

Foreign Science & Technology Information Sources

in the Federal Government
and
Select Private Sector Organizations



DISTRIBUTION STATEMENT A
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**Foreign Science and Technology
Information Sources
in the
Federal Government
and
Select Private Sector Organizations**

Sponsored by

The Department of Commerce
International Technology Policy
Technology Administration

and

The Department of State
Bureau of Oceans and International Environmental and Scientific Affairs
Office of Science Technology and Health
Technological Competitiveness Division

July 1996

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Federal Government
and
Select Private Sector Organizations**



This *Compendium* provides an overview of the mandate, functions and key contacts of U.S. federal and select private sector organizations that monitor, collect, disseminate, or conduct analysis of information involving foreign science and technology. These organizations include U.S. government departments, agencies, military services, and private sector organizations.

Jointly funded by the Departments of Commerce and State, the *Compendium* seeks to improve private sector understanding of and access to U.S. - based resources related to foreign science and technology, including programs, publications, services, and expertise. To ensure that the most current information is available, the *Compendium* lists wherever possible internet homepages and e-mail addresses of participating organizations.

The information in this *Compendium* has been reviewed by participating organizations. It is based upon documents such as program descriptions, brochures, Congressional testimony, annual reports, mission statements, management instructions, and other original works.



Based on Material Prepared by

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We would like to thank A. Duff Mitchell, Department of Commerce, Office of International Technology Policy for reviewing, updating and finalizing the *Compendium*.

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**APPENDIX "A":
INTERNET GUIDE TO UNITED STATES SCIENCE AND TECHNOLOGY
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Executive Summary

In this era of globalization, rapid technological change, and significant shift in wealth creation to Asian economies, the United States must remain at the forefront of science and technology in order to maintain its national prosperity and world leadership. From Europe to Asia to Canada, nations recognize the important link between S&T-based innovation, economic growth and international competitiveness. Our competitors are making ever increasing investments in basic and applied science and pursuing strategies of government-industry-academic collaboration to stimulate technology-based growth, trade and investment. As part of this strategy, nations take full advantage of the opportunities presented by the U.S. system of open access to S&T knowledge. In fact an important focus of some nations is to target the acquisition of U.S. S&T in key industries to supplement their own efforts to foster innovation, rapid commercialization, and value-added production. In this way, these nations seek to increase both their international and U.S. market share.

To compete effectively in global markets and to hold their own in the domestic market, U.S. companies and researchers similarly need to track and remain current with foreign science and technology developments. This is critical as U.S. corporations increasingly partner with foreign firms as a way of addressing new opportunities while sharing technical strengths and financial resources.

However, very few nations provide as open access to S&T as the United States. American companies may find that their efforts alone are not fully effective when it comes to monitoring foreign S&T, especially regarding opportunities for technology transfer. To address this need, additional resources are available through the U.S. government and various private sector organizations that monitor and acquire foreign science and technology on behalf of U.S. interests.

The area of agriculture is a case in point. Some 70 percent of all agricultural research is conducted outside the United States. In order for U.S. agriculture interests to enhance market access, build new markets, and maintain global competitiveness, it is essential that they monitor and acquire the science and technology of competitors. To augment private sector efforts, the U.S. Department of Agriculture conducts international research projects, international training and technical assistance, scientific and technical exchanges, global market surveillance, and liaison with international organizations, among other initiatives. To a considerable extent, U.S. agriculture's world leadership position is due to its ability to learn from and cooperate with foreign counterparts in areas of high priority.

The importance of continually re-evaluating the global market implications of foreign science and technology applies to the whole spectrum of U.S. industry and research activities. Forestry, high tech industries, medical equipment, development and commercialization of defense technology, management of the environment, development of energy resources, transportation systems, and space exploration are ready examples.

To ensure that no resources are overlooked nor opportunities ignored, this *Compendium* was developed as a guide to the foreign science and technology services and expertise available from the U.S. federal government and select private sector organizations. For the first time in one source, it describes the mandate, activities, products and key contacts of nine U.S. Cabinet departments (covering 60 distinct organizations), six U.S. government agencies (covering nine distinct organizations, including those affiliated with executive and legislative branches), seven U.S. military service organizations, and six select

private sector organizations -- 80 distinct organizations in total. All of these organizations to some degree monitor, collect, disseminate or conduct analysis on information involving foreign science and technology related to their mission mandates. Many of the mission mandates include as well a specialized international focus, such as, monitoring of specific technology sectors, providing technical assistance, negotiation and management of international technology exchange agreements or treaties involving science and technology. Two organizations in particular worth noting for their comprehensive services and expertise are: 1) the Department of Commerce's National Technical Information Service with its extensive bibliographic database of scientific, technical, engineering, and business information, and 2) the Department of State's Overseas Environment, Science and Technology Officers who implement U.S. Government international science and technology programs at foreign posts around the world.

It is the hope of the two sponsoring departments -- the Department of Commerce's Technology Administration and the Department of State's Bureau of Oceans and International Environmental and Scientific Affairs -- that by drawing upon the resources identified in the *Compendium* U.S. companies and researchers will be able to widen their scope of opportunities for international licensing, technology trade events, developing intellectual property, potential R&D partnerships and joint ventures, as well as better anticipate the commercial launch of innovative technologies. For those companies with a particular geographic or country focus, various U.S. federal and private sector organizations can provide background information and introductions to local businesses, universities, research labs and institutes, and individual scientists. Expertise is also available for helping overcome cultural, language and political barriers to accessing foreign science and technology resources. Finally, recognizing that the face of government is continuously changing, the *Compendium's* Appendix lists Internet HomePages and the major legislation, programs and activities of the participating organizations.

I. DEPARTMENT LEVEL - FEDERAL ORGANIZATIONS

A. U.S. DEPARTMENT OF AGRICULTURE

1. Agricultural Research Service
 - a. Office of International Research Programs
 - b. Office of Technology Transfer
2. Economic Research Service
3. Foreign Agricultural Service
4. International Cooperation and Development
5. World Agricultural Outlook Board
6. Forest Service

U.S. DEPARTMENT OF AGRICULTURE

Agricultural Research Service

Office of International Research Programs

About 70 percent of all agricultural research is being conducted outside of the U.S. The Office of International Research Programs (OIRP) is organized to formally monitor and acquire foreign technology of interest to U.S. agriculture. This is done by seeking out and developing cooperative research programs with foreign counterparts in areas of high priority to U.S. agriculture. Programs are developed where there are common problems to be solved. All formal agreements are considered strategic alliances in which both partners benefit. These agreements are developed either as Memoranda of Understanding under Department of State, Science and Technology agreements with foreign countries, or as project based Specific Cooperative Agreements. OIRP insures these agreements clear State Department formalities and are consistent with the Office of Technology Transfer intellectual property policy. The agreements are designed to protect each parties Intellectual Property and where appropriate joint patenting is shared. The Office of Technology Transfer is responsible for the management of new patentable technology. These programs serve as a mechanism to acquire foreign technology through mutually advantageous agreements.

Office of Technology Transfer

The Office of Technology Transfer is involved in the transfer of technology developed by the Department of Agriculture (USDA) scientists and their partners. This is accomplished by developing technology management plans for all patents resulting from collaborative research including those with foreign scientists. These plans include marketing of new products and technology licenses. About 200 active technology licenses are now in effect. USDA scientists who make patentable inventions earn 25 percent of the royalties accruing from the licensing of their inventions.

This Agricultural Research Service program is one of the few in the Federal Government that is organized formally to monitor, acquire, and transfer foreign technology. It uses cooperative agreements to obtain access to such technology in a way that benefits both the U.S. and foreign partners.

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AGS HomePage: <http://www.ars.usda.gov/>
General Agency Information: gopher://zeus.esusda.gov/11/feds/usda-info

U.S. DEPARTMENT OF AGRICULTURE

Economic Research Service

The Economic Research Service (ERS), originally established in 1961, under the authority of the Agricultural Marketing Act of 1946 (7 U.S.C. 1621 1627), was reestablished under the authority of the Secretary of Agriculture as a USDA Bureau in 1981. The ERS is under the Under Secretary for Research, Education and Economics (REE), which has oversight responsibilities for ERS, the National Agricultural Statistics Service (NASS), the Agricultural Research Service (ARS) and the Cooperative State Research, Education and Extension Service (CSREES).

The ERS produces economic and other social science information as a service to the general public and to aid Congress and the Executive Branch in developing, administering, and evaluating agricultural and rural policies and programs. It monitors, analyzes, and forecasts United States and world agricultural production and demand for production resources, agricultural commodities, and food and fiber products. In addition, ERS produces economic and other social science information about the organization and institutions of the United States and world agricultural production and marketing systems, natural resources, and rural communities.

Information produced by ERS is made available to the general public through research monographs, situation and outlook reports, electronic data products, professional and trade journals, magazines (including Agricultural Outlook, National Food Review and Rural Development Perspectives), radio, television, direct computer and autofax access, and frequent participation of ERS staff at various public forums.

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U.S. DEPARTMENT OF AGRICULTURE

Foreign Agricultural Service

The Foreign Agricultural Service (FAS) serves the diverse interests of U.S. agriculture abroad and leads agricultural export efforts by working to enhance market access, build new markets, and maintain global competitiveness. FAS operates worldwide, with staff in more than 75 posts covering over 130 countries. The overseas staff is backed up by analysts, negotiators, and marketing specialists in Washington, D.C..

Agricultural Linkages

FAS' International Cooperation and Development (ICD) program enhances U.S. agriculture's competitiveness by providing linkages to world resources and international organizations. These linkages produce new technologies vital to preserving the world's agricultural base and producing new and alternative products. ICD links U.S. agricultural technical expertise with that of many other nations.

Market Development

FAS programs help U.S. exporters develop and maintain markets overseas for hundreds of products, from bulk commodities to consumer items. Promotional activities are carried out chiefly through the Foreign Market Development Cooperator and the Market Promotion programs in cooperation with nonprofit agricultural trade associations and firms which agree to plan, manage, and contribute resources for these activities. FAS also sponsors U.S. participation in trade shows and exhibitions, and assists U.S. exporters in launching products in overseas markets.

International Trade Policy

FAS coordinates and directs USDA's efforts in international trade negotiations and programs, working closely with the U.S. Trade Representative's Office. FAS international trade policy experts help identify -- and reduce -- barriers to U.S. agricultural exports.

U.S. agricultural exports are often subject to import duties and non-tariff trade restrictions. Intelligence sent to Washington from personnel overseas is used to map strategies for improving market access, pursuing U.S. rights under trade agreements, and developing programs and policies to make U.S. products more competitive.

Statistics and Market Information

FAS collects global crop and livestock production data and import/export information to prepare production forecasts, assess export opportunities, and track policy changes affecting U.S. agricultural trade. These analyses are greatly relied upon by policymakers, program administrators, farmers, exporters, and others.

FAS publishes more than 140 commodity reports a year that describe world production, consumption, and trade in about 100 commodities. The agency also issues over 1,200 news releases a year on export programs, food aid, and other fast-breaking news vital to U.S. farmers and exporters.

Export Financing

FAS provides U.S. agricultural exporters with financing support through credit guarantee programs. The programs protect U.S. exporters or U.S. financial institutions from risk if the importer's foreign bank fails to make payment, and are designed to help developing nations become commercial trade partners.

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U.S. DEPARTMENT OF AGRICULTURE
Foreign Agricultural Service
International Cooperation and Development Program Area

The International Cooperation and Development Program coordinates USDA's international training and technical assistance programs; sponsors international research projects and scientific and technical exchanges with other nations on topics of interest to U.S. farmers and agri-businesses; conducts efforts to encourage private agri-business to get involved in development work overseas; and serves as USDA's liaison with international food and agriculture organizations.

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ICDP HomePage: <http://ffas.usda.gov/ffas/intertec.html>

U.S. DEPARTMENT OF AGRICULTURE

World Agricultural Outlook Board

The World Agricultural Outlook Board (WAOB) is the focal point for the Nation's economic intelligence related to domestic and international food and agriculture. It is responsible for coordinating and reviewing for clearance all commodity and aggregate agricultural and food-related data used to develop outlook and situation material within the Department of Agriculture. The Board's primary objective is to improve the consistency, objectivity, and reliability of outlook and situation material developed in the Department.

The Board's functions include: information dissemination; market surveillance; coordination of international and domestic agricultural developments; and coordination of weather, climate and remote sensing research and forecasting techniques.

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USDA HomePage: <http://www.usda.gov/>

U.S. DEPARTMENT OF AGRICULTURE

Forest Service

The Forest Service (FS) administers programs for applying sound conservation and utilization practices to natural resources of the national forests and national grasslands, for promoting these practices on all forest lands through cooperation with states and private landowners, and for carrying out extensive forest and range research.

The FS participates in international activities through agreements made by the Department of Agriculture, Department of State, or its Memoranda of Understanding. However, much of the FS activity concerning the monitoring and acquisition of foreign technology takes place through a less formal process involving individual scientists and engineers. They visit other countries that have significant forest resources or technology and by the normal process of technical interaction are able to absorb new information.

The technical arms of the FS include regional research stations, the Forest Products Laboratory in Madison, Wisconsin, the Institute of Tropical Forestry in Rio Piedras, Puerto Rico, and the State and Private Forestry Branch with offices in Washington and regional centers. These organizations make field visits to other nations and enter into a number of international cooperative agreements directly. There is no formal process for publishing or otherwise disseminating foreign technical information other than the normal publication of trip reports or research papers. The Forest Service participates in the U.S. - Japan Cooperative Program in Natural Resources.

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B. THE DEPARTMENT OF COMMERCE

1. Bureau of Export Administration
2. International Trade Administration
3. Office of Air & Space Commercialization
4. National Institute of Standards and Technology
5. National Oceanic and Atmospheric Administration
6. National Technical Information Service
7. National Telecommunications and Information Administration
8. Institute for Telecommunication Sciences
9. Patent and Trademark Office
10. Technology Administration

DEPARTMENT OF COMMERCE

Bureau of Export Administration

The Bureau of Export Administration (BXA) promotes U.S. national and economic security and foreign policy interests by managing and enforcing the Department of Commerce's security-related trade and competitiveness programs.

BXA plays a key role in challenging issues involving national security and nonproliferation, export growth, and high technology. The Bureau's primary challenge is combating the proliferation of weapons of mass destruction while furthering the growth of U.S. exports, which are critical to maintaining our leadership role in an increasingly competitive global economy.

Major Programs and Activities

- Implementing the Export Administration Act (EAA). The EAA, which has expired and needs to be re-authorized, provides for export controls on dual use goods and technology not only to fight proliferation, but also to pursue other national security, short supply, and foreign policy goals (such as combating terrorism). Simplifying and updating these controls in light of the end of the Cold War has been a major goal of this Administration.
- Enforcing the export control and antiboycott provisions of the EAA, as well as ensuring compliance with treaties that impose requirements on U.S. industry. The most important such treaty is the Chemical Weapons Convention, which if ratified, will give BXA new enforcement and outreach responsibilities. The EAA is enforced through a variety of administrative, civil, and criminal sanctions. The growing threat of proliferation of weapons of mass destruction to "pariah" nations and the evolution of our export licensing system towards a focus on individual end users necessitates the strengthening of BXA's enforcement staff.
- Analyzing and protecting the defense industrial and technology base, pursuant to the Defense Production Act and other laws. As the Defense Department increases its reliance on dual use high technology goods as part of its cost-cutting efforts, ensuring that we remain competitive in those sectors and sub-sectors is critical to our national security.
- Helping Ukraine, Kazakhstan, Belarus, Russia, and other newly emerging countries develop effective export control systems and dismantle their defense industries. The effectiveness of U.S. export controls can be severely undercut if other supplier nations are exporting sensitive goods and technology or permitting diversion of our exports.
- Assisting U.S. defense enterprises to meet the challenge of the reduction in defense spending by converting to civilian production and by developing export markets. This work assists in maintaining our defense industrial base as well as preserving jobs for U.S. workers.

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EXPORT ENFORCEMENT

BXA's Export Enforcement (EE) arm enforces export controls for reasons of national security, nonproliferation, foreign policy and short supply. A comprehensive and aggressive export enforcement program enables the Administration to maximize all legal export opportunities while ensuring that illegal attempts will be detected and prevented or investigated and punished. Export Enforcement's programs support the Administration's goals relating to the non-proliferation of chemical, biological, and nuclear weapons and the missile systems necessary to deliver them. It also ensures prompt, aggressive action against the Arab boycott of Israel.

Office of the Assistant Secretary for Export Enforcement:

This office has oversight over all policy initiatives affecting Export Enforcement's operations. The office reviews and coordinates all enforcement issues arising under the Export Administration Act (EAA) and the Export Administration Regulations (EAR), and acts on behalf of the Department in the settlement of export control and antiboycott cases.

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Office of Export Enforcement:

The Office of Export Enforcement (OEE) protects national security, nonproliferation, foreign policy, and short supply interests by detecting, preventing, and investigating illegal exports and recommending prosecution of EAA violators, without impeding legitimate international trade. OEE investigates alleged export control violations using criminal investigators based in eight field offices throughout the country. OEE dedicates 90 professionals, 70 of whom are special agents, to investigating export control violations.

Because of their close working relationship with BXA's licensing officers and policy staff, as well as other U.S. Government agencies involved in export controls, OEE agents have a sophisticated awareness of all aspects of the export control system, the importance of its provisions, and the potential areas of vulnerability. OEE also participates in the enforcement aspects of various multilateral regimes, including the Missile Technology Control Regime (MTCR), the Australia Group (AG), the Nuclear Suppliers Group (NSG) and the New Forum (new COCOM).

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Intelligence Division:

OEE's Intelligence Division, based in Washington, D.C., consists of special agents and intelligence research analysts who collect and analyze information relating to dual-use export control violations. The Intelligence Division serves as a central repository and point of contact for all intelligence information needed to identify/target suspects for enforcement investigations and to identify diversion networks.

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License Review and Operations Support Division:

The Office of Enforcement Support (OES) screens all Commerce export license applications to detect potential illegal export. These preventive enforcement measures are used to help decide which license applications for the export of strategic technology should not be granted because the bona fides of the parties involved are questionable. OES conducts information collection, research, and analysis to review export licenses for enforcement concerns, including when pre-license checks (PLCs) and post-shipment verifications (PSVs) should be requested. PLCs help EE and BXA determine the reliability of foreign consignees to receive sensitive U.S. technology. PSVs help ensure compliance with the terms and conditions of U.S. export licenses. OES also reviews shipper's export declarations (SEDs) received by the Census Bureau to monitor exports against general license authorities and detect violations of these licenses.

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Office of Antiboycott Compliance:

The Office of Antiboycott compliance (OAC) is responsible for implementing the antiboycott provisions of the EAA and EAR. OAC performs three main functions: enforcing the antiboycott sections of the EAA and EAR, assisting the public in complying with these sections of the EAR, and compiling and analyzing information regarding the Arab boycott of Israel. Investigative staff enforce the antiboycott provisions of the EAA and EAR through investigations and audits. The Compliance Policy Division provides advice and guidance to the public concerning application of antiboycott provisions of the EAR and analyzes information about boycotts.

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Strategic Industries and Economic Security:

This office is responsible for implementing programs to ensure the U.S. defense industries can meet national security requirements, for facilitating diversification of U.S. defense related industries into civilian markets, and for promoting the conversion of military enterprises in the Newly Independent States to civilian applications. It is also tasked with analyzing the economic impact of U.S. export controls and other trade policies on U.S. industrial competitiveness.

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Defense Programs Division:

This office is responsible for identifying foreign market opportunities for U.S. defense manufacturers, facilitating the conversion of military enterprises in the Newly Independent States, and administering the Defense Priorities and Allocations System. It is responsible as well for implementing the Department of Commerce's responsibilities for the National Defense Stockpile and analyzing the economic effect of the Defense Department's cooperative R&D and coproduction Memoranda of Understanding on the U.S. defense industrial base. This office is tasked with coordinating Commerce's emergency planning preparedness program to ensure industrial responsiveness in emergency situations, participating on NATO's Industrial Planning Committee, and analyzing the industrial impact of Defense Department disposal of excess defense articles.

William J. Denk
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Strategic Analysis Division:

This office is responsible for analyzing the effect of offsets in defense trade on the U.S. defense industrial base and developing initiatives to limit their use. It is also tasked with assessing the capabilities of defense industries and critical technologies to meet national security needs, conducting national security reviews on the impact of foreign direct investment in U.S. industries, and carrying out investigations under Section 232 of the Trade Expansion Act of 1962, which calls for an analysis of the impact of foreign imports on U.S. defense industrial base and U.S.

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Economic Analysis Division:

This office is responsible for conducting assessments to determine if U.S. export controls are placing American firms at a competitive disadvantage in world markets. It accepts claims of foreign availability, collects and analyzes data related to such claims and recommends appropriate actions based on its analysis. It also analyzes the economic implications of export control regulations and policy options on U.S. industry.

Karen Swasey
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STRATEGIC TRADE AND FOREIGN POLICY CONTROLS

The Office has the dual responsibility of development and implementation of export licensing policies for goods and technology controlled for national security reasons and administering the foreign policy based export controls. The Office contributes to the development of U.S. policy for export control on national security controlled items, including control list development, and participates in multilateral negotiations to reach agreement in these areas.

James A. Lewis
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Strategic Trade Division:

The Division is responsible for processing all export licenses, commodity classifications, and advisory opinions pertaining to sensitive dual-use items controlled for national security reasons for which the former COCOM members agreed to retain controls. Responsibility for control of these items will shift to a successor regime designed to control sensitive dual use items. The COCOM successor regime will maintain controls on nine categories of commodities: materials, material processing equipment, electronics devices, computers, telecommunications and cryptography, sensors, avionics and navigation equipment, marine technology, propulsion systems, and transportation equipment. In addition, this Division implements the Supercomputer regime, and work with the Electronics, Computer Systems, Telecommunications, and Sensory industry Technical Advisory Committees.

Jerald Beiter
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Foreign Policy Division:

The Division is responsible for export licensing of items controlled for foreign policy reasons including, regional security, crime control/human rights, anti-terrorism, exports to embargoed countries, and administering aspects of controls based on United Nations Security Council resolutions. The office produces the Annual Report to Congress on Foreign Policy Controls that reviews the U.S. application of and the effectiveness of foreign policy controls. The Division contributes to development of U.S. policy

and the application of foreign policy controls. The office participates in bilateral export control discussions and technical exchanges to increase cooperation and technical expertise of foreign countries in operating effective export control systems in support of multilaterally agreed security and nonproliferation efforts.

