY ACTIONS AND RECOMMENDATIONS THAT COULD
IMPROVE INTERAGENCY COORDINATION**

Current government-wide policy covering negotiating and signing international agreements allows considerable latitude on the part of the agencies to determine when to establish formal cooperative relationships with other countries. The current mix of formal and informal coordination works well, according to agency officials. Nevertheless, the lack of a clear policy on when to enter into an agreement and at what level of formality to establish relations results in inconsistency across the agencies about how, when, and why to agree to cooperate. Moreover, lack of a central location for collecting agreements and providing information about them leads to some duplication of effort among the government agencies. One government official suggested that the current process of informal coordination has grown up largely because of the cumbersome nature of the formal interagency process, which takes months to complete and often holds up important international cooperative activities.

Three possible policy actions emerge from this research that, if implemented, could improve coordination when entering into agreements:

1. rationalize the names of and purposes for different types of agreements
2. create a central clearinghouse on the World Wide Web for ISTAs
3. streamline the formal interagency coordination process.

Different agencies use different agreement vehicles and different negotiating strategies to enter into an international agreement. Rationalizing the terms of and descriptions for international agreements across agencies would enable comparison of the activities across the various agencies. Each agency uses its own names for agreements of different kinds, making it difficult to compare the formality of agreements across agencies. A formal definition of an MOU, for example, and when to enter into such an agreement like this could help make U.S. government activities more transparent.

Creating a central clearinghouse for information about ISTAs, perhaps using the World Wide Web as the place to store and obtain information on government agreements, could help government, industry, and academic researchers to find out more about supports in place to aid international cooperation. Although some of the international agreements are available at the Web sites of the Department of

Commerce and the Department of State, these lists only scratch the surface of the number of agreements these agencies have already entered into. Such a data set could provide useful information when an agency begins to discuss cooperation with its foreign counterparts.

Finally, streamlining the formal Circular 175 process could increase the frequency with which it is used. For example, such new information tools as electronic information transfer could be used to alert interested agencies when an agreement is being negotiated and, simultaneously, to solicit comments from these agencies. Increased use of the Circular 175 process would enable the Department of State to become aware of more of the international cooperation the agencies are initiating, as well as enable the agencies to track the activities of their counterparts in other agencies.

A CATALOG OF REMOTE-SENSING ISTAs

METHODOLOGY FOR CREATING THE CATALOG OF AGREEMENTS

Creating this catalog of U.S. government agreements concerned with remote sensing and earth observation involved contacting and consulting dozens of government sources. We started with the list of formal agreements maintained by the Department of State as part of the Title V report. The Department of State Title V list generally includes those agreements that have been approved through the interagency approval process, known by the name of its cover memo—Circular 175—in which agencies seek comment and approval for formal agreements regarding international cooperation in science and technology. We identified 45 agreements related to remote sensing in the Department of State’s Title V report. Identifying the agreements not contained in the Title V report involved contacting relevant agencies directly. In a number of cases, creating the agency-based list required sorting through files and stacks of paper to identify agreements relevant to this project. The following 20 agencies were contacted in the initial round:

- Agency for International Development
- Air Force (DoD)
- Department of Energy
- Department of Justice
- Department of the Treasury
- Department of Transportation
- Environmental Protection Agency
- Federal Aviation Administration
- Federal Emergency Management Administration
- Federal Maritime Commission
- Maritime Administration
- National Aeronautics and Space Administration
- National Oceanic and Atmospheric Administration (DOC)
- National Science Foundation
- National Telecommunications and Information Administration (DOC)

Navy (DoD)

Nuclear Regulatory Commission

Office of the Secretary of Defense (DoD)

Smithsonian Institution

U.S. Geological Survey (Department of the Interior).

The initial search for agreements relevant to this project resulted in a list of over 1000. On examination, many of these agreements were not relevant to remote sensing and earth observation, so a number of agreements were removed from the initial list, including those that covered

- classified military applications and activities
- remote sensing of the planets and the sun
- data collection on crustal dynamics
- Global Positioning Satellite activities and equipment
- magnetospheric and ionospheric studies when not related to global climate change
- space geodesy.

Agreements covering supporting such activities as balloon calibration, aircraft-based remote-sensing activities, and some related radar studies, were included in the list of agreements, particularly when these activities were related to environmental monitoring. The collected list includes only the agreements considered “unclassified” for U.S. national security purposes. Contacts with agency officials suggest that a list of classified agreements related to remote-sensing might be quite extensive, although most classified agreements would not relate to environmental monitoring.

GUIDE TO READING THE CATALOG

The catalog is split into two sections. Many ISTAs collected for this project are clearly related to the question of U.S. international cooperation in remote sensing, but a number of agreements are only indirectly related to the subject or sponsor supporting systems or equipment that are important to remote sensing. To ensure a full picture of U.S. government activities in this area, this catalog includes both kinds of agreements, but groups the agreement according to whether they directly involve remote-sensing equipment or activities (the A List, beginning on page 27) or only indirectly involve activities or applications that may require remote-sensing data or equipment (the B List, beginning on page 65). Like the subject of agreement, these codes were developed by the project team and represent a judgment about the relevance of the agreement to the client’s question. The list included in this appendix is split by relevance, providing first the A list and then the B list.

The remainder of this section of the appendix describes each of the columns presented in the catalog of agreements. The catalog is presented as a table of the available information on ISTAs related to remote sensing and earth observation.

Country and Partner

The list of agreements is sorted alphabetically by country, or, when applicable, as a multilateral agreement. When the agreement lists the foreign organization responsible for cooperating with the United States—the partner—this information is also listed along with the country name.

Agency

The principal agency sponsoring the agreement is listed next to the country and partner, also presented alphabetically.

Subject of Agreement

Together with officials from the Office of Science and Technology Policy, the RAND team developed a list of subjects to use for tagging the agreements by subject. This coding system is not an official government classification—it is provided as an analytic tool to allow insight into the nature of international cooperation being sponsored by the U.S. government. The subjects used for classification were as follows:

- atmospheric sciences
- arctic or polar
- defense (when related to environmental mapping applications; unclassified only)
- earth sciences (if not otherwise specified)
- global change studies
- land use
- local and regional pollution
- mapping
- meteorology
- natural disaster prevention and monitoring
- ocean studies
- space sciences
- satellite hardware and technologies
- water management
- wildlife tracking.

Description

The description column provides any information gathered about the ISTA. In some cases, the agency had very little information about the activities being supported by the ISTA. In other cases, detailed information went on for pages. To the extent possible, this catalog provides full information or a summary description of each ISTA cited.

Status

Many but not all agreements list the date on which they “enter into force” (EIF) and when or if they terminate. Wherever this information is available from the relevant agency, this information is included in the column marked “status.”

Type of Agreement

There is no commonly agreed-upon set of terms for ISTAs—many common terms appear across the agencies, such as MOU, but many agencies have their own sets of names for different types of agreements. Whenever the agency provided the type of agreement being described, this information is included in the column “type of agreement.” In some cases, the agency reported the agreement simply as an “international agreement,” and this is so noted. When the type of agreement is not identified, this box is left blank.

Funding

International agreements rarely contain information on the amount of funding provided to support the ISTA activity. Nevertheless, in a few cases, this information is available from the agencies. Whenever available, funding information is provided. If the agreement simply notes that funding will be provided by each side, this is also noted in this column.

ID Code

Many agencies use a coding system to track and identify agreements; we requested that agencies include any coding information. An agency code or identification number is included here whenever it was available from the agencies. The agreements collected for the purpose of creating this catalog came from a number of sources.

ABBREVIATIONS USED IN THE CATALOG

The following formal abbreviations are used within the catalog:

AOL	Airborne Oceanographic Lidar
ARGOS	Advanced Research and Global Observation Satellite
ASI	Agenzia Spaziale Italiana
ASTEX	Atlantic Stratocumulus Transition Experiment
AUSLIG	Australian Surveying and Land Information Group
AVHRR	Advanced Very High Resolution Radiometer
BGR	Bundesanstalt für Geowissenschaften und Rohstoffe
BMFT	Federal Ministry for Research and Technology
BMI	Bundesministerium des Innern
BMO	British Meteorological Organization
BNSC	British National Space Center
CCRS	Canada Centre for Remote Sensing
CDTI	Center for Technological Industrial Development
CENAPRED	National Center for Disaster Prevention
CEO	Centre for Earth Observation
CERES	Clouds and Earth's Radiant Energy System
CIRS	Composite Infrared Spectrometer
CNPQ	Conselho Nacional de Pesquisas
CNR	National Research Council of Italy
CSA	Canadian Space Agency
CSIRO	Commonwealth Scientific and Industrial Research Organization
DARA	Deutsche Agentur für Raumfahrt-Angelegenheiten
DISB	Defence Information Services Branch
DIST	Department of Industry, Science and Technology
DMA	Defense Mapping Agency
DOC	Department of Commerce
DoD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation

DRA-AD	Defense Research Agency's Aerospace Division
EGS	Egyptian Geological Survey
EIF	Enter into force
EMR	Department of Energy, Mines, and Resources
EOIS	Earth Observation and Data Information System
EOS	Earth Observing System
EOSDIS	Earth Observing System Data and Information System
ERBE	Earth Radiation Budget Experiment
ERS-1	European Remote-Sensing Satellite-1
ESTC	European Space Technology Centre
ETS-VI	Engineering Test Satellite-VI
EUMETSAT	European Meteorological Satellite
EUMETSAT	European Organization for the Exploitation of Meteorological Satellites
FAA	Federal Aviation Administration
FAO	Food and Agriculture Organization of the United Nations
FS	Forest Service
GFZ	Geoforschungs Zentrum Potsdam
GLOBE	Global Backscatter Experiment
GMC	Geology and Mines Commission
GOES DCS	Geostationary Operational Environmental Satellite Data Collection System
GPS	Global Positioning System
GSD	Geological Survey Department
GSD	Geological Survey Directorate
ICSU	International Council of Scientific Unions
IfAG	Institut für Angewandte Geodesie
INEGI	Instituto Nacional de Estadística, Geografía e Informática
INTA	National Institute for Aerospace Technology
IRF	Swedish Institute of Space Physics
ISAS	Institute of Space and Astronautical Science
ISTA	International Science and Technology Agreement

ITCOP	Interagency Tracking and Communications Panel
JAMSTEC	Japan Marine Science and Technology Center
JAROS	Japan Resources Observation Systems Organization
JERS-1	Japanese Earth Resources Satellite
JPL	Jet Propulsion Laboratory
KIGAM	Korean Institute of Geology, Mining, and Minerals
MEM	Ministry of Energy and Mines
MITI	Ministry of Trade and Industry
MNR	Ministry of Natural Resources
MOA	Memorandum of Agreement
MODIS	Moderate Resolution Imaging Spectrometer
MONBUSHO	Japanese Ministry of Education, Science and Culture
MOPITT	Instrument for Measurements of Pollution in the Troposphere
MOU	Memorandum of Understanding
MPEP	Max-Planck-Institut für Extraterrestrische Physik
MPIC	Max Planck Institute for Chemistry
MSTP	Ministry of Science and Technology Policy
NASA	National Aeronautics and Space Administration
NERC	National Environmental Research Council
NIES	National Institute for Environmental Studies
NOAA	National Oceanic and Atmospheric Administration
NR	Not reported
NRC	Natural Resources Canada
NRCC	Natural Resources Coordinating Council
NS	Not specified
NSF	National Science Foundation
OVLBI	Orbiting very long baseline interferometry
PEMWEST	Pacific Exploratory Mission in the Western Pacific Region
PWRI	Public Works Research Institute
RSA	Russian Space Agency
SAR	Synthetic aperture radar
SBSA	Swedish Board for Space Activities

SEMIP	Secretariat of Energy, Mines, and Parastatal Industry of the United Mexican States
SERC	Science and Engineering Research Council
SGS	Geological Survey of Slovakia
SIR-C	Shuttle Imaging Radar-C
SLR	Satellite laser ranging
SMMR	Scanning multichannel microwave radiometer
TLRS-1	Transportable Laser Ranging System
TOTS	Target Oriented Tracking System
TRMM	Tropical Rainfall Measuring Mission
TUB	Technische Universität Braunschweig
UK	United Kingdom
UMNG	Université Marien Ngouabi
UNAM	National Autonomous University of the United Mexican States
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UOB	University of Bergen
USAF	U.S. Air Force
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VLBI	Very long baseline interferometry
WEGENER	Working Group of European Geo-Scientists for the Establishment of Networks for European Research
WMO	World Meteorological Organization
X-SAR	X-band synthetic aperture radar
ZGSD	Geologic Survey Department of the Republic of Zimbabwe