Joan M. Maloney-Roberts
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Office of Exporter Services:

The Office of Exporter Services (OExS) has the responsibility for counseling exporters, conducting export control seminars, and drafting and publishing changes to the Export Administration Regulations. It is also responsible for actions related to special licenses, including systems reviews on distribution licenses; processing and routing license applications, advisory opinions and commodity classifications; assisting companies in determining the "bona-fides" of end-users, thereby helping exporters determine if a validated license is required for items that would otherwise be eligible for general license treatment; and coordinating field office operations.

OExS also has an extensive seminar and publications program. It conducts seminars on a variety of export control issues and develops brochures and other written guidance to help exporters comply with the EAR. Each year over 130 export control seminars, ranging from introductory courses to advanced sector-specific workshops, are conducted by the Export Seminar Staff and the Western Regional Office. In addition, two Update conferences--which are designed to provide exporters with the latest policy and regulatory information--are held each year, one every spring in Washington, D.C. and one every fall on the West coast.

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Exporter Counseling Division:

This office is responsible for responding to inquiries from the exporting community, whether by telephone or in person; participating in seminars and other outreach efforts to help exporters understand and comply with the EAR, and analyzing requests for expedited licensing treatment and determining whether expedited treatment should be granted.

Laverne Smith
Acting Director
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Regulatory Policy Division:

This office is responsible for drafting new regulations, revising the current Export Administration Regulations (EAR) and coordinating the clearance of all changes to the EAR.

Larry Christensen
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Special Licensing and Compliance Division:

This office is responsible for analyzing applications for special licenses, such as the distribution license, and making decisions on whether to approve, reject, or return the applications without action. It is also responsible for consulting with and informing the exporting community on special license procedures, conducting reviews of the internal control programs of special license holders to ensure compliance with the EAR, conducting reviews of Export Management Systems (EMS) and providing exporters with guidance for the improvement of their EMS.

Deborah Kappler
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Operations Division:

This office is responsible for maintaining and distributing all export licensing forms; screening all incoming license applications, commodity classification and advisory opinion requests for completion and routing them to the appropriate licensing office for review and analysis; issuing import certificates; and maintaining records on all license applications.

Cheryl Suggs
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Bureau of Export Administration
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Western Regional Office and Santa Clara Branch Office:

The Western Regional Office in Newport Beach and its branch office in Santa Clara are responsible for assisting the exporting community in twelve Western states. In addition to providing counseling and seminars similar to those at headquarters, these offices also provide extensive support for BXA efforts in assisting the U.S. defense industrial base diversify into commercial markets.

Western Regional Office:

Michael Hoffman, Director
Bureau of Export Administration
Newport Beach, CA
Tel: (714) 660-0144

Santa Clara Branch Office:

JoAllyn Scott, Acting Dir.
Bureau of Export Administration
Santa Clara, CA
Tel: (408) 748-7450

Chemical/Biological Controls and Treaty Compliance

This office is responsible for implementing multilateral export controls under the Australia Group, the Biological and Toxin Weapons Convention, the Open Skies Treaty, and will be responsible for implementing and administering the Commerce Department's responsibilities under the Chemical

Weapons Convention (CWC). Consequently, this office has a major policy role in treaty compliance and the responsibility for working with U.S. industry, while also conducting its day-to-day export licensing, commodity classification and advisory opinion duties in the chemical and biological weapons area.

Steven C. Goldman
Director
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This office has two divisions:

Chemical and Biological Controls Division:

James Seevaratnam
Acting Director
Bureau of Export Administration
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Treaty Compliance Division:

Chuck Guernieri
Acting Director
Bureau of Export Administration
Department of Commerce
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Nuclear & Missile Technology Controls:

This office is responsible for all policy issues, export licenses, commodity classifications and advisory opinions relating to the Nuclear Suppliers Group and Missile Technology Control Regime. It has a full range of responsibilities associated with the licensing of exports controlled for nuclear or missile technology reasons and consists of two divisions dealing with Nuclear and Missile Technology Controls.

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Nuclear Technology Controls Division:

Joseph Chuchla
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Missile Technology Controls Division:

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BXA HomePage: http://www.doc.gov/resources/BXA_info.html

DEPARTMENT OF COMMERCE

International Trade Administration

U.S. and Foreign Commercial Service

The primary function of the Foreign Commercial Service (FCS) is to increase exports of U.S. products, but in the course of assessing foreign markets for U.S. products, FCS officers or their local national assistants in embassies obtain technical information that is included in their reports. These reports ("Market Research Reports") are disseminated to the private sector in the U.S. by a number of means, including hard copy, CD-ROM (sold by NTIS), and in Internet files.

On the Internet, Market Research Reports can be found by using Gopher to enter the "stat-usa.gov" general database for the U.S. Government, and then finding the NTDB (National Trade Data Bank) specialized database. Hundreds of market research reports can be found there, as well as other useful statistics.

The FCS has over 130 offices abroad in 68 countries and Taiwan, and over 65 offices across the U.S.

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ITA HomePage: <http://www.ita.doc.gov>

National Trade Data Bank: <http://www.miep.org/tutor/ntdb.html>

ITA Resources on the NTDB: <http://www.stat-usa.gov/bems/backup/bemsntdb.html%25>

How to Use NTDB Help Sheet: <http://www.pitt.edu/~busl/bry/ntdb.htm>

DEPARTMENT OF COMMERCE

Office of Air and Space Commercialization

The Office of Air and Space Commercialization (OASC) has been a part of the Office of the Secretary of Commerce since its creation in 1987 and advises the Secretary and Deputy Secretary on the formulation and implementation of policies related to commercial space.

OASC was created as part of the Office of the Secretary to work with the private sector, Federal agencies, as well as state and other governmental entities to develop national policies with respect to the commercial use of space. It was also designed to work with the various bureaus within the Commerce Department, including the Bureau of Export Administration (BXA), International Trade Administration (ITA), National Oceanic and Atmospheric Administration (NOAA), National Telecommunications and Information Administration (NTIA), Technology Administration (TA), and Office of General Counsel (OGC), to coordinate Commerce Department policy on commercial space related activities in DOC.

OASC priorities for FY 1995 included follow-up on remote sensing, implementation of space transportation policy, negotiation of a new space launch trade agreement with Ukraine, and the publication of *Trends in Commercial Space*, a comprehensive source of commercial space market trends and information. OASC expects remote sensing, the launch policy, and international trade negotiations to continue through FY 1996, with the addition of the National Space Policy as a new focus. OASC views orbital debris, global positioning, Geographic Information Systems, direct satellite broadcasting, and space-based manufacturing as emerging issue areas.

OASC is monitoring future trends in commercial space not only by supporting the development of unique and innovative space applications, where possible, but also by providing market information for making important space business choices.

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OASC HomePage: <http://www.doc.gov/oasc.html>

DEPARTMENT OF COMMERCE

National Institute of Standards and Technology

NIST Programs

Operating in fiscal year 1995 with a budget of about \$885 million and some 3,200 staff members at its sites in Gaithersburg, MD, and Boulder, CO, the National Institute of Standards and Technology (NIST) promotes U.S. economic growth by working with industry to develop and apply technology, measurements, and standards. Part of the Commerce Department's Technology Administration, NIST has four major programs that reflect U.S. industry's diversity and multiple needs:

1. Advanced Technology Program (ATP)
2. Manufacturing Extension Partnership (ME)
3. NIST Laboratory Programs
4. Baldrige National Quality Program

1. Advanced Technology Program

The Advanced Technology Program (ATP) is a rigorously competitive program that invests in cost-shared research by individual companies or industry-led joint ventures. The aim is to develop high-risk, potentially high-payoff, enabling technologies that otherwise would not be pursued at all or in the same market critical time frame because of technical risks and other obstacles that discourage private-sector investment.

Overall, NIST has conducted 22 competitions and funded 280 projects to provide a little less than half the funding for nearly \$2 billion of high-risk research. It has conducted six general ATP competitions open to proposals from all areas of technology. Through these general competitions, it has made 138 awards, committing a total of \$370 million in ATP funds with \$404 million in cost-sharing funds from industry.

2. Manufacturing Extension Partnership

The Manufacturing Extension Partnership (MEP) is an effort to improve the competitiveness of smaller manufacturers: the more than 381,000 companies with fewer than 500 employees that account for about 95 percent of all U.S. manufacturing plants. The MEP helps these smaller manufacturers succeed in the marketplace by giving them unprecedented access to new technologies, resources, and expertise.

The MEP provides federal funds to both existing and new extension centers so that they can meet the needs of area manufacturers. All centers are chosen in rigorous, merit-based competitions, and all federal funding must be matched by the state. Forty-two states and Puerto Rico have extension centers affiliated with the MEP. The MEP includes the State Technology Extension Program, which offers support to states and communities so they can begin building the foundation of organization relationships required for the efficient delivery of services, possibly including a manufacturing extension center. Those non-profit centers employ professional engineers and others with manufacturing or business experience.

3. NIST Laboratory Programs

Laboratory research and services are planned and implemented in cooperation with industry and focused on providing infrastructural technologies such as measurements, evaluated data, standards and test methods that U.S. industry needs to continually improve its products and services. The laboratories perform research across a broad spectrum of disciplines, affecting virtually every industry. Primary fields of NIST research include chemical science and technology, physics, materials science and engineering, electronics and electrical engineering, manufacturing engineering, computer systems, building and fire research, and computing and applied mathematics.

NIST offers more than 500 different calibration services, about 1,200 standard reference materials for standard reference data centers that provide reliable, well-documented reference data to scientists and engineers, laboratory accreditation programs, and free evaluations of energy-related inventions.

4. Baldrige National Quality Program

With the cooperation and financial support of the private sector, NIST manages the Malcolm Baldrige National Quality Award. The criteria for the award have become both the U.S. standard of quality achievement in industry and a comprehensive guide to quality improvement. The award program was established by Congress in 1987 not only to recognize individual U.S. companies for their quality achievements, but also to promote quality awareness and to provide information on successful quality strategies. The major focus of the award is on results and customer satisfaction; it is not given for specific products or services.

Key to this program is the award's board of examiners. Made up of more than 250 quality experts from a variety of industry sectors, along with a smaller contingent from universities and government at all levels, board members volunteer to review applications for the award. From 1988 to 1995, the award program received 593 applications from U.S. companies. Twenty-four companies, including 13 large manufacturers, five service companies, and six small businesses have won the award.

Office of International and Academic Affairs

The NIST is engaged in a broad range of international activities that result in the acquisition of foreign scientific and technological information. Formal agreements and scientific exchanges with other countries are managed by the Office of International and Academic Affairs, but much of the information-gathering process takes place at the level of the individual researcher in the small organizational unit.

NIST has assigned NIST personnel or contractors to the following nations abroad: one in Tokyo (for the explicit purpose of collecting advanced technical information from Japan and the other countries of the Far East), located at a private organization (GLOCOM), under detail through the University of New Mexico; one in Brussels (to maintain liaison with the European Union and the International Standards Organization on standards development and issues) as part of the Foreign Commercial Service staff in the U.S. Mission to the European Community; and one contractor person in the U.S. Embassy, Riyadh, Saudi Arabia. One person is scheduled for assignment to the Foreign Commercial Service staff at the U.S. Embassy in Mexico, beginning in February 1996 and another is slated for assignment in the U.S. Embassy in Buenos Aires through the Foreign Commercial Service with an anticipated arrival date of March 1996.

NIST contributes to the Japan Technology Evaluation Center (JTEC) and World Technology Evaluation Center (WTEC) programs sponsored by the National Science Foundation (NSF).

National Institute of Standards and Technology

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[Chair, Committee on Applications and Technology Information Infrastructure Task Force]

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NIST HomePage: <http://www.nist.gov>

NIST Preview Database: <http://www.fedworld.gov/preview/preview>

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) is actively involved in scientific coordination and cooperation both bilaterally and multilaterally. Multilaterally, NOAA participates as a major player in a number of United Nations related organizations, including the Intergovernmental Oceanographic Commission (IOC), the World Meteorological Organization (WMO), the United Nations Environment Program (UNEP), particularly its Regional Seas Programs in the Caribbean and in the South Pacific, the Food and Agriculture Organization (FAO), the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO), and the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS).

Cooperative scientific activities take varying forms in the multilateral fisheries organizations in which NOAA/National Marine Fisheries Service (NMFS) scientists participate. In most cases the scientists of member nations coordinate their findings in scientific committees, which then report to their parent organizations. Examples are the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the North Atlantic Salmon Conservation Organization (NASCO). Other fisheries organizations include scientists within their secretariats. In these cases, NOAA/NMFS scientists coordinate with commission scientists and with scientists of the other member countries. An example of this type of commission is the Inter-American Tropical Tuna Commission (IATTC). The NOAA scientists also are active in worldwide organizations to conserve marine mammals, such as the International Whaling Commission and the Convention for the Conservation of Antarctic Seals.

Multilateral fora dealing with environment and ecosystems that NOAA scientists utilize for scientific coordination include the International Council for the Exploration of the Sea (ICES), the North Pacific Marine Science Organization (PICES), and the Inter-national Hydrographic Organization (IHO). Other multilateral fora are the London Dumping Convention, the Antarctic Treaty, the Pacific Island Network, and the Global Environment Facility.

Space is another area in which NOAA scientists make significant contributions through worldwide coordination. They work within multilateral fora such as working groups and data collection systems relating to Polar-Orbiting Meteorological Satellites, Geostationary Meteorological Satellites, Landsat, and the Committee on Earth Observation Satellites (CEOS).

The NOAA scientists participate actively in the study of global climate change through the United Nations Framework Convention on Climate Change (FCCC), the Intergovernmental Panel on Climate Change (IPCC), the International Group of Funding Agencies for Global Change Research (IAI), and the Montreal Protocol/ Stratospheric Ozone Depletion Convention. Additional multilateral activities include Direct Readout Services, World Data Centers, Very Long Base Line Interferometry, International Global Positioning System Network (CIGNET), and Tropical Oceans Global Atmosphere (TOGA).

Bilateral scientific cooperation occurs through many formal agreements on marine and atmospheric science. These include the U.S.-France Cooperative Science Program in Oceanography, the U.S.-Russia Agreement on Cooperation in studies of the World Ocean, the U.S.-Russia Working Group VIII - Agreement on Cooperation in the Field of Environmental Protection, the U.S.-China Cooperation in the Field of Marine and Fishery Science Technology, the U.S.-China Cooperation in Atmospheric Science and

Technology, the Indo-U.S. Science and Technology Subcommittee, the U.S.-Japan Cooperative Program in Natural Resources (UJNR), the U.S.-Brazil Science and Technology Initiative, the U.S.-Mexico Agreement on Scientific and Technical Cooperation, the U.S.-Canada Memorandum of Agreement on Climate, the U.S.-Israel Cooperation in Marine and Freshwater Science and Technology, the U.S.-Saudi Arabia Technical Cooperation in a Meteorological and Environmental Program (ARSAD Project), and the U.S.-Indonesia Memorandum of Understanding on Climate.

Bilaterals relating to fisheries include the International Pacific Halibut Commission (IPHC) and the Pacific Salmon Commission, which have scientists on their staffs, the Treaty Between the Government of the United States and the Government of Canada regarding Pacific Salmon, the U.S.-Russia Intergovernmental Consultative Committee (ICC), the U.S.-Japan Consultative Committee on Fisheries, formal cooperation meetings with Mexico, and a recently signed cooperation memorandum with Chile.

Environmental bilateral agreements include the U.S.-Canada Hydrographic Commission (USCHC), the U.S.-Canada Joint Ice Working Group, the U.S.-Canada Military Cooperation Committee (MCC), and meteorological agreements with many countries which are periodically updated.

Bilateral cooperation relating to space includes cooperation on instrumentation including Argues (France), Stratospheric Sounding Unit (United Kingdom), and the Advance Microwave Sounding Unit (United Kingdom), the U.S.-Russian Bilateral Agreement, and the Geostationary Meteorological Satellite Backup Data Coverage (ESA/EUMATSAT), including the Meteosat Extended Atlantic Data Coverage and the Meteosat Long-Term Mutual Backup.

The NOAA scientists also participate in two nongovernmental fora, namely, the International Union for the Conservation of Nature and Natural Resources (IUCN) and the International Council of Scientific Unions (ICSU).

NOAA scientists are also commencing cooperative work with scientists of other nations on land-based sources of pollution, coral reefs, straddling fish stocks and highly migratory fish stocks, sustainable development of small island developing states, an International Research Institute for Climate Prediction (IRICP), acid rain and transboundary air pollution, arctic environmental protection, environmental aspect of the North American Free Trade Agreement, desertification, and biodiversity, as well as many aspects of sustainable development. Many of these issues are follow-up to the Earth Summit or the United Nations Conference on Environment and Development.

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NOAA HomePage: <http://www.noaa.gov>

DEPARTMENT OF COMMERCE

National Technical Information Service

The National Technical Information Service (NTIS) is the U.S. Government's central public source for scientific and technical information in all media. NTIS is self-sufficient, operating entirely without appropriated support with all of its products and services being available on a "for fee" basis.

NTIS collects information from over 200 U.S. Government agencies, including foreign information acquired by those agencies. NTIS collects and disseminates electronic products (software and data files) and films and videotapes as well through the National Audiovisual Center.

NTIS has a staff of about 370 professionals with expertise in all fields of information processing. NTIS does not have personnel located abroad.

The technical and scientific focus of NTIS' collection ranges over all fields of science and technology, including the social sciences. In a 1954 opinion regarding NTIS, the Comptroller General of the United States decided that technical information is any information that would be useful to business and industry.

In the international arena, NTIS has a network of nineteen cooperating organizations in foreign countries acquiring reports from their countries for distribution in the U.S. NTIS' direct foreign acquisitions result from agreements with organizations in Austria, Canada, China, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Sweden, Taiwan, and the United Kingdom, as well as three international organizations.

NTIS has also developed a collection system for news of current developments in science and technology in foreign countries. This system receives cables from the science counselors at U.S. Embassies, electronic reports from Army, Air Force, Navy, and National Science Foundation offices in foreign countries, and from many foreign organizations concerned with science and technology.

To carry out its responsibilities under the Japanese Technical Literature Act of 1986, NTIS has developed unique arrangements to acquire technical reports from about 80 large Japanese corporations, as well as from Japanese Government agencies. NTIS also works with the Department of Commerce's Japan Technology Program to provide access to a Japanese on-line database, publish two directories of Japanese resources in the U.S., and sponsor a series of conferences on access to Japanese information with the Japan Information Center for Science and Technology.

In FY 1995, about 100,000 new products were added to its collection, totaling 2.3 million titles. In recent years about 30 percent of each year's acquisitions have been from foreign countries. Of particular interest for their foreign information content are the Foreign BroadC.ast Information Service's (FBIS) Daily Reports and Joint Publications Research Service (JPRS) reports.

NTIS is a permanent repository for the information it acquires. Many documents acquired are available to customers in paper, microfiche, CD-ROM and other multi-media formats. As of 1994, newly acquired documents and older documents that are ordered are being scanned and stored as electronic page images. These images make it easier to convert the text into a format the customer wants.

All information products acquired are cataloged, abstracted, and indexed. The resulting bibliographic records are entered into the NTIS Bibliographic Database. This electronic database is available for public use worldwide through the numerous on-line information retrieval services, such as Dialog. It is also available on CD-ROM through several companies. One hundred percent of NTIS' collection is open source and not classified. Some information is, however, restricted to U.S. sales only.

In 1992, NTIS launched FedWorld, an electronic information service. It provides directories and information catalogs, libraries of electronic information files, subscription services to Federal information products, and a gateway to many other Federal agencies' electronic bulletin boards. FedWorld is accessible via the Internet (World-wide Web, FTP, Telnet, and WAIS) and via telephone and modem connection. Access to FedWorld is free, but some information services available through FedWorld require payment.

A major new on-line service is available from NTIS and is available from the World Wide Web. The World News Connection provides access to information from thousands of international media sources, including political speeches, television programs, radio broadD.C.asts, newspapers articles, periodicals and books. It is designed as a comprehensive, yet cost-effective foreign news alert service for users in government, private industry and academia.

Consumers of information collected by NTIS include the following:

- 64% U.S. large and small businesses
- 20% Foreign organizations
- 6% Federal and state government
- 6% Academic and public libraries
- 4% Individuals

NTIS holds memberships in the following foreign STI-related working groups and committees:

- CENDI (Commerce, Energy, NASA, NLM, NAIC, Defense Information Group - Sponsored jointly by the six-agency members)
- FBIS Interagency Gray Literature Working Group
- Interagency Japanese Technical Literature Working Group, Department of Commerce, Japan Technology Program
- Foreign Technology Information Collection Group, Departments of State and Commerce/Technology Administration
- International Acquisitions Workshop Committee Informal interagency group

Authorizing Legislation

a. 15 U.S.C.1152(1950): The Department of Commerce is directed to operate a clearinghouse for the collection and dissemination of scientific, technical, and engineering information, to search for and collect such information from "whatever sources, foreign and domestic that may be available," and to make the information available to industry and business, all levels of Government, and the general public.

b. 15 U.S.C. 3704b (1988): NTIS is directed to "... collect, translate into English, and disseminate unclassified foreign scientific, technical, and engineering information."

c. 15 U.S.C. 3704 (d) (1986): NTIS and other Department of Commerce offices are directed to determine business and professional needs for information on Japanese technology and engineering; to acquire and translate Japanese technical reports and documents; and to coordinate with other Federal agencies to identify gaps and avoid overlap in coverage.

d. Executive Order 12591 (1987): The Departments of State and Commerce and the National Science Foundation are directed to develop a central mechanism for the dissemination of science and technology information developed abroad to users in Federal laboratories, academic institutions, and the private sector.

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NTIS HomePage: connect to Fedworld - <http://www.fedworld.gov>

DEPARTMENT OF COMMERCE

National Telecommunications and Information Administration

As the Executive branch agency responsible for domestic and international telecommunications and information policy, the National Telecommunications and Information Administration (NTIA) develops and implements Administration and Commerce Department policies involving industries that represent almost 10 percent of the U.S. domestic economy.