A List: Directly Related Agreements

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Africa Region/ AID	DOI/USGS	Natural disaster prevention/ monitoring	Famine Early Warning remote sensing support project. Time series monitoring of vegetation conditions of locust habitat in the Sahel and Horn of Africa.	EIF Jan 1, 1996, terminates Jan 1, 2000	RRSA	NS	NR
Argentina/ CNIE, PRADAS	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Dec 20, 1985, terminates Dec 31, 1990 (extended)	MOA	NS	NR
Argentina/ Serv. Hydro. Naval	DOC/NOAA	Ocean Studies	ARGOS. Slope fronts [study of oceanographic features]. User Bianchi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia	DOC/NOAA	Satellite hardware / technologies	Direct reception and distribution of Landsat data at Landsat ground station.	EIF March 13, 1984, termination contin- gent upon life span of Landsat 4 and 5	Data exchange	No U.S. funding	NR
Australia/ Ampolex	DOC/NOAA	Meteorology	ARGOS. Satellite tracking. User Power. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ AMSA	DOC/NOAA	Meteorology	ARGOS. Satellite tracking. User Gilbert. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Antarctic Divi- sion	DOC/NOAA	Arctic/polar	ARGOS. Antarctic Surface Meteorology. User Morrissy. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Antarctic Divi- sion	DOC/NOAA	Arctic/polar	ARGOS. Sea Ice Dynamics. User Morrissy. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Antarctic Divi- sion	DOC/NOAA	Wildlife tracking	ARGOS. Foraging Behavior of Adelie Penguin. User Kerry. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Australia/ Antarctic Division	DOC/NOAA	Wildlife tracking	ARGOS. Macquarie Albatross. User Robertson. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Antarctic Division	DOC/NOAA	Wildlife tracking	ARGOS. Antarctic Seals. User Southwell. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Aust. Met. Off.	DOC/NOAA	Ocean studies	ARGOS. Aust. Drif. Bu. [ocean current study]. User Moore. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Australian Marine Service	DOC/NOAA	Ocean studies	ARGOS. Australian Marine Service. User O'Boyle. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Australian Meteorological Office	DOC/NOAA	Ocean studies	ARGOS. Aus. Shipboard Pab. Trial. User McKenzie. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Bureau of Mineral Resource	DOC/NOAA	Earth sciences	ARGOS. Rig Seismic Operations. User Whitworth. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Cons. Commission Nat.	DOC/NOAA	Wildlife tracking	ARGOS. Magpie geese. User Freeland. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ CSIRO	DOC/NOAA	Meteorology	ARGOS. CSIRO XBT. User Meyers. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ CSIRO	DOC/NOAA	Ocean studies	ARGOS. Australian Currents. User Cresswell. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Australia/ CSIRO	NASA	Global change studies	Drs. John Parslow and Ian Barton of CSIRO to participate on the Instrument team for the Moderate-Resolution Imaging Spectrometer (MODIS). MODIS is a facility instrument of NASA's EOS and is designed to measure both biological and physical processes on a global basis. MODIS instruments are scheduled for flight on the EOS AM-1 (1998) and EOS PM-1 (2000) spacecraft. The objective of the MODIS program is to provide long-term observations to improve understanding of global dynamics and processes of Earth.	EIF Jan 25, 1993 for duration of CSIRO-sponsored Team Member participation in the flight of the MODIS instrument on the EOS AM-1 and EOS PM-1 spacecraft; termination upon 3 mos written notice; amended May 20, 1993	International	Each bears respective costs	AS0148
Australia/ CSIRO	NASA	Ocean studies	CSIRO-sponsored investigation aboard the TOPEX/POSEIDON mission led by Dr. John A. Church. "Dynamics and Topography of the South Pacific, Southern and Indian Oceans - Ocean transport and Variability Studies Project." Its objective is to estimate transport and time variations in this transport for ocean currents in the Australian region, with particular reference to the East Australian current and to relate these to large scale oceanic circulation.	EIF Mar 24, 1989	International	Each bears respective costs	AS0010
Australia/ CSIRO	NASA	Ocean studies	CSIRO scientists as Prin. Investigator and Co-Investigators on "interdisc. Studies of the Relationships b/t Climate, Ocean Circulation, Biological Processes, and Renewable Marine Resources" which is an interdisc. science investigation for data analysis and modeling, preparing for and using the Earth Observing System (EOS). Key: study links b/t climate, biological processes, ocean-atmosphere interactions, and marine fisheries resources in Australian waters and fisheries.	EIF Jun 29, 1995 for duration of the CSIRO-sponsored PIP's participation in the EOS atmospheric science investigation; termination upon 3 mos written notice	International	Each bears respective costs	AS0169
Australia/ Grid Technology	DOC/NOAA	Local/regional pollution	ARGOS. Dangerous Goods Tracking. User Eagles. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Australia/ James Cook University	DOC/NOAA	Wildlife tracking	ARGOS. Dugong [marine mammal] Movement. User Marsh H. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Lawson & Treloar Pty.	DOC/NOAA	Ocean Studies	ARGOS. Moored Buoy Monitoring Service. User Rice. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Mermaid Sound Port	DOC/NOAA	Meteorology	ARGOS. Rows. User Pointon. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ NT Water Authority	DOC/NOAA	Water management	ARGOS. Northern Territory Water Reserve Monitoring. User Barlow. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Queensland Environment.	DOC/NOAA	Wildlife tracking	ARGOS. Marine turtle migration. User Limpus. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/RAN	DOC/NOAA	Water Management	ARGOS. Personal Locator Beacon. User Dowsing. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Seismic Sur- veyors	DOC/NOAA	Earth sciences	ARGOS. Cargo Security. User Taylor. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ University of LaTrobe	DOC/NOAA	Wildlife tracking	ARGOS. Wandering Albatrosses User Nicholls. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ University of Tasmania	DOC/NOAA	Arctic/polar	ARGOS. Antarctic Weather Station. User Budd. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Australia/ Water Author- ity of West Australia	DOC/NOAA	Water management	ARGOS. Water Resources. User Tite. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Australia/ WNI Science & Weather News	DOC/NOAA	Water manage- ment	ARGOS. Moored Buoy Monitoring. User Master. The ARGOS system is oper- ated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Austria/ Austrian Space Agency	NASA	Satellite hard- ware / technologies	High Alpine Synthetic Aperture Radar (SAR) experiment for SIR-C using radar remote sensing studies of the Earth employing the Shuttle Imaging Radar-C (SIR-C).	EIF Jul 28, 1994	Interna- tional	NS	AU0015
Belgium/ Institut Royal Météor- ologique	NASA	Atmospheric sci- ences	The ATLAS series should support the long-term measurement through use of the Space Shuttle as a platform for periodic observations of the Sun and the Earth's upper atmosphere by: providing periodic benchmarks on the compo- sition of the stratosphere and the mesosphere, of the input of solar radiation into this region; providing calibration of the correlative measurements in sup- port of the Upper Atmosphere Research Satellite (UARS) and future Earth Sci- ence satellites; and providing a flight opportunity.	EIF Mar 18, 1993	Coopera- tion	NS	BE0027
Belgium/ Institute of the Royal Science Nat.	DOC/NOAA	Wildlife tracking	ARGOS. Numenius Tenuirostris [slender-billed curlew (bird)]. User Devillers. The ARGOS system is operated to support environmental applications includ- ing weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Belize/ National Meteorological Service	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jul 5, 1993, ter- minates Jul 31, 2003	MOA	NS	NR
Bolivia	DOC/ NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Oct 6, 1986, terminates Jan 31, 1991 (extended)	MOA	NS	NR
Brazil	DOC/NOAA	Satellite hard- ware / technologies	Direct reception and distribution of Landsat data at Landsat ground station.	EIF May 5, 1984, termination contin- gent upon the life span of Landsat 4 and 5	Data exchange	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Brazil	DOD/USAF	Meteorology	Weather Data and Forecasting and Analysis Techniques.	In force	Data exchange	NS	AF-88- BR- 8802
Brazil/ Brazilian Commission for Space Activities (COBAE)	NASA	Local/regional pollution	The Smoke/Sulfate/Clouds and Radiation Experiment (SCAR) is designed to answer some of the scientific questions relating to the global and regional impacts of fossil fuels and biomass burning to acquire data for the evaluation of algorithms for remote observations of the phenomena from space.	EIF May 19, 1995 until May 18, 1998 (extended)	Interna- tional	NS	BR0090
Brazil/ DNAEE	DOC/NOAA	Meteorology	ARGOS. Brazil. User Garcia. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Brazil/INPE	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jun 25, 1982, terminates Jul 31, 1992 (extended)	MOA	NS	NR
Brazil/INPE	DOC/NOAA	Ocean Studies	ARGOS. Coroas LCD [offshore buoys]. User Stevenson. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Brazil/INPE	DOC/NOAA	Meteorology	ARGOS. Satellite Ellite Brasilien. User Motta. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Brazil/INPE	DOC/NOAA	Meteorology	ARGOS. INPE's experimental ARGOS Data Collection Point (DCP) Net. User Parada. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Brazil/INPE	DOC/NOAA	Ocean Studies	ARGOS. Test [offshore buoys test]. User Barbosa. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Brazil/ SERLA Brazil	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Mar 6, 1994, terminates Feb 28, 1999	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Brazil/ The Nature Conservancy	USDA/FS	Land use	Formal agreement (grant) with The Nature Conservancy (an international NGO) for a Remote Sensing Inventory of Serra Do Divisor National Park. Technology Transfer.	EIF 1995, terminates Sep 30, 1997 (extended)	International	NS	IITF- 95-CA- 010
Burkina Faso/ OMS	DOC/NOAA	Meteorology	ARGOS. Oncho. User Samba. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada	DOC/NOAA	Space sciences	Other agency involved NASA. MOU to advance space science and technology, and application of remote sensing tech on areas such as research studies of e...	EIF Feb. 27, 1991, termination indef- inite	MOU	May 23, 1992 dura- tion indefinite	NR
Canada	DOI/USGS	Mapping	Cooperation in surveys, mapping and remote sensing with Canadian Surveys, Mapping and Remote Sensing Sector (SMRSS) of Natural Resources Canada.	NR	International	NS	NR
Canada	NASA/NSF	Satellite hardware / technologies	MOU between Canadian Space Agency and NASA for launch of Canadian Radarsat in exchange for Earth observations research data and U.S. private...	EIF Feb 27, 1991, terminates Feb 27, 1996 (extended)	MOU	NS	
Canada/AES	DOC/NOAA	Arctic/polar	ARGOS. International Arctic buoy program. User Hume. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/AES	DOC/NOAA	Arctic/Polar	ARGOS. Ice floe drift. User Hume. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/AES	DOC/NOAA	Meteorology	ARGOS. PAPA [weather buoys]. User Hume. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/AES	DOC/NOAA	Meteorology	ARGOS. C-Nomad [weather buoys]. User Hume. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/AES	DOC/NOAA	Water management	ARGOS. Atlantic buoy program. User Hume. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Canada/ Alberta Envi- ronment	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Oct 29, 1987, terminates Oct 31, 1997 (extended)	MOA	NS	NR
Canada/ Atmospheric Environmental Service	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Dec 20, 1980, ter- minates Dec 31, 1990 (extended)	MOA	NS	NR
Canada/ B.C. Ministry Environment	DOC/NOAA	Wildlife tracking	ARGOS. Wolverine & Wolf monitoring. User Lofroth. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ BC Hydro	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF May 3, 1988, ter- minates May 31, 1998 (extended)	MOA	NS	NR
Canada/ BC Ministry of Environment	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Oct 1, 1984, ter- minates Oct 31, 1989 (extended)	MOA	NS	NR
Canada/ Bedford Institute	DOC/NOAA	Global change studies	ARGOS. Environmental monitoring. User Lawrence. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Can Wildlife Serv	DOC/NOAA	Wildlife tracking	ARGOS. Peary Caribou Conservation. User Miller. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/CSA	NASA	Global change studies	Collaborative Agreement for Boreal Eco-System-Atmosphere Study (BOREAS). Joint study to better understand the interactions between the boreal forest biome and the atmosphere. Extensive use of aircraft and ground-based instrumentation in a comprehensive series of field campaigns.	EIF Jun 22, 1992, ter- minates Jun 22, 1998; may be modi- fied or extended; termination upon 90 days written notice	Collabora- tive	Each bears respective costs	CA0216

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Canada/ Department of Fish & Oceans	DOC/NOAA	Wildlife tracking	ARGOS. Newfoundland & Labrador Moori [fish]. User Narayanan. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Department of Fish and Oceans	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jul 31, 1981, terminates Jul 31, 1991 (extended)	MOA	NS	NR
Canada/ Government of the NW Territories	DOC/NOAA	Wildlife tracking	ARGOS. Barren ground caribou. User Gunn Anne. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Government of the NW Territories	DOC/NOAA	Wildlife tracking	ARGOS. Baffin Island caribou telemetry. User Ferguson M.A.D. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Government of the NW Territories	DOC/NOAA	Wildlife tracking	ARGOS. Blue Nose Caribou Herd. User Nagy. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Government of the NW Territories	DOC/NOAA	Wildlife tracking	ARGOS. Qamanirjuaq Caribou Herd. User Mulders. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Greater Vancouver Regional District	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Feb 8, 1995, terminates Feb 28, 2005	MOA	NS	NR
Canada/ Ind. & Nor. Affairs	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jun 11, 1990, terminates Jun 30, 2000	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Canada/ IOS	DOC/NOAA	Ocean studies	ARGOS. Witness [subsurface current study]. User Juhasz. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ IOS	DOC/NOAA	Ocean studies	ARGOS. Ocean search. User Thomson. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Natural Resources Canada/ SMRSS	DOI/USGS	Mapping	Cooperation in surveys, mapping & remote sensing with the Canadian Surveys, Mapping & Remote Sensing sector of Natural Resources Canada.	EIF Mar 1992, duration indefinite	MOU	NS	NR
Canada/NRCC	NASA	Land use	International Satellite Land Surface Climatology Project Field Experiment (FIFE). Correlation experiment involving the surface, airborne and satellite measurement techniques for land surface climatology parameters.	EIF Jun 18, 1987; amended Sep 29, 1987	International	NASA re- im- burses NRCC \$90,000 (US)	CA0010
Canada/ Ontario Hydro	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF May 7, 1985, ter- minates May 31, 1990 (extended)	MOA	NS	NR
Canada/ Ontario Ministry of Natural Resources	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Oct 16, 1987, terminates Oct 31, 1997 (extended)	MOA	NS	NR
Canada/ Ontario Ministry of Natural Resources	DOC/NOAA	Wildlife tracking	ARGOS. North Western Ontario Caribou. User Dalton. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Canada/ Parks Canada	DOC/NOAA	Meteorology	ARGOS. Ellesmere Island. User Wissink. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Petro-Canada	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Nov 26, 1980, terminates Nov 30, 1990, canceled Mar 19, 1991 (extended)	MOA	NS	NR
Canada/ Quebec Min de L'environnement	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jan 27, 1981, terminates Jan 31, 1991 (extended)	MOA	NS	NR
Canada/ Saskatchewan Res. Council	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Apr 24, 1985, terminates Apr 30, 1990 (extended)	MOA	NS	NR
Canada/ Serv Canadien Faune	DOC/NOAA	Wildlife tracking	ARGOS. Alequin Duck. User Laporte. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Univ. British Columbia	DOC/NOAA	Wildlife tracking	ARGOS. Marine Mammal Unit Tracking. User Andrews. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ University of Calgary	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Apr 4, 1986, terminates Apr 30, 1991 (extended)	MOA	NS	NR
Canada/ University of Saskatchewan	DOC/NOAA	Wildlife tracking	ARGOS. Polar bears. User Messier. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Water Survey of Canada	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jun 10, 1980, terminates Jun 30, 1990 (extended)	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Canada/ Wildlife R.C.L.	DOC/NOAA	Wildlife tracking	ARGOS. Ungava and Labrador caribou behavior. User Luttich. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Canada/ Yukon Fish & Wildlife	DOC/NOAA	Wildlife tracking	ARGOS. North Slope Wolf Studies. User Hayes. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Caribbean Meteorological Organization	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Aug 8, 1989, terminates Aug 31, 1994 (extended)	MOA	NS	NR
Central American Commission on the Environment and Development	NASA	Earth sciences	Plan to develop a program to establish a Geographic Information System (GIS) in pilot areas by employing remote sensing techniques.	EIF Jan 7, 1994	Cooperation	NS	CCAD002
Chile/Cunloga n Sa	DOC/NOAA	Wildlife Tracking	ARGOS. Cunlogan Pesca [fish]. User Bull. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Chile/ University of Chile	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Sep 12, 1988, terminates Sep 30, 1998	MOA	NS	NR
China/ NBO	DOC/NOAA	Ocean studies	ARGOS. China Sea. User Ou Huamin. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Colombia/ HIMAT	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Mar 28, 1989, terminates Mar 31, 1994 (extended)	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Costa Rica	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Oct 22, 1992, terminates Oct 31, 2002	MOA	NS	NR
Denmark/ Danbiu Aps	DOC/NOAA	Wildlife tracking	ARGOS. Marine Mammals. User Heide Jorgesen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Denmark/ Landsver- frodinurin	DOC/NOAA	Meteorology	ARGOS. Faroe Islands Waves. User Heinesen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Denmark/ Meteorol. Institute	DOC/NOAA	Meteorology	ARGOS. AWOX. User Jensen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Denmark/ Meteorol. Institute	DOC/NOAA	Meteorology	ARGOS. DKREF. User Jensen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Denmark/ Univ. of Aarus	DOC/NOAA	Wildlife tracking	ARGOS. Narwhals [Arctic whales]. User Mohl. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Dominican Republic	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Nov 26, 1984, terminates Nov 30, 1989 (extended)	MOA	NS	NR
Ecuador/ CLIRSEN	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Dec 2, 1985, terminates Dec 31, 1990 (extended)	MOA	NS	NR
Fiji/ Fiji Meteoro- logical Service	NASA	Meteorology	South Pacific Severe Storm Detection and Warning System (SPSSDWS), NASA is designing, configuring, procuring, and installing equipment and technical systems enhancement, providing on-site training, for the satellite ground station of the Fiji Met. Service	EIF Nov 30, 1988	Data/ Informa- tion exchange	NS	FJ0003