The four major NTIA activities include: 1) domestic telecommunications policy analysis, 2) international telecommunications policy analysis, 3) spectrum research, and 4) telecommunications research and engineering. NTIA's programs have focused on two major priorities, imperative for our being prepared for the Information Age: (1) promoting competition and opening markets, both global and domestic; and (2) ensuring that the traditionally under-served have access to the National Information Infrastructure (NII) and the Global Information Infrastructure (GII).

NTIA was actively involved in the G-7 Ministerial Conference on the Information Society and the Global Information Infrastructure (GII) initiative to promote competition and open markets for U.S. telecommunications service providers and equipment suppliers. NTIA will continue to monitor and, as appropriate, participate in international standards-setting fora to ensure that the interests of U.S. telecommunications equipment manufacturers and service providers are adequately represented.

NTIA routinely observes foreign activities through documentation provided by the Foreign Broadcast Information Service (FBIS) and other information-gathering organizations and is engaged in continuous dialogues with other nations and international organizations on apportioning the radio frequency spectrum to government and private users and it obtains technical information through these channels.

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DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Institute for Telecommunication Sciences (NTIA/ITS)

As the chief research and engineering arm of the National Telecommunications and Information Administration (NTIA), the Institute for Telecommunication Sciences (ITS) supports NTIA telecommunications objectives such as promoting advanced telecommunications and information infrastructure development in the U.S., enhancing domestic competitiveness, improving foreign trade opportunities for U.S. telecommunications firms, and facilitating more efficient and effective use of the radio frequency spectrum.

NTIA/ITS also serves as a principal Federal resource for assistance in solving telecommunication problems of other Federal agencies, state and local governments, private corporations and associations, and international organizations.

Cooperative research agreements based upon the Federal Technology Transfer Act of 1986 are the principal means of aiding the private sector. This Act provides the legal basis for and encourages shared use of government facilities and resources with the private sector in advanced telecommunications technologies to aid in attaining commercialization of new products and services.

Overview

The Institute for Telecommunication Sciences (NTIA/ITS), located in Boulder, Colorado, is the chief research and engineering arm of the National Telecommunications and Information Administration (NTIA) of the U.S. Department of Commerce. NTIA/ITS employs approximately 100 permanent program staff. These employees bring substantial engineering and scientific backgrounds, skills, and experience to our technical programs. The majority of our employees (60 percent) are electronics engineers, while 6 percent are mathematicians, 2 percent are physicists, 3 percent are computer scientists, and 2 percent are computer programmers.

History

NTIA/ITS had its beginnings in the 1940's as the Interservice Radio Propagation Laboratory which later became the Central Radio Propagation Laboratory (CRPL) of the National Bureau of Standards of the Department of Commerce. In 1965, CRPL became part of the Environmental Science Services Administration and was renamed the Institute for Telecommunication Sciences and Aeronomy (ITSA). In 1967, the telecommunications function of ITSA was transferred into the newly formed Office of Telecommunications (OT). Finally, under the President's Reorganization Act of 1977, OT and the Office of Telecommunications Technology Policy merged to form NTIA. Since that time, NTIA/ITS has performed telecommunications research and provided technical engineering support to NTIA and to other Federal agencies on a reimbursable basis. Recently NTIA/ITS has also pursued cooperative research with U.S. industry under the provisions of the Federal Technology Transfer Act of 1986.

Activities

The Institute performs telecommunications research, planning, and engineering in the following areas:

- **Spectrum Planning and Assessment:** Technical analyses of spectrum use in selected frequency bands and preparation of U.S. technical positions for international spectrum allocation conferences.
- **Telecommunications Standards Development:** Contributing to and developing Federal, national, and international telecommunications standards.
- **Telecommunication System Planning:** Relating needs of users to the capabilities of planned backgrounds, skills, and experience to our technical network.
- **Telecommunication System Performance Assessment:** Forecasting the performance of individual communication elements in a system.
- **Applied Research:** Modeling the way radio waves travel from point to point in various frequency bands and evaluating the way information is carried by radio signals, including modulation and coding.

Benefits

The Institute's work benefits both the public and private sectors in several areas:

- **Spectrum Utilization:** Optimization of Federal transferred spectrum through field measurements, and promotion of advances to aid in efficient use of the spectrum.
- **Telecommunications Negotiations:** Expert technical leadership at international conferences and development of negotiation support tools such as interference prediction programs.
- **International Trade:** Promulgation of nonrestrictive international telecommunications standards to remove technical barriers to U.S. export of telecommunications equipment and services.
- **Domestic Competition:** Development of user-oriented, technology-independent methods of specifying and measuring telecommunications performance to give users a practical way of comparing competing equipment and services.
- **National Defense:** Improvement of network operation and management, enhancement of survivability, expansion of network interconnections and interoperation, and improvement of restoration of emergency communications to contribute to the strength and cost-effectiveness of the U.S. Armed Forces.
- **Technology Transfer:** Direct transfer of research results and measurements to U.S. industry and local governments to support international and national competitiveness, to hasten the advent of new technology to users, and to expand the capabilities of the national and local telecommunications infrastructure.

Major outputs of the Institute's research and engineering activities include:

- **Engineering Tools and Analyses:** Predictions of transmission media conditions and equipment performance; test design and data analysis computer programs; laboratory and field tests of experimental and operational equipment, systems, or networks.

- **Standards, Guidelines, and Procedures:** Contributions to and development of national and international standards in such areas as network interconnection and interoperation, performance evaluation, and information protection.
- **Research Result:** Models for electromagnetic wave propagation, noise, and interference characterization.
- **Expert Services:** Training courses and workshops to communicate technology advances and applications to industry and government users.

NTIA/ITS is organized into two program divisions: 1) Spectrum Research and Analysis, and 2) Systems and Networks Research and Analysis. Each of the program divisions is organized into functionally oriented groups. Work performed by the Spectrum Division involves analyses directed toward understanding radio wave behavior at various frequencies and determining methods to enhance spectrum use. The Systems and Networks Division focuses on assessing and improving the performance of telecommunication networks within the Government and the private sector, developing domestic and international telecommunications standards for networks, and evaluating new technologies for future needs.

The activities of NTIA/ITS are undertaken through a combination of programs sponsored by the Department of Commerce and other Government agencies, and through cooperative research agreements with the private sector. NTIA/ITS policy provides that work sponsored by other agencies results in contributions to and reinforcement of NTIA's overall program and must be directed toward supporting the goals of the Department of Commerce. Various Department of Defense components provide the majority of NTIA/ITS's funding from other agencies. Other sponsors include the Department of Agriculture, the Department of Transportation, and the U.S. Information Agency.

Cooperative research agreements with such companies as U.S. West Advanced Technologies, Inc., and Telesis Technologies Laboratories, Inc., support technology transfer and commercialization of telecommunications products and services, which are major goals of the Department of Commerce. NTIA/ITS also undertakes cooperative research agreements with small, start-up companies to ensure the competitiveness of such entrepreneurial ventures with larger national concerns.

Because of its centralized Federal position, NTIA/ITS is able to provide a cost-effective, expert resource that does not require duplication throughout many Federal agencies and industry.

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DEPARTMENT OF COMMERCE

U.S. Patent and Trademark Office

Office of Legislative and International Affairs

The Administrator for Legislative and International Affairs is the principal advisor to Associate Commissioner for Governmental and International Affairs, who supervises the Assistant Secretary and the Deputy Assistant Secretary on public policy matters related to intellectual property protection, including proposed legislation and international activities of the United States. This Office formulates legislative and policy proposals, prepares supporting documentation to carry out the legislative programs and policies of the Patent and Trademark Office (PTO), and reviews and prepares analyses of other legislative proposals concerning intellectual property matters. The Office prepares Congressional testimony on intellectual property for the Assistant Secretary, other Patent and Trademark Office and Department officials, and maintains a liaison with Congress, the intellectual property bar associations, industry, and others concerned with proposed and pending legislation. The staff of this Office analyzes other policy issues before the Executive Branch and obtains public views through various means including public hearings.

The Office promotes international development of intellectual property systems and advocates improvements and more cost-effective means of protecting intellectual property rights of U.S. nationals throughout the world. This includes developing and maintaining multilateral systems for the protection of intellectual property rights; assisting in the establishment of bilateral agreements with other countries and other intellectual property offices; participating in the intellectual property aspects of trade consultations and the conclusion of bilateral investment treaties and trade agreements; promoting the establishment of adequate and effective systems in developing countries for the protection of intellectual property rights; developing international standards and procedures to encourage foreign filing by U.S. nationals; and facilitating access by U.S. nationals to the information contained in U.S. and foreign patent and trademark documents

One way in which the Office of Legislative and International Affairs promotes the development of intellectual property rights was by supporting the Information Infrastructure Task Force (IITF) Working Group on Intellectual Property Rights, chaired by Assistant Secretary of Commerce and Commissioner of Patents and Trademarks, Bruce A. Lehman. The IITF was formed to articulate and implement the Administration's vision for the National Information Infrastructure (NII). The IITF Working Group on Intellectual Property Rights released its report in late 1995, and congressional hearings were held on the proposals.

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Administrator for Search and Information Resources

The Administrator for Search and Information Resources, in coordination with the Administrator for Legislation and International Affairs, provides support, representation, advice and direction on technical issues regarding international patent documentation and search resources matters, including exchanges, and cooperation standards. The Administrator, who is assisted by a Deputy Administrator, an International Liaison Office, and an office of Resource Management, provides oversight to and coordinates the activities of the following Offices:

1. The Office of Patent Automation administers projects involving the development of new concepts and methods relating to Patents Cost Center automated systems and their use. This includes developing requirements for and implementing U.S. and foreign search and information resources and for automated systems to improve the processing of the patent applications and related functions; assessing the efficiency and capabilities of newly implemented systems serving the Patents Cost Center; communicating the effects of such systems upon operations, workloads, personnel and work patterns to and within the Patents Cost center; coordinating the training of the Patents Cost Center personnel in the use of automated systems; providing user support and oversight of the Patent Application Location and Monitoring (PALM) system; and in cooperation with staff assigned to the Chief Information Officer, oversees the day-to-day operation of the PALM systems.
2. The Scientific and Technical Information Center acquires, maintains and provides access to collections of scientific and technical literature in printed form, microform and electronic format; produces, maintains and provides access to specialized biotechnology search and information resources; provides commercial data base on-line search services and translation services to the Patent Examining Corps; serves as the national repository for foreign documents and a depository for U.S. Government publications; and provides facilities and services for use of these collections by the Patent and Trademark Office employees and the public.
3. The Director of Classification Operations provides administrative oversight to and coordination of the activities of:
 - The Classification Groups develop, implement and maintain schemes for organizing and retrieving technical information contained in patents and other documents in the patent search files and generates schedules, definition, indices and other search tools needed to access technical information.
 - The International Patent Classification Group provides direction on technical matters relating to the International Patent Classification (IPC) System; develops proposals for and represents the United States in regard to revision of the IPC; monitors the quality of IPC designations on United States patents; and provides training in IPC use to personnel under the Assistant Commissioner for Patents.
 - The Office of Classification Support provides professional, clerical and operation support for the Classification Groups; monitors the condition of the Examiner and Public Search Room paper patent search files and develops and implements processes to improve them; and produces the schedules, definitions, indices and other search tools generated by the Classification Groups.

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THE PATENT COOPERATION TREATY OFFICE

Office of Patent Cooperation Treaty Operations

The Office of Patent Cooperation Treaty (PCT) Operations reviews and processes international patent applications filed under the PCT. With the exception of decisions regarding the technical nature of the claimed invention (which are made by Patent Examiners) and certain complicated legal matters (which are processed by the PCT Legal Office), this office inspects all applications filed by U.S. applicants seeking foreign patents through the PCT and all applications filed through the PCT which enter the national stage in the United States.

United States residents and nationals may file international applications in the United States Receiving Office. Such applications are reviewed for compliance with Treaty provisions. Applicants may have an International Search Report prepared by the United States International Searching Authority. In addition, applicants may choose to pursue International Preliminary Examination. Applications undergoing the search and examination phase are both processed in the Office of PCT Operations. Applications entering the national stage under the PCT are reviewed for compliance with the appropriate statutes and regulations in the National Stage Processing Branch of the Office of PCT Operations.

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The Patent Cooperation Treaty Legal Office

The PCT Legal Office provides legal guidance to the Office of PCT Operations and other branches of the USPTO on matters relating to the Patent Cooperation Treaty. The PCT Legal Office renders decisions on petitions in applications related to the PCT, provides training and guidance on PCT related issues, operates a PCT "Help Desk" and performs a quality review of reports prepared by Patent Examiners. In addition, PCT Legal Office personnel act as a liaison between the USPTO and the International Bureau of the World Intellectual Property Organization and represent the United States at various international meetings dealing with the Patent Cooperation Treaty.

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DEPARTMENT OF COMMERCE

Technology Administration

Established in its current form by the Omnibus Trade and Competitiveness Act of 1988, the U.S. Department of Commerce's Technology Administration (TA) serves as the focal point for policies and programs that will permit the U.S. private sector to utilize science and technology to improve its international competitiveness. This mission helps expand economic growth and jobs through the development and promotion of the use of civilian technology. Headed by the Under Secretary of Commerce for Technology, the Technology Administration consists of the National Institute of Standards and Technology (NIST), the Office of Technology Policy (OTP), and the National Technical Information Service (NTIS). In addition, the Under Secretary links industry's needs and government technology efforts by chairing the interagency Civilian Industrial Technology Committee, part of the President's National Science and Technology Council. Among TA's mission responsibilities are the following:

- advocate policies that provide for the protection of intellectual property necessary for optimal U.S. commercial development of technology and processes;
- represent the interests of U.S. industry in international science and technology negotiations and forums;
- work to ensure that American industry has access to foreign R&D and technical data;
- provide research, development and generic technology including measurement standards, technical data, and reference materials through the National Institute of Standards and Technology;
- provide an international collection of technical, engineering and business-related information in the form of print and electronic media through the National Technical Information Service; and
- identify and help remove statutory and regulatory barriers that prevent rapid commercialization of new technologies and other impediments affecting U.S. commercial innovation, quality, productivity and manufacturing competitiveness.

National Institute of Standards and Technology

The National Institute of Standards and Technology (NIST) manages a portfolio of programs to meet the needs of industry. Its primary mission is to promote economic growth by working with industry to develop and apply technology, measurements, and standards. [Additional information on NIST is included separately in the Department of Commerce section.]

National Technical Information Service

The National Technical Information Service (NTIS) provides technical information to companies. It is the nation's clearinghouse for R&D results and information produced by and for the U.S. government. It also disseminates similar information from domestic and foreign non-governmental sources. [Additional information on NTIS is included separately in the Department of Commerce section.]

Office of Technology Policy

The Office of Technology Policy (OTP) develops policies and undertakes initiatives to increase the role of technology in enhancing the economic competitiveness and well-being of the United States. Initiatives

range from assessing federal mechanisms to support private sector research, to developing international science and technology policies, to improving industry access to foreign innovations. The OTP conducts analysis for the development of technology policy and also oversees several international science and technology agreements. There are three operating units within OTP:

1. Office of Technology Competitiveness

Conducts special benchmark studies in cooperation with industrial and academic organizations dealing with the competitiveness of specific U.S. industries; coordinates activities associated with the National Medal of Technology; reviews federal mechanisms for research collaboration and support, and seeks to improve federal technology partnerships; ensures industry views are properly accounted for in the creation and implementation of public policies affecting the U.S. business climate for technological innovation.

2. Office of Manufacturing Competitiveness

Evaluates the health of the nation's manufacturing base by conducting annual assessments; undertakes other manufacturing-related initiatives; addresses and reduces barriers that impede the commercialization of industry-driven environmental technologies through its rapid commercialization initiative.

3. Office of International Policy

The Office of International Policy (OIP) undertakes programs and promotes policies to ensure that U.S. companies, researchers and engineers have access to foreign scientific and technical information and programs that will strengthen their ability to compete in today's global markets. It provides a voice for industry in the development of U.S. international science and technology policies, in international negotiations and in international S&T forums such as the OECD and APEC. The OIP monitors and disseminates a wide variety of foreign technical information to U.S. industry. In addition to policy activities related to international S&T agreements and other issues, International Policy manages the following programs:

- The **Asia-Pacific Technology Program** has extensive expertise in science and technology developments and policy in Japan, China, Korea, Taiwan, and other Asian nations. The program coordinates U.S. participation in the Industrial Science and Technology Working Group of APEC. Information is made available to industry through the publication of technical assessments and special reports, conferences, business counseling, electronic dissemination through HomePages, and database access. Other major activities include the U.S.-Japan Manufacturing Technology Fellowship Program which provides support for long-term stays by U.S. engineers at Japanese factories, the U.S.-Japan Joint High Level Advisory Panel, the U.S.-Japan Civil Industrial Technologies Arrangement, Techno-Growth House in Tsukuba City, Japan, a site for short term stays of U.S. researchers in Japan, and the U.S.-Japan Machine Translation Center pilot program.

- **The U.S.-Israel Science and Technology Commission** seeks to increase R&D cooperation between the high technology sectors in the U.S. and Israel. The Commission was formally established in response to an initiative by President Clinton and Israeli Prime Minister Rabin. It awards grants to enable American and Israeli firms to work together to develop long-term, high risk technologies that can contribute to the growth of civilian industries.
- **The European Technology Program** undertakes activities with regard to Western Europe, Eastern Europe, Russia and the NIS, and the OECD. With regard to Western Europe, the program monitors science and technology policies and major R&D programs and reports new developments. The program also provides support for the science and technology-related initiatives under the Transatlantic Business Dialogue. Additionally, the program is responsible for implementing science and technology cooperation commitments under the Irish Peace Process initiative. With regard to Eastern Europe, Russia and the NIS, the program provides information on science and technology policies and possibilities for international technology cooperation, and seeks to facilitate access by U.S. companies to scientific and technical information. With regard to the OECD, the program provides the lead for U.S. participation in the organization's Working Group on Innovation and Technology Policy. Information on all facets of the program is disseminated through short publications and electronically through HomePages.

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OTA HomePage: <http://www.ta.doc.gov/otphome/otp.htm>

TA's International Technology Policy and Programs Page: <http://www.ta.doc.gov/itp/itp.htm>

TA's ITP Regional/Specialty Focus:

Asia-Pacific Region: <http://www.ta.doc.gov/aptp/aptp.htm>

Japan: <http://www.ta.doc.gov/aptp/japan/japan.htm>

China Economics Area: <http://www.ta.doc.gov/optp/china/cea.htm>

Republic of Korea: <http://www.ta.doc.gov/optp/korea/rok.page>

USA: <http://www.ta.doc.gov/itp/usa/usahome.htm>

Canada: <http://www.ta.doc.gov/itp/can/csthome.htm>

Mexico: <http://www.ta.doc.gov/itp/mex/mexico.htm>

Russia and NIS: <http://www.ta.doc.gov/itp/nis/nishome.htm>

Israel: <http://www.ta.doc.gov/itp/israel/page2.htm>

Egypt: <http://www.ta.doc.gov/itp/egypt/egypt.htm>

Office of Technology Reports: <http://www.ta.doc.gov/itp/public.htm>

C. DEPARTMENT OF DEFENSE

1. Ballistic Missile Defense Organization
2. Defense Mapping Agency
3. Defense Nuclear Agency
4. Defense Technical Information Center (DTIC)
5. DTIC/DOD Information Analysis Centers
6. DTIC/Military Service Information Analysis Centers
7. Defense Technology Security Administration
8. DOD International Programs

DEPARTMENT OF DEFENSE

Ballistic Missile Defense Organization

Since its inception, the Ballistic Missile Defense Organization (BMDO) has maintained an aggressive international program which is exercised through international agreements and other initiatives with U.S. allies. Responsibility for the international activities within BMDO fall within the charters of seven organizations.

1. The BMDO Director has delegated authority to negotiate agreements with foreign governments to execute allied participation in BMDO programs, and exercises foreign disclosure authority over BMDO funded technology development and acquisition programs.
2. The Deputy for Strategic Relations (SR) is the principal advisor for international participation and is responsible for coordination of policy and programs regarding international agreements, arms control negotiations, and Allied participation in BMDO programs.
3. The General Counsel (DGC) advises on international law and treaties, including all legal matters pertaining to international participation, and advises on laws governing agency security policies.
4. The Security, Intelligence and Countermeasures Directorate (DSI) provides oversight in areas related to security and foreign disclosure.
5. The Deputy for Acquisition/TMD (AQ) and the Deputy for Technology Readiness (TR) provide program integration and/or program management for BMDO international programs.
6. The International Affairs Directorate (SRI) is the principal office for facilitating international participation in the BMDO programs. Its responsibilities include:
 - accreditation of allied representatives to BMDO;
 - principal point of contact for allies seeking guidance on policy, procurements, visits and export licenses;
 - preparation of Memoranda of Understanding (MOU), Memoranda of Agreement (MOA), and other international agreements involving BMDO;
 - liaison between BMDO and allied governments/foreign embassies;
 - develops and coordinates foreign disclosure guidelines;
 - review and approval of procurement policies that prohibit or restrict allied participation;
 - monitors procurement process to assure cooperating allies receive appropriate RFPs and other procurement documentation;
 - actively monitoring visit requests and munitions cases to facilitate allied participation in the BMDO program;
 - assessment of feasibility of foreign technology to support BMDO technical requirements;
 - support to the Deputy for Technology Readiness (TR) and the various Technology Directorates in developing cooperative R&D programs with our allies including a number of innovative cooperative research programs promoted by the Science and Technology Directorate (TRI).
7. The Deputy for Acquisition/TMD (AQ) oversees international activities related specifically to the Theater Missile Defense program through the Assistant Deputy for TMD Operations (AQ/O) and the

Assistant Deputy for TMD Programs (AQ/A). Listed below are the various directorates which participate and their respective roles:

- The Joint Force Directorate facilitates international cooperation in R&D leading to allied interoperability with U.S. forces, conducts architecture studies with allies, develops plans for international cooperative development and procurement of TMD systems, participates in teams negotiating agreements with allies for cooperative development programs.
- The System Integration/BMC3 Directorate participates in TMD architecture studies with allies.
- The System Applications Directorate and System Acquisition Directorate participate, as required, as members of negotiating team concluding agreements for international cooperative developments, and in providing technical and programmatic perspective concerning arms control and treaty compliance as they relate to weapons technology developments.

The following is a summary of significant programs covered by international agreements or contracts from October 1985 to present:

Australia: Data Fusion and Data/Imagery Transmission using Asynchronous Transfer Mode Links

Czech Republic: I.R. Recognition, Air Defense Technology

France: Extended Air Defense Simulations, Plume Phenomenology Research, Reentry Signature Technology, Medium Extended Air Defense System (MEAS)

Germany: Pointing/Tracking, Optics, Lethality and Target Hardening, Electron Lasers, Theater Defense Architectures, Infrared Phenomenology, Discussions on Extended Air Defense Test Bed, Medium Extended Air Defense System (MEAS)

Israel: Hypervelocity Gun, Boost Phase Interception, Magneto-hydrodynamics, Shortwave Chemical Lasers, ATBM Interceptors (ARROW), Test Bed, Theater Defense Architectures, ARROW Continuation Experiments (ACES), Test Bed Experiments

Japan: Superconducting Magnetic Energy Storage, Josephson Junction Microprocessor, Diamond Optics, Electric Propulsion, Western Pacific Architecture Study, Bilateral Study on Ballistic Missile Defense

Netherlands: Theater Defense Architecture, Launch Systems

United Kingdom: Signal Processing, Sensors, Target Signatures and Backgrounds, Interceptor Systems/Components, Lethality, Countermeasures and Penetration Aids, Materials and Structures, Power and Power Conditioning, Propulsion and Propellants, Directed Energy Weapons, Data Fusion, Artificial Intelligence Techniques, Test Beds, Architecture Studies, Flight Trials, Simulations

Belgium: Theater Defense Architecture, Mosaic Array Data Compression and Processing Module, Laser Algorithms

Canada: Power System Material, Particle Accelerators, Theater Defense Architecture, Sounding Rockets/Targets, Ground Based Radars

Denmark: Metrology Study of Magnetic Optics

Italy: Cryogenic Induction, Millimeter-wave Radar Seeker, Theater Defense Architecture, Smart Electro-optical Sensor, Medium Extended Air Defense System (MEAS)

Russia: Electric Thrusters, Solar Concentrators, RAMOS and AGRE Experiments.

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DEPARTMENT OF DEFENSE

Defense Mapping Agency

The international program of the Defense Mapping Agency (DMA) contributes to the DMA mission in three primary areas. First, coproduction and exchange agreements provide a means to augment DMA production resources and leverage those of international partners. Second, bilateral agreements help advance adoption of standards and, thereby, promote interoperability. Third, agreements serve to promote enduring professional and institutional relationships, supporting not only DMA but broader national objectives as well.

While the demands on DMA have not declined, the resources available to satisfy the demands have. One means of coping with this reality is DMA's co-production and exchange agreements. The DMA exchanges products with and/or participates in joint production with many nations. It has active agreements with 106 countries or political entities, including the International Hydrographic Organization and aeronautical flight safety information exchanges. Foreign produced material provided to DMA under exchange and production agreements constitutes over 25 percent of DMA's total holdings. These and related activities leverage the resources available to DMA to satisfy the demands of the United Commands and Military Departments.

Standards are the key to interoperability, and DMA bilateral agreements promote adoption of mapping, charting, and geodesy standards. For example, standards for the exchange of digital geographic information have been established with 11 NATO countries. These countries have adopted a common feature/attribute coding for topographic and hydrographic applications. Map standards and specifications meeting DMA requirements have been published for use in Central and South America through the Pan American Institute for Geography and History.

The DMA agreements are also key to establishing enduring and professional relationships with a variety of nations, serving both DMA needs and broader national interests. As indicated, these agreements serve as vehicles to augment production and promote standardization.

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DEPARTMENT OF DEFENSE

Defense Nuclear Agency

The Defense Nuclear Agency serves as the Defense Department's center for nuclear expertise, performing essential missions in the areas of nuclear weapons stockpile support, nuclear effects research and operational support, and nuclear threat reduction including arms control technology development. At the same time, DNA is increasingly active in a variety of nonnuclear technology areas through the application of its nuclear expertise to advanced conventional weapons lethality, particularly against hardened and underground targets.

DNA has recently been reorganized, completing its transition from a Cold War posture to a Warfighting customer-oriented agency well positioned to meet the diverse and complex needs of the Department of Defense for the twenty-first century. While carefully ensuring the proper attention continues to be given to nuclear matters, DNA will continue to pursue the diversified missions assigned to the agency, both to capitalize on a 50-year investment in advanced technology and to facilitate the recruitment and retention of the high quality staff.

Some of DNA's current mission challenges are:

- Management of the Department's Nuclear Stockpile -- DNA develops and implements the procedures, systems, and supporting technologies to assure the safety, security, and reliability of the DoD nuclear stockpile. Additionally, DNA provides DoD-wide training and independent field inspections of the Services' nuclear weapons operational procedures and storage facilities. An up-to-date database on the status of all nuclear weapons in DoD custody worldwide is maintained by DNA. The Agency also maintains a command center and response teams to react to nuclear accidents or incidents anywhere in the world.
- Weapon System Operability -- Given the proliferation of weapons of mass destruction and their means of delivery, success on tomorrow's battlefields may require military systems that can function during and after exposure to nuclear, chemical, and biological environments. DNA is developing affordable means to harden the sensitive microelectronics of commercial satellites against the potentially devastating consequences of natural space radiation. This dual-use technology program offers great potential for ensuring U.S. commercial satellite industry lead in quality and performance.
- Cooperative Threat Reduction Program -- DNA is the program manager for the Nunn-Lugar/Cooperative Threat Reduction (CTR) Program, which supports the safe, secure dismantlement of former Soviet weapons of mass destruction. As part of this program, DNA provides the technical expertise and contract management support to implement this program's many agreements with Russia, Ukraine, Belarus, and Kazakhstan.
- Arms Control Verification Technology Demonstration -- DNA's support to arms control has grown with the rapid expansion in the number and scope of treaties reached in recent years. The focus is on the identification, coordination, and development of technologies with arms control monitoring and verification applications.
- Counterproliferation Technical Support -- DNA is concentrating on military response options to the proliferation of weapons of mass destruction and their supporting infrastructure. Specifically, DNA's programs emphasize optimized lethality, hard target destruction capability, chemical and biological

agent collateral effects research and prediction, targeting technical support and methodology development, and proliferation path assessments. DNA serves as the executive agency for the Assistant to the Secretary of Defense (Atomic Energy) in support of a DoD counterproliferation acquisition strategy and directly supports the Counterproliferation Initiative.

- Systems Lethality -- Underground and hardened facilities, often associated with weapons of mass destruction programs, represent a proliferating target set. Enhancing conventional means of destruction of these facilities, while minimizing collateral damage, is the top priority for DNA. Understanding hardened target design, response, and vulnerabilities across the spectrum of war is essential to future military operations.
- Scientific Computing and Information Systems -- High-performance computing capability is an essential underpinning to all of DNA's activities in nuclear and conventional weapons effects and their impact on weapon system lethality, operability, and safety. Reflecting its heritage of 50 years involvement in advanced technology, DNA has some of the most sophisticated models and codes in existence.
- Test and Simulation Technology -- Given the moratorium in nuclear testing, the Nation must rely on simulators capable of testing system operability in both man-made and natural radiation environments. DNA provides the technology, test facilities, and simulators underpinning system operability testing. Additionally, DNA provides technology, test beds, and facilities for performing high explosive testing and enhanced weapon lethality research.

Major General Gary L. Curtin, USAF
Director, DNA
6801 Telegraph Road
Alexandria, VA. 22310-3398
Tel: (703) 325-7004
Fax: (703) 325-2960
E-Mail: CURTIN@HQ.DNA.MIL

Dr. George Ullrich
Deputy Director, DNA
Tel: (703) 325-7300

Office of Plans and Requirements
Mr. Matthew M. Holm
Tel: (703) 325-6667

DNA HomePage: http://www.dtic.dla.mil/defense/defenselink/pubs/ofg/of_dna.html

DEPARTMENT OF DEFENSE

Defense Technical Information Center

AGENCY MISSION: The Defense Technical Information Center (DTIC) is the central point within the Department of Defense (DoD) for acquiring, storing, retrieving, and disseminating scientific and technical information (STI) to support the management and conduct of DoD research, development, engineering, acquisition planning, and studies program. DTIC is a sub-element of the Office of the Undersecretary for Defense of Acquisition and Technology (OUSD, A&T), the Director of Defense Research and Engineering (DDR&E).

DATABASE AND COLLECTION HOLDINGS: DTIC acquires defense-funded gray literature and makes it accessible through its Technical Report (TR) database of over two million records. Approximately 32,000 documents are contributed annually by DoD components and their contractors, by other U.S. Government agencies and by foreign governments. The collection includes: periodic and final technical reports; test results, technical memos and notes; studies and analyses; letter reports; journal articles; conference proceedings and papers; dissertations and theses; DoD patents and patent applications; command histories; and DoD Instructions and Directives. The collection also includes non-print formats: videocassettes, diskettes and magnetic tape.

This database is available to U.S. Government agencies and their contractors and some foreign governments through secure terminals or via dial-access, Internet or CD-ROM. All users in the above categories must be registered with DTIC. The general public is served through the National Technical Information Service (NTIS).

Information services and products are provided for a fee including on-line services, full text copies of technical reports; subject bibliographies; current awareness bibliographies, and automatic document distribution.

DTIC also manages and funds 15 of 25 contractor-operated DoD Information Analysis Centers (IACs). The IACs provide DTIC users access to specified reference services and subject matter experts knowledgeable about the content of worldwide engineering, technical and scientific documents and databases.

FOREIGN ACTIVITIES: Some 18 percent of the collection acquired between 1990-1994 is foreign. Of that, 56 percent is original language or translations contributed by country of origin or NATO sources. Country sources include: United Kingdom, Japan, Canada, Germany, France, the Netherlands, Belgium, Australia, Italy, and the former USSR. The remaining 44 percent is English-language translations received from DoD translation centers.

DTIC has negotiated information exchange agreements with Australia, Canada, Germany, the Netherlands, France and the United Kingdom and represents the Department of Defense on the Advisory Group for Aerospace Research and Development (AGARD), Technical Information Panel (TIP).

Kurt N. Molholm
Administrator, DTIC
8725 John J. Kingman Road, Suite 0944
Ft. Belvior, VA 22060-6218
Tel: (703) 767-9100

R. Paul Ryan
Deputy Administrator, DTIC
Tel: (703) 767-9200

General Info: Tel: (703) 767-8222 or 1-800-CAL-DTIC (225-3842)
Fax: (703) 767-8228

DTIC HomePage: <http://asc.dtic.dla.mil/>

<http://www.dtic.mil>

Gopher: <gopher.dtic.mil>

DEPARTMENT OF DEFENSE
Defense Technical Information Center
Information Analysis Centers

In the Defense Department, Information Analysis Centers (IACs) acquire, analyze, and disseminate specialized technical information according to express or anticipated need in a variety of technologies and disciplines of interest to the Department. The IACs are operated under directive of the Under Secretary of Defense for Research and Engineering. Fifteen centers are administratively sponsored, managed and funded by the Defense Technical Information Center (DTIC), a DoD central STINFO authority. Ten others are managed by other DoD activities.

Under contract with DTIC, the principle DoD IACs are responsible for collecting, analyzing and disseminating information relevant to their specific fields gathered on a worldwide basis. Approximately 15 to 25 percent (on average) of the information currently in IAC databases are of foreign origin. Percentages at individual IAC vary from 5 to 65 percent foreign source depending on subject and mission needs. Information and data currently on file is approximately 85 to 90 percent unclassified, with sanitized reports supplied by intelligence sources. (Sanitized in such a manner as to delete references or traceable information back to sources.) Requesters usually go through an IAC reference specialist to request specific topics or searches; the IAC expertise is to help the customer find and understand the content of DoD Scientific and Technical Information.

IACs are accessible via the Internet. A common HomePage on the World Wide Web (WWW) linking all the DTIC IACs can be reached by contacting <http://www.dtic.mil/iac/>. On the DTIC/IAC HomePage you can find a directory listing all the centers and how to obtain services and products. Several IACs offer dial-up access to portions of their holding; all IACs can search both their information and other government and commercial information resources for their customers.

The primary customers of the DoD IACs are the Defense Components and their contractors. The IACs also serve the other departments of the Federal government and their contractors and the public, within the constraints of available resources and limitation on the dissemination of controlled information. Each IAC is staffed by scientists and engineers who are experts in their fields. Each IAC functions as gateway to a particular domain of the Defense communities technical database, and each DTIC sponsored IAC is chartered to deal with the inordinate growth of information with that domain.

The collections, which are computerized, are expanded on a continuing basis to incorporate the most current applicable domestic and international research information available. The synthesized information in selected subject areas is then repackaged and disseminated according to expressed anticipated needs. An additional mission relates to technical and administrative support for DoD Joint committees to review and coordinate R&D efforts concerning inter-service compatibility of technology programs, and promote the exchange of technical information in specialized subject areas.

IAC information Via the Internet

Information Analysis Center Information server:

DTIC-A, the RD&A Information Support Directorate, is now providing IAC information via the Internet on our World Wide Web (WWW) server. Included are the IAC Directory, which contains information on the IACs and their missions and scope, the products and services they provide, and the IAC Program as a whole. Home Pages (i.e., WWW starting documents that provide links to related information) for all the DTIC sponsored IACs are launching points for access to each IAC and the world of technical information they service.

Accessing the IAC WWW Server:

On the Internet you can access the IAC WWW information with any WWW browser such as Netscape, NCSA Mosaic, MacWeb, lynx, etc. With a WWW browser, connect to Universal Resource Locator URL address: <http://www.dtic.mil/iac/>

If you have a DGIS account, you can use the character-based browser, lynx, to view this information. You will not be able to view graphics, however. To access the IAC server, connect to DGIS and type "unix lynx" (without the quotes) at the asterix prompt. At the lynx screen, select "G" for go and enter the address provided above. Simply follow the instructions provided at the bottom of the screen to navigate through the information.

Ronald E. Hale
Program Manager: DoD Information Analysis Centers
Defense Technical Information Center (DTIC)
8725 John J. Kingman Road, Suite 0944
Fort Belvoir, VA 22060-6218
Tel: (703) 767-9120
Fax: (703) 767-9119
E-mail: iac@dtic.mil

Assistant Program Manager: Brian McCabe

DTIC IAC HomePage: <http://www.dtic.mil/iac/>

**DEPARTMENT OF DEFENSE
Information Analysis Centers (IAC)**

CBIAC, CHEMICAL WARFARE, CHEMICAL BIOLOGICAL DEFENSE IAC

Mr. Francis Crimmins
Director, CBIAC
Battelle Edgewood Operations
ATTN: CBIAC
2113 Emmorton Park Road, Suite 200
Edgewood, MD 21040-1037
E-Mail: crimmins@battelle.org

HomePage: <http://www.dtic.mil/iac/cbiac/cbiachp.html>
<http://www.battelle.org/cbiac/cbiachp.html>

CIAC, CERAMICS (and Ceramic Composites) IAC

Dr. C.Y. Ho
Director, CIAC
Purdue University
2595 Yeager Road
West Lafayette, IN 47906-1398
E-Mail: hocy@ecn.purdue.edu

HomePage: <http://cindas.www.ecn.purdue.edu/ciac/>

CPIA, CHEMICAL PROPULSION INFORMATION AGENCY

Mr. Harry Hoffman (acting)
Director, CPIA
The Johns Hopkins University
Chemical Propulsion Information Agency
10630 Little Patuxent Parkway, Suite 202
Columbia, MD 21044-3201
E-Mail: cpial_tc@jhunix.hcf.jhu.edu

CRSTIAC, COLD REGIONS SCIENCE AND TECHNOLOGY IAC

Mr. A.J. Roberto, Jr.
Director, CRSTIAC
U.S. Army Cold Regions Research and Engineering Laboratory
72 Lyme Road
Hanover, NH 03755-1290
E-Mail: aroberto@hanover-crrel.army.mil

HomePage: <http://www.usace.army.mil/crstiac/>
<http://www.usace.army.mil/crel/>

CSERIAC, CREW SYSTEM ERGONOMICS IAC

Dr. Donald Dreesbach
Director, CSERIAC
CSERIAC Program Office
AL/CFH/CSERIAC, Bldg 248
2255 H Street
Wright-Patterson AFB, OH 45433-7022
E-Mail: ddreesbach@falcon.aamrl.wpafb.af.mil

HomePage: <http://www.dtic.mil/iac/cseriac/IAC.HTML>
<http://www.dtic.mil/iac/cseriac/cseriac.html>

DACS, DATA ANALYSIS CENTER FOR SOFTWARE
Mr. Thomas L. McGibbon
Program Manager, DACS
Data & Analysis Center for Software
Kaman Sciences Corporation
P.O. Box 120
Utica, NY 13503-0120
E-Mail: tmcgibbo@utica.kaman.com

HomePage: <http://www.utica.kaman.com:8001/>

DASIAC, DOD NUCLEAR INFORMATION AND ANALYSIS CENTER
Mr. Don Moffett
Director, DASIAC
2560 Huntington Avenue, Suite 400
Alexandria, VA 22303-1490
E-mail: moffett-alx1@kaman.com

HomePage: <http://www.dtic.mil/iac/gaciac/GCHMPG.HTML>

GACIAC, GUIDANCE AND CONTROL IAC
Dr. Robert Heaston
Director, GACIAC
IIT Research Institute
10 West 35th Street
Chicago, IL 60616-3799
E-Mail: rheaston@dgis.dtic.mil

HomePage: <http://www.dtic.mil/iac/gaciac/GCHMPG.HTML>
<http://gaciac.iitri.com/>

HTMIAC, HIGH TEMPERATURE MATERIALS IAC

Dr. C.Y. Ho
Director, HTMIAC
Purdue University
2595 Yeager Road
West Lafayette, IN 47906-1398
E-Mail: hocy@ecn.purdue.edu

HomePage: <http://cindas.www.ecn.purdue.edu/htmiac/>

IRIA, INFRARED IAC

Dr. Rodney C. Anderson
Director, IRIA
Environmental Research Institute of Michigan
ATTN: The IRIA Center
P. O. Box 134001
Ann Arbor, MI 48113-4001
E-Mail: anderson@erim.org

HomePage: <http://www.erim.org/IRIA/iria.html>

MIAC, METALS IAC

Dr. C.Y. Ho
Director, MIAC
Purdue University
2595 Yeager Road
West Lafayette, IN 47906-1398
E-Mail: hocy@edn.purdue.edu

HomePage: <http://cindas.www.ecn.purdue.edu/mmciac/>

MMCIAC, METAL MATRIX COMPOSITES IAC

Dr. C.Y. Ho
Director, MMCIAC
Purdue University
2595 Yeager Road
Lafayette, IN 47906-1398
E-Mail: hocy@edn.purdue.edu
HomePage: <http://cindas.www.ecn.purdue.edu/mmciac/>

MTIAC, MANUFACTURING TECHNOLOGY IAC

Ms. Michal Safar
Director, MTIAC
IIT Research Institute
10 West 35th Street
Chicago, IL 60616-3799
E-Mail: msafar@dgis.dtic.mil

HomePage: <http://www.dtic.mil/iac/mtiac/MTIAC.HTML>
<http://mtiac.hq.iitri.com/mtiac.html>

NTIAC, NONDESTRUCTIVE TESTING IAC

Dr. George A. Matzkanin
Director, NTIAC
Texas Research Institute Austin
415A Crystal Creek Drive
Austin, TX 78746-6201
E-Mail: ntiac.access.texas.gov

HomePage: <http://www.dtic.mil/iac/ntiac/ntiachome.html>

RAC, RELIABILITY ANALYSIS CENTER (Electronic and mechanical)

Mr. Preston MacDiarmid
Director, RAC
IIT Research Institute
P.O. Box 4700
Rome, NY 13440-6916
E-Mail: pmacdiarmid@mail.iitri.com

HomePage: <http://iitri.com/RAC/>

SURVIAC, SURVIVABILITY/VULNEABILITY IAC

Mr. Kevin Crosthwaithe
Director, SURVIAC
Booz-Allen & Hamilton
WL/FIVS/SURVIAC
2130 Eighth St., Bldg 45, Suite 1
Wright-Patterson AFB, OH 45433-7542
E-Mail: kcrosthw@dgis.dtic.dla.mil

HomePage: <http://surviac.flight.wpafb.af.mil/>

TWSTIAC, TACTICAL WARFARE SIMULATION AND TECHNOLOGY IAC

Dr. Larry Williams

Director, TWSTIAC

Battelle

505 King Avenue

Columbus, OH 43201-2693

E-Mail: williaml@battelle.org

HomePage: <http://www.dtic.mil/iac/twstiac/twstiach.html>

DEPARTMENT OF DEFENSE

DTIC/Military Service-Information Analysis Centers

The concept of an information analysis center has gained acceptance and favor over 50 years of service. Several Department of Defense (DoD) components have established their own information analysis activities which perform many functions and provide a variety of information products and services which are comparable to those provided by chartered DoD Information Analysis Centers.

The following Service-sponsored Information Centers are not official DoD IACs because they have not met all requirements specified in DoD Regulation to acquire the DoD IAC label. DoD IAC users should contact these organizations directly for additional information on products and services they provide.

Airfields, Pavements and Mobility Information Analysis Center (APMIAC)

U.S. Army Engineer Waterways Experiment Station
ATTN: CEWES/GV-Z
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
Telephone Points of Contact
Director (Mr. David R. Haulman)
Tel: (601) 634-3376
Fax: (601) 634-3139

Subject Coverage:

Airfields, pavements, and vehicle mobility, as relevant primarily to military needs. Specific areas of vehicle on-and off-road mobility, ground flotation, and mobility analysis.

Coastal Engineering Information Analysis Center (CEIAC)

U.S. Army Engineer Waterways Experiment Station
ATTN: CEWES-CV-I/Dr. Fred E. Camfield
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
Telephone Point of Contact
Director (Dr. Fred E. Camfield)
Tel: (601) 634-2012
Fax: (601) 634-3433
E-Mail: camfield@coafs1.wes.army.mil

Subject Coverage:

Coastal engineering, coastal regions, beaches, shore erosion, coastal environments, oceanography, ocean waves tides, inlets, hydrodynamics.