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Finland/ Tech. Res. Center	DOC/NOAA	Meteorology	ARGOS. Finnish Antarctic Research Program (Finnarp) Weather Program. User Olli-Pekka. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Finland/ Univ. Helsinki	DOC/NOAA	Meteorology	ARGOS. Finnarp 89. User Launiainen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Finland/ Univ. of Oulu	DOC/NOAA	Wildlife tracking	ARGOS. Fiell Goose Migration. User Rassi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France	DOC/NOAA	Satellite hardware / technologies	France provides ARGOS (French Position Location Weather Satellite Program) onboard data collection and data processing system flown on NOAA solar-orbiting satellite.	EIF Mar 20, 1986, duration indefinite	Data exchange	NS	NR
France	DOC/NOAA	Satellite hardware / technologies	France provides ARGOS onboard data collection system flown on NOAA polar orbiting satellite; France also provides the data processing system for ARGOS.	EIF Mar 20, 1986, duration indefinite	Data exchange	NS	NR
France	DOD/USAF	Defense	Effects of the Ionosphere on Communications and Surveillance Systems (U).	Proposed (as of Jul 16, 1997)	Techno- logical R&D	NS	TRDP (USAF)
France/ AG. BAS. L. BRE	DOC/NOAA	Earth sciences	ARGOS. Naussac Vil. User Lefevre. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ C.E.A.	DOC/NOAA	Meteorology	ARGOS. Deripol Tropical Ocean Global Atmosphere (TOGA). User Rancher. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Local/regional pollution monitoring	ARGOS. Dangerous Chemical Goods. User Picot. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Data management	ARGOS. Transamazonian data transmitter test. User Sanchez. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
France/ CLS	DOC/NOAA	Arctic/Polar	ARGOS. Insu Expedition. User Lucas. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Meteorology	ARGOS. Sancho. User Courrouyan. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Local/regional pollution	ARGOS. Chemitrack [hazardous materials tracking]. User Leminh. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Wildlife tracking	ARGOS. Northwest Atlantic Fisheries Organization (NAFO) agreement with regard to Estonia. NAFO works to contribute to the optimum utilization, rational management and conservation of the fishery resources of the NAFO Convention area. User Cauzac. The ARGOS system is operated to support environmental applications including weather, ocean studies, and water management.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Wildlife tracking	ARGOS. NAFO Latvia. User Cauzac. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Wildlife tracking	ARGOS. NAFO Lithuania. User Cauzac. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Meteorology	ARGOS. Domino. User Sirech. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. Cobrecaf [French fishing vessel monitoring]. User Mouquot. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Meteorology	ARGOS. GNGL. User Lucas. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Local/regional pollution	ARGOS. Monitoring Dangerous Materials. User Courrouyan. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. Fishing Vessel Monitoring Spain. User Guerlou. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. Drifting Buoy Monit. User Guerlou. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. Rukswaterstaat Moored Buoys. User Van Doorn. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. New Zealand Fish Vessels. User Monsaingeon. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. Fishing Monitoring Indonesia. User Monsaingeon. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. Tuna Long Liners in Polynesia. User Guerlou. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. Pilot VMS Holland. User Cauzac. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. VMS Pilot France. User Guerlou. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CLS	DOC/NOAA	Water manage- ment	ARGOS. CMB Fishing Vessel Monitoring. User Mouquot. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CNES	DOC/NOAA	Ocean studies	ARGOS. Topex (Topography Experiment for Ocean Circulation)/Poseidon (Positioning Ocean Solid Earth Ice Dynamics orbiting Navigator) Calibration and Validation (Calval). User Menard. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
France/ CNRS	DOC/NOAA	Upper atmo- spheric sci- ences/ozone layer	ARGOS. Monitor Ozone Stratosphere. User Pommereau. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CNRS	DOC/NOAA	Meteorology	ARGOS. King. User Le Maho. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ CNRS	DOC/NOAA	Meteorology	ARGOS. Empereur. User Le Maho. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Delegation General Pour L'Armement	DOD/USAF	Defense	Annex Number DEA-AF-89-F-7345; The agreement provides for the exchange of information on the infrared properties of the atmosphere with the purpose of improving the operation of remote sensing systems. This DEA has been concluded at this time to take advantage of technology developed by France. France will gain information and data from the Geophysics Laboratory and the European Office of Aerospace Research and Development. The US will gain information and data from the French Direction...	EIF: 19 March 1990	Letter of Transmit- tal	NS	FR21B9 0A
France/ DIR REG Envi- ronnement	DOC/NOAA	Wildlife tracking	ARGOS. Pyrennese Brown Bears User Pauwels. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ EDF	DOC/NOAA	Meteorology	ARGOS. Snow coverage. User Guillot. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ EDF	DOC/NOAA	Meteorology	ARGOS. Transmod. User Lutz. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ EDF	DOC/NOAA	Meteorology	ARGOS. Groseille. User Cellier. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
France/ French Center National D' Études Spatiales	NASA	Atmospheric sci- ences	Clouds and Earth's Radiant Energy System (CERES) Instrument appointment of team leader.	EIF Feb 16, 1993	agreement	NS	FR0348
France/ French Center National D' Études Spatiales	NASA	Upper atmo- spheric sci- ences/ozone layer	Atmospheric Laboratory for Applications and Science (ATLAS) will support the long-term measurement use of the Space Shuttle as a platform for periodic observations of the Sun and of the Earth's upper atmosphere.	EIF Jun 14, 1993	Coopera- tion	NS	FR0357
France/ French Center National D' Études Spatiales	NASA	Global change studies	Moderate Resolution Imaging Spectrometer (MODIS) is a facility instrument of NASA's Earth Observing System and is designed to measure both biological and physical processes on a global basis.	EIF Feb 16, 1993	Coopera- tion	NS	FR0349
France/ French Center National D' Études Spatiales	NASA	Meteorology	AIRS/AMSU/MHS is a Facility instrument of NASA's Earth Observing System; a high-resolution sounder, and together with NOAA's AMSU-A and EUMETSAT's MHS constitute the advanced sounding system designed to meet the requirements of for future operational weather satellites.	EIF Feb 16, 1993	Coopera- tion	NS	FR0347
France/ French Center National D' Études Spatiales	NASA	Ocean studies	MOU of cooperation between NASA and the French Centre National d' Études Spatiales for Joint Development of TOPEX/POSEIDON ocean project. MOU for measurements of the surface topography of the global oceans for three years with sufficient accuracy and precision to enable the determination of the ocean's general circulation as well as its mesoscale variability.	EIF Mar 23, 1987; terminates one year after data collection ceases from space	MOU	NS	FR0025
France/ IFREMER	DOC/NOAA	Ocean studies	ARGOS. XBT Toga (Tropical Ocean Global Atmosphere) for IFREMER (Institute Français de Recherche pour l'Exploitation de la Mer). User Voituriez. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ IFREMER	DOC/NOAA	Meteorology	ARGOS. Samba Zero. User Ollitault. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
France/ IFREMER	DOC/NOAA	Meteorology	ARGOS. Samba. User Ollitrault. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ IFREMER	DOC/NOAA	Meteorology	ARGOS. Sefos-FR. User Poulard. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ INAG	DOC/NOAA	Meteorology	ARGOS. Pestev. User Archambault. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ INSU (Institute Nationale des Sciences de l'Univers)	DOC/NOAA	Meteorology	ARGOS. Geoscope. User Karczewski. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Irigm	DOC/NOAA	Meteorology	ARGOS. Prev. Seism. User Poupinet. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ LODYC	DOC/NOAA	Meteorology	ARGOS. Medoc 92. User Gascard. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ METEO	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.)	Terminates Jan 31, 2006	MOA	NS	NR
France/ METEO-France	DOC/NOAA	Meteorology	ARGOS. Météo Antilles (Meteorology in the West Indies). User Mandar. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
France/ Météorologie Nationale	DOC/NOAA	Meteorology	ARGOS. Nivolog. Met. User Lafeuille. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Météorologie Nationale	DOC/NOAA	Meteorology	ARGOS. Cost 43 Soba. User Fusey. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Météorologie Nationale	DOC/NOAA	Ocean studies	ARGOS. Marisondes B [buoy tracking]. User Fusey. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Météorologie Nationale	DOC/NOAA	Meteorology	ARGOS. Météo Antilles (Meteorology in the West Indies). User Mandar. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Météorologie Nationale	DOC/NOAA	Ocean studies	ARGOS. Marisondes C [buoy tracking]. User Fusey. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Musée de l'Histoire Naturelle	DOC/NOAA	Wildlife Tracking	ARGOS. Pecaris [South American bird]. User Mauget. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/Office de la Recherche Scientifique et Technique Outre-Mer (ORSTOM)	DOC/NOAA	Water manage- ment	ARGOS. Hydro Guyana. User Lointier. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ ORSTOM	DOC/NOAA	Meteorology	ARGOS. Matemsis. User Recy. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ ORSTOM	DOC/NOAA	Meteorology	ARGOS. Caribbean rains. User Hoepffner. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
France/ ORSTOM	DOC/NOAA	Meteorology	ARGOS. St. Paul. User Morliere. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ ORSTOM	DOC/NOAA	Meteorology	ARGOS. EDF Guinee. User Gautier. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ ORSTOM	DOC/NOAA	Meteorology	ARGOS. ORSTOM L.H.N. User Colombani J. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ POT Autonome Marseilles	DOC/NOAA	Meteorology	ARGOS. Pampos 1. User Longe. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Space and Earth Sciences Laboratory for Oceans	NASA	Satellite hard- ware /technologies	Linkage created between satellite and ground based data; NASA has interest in providing improved measurements of surface parameters derived from satellite based sensors. This comparison of large area calibration light sources in connection with the SPOT program, will provide a direct calibration link b/t the satellite data and the ground based data.	EIF Sep 18, 1987	Data exchange	NS	FR0230
France/ TAAF	DOC/NOAA	Meteorology	ARGOS. MD/NAVI. User Balut. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
France/ Univ Savoie	DOC/NOAA	Meteorology	ARGOS. Kelut Lake. User Meulebrouck. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Germany	DOD/USAF	Defense	Cooperative Space Measurements.	Proposed (as of Jul 16, 1997)	Project	NS	TRDP PA (USAF)
Germany/ A Wegener Inst. Polar Res.	DOC/NOAA	Arctic/polar	ARGOS. Sea Ice Process. User Kottmeier. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Germany/ Biological Sta- tion Weisel	DOC/NOAA	Wildlife tracking	ARGOS. White Fronted Geese. User Moou. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

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Germany/ BMFT	NASA	Satellite hardware /technologies	MOU between NASA and Federal Ministry for Research and Technology of Germany for cooperative flights of the Spaceborne Imaging Radar (SIR) with the X Band Synthetic Aperture Radar (X SAR) (1993 launch). An amendment to the data policy is being negotiated.	EIF Oct 6, 1987, until one year after completion of final SIR-C/X-SAR shuttle mission; termination by either upon one year's written notice	MOU	NASA programmatic	No number listed
Germany/ DLR	NASA	Earth sciences	Establishing of interconnected directories describing data sets of interest to researchers in the Earth Sciences. DLR to contribute to establishment of a world-wide Directory Database providing files of the German Remote Sensing program. Agreement to install NASA Master Directory software on computers of the German Aerospace Research Establishment (DLR) in the second half of 1990.	EIF Oct 12, 1990	Data exchange	Each bears respective costs	No number listed
Germany/ GKSS Forschungszentrum	DOC/NOAA	Ocean studies	ARGOS. Full Scale Wave Measurements. User Ziemer. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Germany/ Group Birds of Prey	DOC/NOAA	Wildlife tracking	ARGOS. Lesser Spotted Eagle. User Meyburg. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Germany/ IFM Kiel	DOC/NOAA	Wildlife tracking	ARGOS. Humbolt Penguins. User Culik. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Germany/ Inst für Meereskunde	DOC/NOAA	Ocean studies	ARGOS. German Rafos [subsurface floats used as listening devices]. User Dr. Zenk Walter. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Germany/ Inst. für Naturschutz	DOC/NOAA	Wildlife tracking	ARGOS. Swan Goose. User Nowak. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

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Germany/ Seeschiffahrt & Hydrog	DOC/NOAA	Meteorology	ARGOS. Norwave. User Richter. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Germany/ Univ. Hambourg	DOC/NOAA	Ocean studies	ARGOS. Wassermassen IM Nordmeer. User Quadrafasel. D. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Germany/ Univ. Kiel	DOC/NOAA	Ocean studies	ARGOS. Warm Water. User Krauss. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Honduras	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF May 2, 1988, terminates May 31, 1998 (extended)	MOA	NS	NR
Honduras/ ENNE	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jan 23, 1995, terminates Feb 28, 2005	MOA	NS	NR
Iceland/ Marine Res. Inst.	DOC/NOAA	Wildlife tracking	ARGOS. Cod Spawning Grounds. User Malmberg. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
India/ NIO	DOC/NOAA	Ocean studies	ARGOS. Met Ocean Data Indian Ocean. User RAO. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Israel	NASA	Atmospheric sciences	Study the relation between the atmospheric and surface properties in the desert transition areas; will develop algorithms in preparation for the Earth Observing System mission.	EIF Jul 29, 1992	Cooperation	NS	No number listed
Israel/ Univ. of Haifa	DOC/NOAA	Wildlife tracking	ARGOS. White Pelicans. User Izahki. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