Concrete Technology Information Analysis Center (CTIAC)

U.S. Army Engineer Waterways Experiment Station
ATTN: CEWES/SV-Z
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
Telephone Points of Contact
Director (Mr. Bryant Mather)
Tel: (601) 634-3264

Assistant Director (Mr. Sam Wong)

Tel: (601) 634-3271
Fax: (601) 634-3242

Subject Coverage:

Concrete, reinforced concrete, reinforcing materials, cements, mixtures, construction materials, loads (force), fracture (mechanics), deformation, degradation, chemical analysis, repair, evaluation, maintenance, rehabilitation.

DoD Nuclear Information and Analysis Center (DASIAC)

2560 Huntington Avenue, Suite 400
Alexandria, VA 22303-1490
Telephone Points of Contact
Director (Mr. Don Moffett) (703) 329-7123
General Information
Tel: (703) 329-7379
Fax: (703) 329-7198, Verify: (703) 329-7123
E-Mail: moffett-alex1@kaman.com

Subject Coverage:

Nuclear weapon explosion phenomena; Nuclear weapons effects on military strategic and tactical systems and components; Survivability/vulnerability/ hardening; Nuclear weapon safety and physical security; Military doctrine and operations; Nuclear weapon effects testing

Hydraulic Engineering Information Analysis Center (HEIAC)

U.S. Army Engineer Waterways Experiment Station
ATTN: CEWES/HV-Z
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
Telephone Point of Contact
Director (Dr. Frank Neilson)
Tel: (601) 634-2615
Fax: (601) 634-4158

Subject Coverage:

River, harbor, and tidal hydraulics; flow through pipes, conduits, channels, and spillways as related to flood control and navigation; hydraulic design and performance of dams, locks, channels, and other structures. Effort is directed toward management of technical CE hydraulics information generated by CE and other laboratories pertinent to CE missions in flood control, navigation, energy, etc.

Plastics Technical Evaluation Center (PLASTEAC)

(This IAC is not currently operational)

Formerly located at U.S. Army Armament, Munitions and Chemicals Command Picatinny Arsenal, NJ 07806-5000

Direct inquires about this center to:

DTIC IAC Program Manager

telephone: DSN 284-6260 or

Tel: (703) 274-6260

Fax: (703) 274-0980

E-Mail: rhale@dgis.dtic.mil

Subject Coverage:

PLASTEAC was responsible for acquisition, evaluation and exchange of technical information related to plastics, adhesives, and organic matrix composites. DTIC is evaluating the disposition of these holdings. Selected PLASTEAC holdings will be transferred to the DTIC Technical Reports database. Subject areas included structural, electrical, electronic and packaging applications. Includes molded, formed, foamed and laminated materials. Maintained computerized data files on adhesives technology, compatibility of polymers with propellants and explosives (COMPAT), and materials deterioration data.

Soil Mechanics Information Analysis Center (SMIAC)

U.S. Army Engineer Waterways Experiment Station

ATTN: CEWES/GV-Z

3909 Halls Ferry Road

Vicksburg, MS 39180-6199

Telephone Point of Contact

Director (Mr. David R. Haulman)

Tel: (601) 634-3376

Fax: (601) 634-3139

Subject Coverage:

Soil mechanics, engineering geology, rock mechanics, soil dynamics, earthquake engineering, earth and rockfill dams, levees, earth retaining structures and building foundations, and laboratory testing of soils and rocks.

U.S. Air Force Aerospace Structures Information and Analysis Center (ASIAC)
(A Service Sponsored Information Center)

ATTN: WL/FIBAD/ASIAC, Bldg. 45
2130 8th street, suite 1
Wright-Patterson AFB, OH 45433-7542
Telephone Point of Contact
Director (Mr. Gordon Negaard)
Information Specialist (Ms. Dedee Frantz)
DSN: 785-6688 or
Tel: (513) 255-6688
Fax: (513) 476-4682
E-Mail: asiac@fltD.C.1.flight.wpafb.af.mil

Subject Coverage:

The Aerospace Structures Information and Analysis Center is a central agency for the collection and dissemination of information on aerospace structures. It provides quick state-of-the-art solutions to small complex structures problems and distributes structural computer programs not available at other dissemination centers.

U.S. Navy Shock and Vibration Information Analysis Center (SAVIAC)
(A Service sponsored Information Center)

SAVIAC/Booz Allen & Hamilton, Inc.
3211 Crystal Drive, 7th floor
Arlington, VA 22202
Telephone Points of Contact
Program Manager (Mr. Joel Leifer)
Tel: (703) 412-7774 General Information: (703) 412-7712
Fax: (703) 412-7500
E-Mail: leiferjh@bah.com

Subject Coverage:

SAVIAC's charter is to serve as a center of information for research, analysis and testing related to the structural dynamics, mechanics and physical environmental effects on vehicles, structures, equipment, components and humans under operational and combat conditions. This encompasses the technical areas commonly identified as vibration, shock, blast, crash, impact, penetration, vibroacoustics and mechanical environments. This also includes related supporting areas such as software, sensors, instrumentation, and material dynamic properties. SAVIAC operates under the direction of a multiple-agency Technical Advisory Group with members from the Army, Navy, Air Force, DNA, NASA, and DOE laboratories.

U.S. Air Force Supportability Investment Decision Analysis Center (SIDAC)
(Service Sponsored Information Center)

ATTN: Mr. Lee Greer, SIDAC Director
Battelle Technical Support Operations, Dayton
5100 Springfield Pike, Suite 110
Dayton, OH 45431-1231
Telephone Points of Contact
SIDAC Program Director (Mr. Lee Greer)
Tel: (513) 258-6711
SIDAC Toll Free No: 800-54-SIDAC (800-547-4322)
Bulletin Board System: 800-54-SIDAC
BBS Internet address: 131.167.241.42
Fax: (513) 254-9575

Subject Coverage:

SIDAC's mission is to acquire, improve and apply existing analysis methods, models, techniques, and enabling services for every aspect of weapon system supportability; and to vigorously assess and promote enhancements to the associated supportability investment decision processes.

SIDAC confines its focus to topics of logistics support, logistics research and development, technology insertion, and supportability investment information.

SIDAC special projects may be performed for the Air Force, other Military Services, and other U.S. Government agencies; government contractors or grantees; and the private sector.

SIDAC special projects can cover the full spectrum of weapon system supportability, from the earliest stages of technology development or concept exploration through all phases of the system life cycle. Special projects can include research and development activities, acquisition program assistance, and system support.

Fax: (703) 275-8465
E-Mail: (hallcd@dma.gov)

DMA HomePage: <http://www.dma.gov/>
http://www.dtic.dla.mil/defenseink/pubs/ofg/of_dma.html

DEPARTMENT OF DEFENSE

Defense Technology Security Administration

The Defense Technology Security Administration (DTSA) provides the direction and stewardship for the technology security policies and programs of the U.S. Department of Defense (DoD). DTSA's mission is to develop and implement DoD policies on international transfers of defense-related goods, services, and technologies to ensure such transfers are consistent with U.S. security interests.

In performing this mission, DTSA seeks to:

- Promote efforts to prevent and counter the proliferation of nuclear, biological, and chemical weapons and their means of delivery;
- Preserve critical U.S. military technological advantages;
- Control and limit the acquisition of defense-related goods, services, and technologies by any country or entity that could be detrimental to U.S. security interests; and,
- Support legitimate defenses cooperation with U.S. allies and friends.

The Director of DTSA is Mr. Dave Tarbell. DTSA is part of the Office of the Secretary of Defense, and reports to the Assistant Secretary of Defense for International Security Policy through the Deputy Assistant Secretary of Defense for Counter-proliferation Policy (within the Office of the Under Secretary of Defense for Policy).

DTSA performs a myriad of functions as part of its technology security and export control mission. DTSA does not issue export licenses, and is not a regulatory agency. Export licensing is primarily the responsibility of the Departments of State and Commerce. One of DTSA's principle functions is to manage the review of export licenses referred to DoD by those agencies. DTSA makes recommendations to the Department of State on license applications for the export of defense articles and services under the International Traffic in Arms Regulations, and to the Department of Commerce on license applications for the export of sensitive dual-use goods and technologies under the Export Administration Regulations. In reviewing export license applications, DTSA obtains advice from the Military Departments, the Joint Chiefs of Staff, the National Security Agency, and other DoD organizations. On average, DTSA takes about 25 days to review State Department licenses, and about 15 days to review licenses referred by the Commerce Department.

DTSA's review of State Department licenses allows for an informal day-in-court for applicants facing a possible negative DoD recommendation. The applicant may submit a paper addressing DoD concerns, discuss them at a meeting and, if they wish, ask for a review by the DTSA Director. The day-in-court procedure was requested by defense exporters who have expressed general satisfaction with its implementation and execution. Stringent time limits have precluded DTSA's establishing a similar day-in-court procedure for dual-use cases. However, DTSA makes every effort to communicate directly with exporters on difficult cases and welcomes exporter initiated contacts.

The fast-changing international security and economic environment has led to more license applications for the export of more sophisticated military and dual-use items. Cases involving high-end technology frequently require more time for technical and security policy analysis and consideration. Thus, exporters

are encouraged to contact DTSA early on regarding the nature of the proposed export. Many exporters make presentations in advance of submitting an application; this open dialogue facilitates subsequent formal reviews.

In addition to reviewing export license applications, DTSA performs a number of other functions, including:

- Developing technology security policies on the releasability of defense-related systems and technologies to allies and friends and performing the technical analyses used to develop export control lists and associated regulations;
- Participating in international export control negotiations covering arms and dual-use, nuclear, biological, chemical, and missile technologies;
- Providing technical support to U.S. Government intelligence and law enforcement agencies in the prevention of unauthorized defense-related technology transfers;
- Determining DoD positions on interagency reviews of foreign investments in U.S. defense companies; and,
- Providing technical support for export control assistance programs provided to various countries.

DTSA's normal business hours are 08:30 to 17:00 (Eastern Time), Monday through Friday. DTSA has no plans to acquire a voice mail system and prefers dealing directly with our customers. After hours, exporters are encouraged to send fax messages outlining the nature of the inquiry (please cite the case number) and the appropriate DTSA staff member will follow-up promptly the next day. You might also consider DTSA's on-line, remote, electronic bulletin board system, Export License Status Advisor (ELISA), at (703) 604-5902, 24 hours a day (except 08:00-08:30 Monday-Friday Eastern Time). Callers MUST have their export license application number assigned by the Department of Commerce or State in order to access information.

DTSA's License Directorate (LD) is responsible for coordinating the reviews of export license applications referred to LD by the Departments of Commerce and State. The Director is Jim Woody (703) 604-4859. The Chief of the Munitions License Division is Len Altman (703) 604-5196 and Chief of the Dual-Use License Division is Lieutenant Colonel John Richey, USAF (703) 604-5186. LD's fax is (703) 604-5382 or (703) 602-5840.

The Technology Directorate (TD) of DTSA provides comprehensive technical and analytical support on export control regimes, dual-use and munitions export licensing and other technology related matters. The Director is Clarence Griffin and his Deputy is David Leon; they can be reached at (703) 604-5217/18 respectively. The Chief of the Military Technology Division is Ken Shelly (703) 604-5219 and Chief of the Dual-Use Technology Division is John Batluck (703) 604-5839. TD's fax is (703) 604-5841.

The Policy Directorate (PD) of DTSA is responsible for policy concerning export control regimes, regulations for dual-use technology exports, support for export control policy on weapons of mass destruction, foreign availability assessments, and proposed foreign investments in the U.S. PD also assesses the implication of technology transfer occurring in the context of defense cooperative projects, coordinates policy guidance for more sensitive defense exports, science and technology exchanges, other government to government programs, and overseas safeguards to protect systems for satellite launches on Chinese and Russian launch vehicles. The director is Frank Bray and his Deputy is Tom Popovich, both at

(703) 604-5866. Chief of the Technology Security Policy Division is Walter Earle (703) 604-8036, fax (703) 604-4779. Chief of the Arms Cooperation and Policy Analysis Division is Betty Marini (703) 604-5212, fax (703) 602-4774.

DTSA's Directorate of Technology Security Operations (TSO) brings together intelligence and enforcement information to halt diversions, using diversion cases as a basis to identify, define, and pursue policy initiatives of a national security concern. The Director is F. Michael Maloof and his Deputy is LCDR Marcia Wilson, USN (703) 604-5926, fax (703) 602-4774.

The Resource Management (RM) Directorate of DTSA is responsible for administrative functions including information management systems like ELISA and a wide variety of other services. RM's Director is Howard Ady (703) 604-4836, fax (703) 604-5381. Carole Clarke is the Chief of the Management Service at (703) 604-5440, fax (703) 602-4773. Chief of RM's Information Technology Division is Colonel Geoff Bishop, USAF (703) 604-5937.

DTSA HomePage: http://www.dtic.dla.mil/defenseink/pubs/ofg/of_dtsa.html

DEPARTMENT OF DEFENSE

International Programs

The International Programs Office supports the Assistant Secretary of Defense for Economic Security in establishing Department of Defense policies that encourage greater participation in international acquisition and support programs by the Department.

Selected functional responsibilities of the Office of the Deputy Assistant Secretary for International Programs include:

- Plan for international defense cooperation
- Analyze opportunities for cooperative programs
- Develop resource allocation guidelines for international armaments cooperation
- USD/Acquisition and Technology (A&T) focal point for export control, technology transfer and international investment issues
- Develop and publish militarily critical technologies list on periodic basis
- Provide on-site technical expertise for multinational export control negotiations
- USD (A&T) focal point for review and approval of international agreements for armaments cooperation
- Identify programs for international armaments cooperation;
- work closely with services and defense agencies to successfully execute cooperative programs
- Develop armaments cooperation strategies for specific countries and regions

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DoD IA Home Page: <http://www.acq.osd.mil>
(Under SECDEF - Acquisition & Technology)

D. DEPARTMENT OF ENERGY

1. Office of Non-proliferation and National Security
 - a. Office of Energy Intelligence
 - b. Energy Assessments Division
2. Office of Nuclear Energy, Science, and Technology
3. Office of Scientific and Technical Information
4. Center for the Analysis and Dissemination of Demonstrated Energy Technologies

DEPARTMENT OF ENERGY

Office of Nonproliferation and National Security

The Department of Energy (DoE) has been actively involved in preventing proliferation of nuclear weapons technology and protecting nuclear material and facilities. The Department and its system of national laboratories have conducted a vigorous program of nonproliferation research and development with direct benefit to countering the threat of proliferation. The Department is the lead Federal Department which provides technological and analytical support to guard against the spread of nuclear weapons and weapons-usable materials. The DoE is a major participant in federal and international nonproliferation efforts.

The Office of Nonproliferation and National Security oversees the technical capabilities that support a core program of nuclear nonproliferation activities to support and develop advanced technologies that aid in detecting and countering emerging proliferation threats. A primary issue addressed by the ONNS is the question of the adequate security of the nuclear materials managed by Russia and the NIS. This security issue also pertains to terrorism and the possible theft of fissible materials.

The nonproliferation focus is five-fold: (1) secure nuclear materials in the former Soviet Union; (2) ensure safe secure, long-term storage and disposition of surplus fissile materials; (3) establish transparent and irreversible nuclear reductions; (4) strengthen the nuclear nonproliferation regime, and (5) control exports of nuclear technology and materials. The Office's active nuclear nonproliferation program is augmented by aggressive research and development activities, technical and analytical support to treaty development and implementation, and timely and customized intelligence to support these efforts.

Technical Accomplishments and Responsibilities

The Office of Nonproliferation has completed development and deployment of space-based sensors capable of detecting atmospheric and near-Earth nuclear explosions. These sensors, on Defense Department satellites, provide a system for the United States to continuously detect nuclear explosions and verify treaty compliance world-wide.

Responsibility for research and development of technologies to support U.S. requirements to monitor a future Comprehensive Test Ban Treaty (CTBT) was transferred from the Department of Defense to the Department of Energy (specifically to the Office of Nonproliferation and National Security). Four of the National Laboratories -- Livermore, Los Alamos, Sandia, and Pacific Northwest - have been enlisted to develop technological options for verification of arms control policy.

The office provides technical expertise and policy recommendations in support of diplomatic efforts to achieve an indefinite extension of the Non-Proliferation Treaty, a cornerstone of U.S. national security policy. Efforts include development of overall strategy, initiatives for transparency and irreversibility (including placing excess materials under International Atomic Energy Agency safeguards), technical and analytical support to CTBT negotiations, and the establishment of nuclear technology programs designed to assist in the fulfillment of U.S. obligations for peaceful nuclear cooperation.

The office leads a program of cooperation between DoE laboratories and nuclear research facilities in Russia to improve the protection, control, and accounting of nuclear materials which could be used to make

nuclear weapons. A demonstration project was successfully undertaken to upgrade and enhance the protection of the Kurchatov Nuclear Research Center in Moscow during 1994.

In 1996, the office expects an acceleration of efforts to protect fissile materials and redirect nuclear expertise in the former Soviet Union to peaceful projects plus expand efforts to end the civilian production and use of weapons-usable fissile materials through promotion of alternative energy sources.

The Office of Nonproliferation and National Security's role in monitoring U.S. and Russian inventories of plutonium and highly enriched uranium from weapons dismantlement through inspections and other activities that make dismantlement transparent and irreversible will continue. Unique expertise in support of national and international nonproliferation policies is augmented by efforts to develop more effective, cost-efficient safeguards and security of the DoE complex.

Office of Energy Intelligence

The Department of Energy's mission is to contribute to the welfare of the nation by providing the scientific foundation, technology, policy, and institutional leadership necessary to achieve efficiency in energy use, diversity in energy sources, a more productive and competitive economy, improved environmental quality, and a secure national defense.

The Department's foreign intelligence program is a component of the Intelligence Community. Its missions are to provide the Department and other U.S. government policymakers and decision-makers with timely, accurate, high-impact foreign intelligence analyses; to detect and defeat foreign intelligence services bent on acquiring sensitive information about the Department's programs, facilities, technology, and personnel; to provide technical and analytical support to the Director of Central Intelligence; and to make the Department's technical and analytical expertise available to other members of the Intelligence Community.

The Department traces its membership in the Intelligence Community to July 1947 when national leaders recognized that the Atomic Energy Commission (AEC) had an appropriate foreign intelligence role and authorized AEC representation on the Intelligence Advisory Board.

Following enactment of the National Security Act of 1947, the AEC's intelligence role was affirmed by the National Security Council Intelligence Directive No. 1 of 12 December, 1947. The Energy Reorganization Act of 1974 transferred the AEC's intelligence responsibilities to the Energy Research and Development Administration. They were subsequently transferred to the Department of Energy by the Department of Energy Organization Act of 1977.

Executive Order 12333 directs the Department to provide expert technical, analytical and research capability to the Intelligence Community; formulate intelligence collection and analysis requirements where the expert capability of the Department can contribute; produce and disseminate foreign intelligence necessary for the Secretary of Energy's responsibilities; and participate with the Department of State in overtly collecting information with respect to foreign energy matters. Substantive areas of the Department's intelligence responsibility include nuclear proliferation, nuclear weapons technology, fossil and nuclear energy, and science and technology. The Nuclear NonProliferation Act of 1978 greatly expanded the proliferation-related responsibilities assigned to the Department.

Energy Assessments Division

The Science and Technology Team and Program supports senior DoE policy-makers, as well as top-level officials at other US government agencies, through the assessment of foreign civil and military technology plans, programs and priorities. Customized intelligence products -- prepared and sponsored by EAD analysts and DoE national laboratories as well as by other US intelligence agencies -- alert U.S. officials to the challenges the country will face from its technology competitors and to possible opportunities for technology cooperation and/or exports .

Customers include the Secretary, Deputy Secretary and Under Secretary of Energy as well as all DoE programmatic offices that conduct foreign science and technology agreements and interactions or promote and protect U.S. industry and its export opportunities; other non-programmatic offices, such as the Secretary's Energy Advisory Board; other senior U.S. officials at the White House Office on Science and Technology Policy, the Departments of Commerce, State and Defense and the U.S. Trade Representative's Office; and the intelligence community, primarily the National Intelligence Council.

The S&T program analysts provide support to the Secretary, Deputy Secretary and Undersecretary and the Assistant Secretaries on a daily basis. Analysts from the program are members of a number of intelligence community committees as well as DoE internal working groups and task forces dealing with S&T issues.

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ONNS HomePage: <http://www.nn.doe.gov/nn/>

DOE General: <http://www.doe.gov/>

DOE News: <http://apollo.osti.gov/html/doe/whatsnew/whatsnew.html>

DOE Headquarters: <gopher://uml.hgadmin.doe.gov/>

DOE Technical Information Service: <gopher://dewey.tis.inel.gov.2010/>

DEPARTMENT OF ENERGY

Office of Nuclear Energy, Science, and Technology

The Department of Energy's Office of Nuclear Energy provides technical leadership to address critical domestic and international nuclear issues. The Office contributes to energy supply diversity and advances U.S. competitiveness and security by providing nuclear products and services that meet the needs of the U.S. and the world community. Goals and commitments include maintaining an adequate nuclear industrial and educational infrastructure; fostering increased exports of U.S. nuclear technologies and services; managing facilities in a safe, environmentally sound, and cost-effective manner; and providing nuclear power systems for space and national security purposes.

The Office of Nuclear Energy is the central home for the Federal government's expertise in nuclear engineering and technology. Activities cover a range of international programs, from working to enhance nuclear safety and providing critical isotopes to health care providers and industry to conducting important nuclear research and development and building the nuclear energy systems needed to explore outer space and support the Nation's defense.

Expertise in the nuclear energy field, including the management of nuclear facilities, is applied in ways important to the future. The Office works with industry in a cost-shared program to design a new safer and economical generation of nuclear energy plants. These advanced plant designs will be available for purchase by 1997. It works with industry to assure that current nuclear plants continue to operate safely and economically well into the next century. It also promotes the export of U.S. nuclear energy technology and services overseas and looks for opportunities to open new markets.

The Office supports U.S. foreign policy and national security objectives. International activities include work in the former Soviet Union which is helping reduce the availability of weapons-usable fissile materials. The international programs are also crucial to the U.S. industry through the monitor of world-wide nuclear plant safety concerns.

It also addresses the concern about proliferation of nuclear weapons and is working to implement an agreement to cease production of weapons-grade plutonium in the Russian Federation, and oversee the blending of highly enriched uranium from dismantled Russian weapons into low enriched uranium for fuel in light water reactors.