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Israel/ Univ. of Tel Aviv	DOC/NOAA	Wildlife tracking	ARGOS. Griffon Vulture. User Bahat. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Italy/ Agenzia Spaziale Italiana	NASA	Land use	Cooperative Multisensor Airborne Campaign (MAC Europe): characterizes the land, and will be acquired through use of the European Space Agency's Earth Remote Sensing Satellite.	EIF May 31, 1991	Cooperation	NS	No number listed
Italy/ Agenzia Spaziale Italiana	NASA	Satellite hardware / technologies	Laser Geodynamics Satellite-2.	EIF Feb 13, 1989	International	NS	No number listed
Italy/ ASI	NASA	Atmospheric sciences	Dr. Rolando Rizzi of the European Centre for Medium-Range Weather Forecasting will participate on the Instrument Team for the Atmospheric Infrared Sounder/Advanced Microwave Sounding Unit-A/Microwave Humidity Sounder (AIRS/AMSU/MHS) instruments. AIRS/AMSU/MHS is a Facility instrument of NASA's EOS.	EIF Jan 27, 1993 for duration of ASI-sponsored Team Member participation in the flight of the AIRS/AMSU/MHS instrument on the EOS PM-1 spacecraft; 3 mos written notice for withdrawal by either party	International	Each bears respective costs	No number listed
Italy/ CNR	NASA	Space sciences	Umbrella MOU between the National Research Council (CNR) of Italy superseded in 1988 by the Italian Space and NASA for cooperative development and the launch of the Lageos 2/IRIS using the Space Shuttle and the Italian Research Interim State (IRIS)...	EIF Mar 7, 1984, terminates Oct 22, 1994 (extended)	Umbrella MOU	NS	NR
Italy/ ENEA	DOC/NOAA	Meteorology	ARGOS. National research program. User Vallone C. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Italy/ Inst. Universario Navale	DOC/NOAA	Arctic/polar	ARGOS. Climatic Interaction Sea/Ice: ATM. User Spezie. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Italy/ Inst. Universario Navale	DOC/NOAA	Water manage- ment	ARGOS. Straits of Sicily. User Zambianchi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Italy/ NATO	DOC/NOAA	Meteorology	ARGOS. Expargos. User De Strobel. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Italy/ Stazione Zoologica	DOC/NOAA	Wildlife tracking	ARGOS. Rehabilitated Sea Turtles. User Bentivegna. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Italy/ Telecom Ital Spa	DOC/NOAA	Water manage- ment	ARGOS. Wave Buoy Network. User Baruzzi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan	DOC/NOAA	Satellite hard- ware/tech- nologies	Direct reception and distribution of Landsat data at Landsat ground station.	EIF Aug 11, 1983, duration contingent upon life span of Landsat 4 and 5	Data exchange	No U.S. funding	NR
Japan	NASA	Space sciences	Original letter agreement dated June 18, 1986, concerning cooperative effort b/t NASA, JPL, ISAS, the Tokyo Astrophysical Observatory and the Radio Research Laboratory resulting in first successful demonstration of use of a space vehicle in conjunction with ground observatories to perform orbiting very long baseline interferometry (OVLBI) observations to be extended to include the new 15 GHz observations.	EIF Feb 3, 1988 (extended)	Letter of agreement	NS	No num- ber listed
Japan/ Far Seas Fish Inst.	DOC/NOAA	Wildlife tracking	ARGOS. Northern Pacific Fur Seal Migration. User Baba. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Japan/ Fish Association	DOC/NOAA	Water manage- ment	ARGOS. Fishing Vessel New Caledonia. User Ueda. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Fisheries Agency	DOC/NOAA	Water manage- ment	ARGOS. Japan Fish Vessels. User Sagesaka. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Fisheries Association	DOC/NOAA	Water manage- ment	ARGOS. Japan Fish Vessels. User Tamaki. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Jamarc	DOC/NOAA	Wildlife tracking	ARGOS. Pelagic Fish Community. User Yuichi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Jamstec	DOC/NOAA	Meteorology	ARGOS. IOEB. User Nakanishi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Jamstec	DOC/NOAA	Ocean studies	ARGOS. R&D Marine Automatic Observation Technology. User Nobuyuki. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Japan Met Agency	DOC/NOAA	Ocean studies	ARGOS. Met/Ocean Research. User Noda. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.		MOA	NS	NR
Japan/ Jap MTO Agency	DOC/NOAA	Meteorology	ARGOS. Ker Research. User Kaneko. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Japan Resources Observation System Organi- zation (JAROS)	NASA	Atmospheric sci- ences	Advanced spaceborne thermal emission and reflection radiometer (ASTER) cooperative project.	EIF Jan 18, 1995	Coopera- tion	NS	No num- ber listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Japan/ JMA	NASA	Meteorology	Discussions on Geostationary Weather Satellites	EIF Sep 12, 1997; no specified termina- tion date	LOA		
Japan/ Mar Safety. A.G.	DOC/NOAA	Ocean studies	ARGOS. Kurushio current buoy tracking. User Osamu Yamada. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Meteo Inst.	DOC/NOAA	Ocean studies	ARGOS. Subsurface current study. User Shikama. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Ministry of Construction	DOC/NOAA	Meteorology	ARGOS. Monit Wave Observation. User Fukuchi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ MITI	NASA	Atmospheric sci- ences	MITI providing Advanced spaceborne Thermal Emission and Reflection Instrumentation for flight aboard NASA EOS-AMI spacecraft.	EIF Nov 7, 1996	Imple- menting arrange- ment		
Japan/ MONBUSHO	NASA	Ocean studies	Univ of Tokyo scientist as Investigator for "Application of Precise Altimetry to the Study of the Precise Leveling, the Earth's Gravity Field and the Rotation of the Earth" investigation as part of the TOPEX/POSEIDON mission. TOPEX/POSEIDON project is to measure the surface topography of the global oceans for 3 years with sufficient accuracy and precision to enable the determination of the ocean's general circulation as well as its mesoscale variability.	EIF Mar 24, 1989	Interna- tional	Each bears respective costs	No num- ber listed
Japan/ NASDA	NASA	Earth sciences	Cooperation on the JERS-1 satellite (JERS-1 system verification program).	EIF Mar 15, 1994	Coopera- tion	NS	No num- ber listed
Japan/ NASDA	NASA	Earth sciences	ERS-1 Development; Access to Fairbank Station, Data Available from Fairbanks Station, Provision of Tape Dumping, Exchange of Earth Observation Data (MOU).	EIF Jan 19, 1988	MOU	NS	No num- ber listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Japan/ NASDA	NASA	Global change studies	EOS project investigation of the atmosphere-ocean-land system related to climatic processes; an investigation for data analysis and modeling, preparing and using the Earth Observing System.	EIF Aug 1, 1995	Data exchange	NS	No num- ber listed
Japan/ NASDA	NASA	Ocean studies	Cooperative data reception between NASDA, NASA, and Univ. of HI in direct reception by the UH of Japanese remote sensing data by JERS-1 and Marine Observation Satellite (MOS-1b).	EIF Mar 18, 1996	Data exchange	NS	No num- ber listed
Japan/ NASDA	NASA	Water manage- ment	Tropical rainfall measuring mission: advances the Earth System science objective of understanding the global energy and water cycle by means of providing distributions of rainfall and inferred heat over the global tropics; clarifies the mechanism through which tropical rainfall and its variability influence global circulation; evaluate a space based system for rainfall measurement.	EIF Oct 20, 1995	Interna- tional	NS	No num- ber listed
Japan/ Nat Res Inst Far Seas Fish	DOC/NOAA	Wildlife tracking	ARGOS. Sea Turtle. User Okamoto. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Nesdis General	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	NR	MOA	NS	NR
Japan/ NIES	NASA	Atmospheric sci- ences	Dr. Akira Koizumi, Principle Investigator aboard the NASA DC-8 aircraft which will conduct one of a series of Pacific Exploratory Missions in the Pacific Basin Region. The objective is to study the natural budget of ozone and its precursors over the western Pacific and to assess the anthropogenic impact on the environmental health of the troposphere in this region.	EIF Aug 12, 1991	Interna- tional	Each bears respective costs	No num- ber listed
Japan/ NIPR	DOC/NOAA	Arctic/Polar	ARGOS. Japanese Antarctic Research Expedition (JARE). User Fujii. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

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Japan/ Pac Salmon & Trout Fish	DOC/NOAA	Water manage- ment	ARGOS. Salmon Fishing Vessels. User Yoshida. The ARGOS system is oper- ated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Remote Sens- ing Tech Cen	DOC/NOAA	Global change studies	ARGOS. Global Mapping Chlorophyll. User Koyana. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Univ. of Tokyo	DOC/NOAA	Water manage- ment	ARGOS. Circ & Transp Along Kurushio. User Sugimoto. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ University of Tokyo	NASA	Global change studies	NASA will provide transcription of the NOAA-9, NOAA-14 AVHRR data sets to Univ. of Tokyo; involve Japanese scientists in analysis and research using large global change research .	EIF May 31, 1995	Data exchange	NS	No num- ber listed
Japan/ Wild Bird Society	DOC/NOAA	Wildlife tracking	ARGOS. Migration Studies of Cranes. User Seiichi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Japan/ Yamashina Inst Ornitho	DOC/NOAA	Ocean studies	ARGOS. Shelduck Isayaba Bay. User Yoshi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Korea/ Fish Association	DOC/NOAA	Wildlife tracking	ARGOS. Fish Activity Monitoring. User Chang. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Korea/ KIGAM	DOI/USGS	Earth sciences	MOU between DOI/USGS and the Korean Institute of Geology, Mining and Materials (KIGAM) covering a broad range of geological issues including resources, remote sensing, and mapping.	EIF (Aug 4, 1989) Dec 1, 1993, termi- nates Dec 10, 1998	MOU	NS	NR
Korea/ Kordi	DOC/NOAA	Meteorology	ARGOS. World Ocean Circulation Experiment (WOCE) Surface Velocity Pro- gram (SVP) Kordi. User Lie. The ARGOS system is operated to support envi- ronmental applications including weather, ocean studies, and wildlife track- ing.	NR	MOA	NS	NR
Korea/ Kordi	DOC/NOAA	Meteorology	ARGOS. Marado. User Park. The ARGOS system is operated to support envi- ronmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Korea/ Rural Devt Corp	DOC/NOAA	Meteorology	ARGOS. SMKWMP. User Lee. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Mexico/ Los Servicios de Salud	NASA	Natural disaster prevention /monitoring	Biospheric Modeling and Disease Prediction deploys research aircraft to collect remote sensing data over the Mexican Study Area.	EIF Jan 12, 1989	International	NS	No number listed
Mexico/ Marina	NASA	Space sciences	Collection of Scientific Data through satellite laser ranging from sites near Mazatlan, Sinaloa, Cabo San Lucas, Baja California Sur.	EIF Nov 7, 1988	International	NS	No number listed
Mexico/ Nat. Met. Service	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF May 7, 1984, terminates May 7, 1994 (extended)	MOA	NS	NR
Mexico/ SIMEPAR	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Mar 24, 1995, terminates Mar 31, 2005	MOA	NS	NR
Morocco/ Off. Exp. Des Ports	DOC/NOAA	Meteorology	ARGOS. Mohammedia Terminal. User Messoudi. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Netherlands/ ATO	DOC/NOAA	Water management	ARGOS. Holland Marine. User Broersma. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Netherlands/ Center for Environm. Sci.	DOC/NOAA	Wildlife tracking	ARGOS. Elephant Migration in Northern Cameroon. User De Iongh. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Netherlands/ Inst for Marine	DOC/NOAA	Arctic/polar	ARGOS. Land Ice & Sea Level Change. User Boots. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Netherlands/ Inst of Ecology	DOC/NOAA	Wildlife tracking	ARGOS. Bewik's Swan 1996. User Beeckman. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Netherlands/ Neth. Inst. Oceanic Res.	DOC/NOAA	Water management	ARGOS. Dutch Warp (et 9878). User Van Aken. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Netherlands/ R. N. Met. Inst	DOC/NOAA	Meteorology	ARGOS. Cost 43 Soba. User Oost. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Netherlands/ Univ of Gronigen	DOC/NOAA	Meteorology	ARGOS. Dev: Teching and Research. User Schoenmaker. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
New Zealand/ Maf Fish Research	DOC/NOAA	Wildlife tracking	ARGOS. Biomass Orange Roughy [fish biological studies]. User Zeldis. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
New Zealand/ N.Z. Met. Off	DOC/NOAA	Meteorology	ARGOS. Drifting Buoys for Toga experiment. User Hickman. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
New Zealand/ Nat Inst Water & Atmos	DOC/NOAA	Water management	ARGOS. NIWA MAT Buoy. User Greig. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
New Zealand/ Nat Inst Water & ORNYT	DOC/NOAA	Wildlife tracking	ARGOS. Bullers's Mollyhawk. User Sagar. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Nicaragua/ Institute of Terrestrial Studies	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Feb 22, 1994, terminates Feb 28, 2004	MOA	NS	NR
Niger/ UNPD	DOC/NOAA	Water management	ARGOS. Niger water level monitoring. User Barry. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Norway/ Ch. Michelsen	DOC/NOAA	Meteorology	ARGOS. Soba Norway. User Kvinge. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Directorate of Fish	DOC/NOAA	Water manage- ment	ARGOS. Fishing Vessel Monitoring. User Davidsen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Mar. Res. Ins	DOC/NOAA	Wildlife tracking	ARGOS. Fish Larvae. User Sundby. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ NHL	DOC/NOAA	Water manage- ment	ARGOS. Nor. Hydro. User Saetre. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Nor. Met. Off	DOC/NOAA	Meteorology	ARGOS. Norobs. User Jensen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Nor. Met. Off	DOC/NOAA	Meteorology	ARGOS. Seanor. User Jensen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Nor. Met. Off	DOC/NOAA	Meteorology	ARGOS. Seanor. User Jensen (distinct from above agreement) The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Nor. Met. Off	DOC/NOAA	Meteorology	ARGOS. Cost 43 Soba. User Jensen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Nor. Pol. Inst	DOC/NOAA	Arctic/polar	ARGOS. Ice Drift Experiment (ICEX). User Vinje. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Nor. Pol. Inst	DOC/NOAA	Wildlife tracking	ARGOS. Reindeer Polar Bear TLTY. User Oritsland. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Norway/ Norw Inst Nature Res	DOC/NOAA	Wildlife tracking	ARGOS. Scandinavian Bear Project. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Norw Polar Insttit	DOC/NOAA	Wildlife tracking	ARGOS. Terrestria Mammals Svalbard [Arctic mammals]. User Oritsland. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Oceanor	DOC/NOAA	Water manage- ment	ARGOS. Nor. Hydro. User Kollstad. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Seatex	DOC/NOAA	Ocean studies	ARGOS. Testing of Metocean Data Buoys. User Fossum B. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Sintef	DOC/NOAA	Meteorology	ARGOS. Norid. User Torsethaugen. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Statoil	DOC/NOAA	Meteorology	ARGOS. Heidrun. User Lien. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ Univ Tromsoe	DOC/NOAA	Wildlife tracking	ARGOS. Harp Seal Positioning. User Folkow. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Norway/ UOB	DOI/USGS	Ocean studies	Scientific and technical cooperation in the earth sciences, including remote sensing and monitoring of sea ice, oceans and snow, with the University of Bergen.	EIF (Sep 3, 1992) Nov 3, 1992, termi- nates (Dec 31, 2001) Sep 3, 2002	MOU (extended)	NS	NR
Pakistan	DOC/NOAA	Satellite hard- ware /technologies	Direct reception and distribution of Landsat data at Landsat ground station.	EIF Nov 26, 1984, terminates upon completion of Landsat 4 and 5	Data exchange	No U.S. funding	NR
Pakistan/ Suparco	DOC/NOAA	Ocean studies	ARGOS. Met. Hydro. Ocea. User Mirza. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Panama/ IRHE	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jun 2, 1983, terminates Jun 30, 1983, canceled Jun 30, 1983 (extended)	MOA	NS	NR
Panama/ Panama Canal Watershed	Smithsonian Tropical Research Institute in Panama City /USGS	Land use	Natural Resources Management Project. Establishment of a natural resource monitoring system of the Panama Canal Watershed. Provide a base of referenced information for long-term ecological monitoring and land use management within the Panama Canal Watershed. To evaluate forest cover changes in the Panama Canal Zone Watershed. Remotely sensed data is provided by USGS.	EIF Mar 29, 1996, terminates Jun 7, 1998	Grant	\$1,540,435 funded by the U.S. Agency for Inter- national Develop- ment	166978
Peru/ IGP SENAMHI	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Apr 12, 1985, terminates Apr 30, 1990 (extended)	MOA	NS	NR
Peru/ Ministro Des Pesqui	DOC/NOAA	Meteorology	ARGOS. Inempes. User Ramirez. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Russia	NASA	Global change studies	Agreement with the Russian Academy of Sciences (RAS) for the application of space geodesy to the solution of important scientific problems to earth science and global change research contributing to NASA's Dynamics of the Solid Earth (DOSE) program...	EIF Feb 25, 1994, terminates Feb 28, 2004	Interna- tional	NS	NR
Russia	EPA	Global change studies	Sequel to the US-USSR Environment Agreement. Projects include atmosphere, water and soil resources; marine and coastal areas and resources; arctic and subarctic areas and resources; global environmental issues; the impact of environmental factories on humans.	NR	NR	NS	NR
Russia (USSR)/ Russian Space Agency	NASA	Atmospheric sci- ences	MOU regarding the Stratospheric Aerosol and Gas Experiment (SAGE)III and a Total Ozone Mapping Spectrometer (TOMS) aboard Russian Meteor-3M Spacecraft, which purpose is to downlink the data collected by the NASA pro- vided instruments to both parties for scientific processing analysis, and a comparison of results.	EIF Feb 22, 1995	MOU	Each bears respective costs	No num- ber listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Russia (USSR)/ Space Geodesy Department	NASA	Global change studies	The goal of this cooperation would be the application of space geodesy to the solution of important scientific problems in earth science and global change research using VLBI, SLR, GPS, and GLONASS.	EIF Feb 25, 1994	Coopera- tion	Each bears own costs, except the transport of all NASA equip- ment will be paid for by NASA	No num- ber listed
Saudi Arabia	DOC/NOAA	Satellite hard- ware / technologies	Direct reception & distribution of Landsat data at Landsat ground station.	EIF Sep 25, 1984, duration contingent upon life span of Landsat 4 and 5	Data exchange	No U.S. funding	NR
Saudi Arabia	NASA	Earth sciences	Dr. Abdallah Essa Dabbagh will perform Geologic and Hydrologic Studies of Saudi Arabia Under the Shuttle Imaging Radar (SIR-C).	EIF Aug 20, 1994 until four years after second launch of SIR-C unless termi- nated upon 6 mos written notice; may be extended or amended	Interna- tional	Each bears respective costs	No num- ber listed
Senegal/ Orstom	DOC/NOAA	Meteorology	ARGOS. Deb. Gest .OUV. Senegal. User Lamagat. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
South Africa	DOC/NOAA	Satellite hard- ware / technologies	Direct reception and distribution of Landsat data at Landsat ground station.	EIF Oct 19, 1983, indefinite duration	Data exchange	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
South Africa/ SAWB	DOC/NOAA	Meteorology	ARGOS. Sawbex weather buoys. User Le Roux. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
South Arabia/ Univ of Witwaterstand	DOC/NOAA	Wildlife tracking	ARGOS. White Faced Whistling Ducks. User Petrie. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Spain/ Azti AB	DOC/NOAA	Meteorology	ARGOS. Azti. User Uriarte. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Spain/ Cent Estud Puerto Y Cost	DOC/NOAA	Meteorology	ARGOS. Remro/Medidas Oceano/Martinez. User Lopez. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Spain/ Generalitat Catalunia	DOC/NOAA	Meteorology	ARGOS. Xarxa. User Gerard. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Sweden/ SMHI	DOC/NOAA	Meteorology	ARGOS. Swedish Meteorological Argos Stations. User Wennerberg G. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Taiwan/ Endemic Species Research	DOC/NOAA	Wildlife tracking	ARGOS. Black-Faced Spoonbills. User Cheug-Te. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Taiwan/ Nat Taiwan Ocean Univ	DOC/NOAA	Meteorology	ARGOS. Kurushio/Taiwan Strait. User Hu. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Taiwan/ Taiwan Fish Assn	DOC/NOAA	Wildlife tracking	ARGOS. Taiwan Fish Act. User Wu. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Thailand	DOC/NOAA	Satellite hardware/ technologies	Direct reception and distribution of Landsat data at Landsat ground station.	EIF Sep 18, 1985, terminates upon conclusion of Landsat 4 and 5	Data exchange	No U.S. funding	NR
Tunisia/ Dir Gen Resources En EAI	DOC/NOAA	Water management	ARGOS. Tunisian hydrological natural reserves. User Bacha. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Tunisia/ Minist Agri	DOC/NOAA	Meteorology	ARGOS. LACS Collinaires. User Missaoui. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UAE/ Nat Avian Research Cent	DOC/NOAA	Wildlife tracking	ARGOS. Houbara Bustard & Sakar Falcon. User Osborne. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK	NASA	Global change studies	Dr. Jan-Peter Muller (Univ. Coll. London) to participate on the Instrument Team for the Moderate-Resolution Imaging Spectrometer (MODIS). MODIS is a facility instrument of NASA's EOS and is designed to measure both biological and physical processes on a global basis.	EIF Sep 11, 1992 for the duration of BNSC-sponsored Team Member participation in the flight of the MODIS instrument on the EOS AM-1 and EOS PM-1 spacecraft; termination upon 3 mos written notice.	International	Each bears respective costs	No number listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
UK	NASA	Mapping	Dr. Jan-Peter Muller will participate on the Instrument Team for the Multi-Angle Imaging Spectro-Radiometer (MISR). The objectives of the MISR investigation are to provide global maps of planetary and surface albedo, and aerosol and vegetation properties.	EIF Sep 11, 1992 for the duration of BNSC-sponsored co-Investigator participation in the flight of the MISR instrument on the EOS AM-1 spacecraft; termination upon 3 mos written notice	International	Each bears respective costs	No number listed
UK/ BMO	NASA	Global change studies	Agreement to participate in joint activity in cloud climatology research entitled the First International Satellite Cloud Climatology Project (ISCCP) Regional Experiment (FIRE). Intended to study those clouds which play important roles in the Earth's global climate. FIRE will measure the radiative and physical properties of cirrus and marine stratocumulus clouds over the continental US and its coastal regions. Msmts. made from variety of satellite, airborne, & surface platforms over space and time.	EIF Jun 5, 1987	Cooperation	Each bears respective costs	No number listed
UK/ BNSC	NASA	Atmospheric sciences	Interim Agreement: Collaboration of the Natural Environment Research Council (NERC) in collaboration with the British National Space Center (BNSC) on the High-Resolution Dynamics Limb Sounder (HIRDLS) programme. HIRDLS is an infrared limb-scanning radiometer designed to sound: the upper troposphere, stratosphere, and mesosphere to determine temperature; measure concentrations of ozone, water, methane, and aerosols; and study polar stratospheric clouds and cloud tops.	EIF Jun 15, 1994 until EIF of a subsequent agreement for the development and operation phases	International	Each bears respective costs	No number listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
UK/ BNSC	NASA	Atmospheric sciences	Dr. John Pyle's project "Chemical, Dynamical, and Radiative Interactions through the middle atmosphere and thermosphere" will be an EOS interdisciplinary science investigation for data analysis and modeling, preparing for and using the Earth Observing System (EOS).	EIF Jul 13, 1994 for the duration of the BNSC-sponsored Principle Investigator's participation in the EOS interdisciplinary science investigation; termination upon 3 mos written notice	International	Each bears respective costs	No number listed
UK/ Brit. Antarc Survey	DOC/NOAA	Arctic/polar	ARGOS. Ronne Ice Shelf. User Nicholls. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ British Antarctic Survey	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Nov 11, 1987, terminates Nov 30, 1997 (extended)	MOA	NS	NR
UK/ Country Side Council	DOC/NOAA	Meteorology	ARGOS. Skomer Integrated Monitoring. User Bullimore. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Fishing Lab	DOC/NOAA	Wildlife tracking	ARGOS. Herring Larval Drift. User Read. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Institute of Hydrology	NASA	Land use	Dr. Richard J. Harding's project "The Regional Representation of the energy and Moisture Fluxes from Snow Covered Areas in the BOREAS experiment" will be included in the Boreal Ecosystem-Atmosphere Study (BOREAS). Focusing on the representation of open snow surfaces, snow covered forest, and snow free areas within a single GCM grid square.	EIF Sep 9, 1993 until 3 years after the last BOREAS field campaign, unless terminated upon 6 mos written notice; may be extended or amended	International	Each bears respective costs	No number listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
UK/ Institute of Hydrology	NASA	Land use	Dr. Paul G. Jarvis's project "the CO2 exchanges of Boreal Forest in BOREAS" will be part of the Boreal Ecosystem-Atmosphere Study (BOREAS). Satellite data sets will be provided according to established US/Canadian data policies. The Terrestrial Initiative in Global Environmental Research (TIGER) programme of the Natural Environment Research Council (NERC) will use its best efforts to assure fulfillment of the responsibilities of Dr Jarvis.	EIF Sep 8, 1993 until 3 years after the last BOREAS field campaign; termination upon 6 mos written notice	International	Each bears respective costs	No number listed
UK/ Meteorological Office	DOC/NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Oct 17, 1986, terminates Oct 31, 1996 (extended)	MOA	NS	NR
UK/ Ministry of Defense	NASA	Ocean studies	Agreement for the loan of an AC-9 spectral absorption/attenuation meter and computer to the Plymouth Marine Laboratory (PML) for a period of five years beginning in July 1995. NASA and PML are working together on an investigation with NASA's Sea-Viewing Wide Field Sensor (SeaWiFS) program, entitled British Antarctic Survey (BAS) Cruises. The meter will be used to measure various optical properties of oceanic, coastal, and estuarine waters over nine different wavelengths.	EIF Jul 7, 1995 terminates Jul 7, 2000 or upon 5 days written notice; may be amended or extended	International	Each bears respective costs	No number listed
UK/ Mouk	DOC/NOAA	Ocean studies	ARGOS. Ocean Data Acquisition System (ODAS) project 20 (85). User Bentley. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Mouk	DOC/NOAA	Meteorology	ARGOS. Soba UK. User Painting. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Nat Env Res Council	DOC/NOAA	Meteorology	ARGOS. Lois Ses. User Meldrum. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ NERC	DOI/USGS	Ocean studies	Cooperation with the National Environment Research Council on earth sciences & environmental studies. Sea floor sonar imaging, surveys using the Geologic Long-Range Inclined ASDIC (GLORIA) system.	EIF Oct 12, 1994, terminates Oct 12, 1999	MOU	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
UK/ Plymouth Marine Laboratory	DOC/NOAA	Meteorology	ARGOS. Bofs. User Pingree. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Proudman Oceano Lab	DOC/NOAA	Ocean studies	ARGOS. Ocean current profiles. User Howarth. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ School Ocean Sciences	DOC/NOAA	Ocean studies	ARGOS. North Sea Frontal Exp. [ocean experiment]. User Matthews. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Sea Mam. R.U.	DOC/NOAA	Wildlife tracking	ARGOS. UK Seals. User Macconnell. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Univ of Wales	DOC/NOAA	Ocean studies	ARGOS. Eddies in Faroe-Shetland. User Sherwin. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Univ of Wales	DOC/NOAA	Ocean studies	ARGOS. Seasonal Gyres Coastal Sea. User Hill. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Univ Oxford	DOC/NOAA	Wildlife tracking	ARGOS. Houbara Bustards [birds]. User McDonald. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
UK/ Wimpol LD	DOC/NOAA	Ocean studies	ARGOS. Wave Measurement. User Payne R. The ARGOS system is operated to support environmental applications including weather, ocean studies, and wildlife tracking.	NR	MOA	NS	NR
Venezuela	DOC/ NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Jun 30, 1988, terminates Jun 30, 1993 (extended)	MOA	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Venezuela/ Edelca	DOC/ NOAA	Meteorology	International User of Geostationary Operational Environmental Satellite (GOES) Data Collection System (DCS). The use of GOES DCS is strictly limited to monitoring environmental parameters (meteorology, ocean studies, earth sciences, global change, etc.).	EIF Sep 6, 1994, terminates Sep 30, 2004	MOA	NS	NR
Venezuela/ Instituto de Ingenieria	NASA	Ocean studies	The Ocean Biogeochemistry Program at NASA is interested in establishing a collaborative program with Venezuelan govt. institutions to collect, archive, and distribute high resolution Advanced Very High Resolution Radiometer (AVHRR) and SeaWiFS satellite. data over northern South America and the Caribbean Sea.	EIF Oct 28, 1993	Collaborative	NASA makes a loan of the equipment	No number listed
Zimbabwe/ ZGSD	DOI/USGS	Earth sciences	MOU between DOI/USGS and the Geologic Survey Department of the Republic of Zimbabwe concerning Scientific and Technical Cooperation in the Earth Sciences. Areas include regional geochemistry, geophysics, geologic mapping, remote sensing, geographic information systems (GIS), and databases and information dissemination. Includes IPR Annex.	EIF Aug 12 (Sep 28), 1993, terminates Aug 12 (Sep 28), 1998	MOU	NS	NR

B List: Indirectly Related Agreements

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Albania/ Topographic Institute, Min- istry of Defense	DoD/DMA	Mapping	The agreement provides the basis for free exchange of unique mapping information and the provision of technical assistance and expertise by DMA to the Military Topographic Institute of Albania to achieve and maintain standardization and interoperability of specifications, production processes, products and mapping equipment.	EIF25 March 1994	Bilateral	NS	AB25C94A
Argentina	DoD/DMA	Mapping	To establish an understanding the authorities of the Instituto Militar and those of the Defense Agency, according to the Technical and Scientific Projects and in confirmation of discussions representatives of both governments the desirability of cooperation assistance in cartography and well as the exchange of cartograms and related information.	EIF1983		NS	AR11G83A
Argentina/ Comision Nacional de Investigaciones Espaciales	NASA	Earth sciences	Establishing interconnected directories describing data sets of interest to researchers in the Earth and Space Sciences. Directories are a logical step to solving some of the data management and data info. problems associated w/ programs like EOS & IGBP.	EIF Aug 13, 1993	Data exchange	Each bears respective costs	AR0031
Argentina/ Fuerza Aerea Argentina	DoD/ Defense Mapping Agency	Mapping	Cooperation and mutual assistance in Mapping, Charting and Geodesy (MC&F) and the exchange of aeronautical data and related information between DMA and Fuerza Aera Argentina MOU: 1. Coordinate and exchange operational requirement information to include annual programs and periodic product reports. 2. Exchange aeronautical data and related info. 3. Facilitate production program...	EIF 1981	MOU	NS	AR23F81A
Argentina/ Instituto Geografico Militar	DoD/DMA	Mapping	Sharing of mapping, charting, and geodesy data.	EIF1991		NS	AR30191A
Argentina/ Naval of Argentina/ Argentina Navy	DoD/DMA	Mapping	This agreement is an umbrella agreement which combines the referenced agreement and establishes mutual cooperation for nautical cartography and hydrography. General areas of cooperation include: exchange of maps, charts, technical data, and reproduction materials; exchange of techniques, processes, and equipment; and training of personnel.	EIF18 June 1991	Bilateral	NS	AR18F91A