The newest and one of the most important areas of work for this organization is the Office's mission to enhance the safety of nuclear energy throughout the world and increase international cooperation. Cooperative research and development is being conducted with countries that have advanced nuclear programs such as Japan, the United Kingdom, and South Korea. DoE provides policy and technical leadership to international organizations concerned with nuclear safety, with steps being taken to improve nuclear safety practices and technology in countries such as India and China.

The Office of Nuclear Energy, Science, and Technology's International Nuclear Safety Program (INSP) is a comprehensive effort to cooperate with partners in other countries to improve nuclear safety worldwide. A major element of the program consists of extensive activities to improve the level of safety of Soviet-designed nuclear power plants. The INSP is assisting countries with Soviet-designed nuclear energy plants

in bridging the gap between internationally-accepted safety practices and their existing level of design, maintenance, and operation. The Office is working to facilitate Ukraine's shutdown of the Chernobyl units still in operation, and is strengthening its cooperation with international agencies involved in addressing nuclear safety issues.

DoE has assigned a dedicated program management team, with technical support from the national laboratories, to meet the objectives of the INSP.

These activities are conducted consistent with guidance and policies established by the U.S. Department of State, the Agency for International Development, and the Nuclear Regulatory Commission. All four agencies work collaboratively to achieve INSP objectives. Within DoE, the program is managed by the Office of International Nuclear Safety of the Office of Nuclear Energy.

The Office of Nuclear Energy has recently reorganized into the following structure:

- Planning and Analysis: policy analysis; external relations; planning and presentations; university nuclear engineering programs, and uranium inventory management
- Resource Management: budget; personnel; TQM, FOIA, HBCU, EEUO, security
- Engineering & Technology Development: advanced light water reactors, commercial light water reactor programs; space and national security; technology support
- Facilities: facilities operations; facilities shutdown; safety and environment; general technical support
- International Nuclear Safety: Soviet-designed reactor safety; replacement power initiatives; international cooperation; highly enriched uranium (HEU) transparency
- Isotope Production & Distribution: isotope sales; inventory management; production capability enhancement

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ONEST HomePage: http://apollo.osti.gov/budget/ne_oda.html

DEPARTMENT OF ENERGY

Office of Scientific and Technical Information

The Office of Scientific and Technical Information (OSTI) is the repository of DoE scientific and technical research results and international R&D results gained through bilateral and multilateral information exchanges.

The primary purpose of the international activities office at OSTI is to obtain international information in support of the DoE mission. International objectives of OSTI include:

Objectives

- Obtain scientific and technical information resulting from R&D in other countries by negotiating bilateral/multilateral information exchange agreements;
- Ensure, on behalf of the Department and the U.S. public, the fullest utilization of foreign information obtained from Departmental International Activities;
- Identify international sources of scientific and technical information needed by the Department;
- Assist in the development and execution of Department policy in exchanging and communicating scientific and technical information.
- Develop and coordinate standards and mechanisms for exchanging information resulting from advanced technological systems.

Multilateral Agreements

The Office participates in multilateral agreements that provide, according to agreed standards and in English: (1) abstracted and indexed foreign energy literature in electronic formats and (2) copies of "non-conventional" literature that are unavailable through commercial channels.

Bibliographic information is provided to OSTI via Internet, diskettes, or magnetic tape. The database created from the international and U.S. information is available on-line on Knight-Ridder/Dialog and STN and on CD-ROM from Dialog and SilverPlatter. Non-conventional literature is available through NTIS.

Current Active Agreements

The Energy Technology Data Exchange (ETDE) was established in 1987 under the auspices of the International Energy Agency (IEA). Eleven countries initially signed the Implementing Agreement, to consolidate several bilateral agreements the Department had established with foreign governments. The 18 countries currently comprising the Exchange are Australia, Brazil, Canada, Denmark, Finland, France, Germany, Italy, Japan, The Netherlands, Norway, Poland, Republic of Korea, Spain, Sweden, Switzerland, United Kingdom, and the United States. Belgium, Mexico, and India are considering membership in 1996. In addition to representing the United States, OSTI is the Operating Agent for the Exchange. Through this Exchange, foreign literature is available to the Department, industry, educational institutions and the public.

The International Nuclear Information System (INIS), operated by the International Atomic Energy Agency (IAEA) under the aegis of the United Nations, provides for the exchange of nuclear information among more than 90 countries and 17 international organizations. The United States is partnering with INIS and other international entities to determine how advances in telecommunication and information technology can be used to better meet the information needs of the international nuclear community.

In support of DoE's Office of Fossil Energy, OSTI provides U.S. coal information to the IEA Coal Research Service and disseminates within the United States information collected through agreement.

In addition to scientific literature, scientific and technical software is exchanged through an international agreement with the Nuclear Energy Agency (NEA). The DoE's Energy Science and Technology Software Center (ESTSC) maintained by OSTI and the Radiation Shielding Information Center (RSIC) at Oak Ridge National Laboratory are the primary DoE contacts in the U.S. These records are also cited in the database.

Bilateral Exchange Agreements

OSTI negotiates bilateral exchange agreements to obtain information in broad energy areas for researchers and policymakers and implements information exchanges included as part of bilateral agreements negotiated by other Departmental elements. OSTI negotiated and maintains agreements with the Nordic Countries and Germany for exchanging descriptions of current research activities, conference information, and specialized energy information. OSTI also participates in a Departmental agreement with Australia for exchanging descriptions of current research activities.

OTHER ACTIVITIES

- In support of Departmental commitments to the International Atomic Energy Agency, the office provides descriptions of current research activities in the field of health, physics and waste management.
- In support of DoE's Office of Nuclear Energy, OSTI manages an exchange of Applied Technology documents with several countries.
- OSTI ensures Departmental and U.S. public access to foreign information obtained through agreements of program elements.
- OSTI is a member of the International Council for Scientific and Technical Information (ICSTI), an organization comprising key international and domestic players in the scientific and technical information field. The organization fosters communication and interaction among all participants in the information transfer chain, in order to develop appropriate tools to better meet information requirements of the world community of scientists and technologies..
- OSTI maintains personal contacts with IAEA, IEA and NEA as well as with member country organizations participating in the exchanges. In addition, DoE staff are abroad or represented on decision-making bodies at various levels of INIS and the IEA.

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OSTI HomePage: <http://www.doe.gov/html/osti/ostipg.html>

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DEPARTMENT OF ENERGY

Center for the Analysis and Dissemination of Demonstrated Energy Technologies

The Center for the Analysis and Dissemination (CADET) was formed by the International Energy Agency (IEA) in 1988 to collect and disseminate information on demonstrated, energy-efficient technologies. The ultimate goal of DoE involvement in the CADET program is to assist U.S.- companies by promoting their energy-efficient technologies to potential new markets within and outside the United States. In addition, CADET strives to make information on other countries' demonstrated energy technologies available to domestic decision-makers. It also contributes to an international effort to reduce the adverse environmental effects of fossil fuel consumption through energy conservation in the United States' Oak Ridge National Laboratory (ORNL) and coordinates involvement with the CADET Energy Efficiency Annex for DoE. The National Renewable Energy Laboratory coordinates involvement with the recently created CADET Renewable Energy Annex.

At the heart of the CADET operation is the computerized Register of information on more than 1,600 energy technology demonstration projects. Each member country is responsible for preparing Register entries covering demonstrations in their countries. A majority of these entries focus on technologies for increasing the efficiency of energy use in buildings and industrial processes. Agriculture, transportation, utilities, and other end uses are also represented, but to a lesser degree. A total of 358 entries describe U.S. energy efficiency demonstration projects, and an additional 37 entries describe U.S. renewable energy demonstration projects. The CADET also produces technical brochures, which provide expanded information on key technologies represented in the CADET Register; analysis reports, which compare the technical and economic results of selected demonstration projects on a particular technology; and quarterly newsletters which are currently distributed to over 10,000 subscribers worldwide.

Greenhouse Gas Technology Information Exchange

GREENTIE was formed under the auspices of IEA in October of 1993. This pilot program was created in response to concerns of IEA member nations about the global rise in temperature caused by man-made changes in the composition of the atmosphere, and their questions about appropriate remedial action. The **GREENTIE** objectives are to identify suppliers of greenhouse gas mitigation technologies that have a potential for international deployment and to publicize the availability of these technology options to potential decision-makers and users. By helping to inform decision-makers worldwide about available greenhouse gas technologies, **GREENTIE** will contribute to increased exports and unit sales of energy-efficient products and will help to reduce the adverse effects of fossil fuel consumption on the global environment.

At present, 21 member countries participate in this IEA pilot program: 12 are members of IEA; the remaining nations, developing countries from around the world, are "pilot countries." The **GREENTIE** Center in the Netherlands acts as a focal point for information and technology sharing between these 21 countries. **GREENTIE**'s primary product will be a directory of information about suppliers of product technologies, and information related to the mitigation of greenhouse gases. In 1995, the **GREENTIE** Center in the Netherlands completed the first edition of a directory of this supplier information and has

made the directory available to all member countries. The directory categorizes the capabilities of suppliers along five dimensions: (1) the greenhouse gases that their products and technologies help to mitigate, (2) the economic activities of the users of their products and technologies, (3) the types of greenhouse gas technologies that they supply (4) the technology's life cycle, and (5) the products, and services that they offer. During 1995 ORNL's directory information dealt with 2,500 organizations located in the United States.

Asia-Pacific Economic Cooperation

Oak Ridge National Laboratory (ORNL) is assisting DoE in support of the Energy Working Group and Energy Efficiency and Conservation Expert Group in the Asia-Pacific Economic Cooperation (APEC) agreement. The APEC was created in 1989 to promote the economic and social well-being of the Asia-Pacific region through expanded trade and multilateral cooperation. Its Energy Working Group was established to address regional energy issues, improve the efficiency of energy utilization, and help protect the environment.

One focus for the activities of the Energy Working Group is the Expert Group on Energy Efficiency and Conservation (EE&C). ORNL provides technical support to DoE's involvement with this group. Among the recent activities of the EE&C Expert Group have been a workshop on integrated resource planning and DSM modeling (Kyongju, Korea, May 9-12, 1995); a workshop on cogeneration and waste heat recovery (Singapore, November, 1995), and a number of specific products. These products include a *Directory of Demand Side Management Program Service Providers and Vendors*, December 1995, a *DSM Guidebook* (in process), and protocols for commercial and industrial sector benchmarking. In addition, DSM assessments have been undertaken by ORNL and EPRI in Hong Kong with China Light & Power and Hong Kong Electric (September, 1995) and in Korea with the Korea Electric Power Company (October, 1995). These assessments have reviewed all aspects of company planning, rates, forecasting, customer service, and DSM toward the end of providing advice on how the DSM activities may usefully be expanded. Future workshops will address such topics as sustainable cities (Monterey, California, September 1996) and efficient gas technologies (East-West Center, Hawaii, July-August, 1996). The U.S. will support an Urban Transportation Forum in New Zealand in April, 1996. ORNL investigators will participate in this opportunity to share experiences in solving environmental, energy, and technology-related problems in urban transportation. A number of initiatives are being pursued through the Inter-Utility DSM Liaison Group including:

- developing advanced data collection schemes for load research and other customer data (Australia);
- producing a handbook for designing and operating energy centers (Australia);
- developing funding strategies for DSM (South Pacific Forum, Fiji);
- building load research capability (Thailand);
- defining joint regional action on appliance efficiency improvements (U.S.A.);
- undertaking an APEC-sponsored DSM-EE Specialist Training and Certification Program (U.S.A.)

CADDET

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DOE HomePage: <http://www.doe.gov/>

GREENTIE HomePage: <http://apollo.osti.gov/etde/abtetde/green.html>

E. DEPARTMENT OF HEALTH AND HUMAN SERVICES

1. Food and Drug Administration
2. National Institutes of Health
 - a. National Cancer Institute
 - b. National Eye Institute
 - c. National Heart, Lung and Blood Institute
 - d. National Institute of Allergy and Infectious Diseases
 - e. National Institute of Dental Research
 - f. National Institute on Alcohol Abuse and Alcoholism
 - g. National Institute on Drug Abuse
3. John E. Fogarty International Center for Advanced Study in the Health Sciences
4. International Cooperative Biodiversity Group

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration

The Food and Drug Administration (FDA) does not engage much in the exchange of technical information with other countries, except in regulatory matters. Foreign manufacturers of drugs and medical devices wishing to sell or distribute their products in the U.S. must obtain FDA approval, just as domestic manufacturers do. They submit applications that include substantial amounts of technical information on efficacy and safety of the drug or device, clinical data, etc. When FDA receives technical information from private companies abroad, it treats this information as confidential, in accordance with regulations created under the Freedom of Information Act of 1974, and therefore will not release commercial technical information, either domestic or foreign, to persons outside the Federal Government.

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FDA HomePage: <http://www.fda.gov>

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

The National Institutes of Health (NIH) engage in the exchange of technical information throughout the world through formal agreements executed with other countries, the dispatch of scientists to foreign laboratories and conferences, and the reception of foreign scientists in NIH laboratories. The organizations with the largest or most active international programs are the National Cancer Institute, the National Institute of Allergy and Infectious Diseases, the National Heart, Lung, and Blood Institute, the National Eye Institute, the National Neurological Institute, and the National Institute of Drug Abuse.

Following are the principal contact points and program descriptions for international matters in the individual institutes (though not all transfers of technical information from foreign sources flow through these offices).

National Cancer Institute (NCI)

The NCI supports international health research through agreements, grants, and contracts. It also maintains an International Cancer Information Center (ICIC). During FY 1994, NCI obligated about \$25 million for its programs related to international cooperation.

Individual scientists initiate most of the cooperation in cancer research, but NCI does take the initiative when a particular scientific opportunity is ready for exploitation. Either the Office of International Affairs (OIA) or one of the research divisions of NCI may act in this capacity.

One vehicle used by NCI for exchanging information with other countries is international workshops. Twelve of these were held with Japanese counterparts in 1994 (under the U.S.-Japan Cooperative Cancer Research Program), one with Chile, two with Russia and a multilateral workshop was held in Poland.

During 1994, OIA supported 198 exchange scientists from 36 countries. In addition, 564 foreign scientists visited NCI laboratories under other NIH programs. The NCI also contributed to the funding of over 100 short-term technology transfer fellowships administered by the International Union Against Cancer. As well, a new program was begun to aid young cancer researchers in the states of the former USSR, and another was set up to provide retraining in medical physics for doctoral-level scientists formerly engaged in defense work in the former USSR.

The NCI supported 57 foreign grants and 25 foreign contracts in 1994 in addition to many grants and contracts awarded to U.S. institutions with a foreign component. Also, clinical trials of anticancer agents are sponsored in other countries in cooperation with U.S. industry.

The NCI now has 14 direct, formal bilateral agreements for cooperation with other countries, an additional 40 informal agreements, and 21 more agreements arranged through the Fogarty International Center. In addition, OIA maintains liaison with the following international organizations: European Organization for Research and Treatment of Cancer; International Agency for Research on Cancer; Organization of European Cancer Institutes; Pan American Health Organization; and the International Union Against Cancer.

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NCI HomePage: <http://www.nci.nih.gov>

National Eye Institute (NEI)

The National Eye Institute (NEI) currently supports international research on seven blinding diseases of worldwide concern: cataract, corneal epitheliopathy, diabetic retinopathy, glaucoma, ocular toxoplasmosis, onchocerciasis, and vitamin A deficiency. Collaborative research is carried out with partners in Belgium, Brazil, Canada, India, Israel, Italy, Japan, Mexico, Sweden, and the United Kingdom.

In FY 1995, NEI awarded 16 grants to foreign institutions in 9 countries. It received 32 visiting fellows, 16 visiting associates, 17 visiting scientists, 23 special volunteers, and 1 guest researcher from more than 20 countries for the purpose of conducting research at NEI's Bethesda laboratories.

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NEI HomePage: <http://www.nei.nih.gov>

National Heart, Lung and Blood Institute (NHLBI)

In FY 1994, NHLBI spent \$3,536,059 in direct costs for 16 cooperative agreements (fellowships, contracts, and grants) with Germany, Sweden, Canada, Switzerland, and the United Kingdom. Its other major expenditures were a contribution of \$108,315 to USAID for a project in Egypt; \$76,000 to the Center for Disease Control for a contract involving China, Poland, and Russia; \$563,000 for a contract with the University of North Carolina involving China, Poland, Russia, and Pakistan; and \$398,318 for expenditures in the U.S. involving 17 bilateral agreements with other countries.

Major cooperative research activities, both within and outside bilateral agreements, were carried out in FY 1994 with Canada, China, the Czech Republic, Egypt, Georgia, Germany, Hungary, India, Italy, Japan, Korea, Kyrgyzstan, Nigeria, Pakistan, Poland, Russia, Sweden, Thailand, Uganda, and Vietnam. The NHLBI maintains extensive collaboration with the World Health Organization. It also has developed relationships with Juvenile Diabetes International, the Montreal Heart Institute, the University of Manitoba, the European Molecular Biology Organization, and the Karolinska Institute (Stockholm).

During FY 1994, 30 visiting associates, 20 visiting scientists, 24 volunteers, 68 visiting fellows, one guest researcher, and one expert have carried out joint research in the NHLBI laboratories. Countries represented included Argentina, Belgium, Australia, Brazil, Canada, Chile, China, France, Germany, Greece, India, Iran, Ireland, Israel, Italy, Japan, Korea, Morocco, Pakistan, Poland, Russia, Spain, Thailand, the United Kingdom and several countries from Africa.

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NHLBI HomePage: <http://www.nhlbi.nih.gov/nhlbi/nhlbi.html>

National Institute of Allergy and Infectious Diseases (NIAID)

The NIAID currently participates in bilateral agreements with Brazil, China, Croatia, Finland, France, Germany, India, Israel, Italy, Japan, Mongolia, Poland, Russia, Slovenia, and Taiwan. It also manages international projects on behalf of USAID, the Department of State, and the Environmental Protection Agency. The NIAID participates extensively in World Health Organization programs and also maintains close working relations with the Pan American Health Organization and the Organization of American States.

In addition to these countries with which NIAID has bilateral agreements, research contacts and involvement occur through normal scientific channels with a number of countries, including Argentina, Australia, Austria, Bangladesh, Belgium, Canada, Chile, Colombia, Czech Republic, Denmark, Gambia, Ghana, Greece, Haiti, Malawi, Mali, Mexico, Netherlands, Papua New Guinea, Philippines, Rwanda, Senegal, South Africa, Spain, Sudan, Sweden, Switzerland, Thailand, Uganda, United Arab Emirates, Venezuela, Vietnam, and Zaire.

The NIAID currently supports five special international programs. Three are in Tropical Medicine. The other two are in HIV/AIDS and tuberculosis. Tropical Disease Research Unit (TDRU) awards support multi-disciplinary centers of research excellence in the U.S.A. The International Collaboration in Infectious Disease Research (ICIDR) Program provides funding to U.S. institutions to link up with foreign institutions in developing countries. Tropical Medicine Research Center (TMRC) awards are direct funding to outstanding institutions located in the tropics. In 1987, NIAID launched the International Collaboration in AIDS Research (ICAR) Program modeled after the ICIDR Program. The ICARs were succeeded by the more focused Preparing for AIDS/HIV Vaccine Evaluation (PAVE) linkage awards which supported U.S. institutions for an intensive two year effort to work with developing country counterparts overseas in training, technology transfer, and institutional strengthening. The NIAID also supports an International AIDS Vaccine Master Contract which makes awards to U.S. institutions to carry out specific HIV/AIDS intervention or prevention projects in developing countries. At present there are eight international and seven domestic HIVNET sites.

To coordinate and monitor tropical medicine research activities more closely, NIAID established the International Centers for Tropical Disease Research (ICTDR) Network in 1992. The ICTDR Network consists of: (1) the NIAID Assistant Director for International Research (OTMIR/NIAID); (2) LPD/NIAID, LMR/NIAID, and other intramural laboratories; (3) TDRU, ICIDR, and TMRC participants; and (4) other U.S. institutions receiving substantial NIAID tropical medicine research support. The ICTDR Network convenes each Spring in an open scientific meeting in Bethesda for coordination, exchange, and identification of research needs and opportunities.

In the current period of increasingly limited resources in the U.S. Government, it has become common for agencies to combine resources to carry out joint programs. This strategy has particularly characterized USAID which frequently utilizes the resources within the U.S. Government to carry out its international activities. Examples of these agreements include LIR/NIAID and DAIDS/NIAID participation in an agreement with CD.C. for Project SIDA in Zaire and NIAID participation in the Biodiversity Program managed by FIC/NIH. In addition, NIAID and NASA are engaged in an ongoing dialog to identify projects of mutual interest. The OTMIR/NIAID frequently manages externally funded international agreements which draw on the resources of multiple NIAID components or awardees. During FY 1994, NIAID managed four USAID, three DoS, and one Environmental Protection Agency (EPA) agreements.

The NIAID is also a member of the consortium of UN agencies (e.g., WHO, UNICEF) and other organizations convened with the Childhood Vaccine Initiative (CVI). The DMID/NIAID role is to invest in basic and applied research leading to the development and evaluation of new or improved pediatric vaccines.

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NIAID HomePage: gopher://gopher.niaid.nih.gov

National Institute of Dental Research (NIDR)

International cooperation by NIDR involves bilateral exchanges and communication through the NIDR's partnership with the World Health Organization, the Federation Dentaire Internationale, the International Standards Organization, and the International Association for Dental Research. The NIDR and these agencies also participate in an initiative of the G-7 economic summit nations, the International Collaboration for Oral Health Research. Bilateral activities are carried out with Chile, India, and Israel. In specific instances, support by the Department of State is involved.

During FY 1993, NIDR provided support for 5 foreign grants, 1 foreign contract, and foreign components of 13 domestic grants. Another two foreign grants and the foreign components of four domestic grants continued to be active through NIDR grants made in previous years. Investigators from Australia, Belgium, Brazil, Canada, China, Czech Republic, Denmark, Egypt, Germany, Israel, Mexico, Norway, South Africa, Sweden, Switzerland, Taiwan, and the United Kingdom are involved. More than 100 foreign scientists and researchers representing 26 countries worked in the 8 intramural NIDR laboratories. Some of these were supported by foreign institutions.

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NIDR HomePage: <http://www.nidr.nih.gov>

National Institute on Alcohol Abuse and Alcoholism (NIAAA)

NIAAA maintains international cooperative activities through a program of joint research, technical assistance, the exchange of information and the exchange and training of scientists. The Institute currently supports activities in the following countries: Australia, Bulgaria, Canada, China, Czech Republic, Estonia, France, Great Britain, Hungary, Italy, India, Japan, Latvia, Lithuania, Mauritius, Mexico, New Zealand, Poland, Romania, Russia, Slovak Republic, Slovenia, South Africa and Sri Lanka. NIAA is a World Health Organization Collaborating Center for Research and Training on Alcohol.

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NIAAA HomePage: <http://www.niaaa.nih.gov>

National Institute on Drug Abuse (NIDA)

The National Institute on Drug Abuse (NIDA) is one of the newest NIH institutes, becoming part of NIH in 1992. It maintains bilateral research linkages with Brazil, Canada, Poland, China, Colombia, Czech Republic, India, Israel, Japan, The Netherlands, Russia, Turkey and the United Kingdom. The NIDA has extensive collaborative arrangements with the World Health Organization, and works directly with the following regional organizations: Organization of American States, Pan American Health Organization, U.S.-Mexico Border Health Association, Council of Europe Pompidou Group, Commission of the European Communities, and the Colombo Plan Bureau.

In FY 1994, NIDA supported 14 foreign grants or domestic grants with foreign components. It sponsors a broad fellowship plan to bring foreign scientists to the U.S. Countries involved include Brazil, Bulgaria, India, Israel, Korea, Morocco and Russia. Intramural research conducted at NIDA's Addiction Research Center in Baltimore, MD hosted visiting fellows, visiting scientists, and guest workers from Argentina, Belgium, Colombia, China, France, Germany, Japan, and the United Kingdom.

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Other NIH Organizations

The NIH is composed of a management organization, 17 national institutes, two research centers, Fogarty International Center, the Clinical Center, the National Library of Medicine, a computer division and a research grants division. All have some kind of involvement in international matters. Therefore, descriptions given above represent only a sample of the total international activity.

NIH HomePage: <http://www.nih.gov/>

NATIONAL INSTITUTES OF HEALTH

John E. Fogarty International Center for Advanced Study in the Health Sciences

The John E. Fogarty International Center (FIC) for Advanced Study in the Health Sciences has its own program of exchanges and fellowships and provides leadership in confronting the most compelling international health threats and scientific challenges. FIC works in concert with scientists throughout the country to develop long-range plans focused on key global health threats of national importance.

The FIC serves as the NIH link with the Department of State, U.S. Agency for International Development (USAID), the international component of the White House Office of Science and Technology Policy, and international organizations and foreign ministries. It seeks to coordinate its programs with NIH research institutes and other government agencies.

Protecting citizens from the health threats that emerge from worldwide ecological, social and demographic change, such as emerging infectious diseases, and illness resulting from pollutants is an FIC priority. With the increasingly rapid mobility of individuals and populations, new infectious diseases can spread more quickly across borders and continents. As the international arm of the National Institutes of Health, the FIC carries forward an historic mandate--to combat diseases of international origin.

In response to the 1988 Congressional mandate to implement an international research and training program on the epidemiology of AIDS, the FIC has established research linkages between 13 U.S. and 40 foreign medical centers in South America, Africa and Asia. Because of geographic differences in the biological and epidemiological characteristics of HIV/AIDS, international approaches are essential to develop vaccines and other preventive measures.

In collaboration with U.S. trained foreign scientists, American scientists have conducted international studies on the factors that enhance the risk of acquiring HIV. Based on its international AIDS program, the FIC is forging scientific linkages between U.S. research institutions and the regions of the world in which new infections are likely to arise because of changing population patterns and encroachments on wilderness.

Serious health risks are also presented by rising concentrations of industrial and chemical pollutants, particularly in countries undergoing rapid industrialization. These hazards are transnational and underscore the importance of international cooperation to identify and prevent environmentally induced diseases.

Through the FIC International Training and Research Program on Environmental and Occupational Health, the U.S. works cooperatively with regions of the world with relatively high contamination levels. The objective is to study the effects of environmental agents on human health and to develop new interventions. The program is a joint effort of the Fogarty Center, the National Institute of Environmental Health Sciences, and the National Institute for Occupational Safety and Health of the Centers for Disease Control and Prevention. Environmental degradation, including the destruction of tropical rain forests, will also diminish the discovery and development of new medicines. In the U.S., one-quarter of all pharmaceuticals are substances extracted from plants. Another 13 percent are derived from microorganisms. However, only a fraction of the world's biological resources has been examined for therapeutic potential.

In partnership with other NIH research institutes, the National Science Foundation (NSF), and the USAID, the Fogarty Center supports and administers the International Cooperative Biodiversity Groups Program (ICBG). Its purpose is to discover new drugs from the earth's biological diversity while advancing ways to preserve important ecosystems and promoting economic growth through sustainable development. Research and training conducted by consortia of U.S. and foreign scientists and development practitioners from universities, foundations and pharmaceutical firms that share expertise and resources.

The emergence of new infectious diseases, increased human exposure to pollutants, and the destruction of natural ecosystems are all related to demographic changes. In cooperation with the National Institute of Child Health and Human Development, the FIC has launched an International Training and Research Program on Population and Health. The purpose of this program is to enable American universities to cooperate with scientists and health professionals in developing nations, to improve reproductive health and to better understand the social and behavioral determinants of population change. In addition to programs that address global health threats, the FIC supports investigator-initiated grants and fellowship programs to enable the U.S. to benefit from innovation, expertise and special resources throughout the world.

The FIC Scholars-in-Residence Program brings some of the world's leading scientists to the NIH campus to conduct advanced study in concert with NIH intramural scientists. Over the past year, one Scholar has examined the genetic changes in the influenza virus that enable it to elude vaccine immunity. This new technology will lead to more rapid development of flu vaccines when the threat of a new epidemic appears.

Through the program of Fogarty International Research Collaboration Awards (FIRCA), American scientists cooperate with counterparts in regions of the world that present new opportunities because of democratic change. Examples include American and Hungarian scientists who have done research on the metastasis of tumors and discovered the biochemical steps that result in the migration of tumor cells to other regions of the body. One enzyme, known as 12 lox, appears to activate key events in cancer metastasis. This enzyme is now a potential target for new anti-cancer drugs. A cooperative study with scientists in the Slovak Republic has resulted in the isolation of a gene that determines the cellular receptor, or "docking place" of bovine leukemia virus, one of a family of "retroviruses" that includes HIV. This finding may have implications for the development of a retroviral vaccine or other strategies to assist the immune system to fight infection. The Fogarty International Center also works to prepare the current and future generation of American scientists to work effectively within a global environment. With the support of NIH's Office for Research on Minority Health, the FIC has launched a program to enable African American, Hispanic American and Native American students to pursue research and training at academic institutions on four continents. A goal is to encourage students from groups under-represented in the biomedical research professions to pursue research careers through the stimulus of international programs.

Recognizing the growing importance of biomedical research in Japan and the need for U.S. scientists to learn firsthand about scientific advances in that country, the FIC supports American graduate students to conduct research in Japan. The Summer Institute in Japan Program, funded jointly by the Japanese government, the Fogarty Center and the National Science Foundation, transfers basic innovations and research technologies from Japanese laboratories to the United States.

In support of the Middle East peace process, the FIC worked with the Department of State to launch a cooperative program among Arab, Israeli and American scientists to assess the environmental risks of pesticides in the region. Through a bilateral agreement known as the U.S.-Japan Common Agenda, FIC

contributed to a major shift in Japanese foreign aid toward support for development of childhood vaccines, combating AIDS, and the eradication of polio in Asia. The FIC also conceived and helped develop a proposal for the creation of a Council on Science and Technology for the Americas (COSTA), which was adopted at the Summit of the Americas in Miami. The COSTA will increase collaboration among the scientific communities of the Americas.

The NIH remains a world leader in research but has many allies and much to learn from them. Today, new discoveries and techniques may be pioneered in foreign laboratories as well as those of the U.S. American scientists must know and interact with their colleagues in the "global laboratory."

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NATIONAL INSTITUTES OF HEALTH
Fogarty International Center
International Cooperative Biodiversity Group (ICBG)

The International Cooperative Biodiversity Groups (ICBG) Program is an integrated conservation and development program that addresses the interdependent issues of biodiversity conservation, sustained economic growth, and human health in terms of drug discovery for diseases of concern to both developing and developed countries. The funding for this program is provided by the National Institutes of Health, National Science Foundation, and U.S. Agency for International Development.

Because biological resources that benefit local communities are among those most likely to be preserved, chemical prospecting or, more specifically, development of pharmaceuticals from natural products can be used to promote biological conservation by providing an economic return from sustainable use of the resources. A critical component of the supported activities is to ensure that equitable economic benefits from these discoveries accrue to the country of origin, community, group, or organization which facilitated the discovery of the natural product. This is being achieved through the use of novel contractual mechanisms among the members of each group. Observations drawn from implementation and the first year of the program include the importance of realistic assessments of returns, infrastructure strengthening in partner countries, private-public linkages, individual project design, and collaborative benefits-sharing agreements.

Conservation of Biological Diversity

Program goals encompass creating incentives at all levels for the preservation of intact habitat; increasing the knowledge base upon which conservation activities are based; and developing long-term ecological and economic strategies to ensure more sustainable harvesting of targeted organisms and conservation of habitat. Programs undertake implementation of strategies to support the selection and acquisition of natural resources and novel agents, including the use of ethno-biological studies and approaches to working with traditional cultures and their knowledge of traditional medicine. Programs incorporate systematists, ecologists, and anthropologists in integrative surveys of a developing country's biological diversity. Programs develop collection practices compatible with conserving biodiversity. Production and documentation of all collected material in the form of published works, and/or databases, reporting specific locality and all features of biology relevant to standard botanical and zoological collections is an important aspect of the inventory work. Programs assure accessibility of inventory data to all individuals, including those not associated with the ICBG, by housing catalogues and databases in public institutions (such as universities and national museums) and, when databases are kept on computer systems in private institutions, by including specific references to these databases in publications.

Program Goals

The ICBG program has three interrelated goals reflecting the tri-agency support for the program: biodiversity conservation; sustainable economic activity; and drug discovery. The ICBG Program accomplishes this by linking developing country organizations and indigenous peoples with U.S. academic and industry partners for the purpose of developing and implementing innovative strategies for the conservation and sustainable management of biological diversity through economic returns from the

screening of medicinal and other organisms for compounds active against both developing and developed country diseases, agricultural and veterinary purposes, and in some instances parallel development of medicinal or other products for host country markets.

Projects include the selection and acquisition of natural products derived from biological diversity as potential therapeutic agents for diseases of concern to both developed and developing countries, such as AIDS, cancer, parasitic diseases, and heart disease. Other important components include the examination of traditional medicine practices, development of long-term strategies to ensure sustainable harvesting, biodiversity inventories and surveys, training and infrastructure support for host country institutions, and long-term funding for biodiversity conservation in the host countries. Included also are the preparation of crude materials for testing against diseases; isolation, and preclinical evaluation of agents from natural sources to treat or prevent cancer, infectious diseases including AIDS, malaria, and parasitic infections, cardiovascular diseases, mental disorders, and other diseases. Medical conditions of primary concern to developing countries are important components of every ICBG. Studies required for the later stages of drug development (e.g., formulation development, classical toxicology, etc.) and the conduct of clinical trials are beyond the scope of this program.

Program Participants

Five groups, consisting of diverse private and public institutions including pharmaceutical companies and environmental organizations in seven countries, are collaborating on projects that address biodiversity conservation and the promotion of sustained economic activity through drug discovery from natural products. Support for this innovative program totals approximately \$2.3 million per year over its five year duration, shared among the NIH, NSF, and USAID. The Fogarty International Center, the international arm of the NIH, both administers the program on behalf of the sponsoring agencies and contributes to it along with the National Cancer Institute, the National Institute of Allergy and Infectious Diseases, the National Institute of Mental Health, and the National Heart, Lung, and Blood Institute.

These investments in part represent the U.S. Government's commitment to uncover new knowledge that leads to better health for everyone, to promote and advance scientific progress and to achieve sustainable development that focuses on the environment, health and population, democracy, and sustained economic activity.

Program Awards

A Request for Applications (RFA) was completed in June of 1992 and invited applications for the establishment of International Cooperative Biodiversity Groups to address the interdependent issues of biodiversity conservation sustained economic activity, and human health in terms of drug discovery for diseases of primary concern to developed and developing countries. Sixty-three letters of intent to submit an application were received in September followed by 34 applications in November 1992. Applications included primary investigators and collaborators from 25 countries, 13 in Latin America and the Caribbean (LAC), 7 from Asia, 4 from Africa, and 1 from the Middle East. About half the applications included a collaborator from LAC, a third from Asia, and about an eighth from Africa.

The peer review of these applications in March of 1993 included reviewers from universities, museums, pharmaceutical companies, the World Bank, and environmental non-profits with backgrounds in natural products chemistry, intellectual property rights law, systematics, ecology, ethnobiology, and international

development. In addition, the Advisory Board of the Fogarty International Center, the administrators of the program, and a Technical Advisory Group made up of representatives of the three funding agencies also reviewed the proposals and participated in the selection process.

Review was based on both the scientific merit and the responsiveness of each application to the goals and priorities outlined in the detailed and lengthy RFA which included the desire for a balanced portfolio in terms of geography, industrial partners, target study organisms, diseases, etc. The composition of the final portfolio reflects this together with the desire to fund those applications which were most responsive to the goals and priorities outlined in the RFA.

The awarding of five Cooperative Agreements was announced in December of 1993. Each award is five years in duration and has an annual budget of approximately \$400,475. Each ICBG constitutes a cooperative agreement with the U.S. Government. Cooperative agreements differ from grants and contracts in that sponsoring government agencies have substantial programmatic involvement in achieving the goals and objectives of the project. In the ICBGs this is accomplished through the designation of a Government Scientific Coordinator for each project who has scientific oversight responsibility and is assisted by an advisory committee consisting of staff in relevant technical fields from the participating agencies. The Government Scientific Advisory Committee for each group serves as a resource and acts in an advisory capacity.

Although collaboration with an industrial partner was encouraged by the RFA as a mechanism for the later stages of product development and commercialization, there was no requirement that applicants include an industrial partner.

Listed below are the programs and participants that were awarded grants.

- Virginia Polytechnic Institute and State University in Blacksburg, VA, is collaborating with the forest people of Suriname, Conservation International, the National Herbarium of Suriname, the Missouri Botanical Garden, Bedrijf Geneesmiddelen Voorziening Suriname, and Bristol-Myers Squibb Pharmaceutical Research Institute to study rainforest plants in Suriname.
- Washington University in St. Louis is collaborating with the Natural History Museum in Peru, the Cayetano Peruvian University, and Searle Pharmaceuticals to examine plants that have been used medicinally for generations in Andean tropical rainforests of Peru.
- Cornell University in Ithaca, NY leads a team for the study of insects and related species from the dry tropical forests of the Guanacaste Conservation Area in Costa Rica, in conjunction with the National Biodiversity Institute of Costa Rica, the University of Costa Rica, and Bristol-Myers Squibb Pharmaceutical Research Institute.
- A group based at Walter Reed Army Institute of Research is focusing on cures for parasitic diseases from rainforest plants of Cameroon and Nigeria. Their collaborators are the Smithsonian Institution, the Bioresources Conservation and Development Programme, The University of Yaounde in Cameroon, the Biodiversity Support Program, and Shaman Pharmaceuticals.
- The University of Arizona at Tucson and colleagues are collaborating with the Institute of Biological Resources of Buenos Aires and the National University of Patagonia in Argentina, the Catholic University of Chile, the National University of Mexico, Purdue University, Louisiana State University, and the Medical and Agricultural Divisions of American Cyanamid Company to study arid land plants in Argentina, Chile, and Mexico.

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F. DEPARTMENT OF THE INTERIOR

1. Territorial and International Affairs
 - a. The U.S. Fish and Wildlife Service
 - b. National Park Service
 - c. National Biological Survey
 - d. U.S. Geological Survey
 - e. Bureau of Reclamation
 - f. Bureau of Land Management
 - g. Minerals Management Service
 - h. Office of Surface Mining Reclamation and Enforcement
2. U.S. Geological Survey (USGS International Programs)

DEPARTMENT OF THE INTERIOR

Territorial and International Affairs

The Assistant Secretary for Policy, Management and Budget (PMB), assisted by the Office of Policy Analysis, is responsible for: representing Interior in interagency trade policy deliberations, including the Trade Policy Review Group; providing policy analysis and coordination of significant environmental issues affecting resources on or near the U.S.-Mexico border; providing analytical support for U.S. government efforts to address trade and environment concerns in the OECD and World Trade Organizations so as to protect U.S. national sovereignty; and participating in U.S. delegations to international environmental negotiations, including the Biodiversity Convention, CITIES, and the International Union for the Conservation of Nature.

The **Office of International Affairs** (OIA), under the Assistant Secretary for Policy, Management and Budget, conducts the following activities:

- Chairs the DOI International Activities Liaison Committee;
- Coordinates initiatives at request of the Secretary;
- Coordinates activities which affect more than one Bureau;
- Reviews and monitors Departmental agreements (about 160) with foreign countries and coordinates Departmental review of other Federal agency foreign agreements (Circular 175 Process);
- Hosts governmental officials from other countries;
- Prepares Departmental Reports on International Activities for OMB, State Department and USIA;
- Approves Visa Waivers for the Department;
- Serves as Point of Contact for the US-South Africa Committee on Conservation, Environment and Water, chaired by the Secretary;
- Administers the Partnership for Biodiversity PASA with the U.S. Agency for International Development and Peace Corps.

DOI Activities in Foreign Countries

Interior and its Bureaus currently have over 160 formal Agreements with 73 foreign countries and 17 multilateral agencies to conduct cooperative activities. The Department is most active in the following countries: Canada, Mexico, Russia, China, Saudi Arabia, Indonesia, Panama, Brazil, Venezuela, Pakistan, Egypt and India.

The U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service's principal international activities focus on the exchange of technical information and assistance between the Service and foreign wildlife agencies and organizations. Among the major activities are participation in the Convention on Wetlands of International Importance (or Ramsar Convention) and the Convention on International Trade in Endangered Species of Flora and Fauna (CITES); implementation of the Western Hemisphere Convention; the U.S.-Russia Environmental Agreement (Area V); the Convention for the Protection and Development of the Marine Environment of

the Wider Caribbean Basin; and the U.S.-China Nature Conservation Protocol. Additionally, the Service carries out responsibilities under bilateral migrator bird conservation treaties with Russia, Japan, Mexico and Canada.

The Service continues its emphasis on international wetlands conservation efforts, working with the Conference of Parties to the Convention on Wetlands International Importance to facilitate transfer and exchanges of information and skills necessary for developing nations to conserve their wetland resources for sustainable use. The office will also devote substantial effort to enhancing the Service's many cooperative efforts with Mexico, which range from wetland habitat management to migratory bird management and research, from endangered species studies to wildlife trade and law enforcement. The Service will focus on maintaining and conserving biological diversity throughout Latin America via its educational and training initiatives designed for Latin American protected-area managers.

Under Section 8(a) of the Endangered Species Act (ESA), the Service continues to use funds available through the Special Foreign Currency Program (P.L.480) and the U.S.-India Fund to provide technical expertise and assistance to regional and international institutions responsible for the maintenance of biological diversity, such as the Wildlife Institute of India. Through its efforts with the Agency for International Development, the Service is carrying out a five-year multi-task program to assist the Sri Lanka Department of Wildlife in enhancing its planning and management capabilities. The Service also manages international and domestic trade in wildlife and plants for conservation purposes and sustainable use programs under CITES, the ESA, the Marine Mammal Protection Act, the Pelly Amendment, the North American Free Trade Agreement, and related treaties and laws.

The Services Office of Management Authority communicates and cooperates with the CITES Secretariat in Switzerland and CITES management authorities in 130 other CITES member nations. It also administers grants and cooperative programs and regulates international trade under the African Elephant Conservation Act and Wild Bird Conservation Act.

National Park Service

The National Park Service (NPS) offers technical assistance in heritage conservation in foreign countries, hosts multinational park seminars, and acts as the lead agency for implementation of the Convention Concerning the Protection of the World Cultural and Natural Heritage (P.L. 96-515) now ratified by 134 nations. The Service shares responsibility for implementing Service-wide international commitments mandated by public law, treaties, conventions, and bilateral agreements such as the Western Hemisphere Convention and the Specially Protected Areas and Wildlife Protocol under the Wider Caribbean Protocol.

The Office of International Affairs (OIA) within the NPS advises the Director on international issues, responsibilities and opportunities to meet the Service's international mission, obligations, and objectives. The OIA initiates, develops, manages and coordinates all Park Service international programs for exchanging information, data, and personnel with, and providing technical assistance in natural and cultural heritage resource management to other nations and organizations. It designs, manages and implements relevant foreign policy initiatives, projects and activities using external funding sources and in partnership with organizations such as the U.S. Agency for International Development, the World Bank, U.S.-owned foreign currencies, the U.S. Information Agency, the World Conservation Union, the International Council on Monuments and Sites, and the Department of State.

The OIA conducts and coordinates training programs in all aspects of heritage management for park and conservation personnel from other countries both in the U.S. and overseas and is most active in Latin America and India. In Spain alone, park professionals have provided over 19,000 training days in the past five years and have trained the large majority of current national park system directors worldwide. It directs strategic international efforts to ensure the preservation, effective management and accurate interpretation of domestic natural and cultural resources shared with other nations such as transboundary ecosystems and sites commemorating ethnic origins.

National Biological Service

The National Biological Service (NBS) provides international assistance in inventory, monitoring, and research relevant to the assessment, conservation, management and restoration of biological resources. It initiates and coordinates programs and projects for obtaining, sharing, and managing data and information to enhance the theory and practice of biological conservation, and to improve understanding of the effects of natural and human influences. It facilitates participation of U.S. scientists in international programs, projects, and forums for addressing scientific, technical, policy, and management issues relating to biological resources. The NBS participates in international training and assistance to strengthen the institutional, technical, and scientific capabilities of cooperating nations. It provides data, information, and technical assistance to support U.S. leadership in implementing international conventions, agreements, and cooperative monitoring and research networks relevant to biological conservation.

The NBS encourages cooperation with other nations that share biological resources with the U.S. (e.g., transborder ecosystems, neotropical migratory birds, migratory waterfowl), have ecologically similar conditions, or have biological resources that could help address threats to U.S. biota (e.g., biological control organisms for non-native species). The NBS is particularly active in Latin America, Europe, Russia, China and India.