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Argentina/ Servicio de Hidrografia Naval of Argentina	DoD/DMA	Mapping	Servicio de Hidrografia Naval (SHN) de la concerning cooperation and mutual assistance in mapping, charting, and geodesy, as well as the exchange of maps, charts, digital products and related data, and to serve as the basic reference in the implementation of the said cooperation.	EIF 1981		NS	AR23F81A
Australia	DoD/ USAF	Atmospheric sci- ences	GPS Ionospheric Scintillation Monitors.	Proposed (as of Jul 16, 1997)	Loan	NS	LOAN
Australia	DoD/ USAF	Defense	Radar Synoptic Performance Modeling.	In force	Project	NS	PA (USAF)
Australia	NASA	Atmospheric sci- ences	Extension of agreement signed 7/24/85 for long and short-duration flights of scientific balloons originating in and from Australia.	NR	Interna- tional (extension)	NASA program- matic	NR
Australia	NASA	Satellite hard- ware/ technologies	Installation and operation of NASA tracking stations in Australia, original agreement amended several times to extend the termination date and to add additional facilities...	NR	Interna- tional (extension)	NS	NR
Australia/ AUSLIG	NASA	Space sciences	Continued geodetic cooperation. NASA and AUSLIG will continue to cooperate, leading to further achievements in all areas of space geodesy, i.e., satellite laser ranging (SLR), lunar laser ranging (LLR), global positioning system (GPS), very long baseline interferometry (VLBI), radar interferometry, and altimetry.	EIF Dec 19, 1995, terminates Dec 19, 2005; termi- nates upon 6 mos written notice; may be amended or extended	Interna- tional	Each bears respective costs	AS0166
Australia/ CSIRO	NASA	Satellite hard- ware / technologies	Extension of Sep 1987 agreement for analysis of AVHRR data from NOAA-7 and NOAA-9 for Australia. The extension expands research work on the analysis of AVHRR data through 1990.	EIF Jun 25, 1990	Data exchange (extension)	CSIRO pays \$16,500 as estimated costs of AVHRR data pro- cessing	AS0137

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Australia/ Department of Defense of Australia	DoD	Defense	MOU: the loan of Laser Airborne Depth Sounder (LADS) Airborne and Ground Processing Equipment. Australia will loan the U.S. required airborne and ground support equipment to enable installation, test and evaluation of the RAN Laser Airborne Depth sonar (LADS) system in a US Navy P-3 aircraft	EIF 16 November 1995; terminate 16 November 1997 (extended)	MOU	NS	AS16K95A
Australia/ DIST	NASA	Atmospheric sciences	Agreement concerning the conduct of a scientific balloon program based in Australia, including long duration flights from Australian territory.	EIF Mar 10, 1995; may be amended or extended; termination upon 90 days written notice	International	Each bears respective costs	AS0164
Australia/ Headquarters Australian Defence Force (Operations)	DoD/DMA	Mapping	Implementing Annex is to define arrangements for the exchange of digital data, related MC&G materials, and provisions for coproduction and technical support (when applicable) pursuant to Memo of Mapping, Charting, and Geodesy (MC&G) Arrangements b/t US DoD and DMA dtd 29 August 1973. This Annex is intended to promote conformance of Australian produced MC&G products to USA MC&G standards and formats and ensure maximum interoperability of coproduced products.	EIF 1996		NS	AS16D96A
Belgium/ Laboratoire de Telecommuni- cations et Teledetection	NASA	Ocean studies	Investigate theoretically and experimentally space borne radar response to wind-generated sea surface waves caused by rainfall on the ocean surface.	EIF May 12, 1992	Cooperation	Each bears respective costs	BE0024
Belgium/ Ministry of National Defence (Kingdom of Belgium)	DoD/DMA	Mapping	The basic agreement states the intent of the two parties to cooperate in a broad range of Mapping, Charting, and Geodesy (MC&G) activities, including product exchange, joint production and technical consulting	EIF1 March 1994; no specified termination date	Bilateral	NS	BE01C94A
Belgium/ Service de la Recherche Scientifique	NASA	Atmospheric sciences	An agreement covering the balloon launch, flight, and recovery of a grating spectrometer which will be flown at a high altitude.	EIF Jun 7, 1993	International	NS	BE0025

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Brazil/ Brazilian Space Agency	NASA	Earth sciences	Balloon launch twice a month so that correlations may be made with satellite data.	EIF Sep 1990 until Sep 1998	Coopera- tion	NS	BR0087
Brazil/ SUDAM	USDA/ Forest Ser- vice	Satellite hard- ware / technologies	Cooperation of the International Institute for Tropical Forestry with SUDAM (developmental organization in Brazil, part of the Brazilian government) for technology transfer and GPS.	EIF 1994, termi- nates Sep 30, 1997 (extended)	Informal	NS	NR
Canada	DOC/ NOAA	Space Tech- nologies	Direct reception/distribution of Landsat data at Landsat ground station.	EIF	Data exchange	NS. No U.S. fund- ing.	NR
Canada	DoD/ USAF	Defense	Space-Based Surveillance and Space System Technologies.	In force	Data exchange	NS	AF-93-CA- 7008
Canada	DoD/ USAF	Defense	Airborne Reconnaissance Imagery Data Management and Exploitation.	Proposed (as of Jul 16, 1997)	Data exchange	NS	AF-95-CA- XXXX
Canada	DOI/ USGS	Global change studies	Joint studies of hydrologic impacts of climate change in Red River Basin, Canada.	EIF Sep 1, 1989, indefinite dura- tion	Interna- tional	about \$500,000 annually. USG funds \$90,000. Canada funds its participa- tion.	NR
Canada	DOT	Local/ regional pollu- tion	Spill Response Technology. MOU provides for USCG and Environment Canada cooperation in pollution control research and development.	EIF Jul 31, 1992, terminates Jul 31, 1997 (extended)	MOU	NS	NR
Canada/ Atmospheric Environment Service	DOC/ NOAA	Atmospheric sci- ences	MOU with Atmosphere Environment Service Canada to improve climate cooperation and coordination between agencies.	EIF Jun 28, 1985, terminates Sep 27, 1995 (extended)	MOU	Termina- tion con- tingent to life span of Landsat 4 and 5	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Canada/ CSA	NASA	Atmospheric sciences	Cooperative sounding rocket campaign to model airflow and atmospheric processes in the lower atmosphere. Entitled GEMINI. GEMINI will provide a comprehensive data set which will include height profiles of airflow and component densities.	EIF Apr 8, 1993 until completion of GEMINI cooperative project or upon written notice of either party	International	Each bears respective costs	CA0260
Canada/ CSA	NASA	Space sciences	Change of Waves in Space Plasma (WISP) Experiment from Orbital Maneuvering vehicle to NASA's ATLAS 4 mission. Objectives: to study the interaction of electromagnetic wave with the Earth's plasma environment and the generation, propagation and detection of plasma waves in the ionosphere. Mission scenario developed using the WISP Experiment and NASA's deployable SPARTAN satellite.	EIF Oct 21, 1991	International	Each bears respective costs	CA0227
Chile	DOI/ USGS	Mapping	Scientific cooperation in the Earth Sciences with Chile's Servicio Nacional de Geología y Minería. Geologic mapping and geochronologic study of El Salvador.	EIF Aug 26, 1982, duration indefinite	Cooperation	NS	NR
Chile	NASA	Earth sciences	Renewal of agreement signed Dec 20, 1982. Continue measurement of certain baselines b/t stations in Andean region using satellite laser ranging systems to determine regional deformations and strain accumulations along the western coast of South America, and baselines b/t a station at Easter Island and stations along the west coast of S.A. and in the Pacific to determine relative plate motion b/t the Nazca, South American, and Pacific plates.	EIF Mar 8, 1990, termination upon one year written notice; amended Apr 20, 1993	International	NS	CI 0003, CI0018
China	DOC/ NOAA	Meteorology	Direct reception and distribution of Landsat data at Landsat ground station.	EIF	Data exchange	NS. No U.S. funding	NR
China	DOC/ NOAA	Ocean studies	Bilateral agreement dealing with marine science and research using available data from ground and remote sensing sources.	NR	Bilateral	Each bears respective costs	

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
China/ CAS	DOC/ NOAA	Atmospheric sci- ences	Protocol on Cooperation in Atmospheric S&T; joint meteorological studies; training; other participating agencies NSF and NASA, Chinese CAS, National Natu...	EIF May 8, 1979, terminates May 9, 1999	Protocol	NS	NR
China/ MBSM	DOI/ USGS	Mapping	Protocol for cooperation in Surveying and Mapping with National Bureau of Surveying and Mapping.	EIF Apr 30, 1996, terminates Apr 30, 2001	MOU	NS	NR
Costa Rica	USDA/ USFS	Land use	International Institute for Tropical Forestry performing an assessment of need for GPS/GIS application and technology transfer.	EIF Aug 1997	Informal	NS	NR
Costa Rica/ Ministry of Transportation and Public Works	DoD/DMA	Mapping	Basic exchange and cooperative agreement—topographic mapping, nautical and aeronautical charting and information, geodesy and geophysics, digital data and related mapping, charting and geodesy materials.	EIF2 July 1996; no specified termi- nation date	Basic Exchange and Coopera- tive	NS	CR02G96A
Denmark/ The Chief of Defence	DoD/DMA	Mapping	Mapping, Charting, and Geodesy Cooperation	EIF1996	NR	NS	DE07B96A
Djibouti/ ISERST	DOI/ USGS	Mapping	MOU signed between DOI(USGS) and the Institut Superieur pour les Etudes et la Recherche Scientifique et Technique of the Republic of Djibouti (ISERST) to pursue S&T cooperation in the geological and cartographic sciences. Areas of cooperation include geology, hydrology, remote sensing, cartography, com-puter sciences, and geographic information systems (GIS).	EIF Dec 9, 1993, terminates Dec 9, 1998	MOU	NS	NR
Dominican Republic/ State Secretariat of the Armed Forces	DoD/DMA	Defense	Basic exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting and information, geodesy and geophysics, digital data, and related mapping, charting & geodesy materials	NR	Basic Exchange and Coopera- tive	NS	DO25195A
Eastern Caribbean Station (ECS)	FAA/ AIA	Space sciences	FAA to provide assistance to Antigua and Barbuda to fulfill the country's needs for the ICAO World Geodetic Survey (WGS-84) and GPS requirements.	EIF Jan 25, 1996	MOA Umbrella	NS	NAT-I- 3341

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Egypt/ EGS	DOI/ USGS	Earth sciences	Cooperation in the earth sciences with the Egyptian Geological Survey.	EIF Sep 26, 1994, terminates Sep 26, 1999	MOU	NS	NR
El Salvador/ National Registration Centre	DoD/DMA	Mapping	Basic exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting and information, geodesy and geophysics, digital data, and related mapping, charting & geodesy materials	EIF 22 May 1996		NS	ES22E96A
European Community	DOS	Local/ regional pollu- tion	Letters establishing the framework for cooperative environmental activity. Initial areas of interest include exchange of information on methods of analysis and measurement of certain air and water pollutants.	EIF Jul 1, 1974, duration indefi- nite	Letters of intent	NS	NR
France	DOC/ NOAA	Ocean studies	U.S. France Cooperation in Oceanography; joint multidisciplinary oceanographic research; information and data exchanges.	EIF Nov 1, 1970, duration indefi- nite	Data/ Informa- tion Exchange	NS	NR
France	DoD/ USAF	Defense	Military Space Cooperation.	In force	MOA	NS	MOA (D0D)
France	DoD/ USAF	Global change studies	Optical Properties of the Environment.	In force	Data exchange	NS	AF-93-F- 7358
France/ French Center National D'Etudes Spatiales	NASA	Satellite hard- ware/tech- nologies	Experimental system for using GPS radio metric tracking data to determine the orbits for low orbiting earth satellites.	EIF Oct 1, 1992	Coopera- tion	NS	FR0353
France/ French Center National D'Etudes Spatiales	NASA	Satellite hard- ware/ technologies	Loan agreement for optical disk equipment associated with the Earth Radiation Budget Experiment (ERBE).	EIF Apr 8, 1993	Loan	NS	FR0346

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
France/ Ministry of Defense	DoD/DMA	Mapping	Exchange digital products and information upon request, subject to availability and where releasable. Exchange digital mapping and charting data intended for electronic display. Exchange other digital products including numerical and mathematical models. DMA and CGI will continue to produce and exchange DTED and DFAD over the European area of interest under the terms of the Multination DLMS agreement. Exchange Digital Landmass Blanking Data (DLMB).	EIF1995		NS	FR11E95A
Germany	DoD/ USAF	Defense	Pattern Recognition and Analysis and Techniques and Technologies for Aerial Radar Reconnaissance.	In force	Data exchange	NS	AF-75-G- 7460
Germany	DoD/ USAF	Global change studies	Optical Properties of the Environment.	In force	Data exchange	NS	AF-96-G- 7463
Germany	DoD/ USAF	Space sciences	Observation and Modeling for Space Weather.	Proposed (as of Jul 16, 1997)	Project	NS	PA to RTP (USAF)
Germany	NSF	Earth sciences	Agreement with the Federal Ministry for Research and Technology (BMFT) on Cooperation in Research in the Geosciences (including studies in the ocean, atmosphere, and earth sciences). An annex on continental drilling was signed in 1995.	EIF Mar 7, 1994, terminates Mar 6, 1999; in that year the agreement will automatically renew every two years	Interna- tional	NS	NR
Germany/ BGR	DOI/ USGS	Earth sciences	Cooperation in the Geological Sciences with the Bundesanstalt fur Geowissenschaften und Rohstoffe.	EIF Apr 19, 1996, terminates Apr 19, 2000	MOU	NS	NR
Germany/ Represented by Leiter Mili- tarisches Geowesen	DoD/DMA	Mapping	To exchange selected mapping, charting and geodetic products related information. The items to be exchanged will include, but are not limited to, source materials, maps, charts and related materials in printed or digital formats; aeronautical information including flight information publications and other publications relating to safety of navigation; geodetic, geomagnetic and gravity data; reproduction materials, and other related...	EIF 1994	Coopera- tive	NS	GE01K94A

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Guatemala/ Instituto Geografico Militar	DoD/DMA	Mapping	Basic Exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related mapping, charting and information and geodesy materials	EIF 2 July 1996; no specified date of termination	Basic Exchange and Coopera- tive	NS	GU02G96 A
Guyana/ GMC	DOI/ USGS	Mapping	Scientific and technical cooperation in the earth and mapping sciences with the Geology & Mines Commission.	EIF Jul 21, 1993, duration indefi- nite	MOU	NS	NR
Honduras/ MNR	DOI/ USGS	Mapping	Cooperation in the earth and mapping sciences with the Honduran Ministry of Natural Resources (MNR).	EIF Jun 10, 1991, duration indefi- nite	MOU	NS	NR
Honduras/ Secretary of Public Works and Trans- portation	DoD/DMA	Mapping	Basic Exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related mapping, charting and information and geodesy materials	EIF 5 September 1995; no specified date of termina- tion	Basic Exchange and Coopera- tive	NS	HO05195A
Hong Kong/ Royal Observa- tory	NASA	Atmospheric sci- ences	Pacific Exploratory Mission in the Western Pacific Region (PEM-WEST) Mis- sion will study the natural budgets of ozone and its precursors over the western Pacific and assess anthropogenic impact on the environmental health of the troposphere in this region. The Royal Observatory will utilize the portable satellite receiving station set up there for weather forecasting when it will not interfere otherwise.	EIF Aug 5, 1991	Interna- tional	NS	HK0002
Iceland/ NRC	DOI/ USGS	Earth sciences	Agreement of cooperation in earth sciences with the Icelandic Council of Sci- ence; information and personnel exchanges; joint research in geophysical, geological, and hydrological phenomena.	EIF Apr 9, (1982) 1990, terminates Apr 9, 1998	MOU	NS	NR
India	DOC/ NOAA	Meteorology	Direct reception and distribution of Landsat data at Landsat ground station.	EIF Oct. 26, 1984, duration contin- gent upon the life span of Landsat 4 and 5	Data exchange	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Indonesia	USDA/ Forest Service	Mapping	Forest Health Monitoring in Indonesia will include: AVHRR Mapping, Investigations of aerial video, radar, and other technologies, ecological classification, and biodiversity estimation.	EIF 1996, renewable yearly	Informal	\$120K	NR
Indonesia/ National Institute of Aero/ Space	DOC/ NOAA	Global change studies	Climate research agreement; non binding MOU for climate research with Indonesia's National Institute of Aero/Space.	EIF Oct 28, 1992, duration indefinite	MOU	NS	NR
Indonesia/ PKA	DOI/ USGS	Earth sciences	MOU concerning technological development cooperation in the earth sciences. Executive agent for the U.S. is the USGS of DOI. Executive agent for Indonesia is the Deputy for Natural Resources Development (PKA) of the Agency for the Assessment and Application...	EIF May 3, 1995, terminates May 2, 2000	MOU	NS	NR
Israel	DoD/ USAF	Defense	Reconnaissance.	In force	Data exchange	NS	AF-92-IS- 8709
Israel/ Israeli Space Agency (ISA)	NASA	Earth sciences	Participation in global geodynamic observations by assuming responsibility for installing and operating a site which has a fixed satellite laser ranging system.	EIF Feb 28, 1994	Cooperation	NS	None listed
Israel/ Israeli Space Agency (ISA)	NASA	Space sciences	Agreement to identify areas of mutual interest and to seek to develop cooperative programs in the use of space for research and practical applications, and to work closely together to this end.	EIF Oct 2, 1996, terminates Oct 2, 2006 unless terminated by 6 mos written notice or unless amended or extended by mutual written agreement	International	Each bears respective costs	None listed
Israel/ Tel Aviv University	NASA	Satellite hardware / technologies	Cooperation w/ the Israeli Space Agency using Bar Giora SLR Station as a critical reference point for Satellite Laser Ranging (SLR).	EIF Oct 31, 1990 terminates Oct 31, 1999	Cooperation	NS	None listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Italy	NASA	Earth sciences	Cooperation on: measurements of the solid earth involving the use of Satellite Laser Ranging (SLR), Very Long Baseline Interferometry (VLBI), and Global Positioning System (GPS) for the study of global plate motion for the study of global plate motion, regional crustal deformation, and earth rotational dynamics, and; joint measurements involving the use of SLR and GPS for precise determination of the orbits of Earth satellites.	EIF Feb 19, 1992	Cooperation	NS	None listed
Italy/ ASI	NASA	Earth sciences	Joint agreement to develop Satellite Laser Ranging (SLR) and Very Long Baseline Interferometry (VLBI) technologies for Earth Observation studies. NASA provides Transportable Laser Ranging System (TLRS-1) to ASI for the continued acquisition of laser data at various WEGENER sites in Italy, Greece, and Turkey.	EIF Nov 3, 1994, terminates Nov 3, 2004 or by 6 mos written notice by either party; may be extended	International	Each bears respective costs	None listed
Italy/ Defense General Staff for the Ministry of Defense	DoD/DMA	Mapping	Basic Exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related materials	EIF11 September 1992	Basic Exchange and Cooperative	NS	IT11192A
Japan	DOC/ NOAA	Ocean studies	Under the guidance of the U.S. Japan S&T agreement this MOU focuses on cooperative activities in oceanic and atmospheric research in the Pacific Ocean.	EIF Jun 7, 1993, terminates Jun 7, 1998	MOU	NS	NR
Japan	DOS	Ocean studies	US-Japan Cooperative Program in Natural Resources (UJNR). Joint multidisciplinary research projects; info & data exchange panels (16); 7 panels for marine S&T cooperation through DOC/NOAA; panels include Aquaculture, Diving Physiology & Technology, Marine Instrumentation & Communications, Marine Mining, Marine Facilities, Marine Geology, and Sea Bottom Surveys, 9 panels for non marine topics, coordinated by USDA.	EIF Jan 1, 1964, duration indefinite	Data/ Information exchange	NS	NR
Japan/ Geographical Survey Institute of the Ministry of Construction	DoD/ Army	Mapping	Provide standard maps for joint use by Japanese and United States agencies so that identical maps will be used by such agencies in conducting joint activities; to avoid duplication of cartographic effort; to protect unique cartographic manuscripts and allied mapping data by creating duplicate files of such materials in the hands of both parties, continuously available to each other; to provide a continuing exchange of mapping materials.	EIF9 March 1953	Agreement	NS	JP09C53B

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Japan/ JAMSTEC	NASA	Ocean studies	Cooperative test of time-gated micro-channel plate photomultiplier tube (MCP-PMT) detector system on the ground and aboard the NASA Airborne Oceanographic Lidar (AOL).	EIF Jul 27, 1990	Cooperation	Each bears respective costs	None listed
Japan/ MITI	NASA	Atmospheric sciences	Reimbursable arrangements for aster ground data systems.	EIF June 30, 1997; no specified termination date	LOA		
Japan/ NASDA	NASA	Earth sciences	Establishing of interconnected directories describing data sets of interest to researchers in the Earth Sciences. NASDA to contribute to establishment of a world-wide Directory Database providing files of the Japan Remote Sensing program. Agreement to install NASA Master Directory software on NASDA computers located at NASDA's Tsukuba Space Center. The installation will occur in May or June of 1990.	EIF May 18, 1990	Data exchange	Each bears respective costs	None listed
Japan/ NASDA	NASA	Earth sciences	Terms and conditions for the accommodations of NASDA Tech. personnel at NASA Goddard Space Flight Center for activities related to interoperability between the EOSDIS and the EOIS.	EIF Mar 15, 1996	Protocol	NS	None listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Japan/ NASDA	NASA	Earth sciences	MOU concerning the direct reception of ERS-1 data at the Fairbanks Station. Defines terms and conditions of scientific and technical collaboration b/t NASDA and NASA during the ERS-1 development and exploitation phase.	EIF Jan 28, 1988 until up to one year after technical lifetime of ERS-1; may be revised; termination upon reasonable notification in writing	MOU	No exchange of funds except for the cost of high density digital tapes for tape data and the shipping charge to send them from the Fairbanks Station to NASDA	None listed
Japan/ NASDA	NASA	Global change studies	Long-term cooperative effort to build interoperability among shared earth science and environmental observation data and information systems.	EIF Mar 24, 1994	Data/ Information exchange	NS	None listed
Japan/ NASDA	NASA	Global change studies	Involve Japanese scientists in analysis and research using large satellite data sets for global change research.	EIF Jul 27, 1994	Data exchange	NS	None listed
Japan/ NASDA	NASA	Satellite hardware / technologies	.	EIF Aug 1, 1997	Arrangement		

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Japan/ NASDA	NASA	Satellite hardware / technologies	Joint calibration experiments and aircraft flights to calibrate and validate the Japan Earth Resources Satellite (JERS-1) Synthetic Aperture Radar (SAR) and Optical Sensor (OPS).	EIF Jan 4, 1993, terminates Jan 31, 1993; renewed automatically for two additional one-year periods beginning Apr 1, 1993 and Apr 1, 1994 respectively unless 90 days written notice given	Cooperation	Each bears respective costs	None listed
Japan/ NASDA	NASA	Satellite hardware / technologies	Agreement to the training of Mr. Shiji Ogawa to provide local coordination to progress cooperative work such as tracking, communication and operations of data relay satellite systems. His assignment includes the TRMM/COMETS and ETS-VII/TDRS.	EIF Sep 25, 1996	International	NS	None listed
Japan/ NASDA	NASA	Satellite hardware / technologies	Flying the RRMD aboard the Space Shuttle/MIR program; NASA and NASDA plan to fly the RRMD during two Shuttle missions, data exchange.	EIF Apr 4, 1996	International	NS	None listed
Japan/ NASDA	NASA	Space sciences	MOU with Japan's Institute for Space & Astronautical Science (ISAS) for carrying out a program of cooperative balloon launches for the Bess Balloon borne experiments with a Superconducting Magnet Spectrometer using NASA's stratospheric research balloon launch, tracking, and recovery capability.	EIF Sep 5, 1989; extended Aug 1, 1995, terminates Aug 1, 2002	MOU	NASA programmatic (each bears respective costs)	NR
Japan/ PWRI	DOI/ USGS	Global change studies	Cooperation in hydrology, water resources, and global climate change. Executive agent for the U.S. is USGS of DOI. Executive agent for Japan is Public Works Research Institute (PWRI) of The Ministry of Construction of Japan.	EIF Feb 3, (1992) 1995, terminates Feb 3, 1998	MOU	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Kazakstan/ Ministry of Sci- ence-Academy of Sciences (MSAS)	DOE	Mapping	Agreement for the conduct of the Remote Sensing Mission (AMPS) in the Republic of Kazakstan. Goals include demonstration of the possibilities of contemporary technologies of remote ground surface survey and of the results of data processing by DOE, collection and processing of remote sensing data, study of possibilities of applying AMPS technology in Kazakstan, and devel. of scientific and tech. cooperation b/t DOE and MSAS.	EIF May 13, 1997, terminates May 13, 2002 or upon termination of the Agreement b/t the Gov't of the United States of America and the Gov't of Kazakstan on S&T Cooperation, signed Feb. 14, 1994, whichever ends earlier; terminates upon 6 mos written notice	Coopera- tion	Each bears respective costs; DOE finances organiza- tion of center for process- ing of multisen- sor info. in Kazakstan	NR
Korea MRI and KMA	DOC/ NOAA	Meteorology	Executive agent for the U.S. is the Forecast Systems Laboratory (FSL) of NOAA in DOC. Executive agents for Korea are the Meteorological Research Institute (MRI) of the Korea Meteorological Administration (KMA) and the Systems Engineering...	EIF Jan 28, 1995, terminates Jan 27, 2000	Interna- tional	NS	NR
Lithuania/ State Department of Surveying and Mapping	DoD/DMA	Mapping	Basic Exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related mapping, charting and information and geodesy materials.	EIF21 January 1994; no specified date of termina- tion	Basic Exchange and Coopera- tive	NS	LT21A94A
Mexico/ CENAPRED	DOI/ USGS	Natural disaster prevention/ monitoring	Scientific and technical cooperation in the earth and mapping sciences with the National Center for Disaster Prevention.	EIF May 7, 1996, duration indefi- nite	MOU	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Mexico/ INEGI	DOI/ USGS	Mapping	Cooperation in technical assistance in the general area of earth sciences and particularly in surveying, mapping, remote sensing and geographic information systems with the Instituto Nacional de Estadística, Geografía e Informática (INEGI). Cooperation in geothermal and related volcanic investigations with Mexico's Instituto de Investigaciones Electricas (IIE).	EIF Aug 12, 1992, duration indefinite	MOU	arrange- ments agreed to by Parties before each activity.	NR
Mexico/ SEMIP	DOI/ USGS	Mapping	Scientific and technical cooperation in the earth and mapping sciences with the Secretariat of Energy, Mines, and Parastatal Industry of the United Mexican States (SEMIP). Areas of mutual interest are mineral resources, geothermal, regional geologic mapping, marine geology, geochemistry, geophysics, the environment, remote sensing, topographic and cadastral mapping, publications, libraries, and information systems. IPR protection.	EIF (Nov 3, 1994, duration indefinite subject to periodic auto- matic renewal) Nov 29, 1994, duration indefinite	MOU	NS	NR
Mexico/ UNAM	DOI/ USGS	Mapping	MOU signed with the National Autonomous University of the United Mexican States concerning S&T cooperation in the earth and mapping services. Topics of interest include mineral resources (metallic, non metallic), energy resources (hydrocarbons, fossil fuels, geothermal), regional geologic mapping, marine ecology, geochemistry, geophysics, geologic hazards (earthquakes, volcanoes, landslides), the environment, remote sensing...	EIF (Mar 9, 1994) May 9, 1994, duration indefinite	MOU	NS	NR
Mongolia	DOI/ USGS	Earth sciences	Scientific and Technical Cooperation in the Earth Sciences.	EIF Nov 9, 1992, terminates Nov 9, 1997	S&T	NS	NR
Multilateral	DoD	Defense	Synthetic Aperture Radar (SAR) Application Development. Cooperative R&D project with Norway and the UK to support coastal warfare applications and surface ship wake detection and characterization. The project will examine SAR measurements from numerous platforms and develop algorithms to allow expanded use of SAR in fleet systems and weapons design.	EIF Sep 5, 1994	MOU	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Multilateral	DOS	Local/ regional pollu- tion	Initiate and cooperate in the conduct of research into and/ or development of: a) existing and proposed technologies for reducing emis- sions of sulfur compounds and other major air pollutants, including technical and economic feasibility, and environment consequences; b) instrumentation and other techniques for monitoring and measuring emission rates and ambi- ent concentration of air pollutants; c) Improved models for a better under- standing of the transmission of long-range transboundary...	NR		NS	MU13K79A
Namibia/ GSD	DOI/ USGS	Earth sciences	MOU to pursue S&T cooperation in the earth sciences with the Geological Survey Directorate. The Executive agent for the U.S. is the USGS of DOI. The Executive agent for Namibia is the Ministry of Mines and Energy (MME) of Namibia. Topics of particular interest include analytical chemistry, geophys- ical studies...	EIF Aug 23, (1994) 1995, terminates Aug (22) 23, 2000	MOU	NS	NR
Netherlands	DoD/ USAF	Atmospheric sci- ences	Measurement and Analysis of the Infrared Celestial Background.	In force	Interna- tional	NS	IA (USAF)
Netherlands/ Director of Physics Faculty	NASA	Atmospheric sci- ences	Atlantic Stratocumulus Transition Experiment (ASTEX); Netherlands support of this.	EIF May 13, 1992	Interna- tional	NS	NL0033
Netherlands/ Head Programme Bureau of the BCRS	NASA	Mapping	Confirmation of the endorsement of the Netherlands Remote Sensing Board for Mapping of Evaporation of the Playas in North Africa.	EIF Feb 26, 1988	Interna- tional	NS	NL0007
Nicaragua	USDA/ FUSFS	Land use	International Institute for Tropical Forestry performing an assessment of need for GPS/GIS application and technology transfer.	EIF Sep 1997	Informal	NS	NR
Nicaragua/ Ministry of Construction and Trans- portation	DoD/DMA	Mapping	Basic Exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related mapping, charting and information and geodesy materials.	EIF1 December 1994; no specified date of termina- tion	Basic Exchange and Coopera- tive	NS	NI01L94A

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Norway/ Norwegian Mapping Authority	NASA	Earth sciences	Cooperation concerning joint global geodynamic observations.	EIF May 24, 1991	Coopera- tion	NS	None listed
Paraguay	DOI/ USGS	Mapping	Scientific and technical cooperation in the earth and mapping sciences.	EIF Jul 19, 1990, duration indefi- nite	S&T	NS	NR
Peru/ Instituto Georafico Nacional	DoD/DMA	Mapping	This Memorandum of Procedures establishes the production goals and specific map sheet production for FY 91-92 in support of the referenced cooperative mapping agreement.	EIF16 September 1991; terminate 30 September 1995 (extended)	Memoran- dum of Procedures	NS	PE16I91A
Peru/ MEM	DOI/ USGS	Earth sciences	Cooperation in the earth and mapping sciences with Ministry of Energy and Mines (MEM).	EIF Jul 17 1990, duration indefi- nite	MOU	NS	NR
Philippines/ National Mapping and Resources Information	DoD/DMA	Mapping	The cooperating agencies to this agreement shall participate jointly in the development of technical assistance to complement relevant programs in topographic mapping, hydrographic charting, related digital data, geodetic surveys, geodetic computations and adjustments, geophysical surveys, and other geographic cooperation as may be mutually determined. The cooperating agencies shall also participate jointly in the exchange of printed maps and charts; reproduction materials; publications and ...	EIF9 September 1991; Date of Termination: NONE	Basic Exchange and Coopera- tive	NS	PH099191A
Poland	DOI/ USGS	Earth sciences	MOU with the Panstwowy Instytut Geologiczny of the Republic of Poland concerning S&T cooperation in the Earth Sciences. Areas of cooperation include mineral resource assessment studies; energy resource assessment studies; Regional geology; global change...	EIF Sep 23, 1994, terminates Sep 22, 1999	MOU	NS	NR
Republic of Estonia	DoD/DMA	Mapping	Basic Exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related mapping, charting and geodesy materials signed 7 Dec. 1993. The appendix defines arrangements for the production of two 1:50,000 scale topographic maps by the National Land Board, ministry of the Environment of the Republic of Estonia, and cost reimbursement provided by the DMA.	EIF September 1995	Basic Exchange and Coopera- tive	NS	EA23H95A

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Republic of Latvia/ State Land Service	DoD/DMA	Mapping	Basic exchange and cooperative agreement for topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related mapping, charting and information and geodesy materials .	EIF24 August 1993; no specified termination date	Basic Exchange and Coopera- tive	NS	LV24H93A
Romania	DoD/DMA	Mapping	Basic exchange and cooperation agreement—military topographic department. Program for exchange and cooperation on maps, geodetic and geophysical data, and related mapping, charting, and geodesy materials, signed 21 March 1995.	EIF21 March 1995	Basic Exchange and Coopera- tive	NS	RO19E94B
Romania/ Military Topographic Department Ministry of National Defense of Romania	DoD/DMA	Mapping	Topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related mapping, charting and information and geodesy materials.	EIF 1994	Basic Exchange and Coopera- tive	NS	RO19E94A
Russia	NASA	Space sciences	Agreement for space related scientific research.	EIF Jun 23, 1994, indefinite dura- tion	Interna- tional	To \$100 million a year dur- ing the 1994/ 1997 period for goods and services RSA pro- vides	NR
Russia	USDA/ USFS	Global change studies	MOU with the Intermountain Research Station of USFS and the Russian Academy of Sciences concerning modeling of global climate change.	EIF Sep 9, 1993, duration indefi- nite	MOU	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Russia (USSR)/ Ministry of Foreign Affairs of the Russian Federation	NASA	Atmospheric sci- ences	This agreement determines the terms of the Implementing Agreement of the Russian Federation on the flight of a US Stratospheric Aerosol and Gas Experiment (SAGE)III and a Total Ozone Mapping Spectrometer (TOMS) aboard a Russian Meteor-3M Spacecraft.	EIF Feb 22, 1995	Interna- tional	NS	None listed
Russia (USSR)/ Russian Academy of Sciences	NASA	Satellite hard- ware / technologies	Scientific and technical cooperation regarding the establishment and operation of a High Resolution Picture Transmission (HRPT) Receiving Station in Krasnoyarsk, Russia and the development of data bases and geographic information systems (GIS).	EIF Mar 10, 1994	STI exchange	Each bears respective costs	None listed
Russia (USSR)/ Russian Federal Service for Hydrome- teorology and Environmental Monitoring (ROS- GIDROMET)	NASA	Satellite hard- ware / technologies	The goal of this agreement is defining the terms and conditions of scientific and technical cooperation regarding the establishment and operation of two High Resolution Picture Transmissions (HRPT) receiving stations in Yakutsk and Khabarovsk.	EIF Aug 31, 1994, terminates Aug 31, 1999	Interna- tional	Each bears respective costs	None listed
Russia/ MSTP	DoD	Ocean studies	MOU between DoD and the Ministry of Defense and the Ministry of Science and Technology Policy of Russia on S&T cooperation in acoustic thermometry of ocean climate. To create and develop a technical base of receiving and transmitting stations for monitoring..., and (Russia) the Radio-Technical Department of the Navy. Renewable every 5 years by written agreement.	EIF Dec 16, 1994, terminates Dec 15, 1999	MOU	NS	NR
Russia/ WIL	DOI/ USGS(BRD)	Global change studies	Paired Ecosystem program - Environmental monitoring with NBS and 5 Russian habitats under the US/Russia Environmental Agreement.	EIF May 14, 1992, terminates May 14, 1997 (extended)	MOU	NS	NR
Slovak Republic/ Ministry of Defense	DoD/DMA	Mapping	Basic exchange and cooperative agreement for topographic mapping, aeronautical charting and information, geodesy and geophysics, digital data, and related mapping, charting & geodesy (MC&G) materials.	EIF1993	Basic Exchange and Coopera- tive	NS	CZ09k93A

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Slovak Republic/ SGS	DOI/ USGS	Earth sciences	Scientific and technical cooperation in the earth sciences with the Geological Survey of Slovakia.	EIF May 22, 1995, terminates May 22, 2000	MOU	NS	NR
South Africa	NASA	Space sciences	Interim Agreement on cooperation related to the microsatellite project SUNSAT. NASA will fund the integration of SUNSAT as a secondary payload on a U.S. Delta II launch vehicle. In return, Stellenbosch would integrate onto the spacecraft a NASA-provided Global Positioning Satellite (GPS) receiver, and potentially a laser retroreflector and magnetometer.	EIF Dec 6, 1994 until the EIF of a subsequent MOU for the integra- tion and opera- tion phases	Interim	Each bears respective costs	None listed
South Africa/ SNSB	NASA	Satellite hard- ware / technologies	MOU concerning the SUNSAT Microsatellite Project. FRD provides 3-color imaging system, NASA provides laser reflector and precision GPS receiver. NASA funds integration and launch of SUNSAT as secondary payload on a U.S. Delta II mission.	EIF May 10, 1996, terminates May 10, 2004 or the duration of the mission, whichever comes first; termination upon 6 mos writ- ten notice	MOU	Each bears respective costs	None listed
Spain/ CDTI	NASA	Space sciences	Agreement on cooperative activities in the following areas: technical consultation on the construction and use of facilities for space vehicle landing and related activities, exchange of scientific and tech. info. with different NASA facilities, scientific research and technological devel. progs. in areas such as remote sensing, astrophysics, microgravity, solar system science, and fluid mechanics, and joint exploration of areas for possible development of Spanish scientific instruments.	EIF Jul 3, 1992 until Jul 3, 2000; will be automati- cally extended for periods of one year unless 6 mos written notice of termination is given	Coopera- tion	NS	None listed

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
Spain/ INTA	NASA	Space sciences	Agreement on cooperative activities in the following areas: technical consultation on the construction and use of facilities for space vehicle landing and related activities, exchange of scientific and tech. info. with different NASA facilities, scientific research and technological devel. progs. in areas such as remote sensing, astrophysics, microgravity, solar system science, and fluid mechanics, and joint exploration of areas for possible development of Spanish scientific instruments.	EIF Dec 2, 1991, terminates Dec 2, 1999; automatically extended for periods of one year unless terminated by written notice prior to 6 mos before end of initial 8 year term or of any subsequent one-year term	Cooperation	NS	None listed
Switzerland/ Federal Office of Topography	DoD/DMA	Mapping	Federal Office of Topography concerning Mapping, Charting and Geodesy Cooperation.	EIF11 August 1992; Termination date: UNLIMITED	Basic Exchange and Cooperative	NS	ST11H92A
Taiwan	DOC/ NOAA	Earth sciences	This agreement between NOAA and AIT facilitates training, shared technical expertise, and scientific exchange of geodetic technology such as...	EIF Feb 21, 1991, indefinite duration	International	NS	NR
Taiwan	DOC/ NOAA	Meteorology	This 5 year agreement transfers NOAA NOWCAST technology to Taiwan for improved forecasts, enables NOAA to test the NOWCAST under different meteorological...	EIF Jun28, 1990, terminates Jun 27, 1995 (extended)	S&T Cooperation	NS	NR
Taiwan	DoD/DMA	Mapping	Agreement between the American Institute in Taiwan and the Taipei Economic and Cultural Representative office in the US concerning mapping, charting, and geodesy cooperation.	EIF28 November 1995; no specified termination date	Basic Exchange and Cooperative	NS	TA28K95A

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UK	DoD	Defense	Target Oriented Tracking System (TOTS). TOTS program established to design and develop a real-time, multiple sensor, multiple target tracking system which exploits concurrent processing. TOTS provides real-time, end-to-end BMD tracking with sensor.	NR	International	NS	NR
UK	DoD/ USAF	Atmospheric sciences	Effects of the Ionosphere on C31 Systems (U).	In force	Data exchange	NS	US-UK- AF-95- 0003
UK	DoD/ USAF	Defense	Tactical Space Based Radar, Radiometry, and Infrared Surveillance and Targeting Systems.	In force	Information exchange	NS	IEP-1987- UK-DoD- 02
UK	DoD/ USAF	Defense	Tactical Imagery Data Management and Exploitation (TIDE).	In force	Information exchange	NS	IEA-1990- UK-AF- 9025
UK	DoD/ USAF	Defense	Cooperative Research in the Strategic Defense Initiative.	In force	MOU	NS	MOU
UK	DoD/ USAF	Defense	Single Mode Optical Fibers for Array Imaging.	In force	Data exchange	NS	US-UK- AF-95- 0007
UK	DoD/ USAF	Meteorology	Weather Impact Decision Aids (WIDA).	Proposed (as of Jul 16, 1997)	Data exchange	NS	UK-UF- 96-XXXX
UK	NASA	Space sciences	Agreement for the implementation of co-operative effort relating to NASA's Advanced X-Ray Astrophysics Facility (AXAF), specifically the inclusion of Dr. George W. Fraser (Univ. of Leicester) as co-Investigator in the devel., launch, post-launch and data analysis phases of the High Resolution Camera (HRC).	EIF Sep 19, 1995 until 3 yrs after launch of AXAF-I, unless terminated upon 6 mos writ- ten notice; may be extended or amended	International	Each bears respective costs	None listed
UK/ Directorate of Military C- UliVEY	DoD/DMA	Mapping	Cooperative acquisition of geodetic and satellite data by observation. Conducting satellite tracking and conventional survey operations to acquire geodetic data at required locations.	NR	NR	NS	UK19G96A

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UK/ SERC/ BNSC	NASA	Atmospheric sciences	Establishment of NASA Science Internet (NSI) program to provide digital data access, shared computational resource and software access, and e-mail capabilities. Enhanced US/UK information link. Several efforts can benefit from this system. Two are the Upper Atmosphere Research Satellite (UARS) Improved Stratospheric and Mesospheric Sounder Project and the Galileo Near Infrared Mapping Spectrometer Project. NASA will loan the equipment.	EIF Mar 15, 1991 termination upon 60 days written notice	Data exchange	NS	None listed
Ukraine	NASA	Space sciences	Agreement on cooperation in the exploration and use of outer space for peaceful purposes. The Parties shall carry out civil space cooperation in the fields of space communications, life and microgravity sciences and applications, studies of the Planet Earth, and other activities of mutual interest on the bases of equality, reciprocity and mutual benefit (remote sensing cited as example).	EIF Nov 22, 1994, terminates Nov 22, 1999; may be extended 5 more years by exchange of diplomatic notes; termina- tion upon 6 mos written notice	Coopera- tion	NS	None listed
Ukraine/ ASU	NASA	Global change studies	Agreement for cooperation with ASU in fields of earth science and global change research, contributing to NASA's Dynamics of the Solid Earth (DOSE) program and similar programs at ASU. VLBI, SLR, GPS, and GLONASS would be employed.	EIF Oct 25, 1993 until Oct 25, 2003 or upon 6 mos written notice	Coopera- tion	Each bears respective costs	None listed
UN / Geneva	DOS	Local/ regional pollu- tion	Initiate and cooperate in the conduct of research into and/or development of: a) existing and proposed technologies for reducing emissions of sulfur compounds and other major air pollutants, including technical and economic feasibility, and environmental consequences; b) instrumentation and other techniques for monitoring and measuring emission rates and ambient concentration of air pollutants...	EIF16 March 1983		NS	MU13K79 A
UN/ UNEP	DOI/ USGS	Global change studies	Cooperation in the operation of the United Nations Environment Program Global Resource Information Database facility (Sioux Falls, SD) between USGS, NASA, and UNEP.	EIF Jan 1, 1995, terminates Jan 1, 1998	MOU	NS	NR

Country/ Partner	U.S. Sponsored Agency	Subject of Agreement	Description	Status	Type of Agreement	Funding (if known)	ID Code
UNEP/ USGS	NASA	Earth sciences	Agreement concerning the operation of a global resource information database facility. Provides for the cooperative operation of a UNEP-designated Global Resources Information Database (GRID) facility for North America at the USGS's EROS Data Center. (EDC) in Sioux Falls, South Dakota, USA.	EIF Feb 2, 1995, terminates Dec 31, 1997; may be extended or modified, or terminated upon 90 days written notice	Informa- tion exchange	Each bears respective costs	None listed
Venezuela/ MEM	DOI/ USGS	Mapping	Cooperation in the earth and mapping sciences with Venezuela's Ministry of Energy and Mines (MEM). Areas of activity include mineral resource investigations, minerals availability assessments, regional geologic mapping, petroleum geology, marine geology, geochemistry, geophysics, publications, libraries, and information system in general, geologic risks, environmental geology and...	EIF Jan 15, 1992, duration indefinite	MOU	NS	NR
Venezuela/ Ministry of Defense	DoD/DMA	Mapping	Topographic mapping, nautical and aeronautical charting, geodesy and geophysics digital data and related mapping, charting and information and geodesy materials.	EIF20 March 1996; no specified termination date	NR	NS	VE20C96A
Zambia/ GSD	DOI/ USGS	Earth sciences	Scientific and technical cooperation in the earth sciences with the Geological Survey Department (GSD).	EIF May 9, 1996, terminates May 9, 2001	MOU	NS	NR