U.S. Geological Survey

The U.S. Geological Survey (USGS) provides cooperative international assistance in virtually all the major sciences and in matters concerning the earth and its environment. The USGS scientists assist in geologic and topographic mapping, as well as in the investigation and assessment of natural resources (energy, minerals, water, etc.). The Survey is at the forefront of research and practical efforts to reduce global natural hazards, with international expertise in earthquakes, volcanoes, ground failure (landslides, subsidence), and floods. It is also active in international training and institutional strengthening. The USGS is most active in Russia, Latin America, and the Middle East. [Additional information on USGS is included in the Department of Interior section.]

In the wake of the closing of the Bureau of Mines, some staff of its Division of International Minerals has been transferred to the U.S. Geological Survey and renamed the Office of Mineral Information. The Office is the focal point within the U.S. Government for the collection and analysis of comprehensive international minerals and materials information needed to assess the U.S. industry in the global market place in support of U.S. mineral and trade policy and to assess the availability of materials needed to support national defense requirements. It maintains a data base on mineral deposits, mines and processing plants world-wide and publishes an annual review of the mineral industries in 175 countries.

Bureau of Reclamation

The Bureau of Reclamation provides reimbursable technical assistance and training in a variety of areas related to water resources management. Reclamation has been active in international cooperative efforts since 1910 in over 60 countries and has trained more than 5,000 water resources engineers and scientists from over 80 countries. The Bureau's domestic program involves the operation of water resources projects in the 17 Western states to benefit multiple uses which include agricultural, industrial and municipal, flood control, recreation, fish and wildlife habitat, wetlands, hydropower generation, and water quality while supporting a wide range of environmental values. The Bureau is currently most active in Latin America, the Middle East and Southeast Asia.

Bureau of Land Management

The Bureau of Land Management (BLM) provides technical assistance in land use planning and environmental impact assessment procedures, land and mineral leasing, automated land information systems, land reclamation, and wildfire suppression. BLM is most active in China and trans-boundary projects on the U.S.-Mexican border. It leads DOI participation on the U.S. Desertification Convention.

Minerals Management Service

The Minerals Management Service manages the mineral resources of the U.S. outer continental shelf and collects and distributes bonuses, rents, and royalties from companies that lease and produce minerals from Federal land, both onshore and offshore, and from Indian lands. Specialists can provide assistance in marine-related subjects (e.g., environmental assessment, response to production-related oil-spills, safety of structures, boundary determinations, and hard-minerals mining) as well as certain general subjects (e.g., royalty management, evaluation of oil and gas potential, and involvement of the public and other constituent groups in the decision-making process). The Service is most active in Canada and Russia.

Office of Surface Mining Reclamation and Enforcement

The Office of Surface Mining Reclamation and Enforcement contributes to resource development by conducting research and providing technical expertise in environmental planning for surface mining and in the development and application of technology for reclaiming mined land. The Office is most active in India and Indonesia.

Information Available from Territorial and International Affairs

- Center for Disease Control Health Summaries and International Traveler Handbook
- Country background files (holding cables on issues/actions/events relevant to DOI)
- DOI and Federal Register Statutes on Exchange Visitors and J-1 Visa Waivers
- DOI Database of Staff Foreign Travel
- DOI Departmental Manual section on international travel and activities
- DOI International Agreements, list of, and copies of most
- DOI Quarterly Reports for Foreign Travel by Bureau Staff
- International Affairs Calendar

- Post Reports from the U.S. Embassies in foreign countries
- Tips for Travelers to Mexico, Central & South America (State-Department-issued)
- Travel Warnings and Consular Information Sheets (State-Department-issued)
- Trip Reports of foreign travel by DOI state (over past six months)
- US Government Per Diem rates for Foreign Cities and Countries

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Department of the Interior HomePages

Territorial and International Affairs: <http://info.er.usgs.gov/doi/territorial-International-Affairs.html>

U.S. Fish and Wildlife Service: <http://www.fws.gov/>

National Park Service: <http://www.nps.gov/>

National Biological Survey: <http://www.nbs.gov/>

U.S. Geological Survey: <http://info.er.usgs.gov/doi/usgs.html>

Bureau of Reclamation: <http://info.er.usgs.gov/doi/bureau-of-reclamation.html>

Bureau of Land Management: <http://www.blm.gov/>

Minerals Management Service: <http://www.mms.gov/>

Office of Surface Mining: <http://info.er.usgs.gov/doi/office-of-surface-mining.html>

DEPARTMENT OF THE INTERIOR

U.S. Geological Survey

The fundamental mission of the U.S. Geological Survey (USGS) is to ensure the availability of policy-relevant earth science data and information for the nation, in partnership with Federal, state, and local organizations. USGS programs focus on multidisciplinary studies to address the most critical issues facing the United States, and are organized to address four major areas of emphasis: natural hazards, the environment, natural resources, and information and data.

The USGS carries out international activities as complements to its domestic programs, under authorization provided in the revised USGS Organic Act, and in the Foreign Assistance Act and related legislation. Under these acts, the USGS may also conduct programs which have been initiated by the U.S. Department of the Interior or other Federal Agencies, such as the Department of State (DOS) and the U.S. Agency for International Development, and which these Agencies consider to be in the best interests of the U.S. Government.

International scientific programs conducted by the USGS provide opportunities to: 1) compare geologic and hydrologic systems and mapping science technologies in foreign countries with those in the United States; 2) acquire information on mineral and energy resources and other earth science information of interest to the U.S. Government; 3) support U.S. foreign policy goals by providing technical assistance to counterpart agencies in foreign countries; 4) provide benefit to the U.S. private sector by gathering and distributing information necessary to make informed investment decisions; and 5) broaden and increase the scientific knowledge of USGS scientists.

Major International Activities

Natural Hazards

Studies designed to forecast and mitigate geologic hazards, including the monitoring of volcanoes and research on earthquakes and seismicity, were major ongoing activities during fiscal years 1994 and 1995. Activities continue under the Interagency Volcano Disaster Assistance Program (VDAP), in cooperation with the U.S. Agency for International Development, Office of Foreign Disaster Assistance. The primary goal of VDAP is to reduce the loss of life and economic losses in countries experiencing catastrophic volcanic eruptions.

The Worldwide Earthquake Risk Management Program was completed in 1995. Geologic hazard assessment and mitigation programs continue under the Earthquake Mitigation Training Program. VDAP volcano-monitoring studies were conducted in the Philippines, Montserrat, British West Indies, Mexico, and Zaire.

In cooperation with the International Civil Aviation Organization (ICAO) and the Airline Pilots Association (ALPA), the USGS continues to seek ways to inform and educate the aviation community about the nature of volcanic hazards and to promote air-travel safety by mitigating and minimizing the effects of airplane encounters with volcanic ash.

In support of the United Nations' International Decade for Natural Disaster Reduction (IDNDR), the USGS helped develop the "U.S. National Report to the IDNDR World Conference on Natural Disaster Reduction" and the report "Natural Disaster Reduction: A Plan for the Nation," which responds to the IDNDR goal to develop national programs for natural disaster reduction as a core to the IDNDR international effort.

The USGS continues a multilateral program to establish seismic stations and to coordinate studies under the Global Telemetered Seismic Network Program. Bilateral earthquake and related geophysical studies with Jordan, Mongolia, Saudi Arabia, the People's Republic of China, Armenia, Ukraine, and Russia are underway or were recently completed. These studies are designed to monitor earthquake activity, with the goal of predicting earthquakes and mitigating their effects. In addition, several of these seismic stations are being incorporated into the United Nations' efforts to establish an effective nuclear test ban monitoring regime.

The Environment

Water resource assessment and research programs have been completed or are being conducted by the USGS in the People's Republic of China, France, India, Japan, Hungary, Poland, Russia, Slovakia, and Sweden. Studies of ground water availability and origin are also underway in the United Arab Emirates (UAE).

Training courses in ground-water assessment and in water data collection and interpretation were provided to participants from India, China, Korea, Argentina, and the UAE. A training course in water data acquisition systems was also presented jointly by the USGS and Canadian specialists to participants from Israel, Jordan, Palestine Autonomous Territories, and Egypt.

Activities involving applications of remote sensing to surveying and mapping continued under the Protocol with the People's Republic of China. This program includes the transfer of technology in geographic information systems (GIS) and digital cartography to aid in modernizing and standardizing China's topographic mapping operations. It also includes the application of remote sensing to environmental studies and the utilization of global positioning systems data to improve global models.

A CD-ROM was also produced containing digital raster graphic images (DRG's) of five 1:50,000 scale topographic maps in the Dry Valleys of Antarctica. Digital line graphs for the same maps were also included in the CD-ROM.

The USGS Global Change and Climate History Program has completed a comprehensive reconstruction of environmental conditions during a warm interval in the Pliocene period (about 3 million years ago). The results of experimental modelling indicate that the average global temperature during this period was about 2 to 3 C warmer than at present. This work was a cooperative effort involving university and government scientists from Canada, Russia, Iceland, Japan, and the United Kingdom.

The USGS has conducted two multi-year programs with several U.S. Universities (funded by NSF) and the Russian Academy of Sciences to: 1) acquire a paleoclimate record from cores of sediment from Lake Baikal, and 2) conduct a large multichannel seismic reflection survey of the deep structure of the Baikal Rift. These projects have produced a valuable record of climate change in Eastern Siberia which extends back 250,000 years, and have also yielded insights into the evolution of rift zones in the earth's crust.

The USGS is also cooperating with the Russian Federal Service for Geodesy and Cartography (ROSKARTOGRAFIA) in a U.S. State Department funded program to develop an environmental GIS database of the Lake Baikal drainage basin. This program has established two UNIX-based GIS facilities at ROSKARTOGRAFIA institutes in Moscow and in Irkutsk, and has provided PC-based GIS systems to regional environmental committees in Irkutsk, Chita, and Ulan Ude. The GIS will cover an area of approximately 2.5 million square kilometers at a scale of 1:1,000,000, with additional coverages of selected areas at larger scales. The completed GIS will provide local officials with the tools to make more informed decisions on land-management and environmental protection issues.

Natural Resources

Petroleum Resource Studies

The World Energy Resources Program is an extension of the USGS's domestic oil and gas assessment program. The program's objectives are: 1) to determine the probability of undiscovered resources of conventional oil and gas in priority regions of the world using similar methodology as used in the U.S. National Assessment, and 2) to provide a global context from which U.S. domestic resources can be evaluated. Products generated by the program are assessments of prioritized regions or provinces, compiled in digital form using a Geographic Information System (GIS) format. The program is currently engaged in cooperative efforts in Russia, Ukraine, Columbia, Israel, Jordan, Croatia, and Yemen.

With funding from the USAID, by the end of 1996 the USGS will have established seven petroleum-geology technical-training facilities and in Russia and Ukraine and trained their staffs. Three types of facilities are being established: petroleum geochemistry laboratories (Moscow and Tyumen, Russia); seismic-processing facilities (Moscow and Tyumen, Russia, and Kiev, Ukraine), and GIS laboratories (Moscow, Russia). In cooperation with the USGS, these facilities will produce and release technical reports, digital databases, and maps to promote and facilitate investment decision making by the private sector. USGS also will work with these facilities to develop cooperative geologic projects aimed at an improved understanding of Russian and Ukrainian petroleum geology and the resource potential of their petroleum basins.

Coal Resource Studies

With funding from USAID, the USGS is conducting a cooperative program of coal exploration and resource assessment with the Armenian Department of Underground Resources. The goals of the program are to train and equip Armenian geologists to assess the quantity and quality of coal resources in Armenia and to use the resulting data in mine planning and utilization. The program will provide the equipment and training necessary to conduct all aspects of a coal exploration and development program, including exploration drilling, geophysical logging, geochemical analysis, and coal database development and utilization. The 3-year program will provide Armenia with the means to continue to explore for coal and to independently determine the best means of developing the country's coal resources.

A USAID-funded effort is also underway in Kyrgyzstan, with the goals of evaluating the state of knowledge of Kyrgyzstan's coal resources, and advising the Kyrgyzstan government in developing long-term plans and policies for the rational development of their coal industry.

Mineral Resource Studies

Mineral resource assessments and other studies on the genesis of mineral deposits have been completed or are underway in cooperation with the following countries: Australia, Bolivia, Canada, Chile, Japan, Mauritania, Peru, The People's Republic of China, Poland, Russia, Spain, Venezuela, and the former Yugoslavia. The USGS also maintains a permanent mission in Saudi Arabia to advise and assist the Saudi Directorate General of Mineral Resources on the assessment of, and exploration for its non-fuel mineral resources. These programs provide knowledge of the availability of minerals critical to the U.S., assist foreign countries in the development of their mineral resources, and train foreign nationals in modern resource assessment techniques and methodologies.

Following the abolishment of the U.S. Bureau of Mines, the international minerals information function housed in this Bureau was transferred to the USGS. Former USBM programs in this area and counterpart programs in USGS are currently undergoing a review to determine objectives and workplans for a future integrated effort.

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G. DEPARTMENT OF JUSTICE

1. The Executive Office for National Security

DEPARTMENT OF JUSTICE

Executive Office for National Security

The Executive Office for National Security was created to address the need for policy coordination among the various Justice Department components whose law enforcement missions intersect foreign affairs, intelligence or military activity.

Crime, as well as migration, have increasingly become matters of international concern, cooperation, and action. To address the threat posed by transnational crime, drug trafficking, international terrorism, and illegal immigration, the Justice Department is developing information links throughout the world.

As of December 31, 1994, the Department of Justice had 808 employees stationed overseas, against an authorized total of 914 positions. The majority of the vacant positions are in the Drug Enforcement Agency (DEA) and Immigration and Naturalization Service (INS). Justice offices are currently found in 86 cities within 56 countries. Department of Justice agencies with employees in foreign offices include DEA (412 employees), INS (270 employees), the FBI (119 employees), the U.S. Marshals Service (1 position), the Criminal Division (5 employees), and the Civil Division (1 employee).

The Drug Enforcement Agency

The goal of the DEA's Foreign Cooperative Investigations Program is to attack drug trafficking organizations through cooperative action with nations that demonstrate a commitment to fighting international narcotics syndicates. More specifically, DEA's overseas efforts are directed toward advising, assisting and encouraging host country governments in the development of the law enforcement infrastructure required to reduce the supply of drugs at or near their source of production. The work includes coordination of drug intelligence collection and drug investigations with foreign law enforcement, as well as participation in bilateral and multilateral drug suppression programs.

The Immigration and Naturalization Service

The INS presence overseas has grown over the past several years to meet increased worldwide demand for refugee processing to the United States. Refugee claims worldwide have also risen significantly. The rising costs associated with illegal entrants into the United States have prompted a corresponding increase in INS efforts to deter such entrants.

The Service's overseas presence allows it to approve qualified applicants for refugee status and for admission into the United States; to adjudicate petitions, asylum applications and other applications for benefits under the Immigration and Nationality Act; and to verify claims on applications and petitions by conducting immigration investigations. The INS also coordinates and implements overseas enforcement initiatives directed against illegal immigration, fraud and related activities. Finally, the overseas staff is tasked with establishing important liaisons with host governments, U.S. agencies and others to ensure the effective sharing of information of common interest.

The Federal Bureau of Investigation

The FBI currently has 23 legal attache offices around the world. The work of these offices is essential to the successful fulfillment of the international role of the FBI and to securing U.S. interests. The mission of the FBI's legal attaches is to pursue the international aspects of the FBI's investigative responsibilities through liaison with the principal law enforcement and intelligence/security services in the host countries. These relationships enable the FBI to develop information necessary to deal effectively with organized crime, terrorism, foreign counterintelligence, white-collar and violent crimes.

The FBI's presence overseas has increased as a result of the growth in international crime and the expansion of FBI jurisdiction to deal with that crime. The Comprehensive Crime Control Act of 1984 and the Omnibus Diplomatic Security and Anti-terrorism Act of 1986 created extraterritorial jurisdiction for investigating hostage taking, murder, manslaughter, and serious bodily injury crimes directed against U.S. nationals abroad. In addition, on November 3, 1989, President Bush signed the Intelligence Authorization Act, vesting in the FBI the authority to supervise the conduct of all investigations of violations of the espionage laws of the U.S. by persons employed by or assigned to U.S. missions abroad.

The Criminal Division

The Criminal Division maintains overseas positions in several locations. The Office of Professional Development and Training (OPDAT) has recently increased its foreign training assistance by sending Criminal Division attorneys to train prosecutors in and enhance the legal systems of Bolivia, Haiti, and Colombia. It will soon take similar steps in Peru, Russia and Poland.

The Criminal Division also has two attorneys on the War Crimes Tribunal in the Hague, assisting in the prosecution of war crimes occurring in Bosnia. The Division's Rome office serves as a liaison with the Italian Ministry of Grace and Justice and assists in the execution of requests for extradition and Mutual Legal Assistance Treaties (MLATs).

This office also represents the Attorney General in international law enforcement fora in Europe.

The Civil Division

The Civil Division has one employee abroad, currently located in Munich, Germany and working for the Office of Foreign Litigation (OFL). The OFL is responsible for overseeing civil litigation involving the U.S. Government in foreign countries. The employee in Munich coordinates litigation on-going within Europe.

The Marshals Service

The U.S. Marshals Service has one employee stationed at the International Criminal Police Organization (INTERPOL) headquarters, in Lyon, France, providing liaison on international investigations with that organization.

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H. DEPARTMENT OF STATE

1. Bureau of Oceans, International Environmental and Scientific Affairs
 - a. Oceans
 - b. Environment and Development
 - c. Science, Technology and Health Directorate
2. List of Overseas Environment, Science and Technology Officers
3. Bureau of Intelligence and Research

DEPARTMENT OF STATE
**Bureau of Oceans, International Environmental and
Scientific Affairs**

The Department of State's primary mission is to advise the President in the formulation and execution of foreign policy and to ensure the advancement and protection of U.S. interests abroad. The Department is also responsible for conducting consular operations, including visa services for foreign nationals; providing services to U.S. citizens overseas; and managing embassies and other real property. It carries out its mission through overseas posts and supports the work of 60 federal agencies by providing information and analysis of political and economic trends, including science and technology.

Twenty-one bureaus, as well as over 250 foreign posts and other U.S. offices, carry out State's world wide program and administrative responsibilities with over 25,000 full-time employees here and abroad. Five broad groups at headquarters in Washington are led by Under Secretaries for: Political Affairs; Economic, Business and Agricultural Affairs; Arms Control and International Security Affairs; Management; and Global Affairs.

The Bureau of Oceans and International Environmental and Scientific Affairs (OES) is the Department of State's focal point for coordination of U.S. Government international science and technology activities, which include matters relating to Law of the Sea, environmental, scientific, health, fisheries, wildlife, and polar affairs. OES is also the principal bureau in Washington for the full-time Environment, Science, and Technology (EST) Officers at U.S. diplomatic missions abroad.

OES ensures that U.S. Government international environmental, science and technology considerations and activities are integrated into U.S. foreign policy and that they receive appropriate consideration, focus, and emphasis in foreign policy deliberations and conclusions. It also coordinates and assembles the annual Presidential Title V Report for the White House Office of Science and Technology Policy.

Bureau Structure

OES is one of four global issues bureaus in the Department of State under the overall direction of the Under Secretary of State for Global Affairs. These bureaus deal with transnational issues with global implications. Other global bureaus are:

DRL - Democracy , Human Rights and Labor
PRM - Population, Refugees, and Migration
INM - International Narcotics Matters

OES is headed by an Assistant Secretary of State and is divided into three substantive areas each headed by a Deputy Assistant Secretary of State. There is also an Executive office headed by an Executive Director.

- Oceans
- Environment and Development
- Science, Technology and Health

OES Priority Areas

OES MAJOR CONCENTRATIONS FOR FY 1996

Biosafety: The Parties to the Biodiversity Convention (CBD) have decided to negotiate a "biosafety" protocol to regulate the transfer and handling of organisms that have been genetically modified through modern biotechnology. Examples of these organisms are a new tomato containing a gene that conveys resistance to spoilage and a soy bean containing a gene that allows it to withstand a specific herbicide. Proponents of a protocol fear that such organisms will adversely affect the biodiversity of the country into which they are being introduced.

We have serious concerns with a protocol because we believe that it could create significant barriers to trade in biotechnology products -- an area in which the U.S. leads the world. Many parties to the CBD have not fully considered the impact of a protocol on trade, particularly in agricultural commodities. The issue is particularly important (and divisive) in the EU, where the Nordics tend to support strongly the idea of a protocol and the UK and the Dutch are more reserved. In the G-7, support for a protocol appears to be focused in India, Colombia, and Malaysia. At this point, our policy is directed towards keeping the debate on a solid scientific footing, to ensure that any protocol's actions are commensurate with the demonstrated risks. Our influence in this critical debate is limited, however, because we are not parties to the CBD, having not yet ratified it.

Chemicals: The use of certain toxic chemicals and pesticides -- like DDT and PCBs -- in developing countries and Eastern Europe/NIS is an increasing health threat to U.S. citizens. Most of these toxic chemicals were banned long ago in the U.S. because they do not biodegrade and have serious negative impact on human health and the environment. These chemicals are transported long distances through the air and water, thus affecting populations far from their region of origin (they tend to travel from warmer to colder climates and are found even in remote, non-industrialized parts of the Arctic). Because this poses a long-term health and environmental threat to the United States, we have placed a high priority on developing international agreements to regulate the trade production and use of the most hazardous of these chemicals and pesticides, also known as persistent organic pollutants (POPs). We will urge all countries to work together toward an effective regime to address this issue. We will also work to provide improved mechanisms for addressing risks associated with other hazardous chemicals, including through participation in development of a legally binding instrument for prior informed consent for export of certain of these hazardous chemicals. Key producers of these chemicals can be found in China, India, Italy and Russia.

Climate Change: The latest science reports that human actions are changing the global climate system. Climate change impacts are expected to include a rise in sea level, changes in agricultural productivity, changes in the patterns of the spread of diseases and changes in the frequency or severity of floods and

droughts. The Administration has pushed for a sensible but progressive domestic and international approach to this problem, including the negotiation of stronger steps under the 1992 Climate Convention. Given the international nature of the climate issue, and the need to involve all regions of the world in the solution, the Department has the lead in the interagency process. OES coordinates the issue for the Department, relying on an active network of mission and desk officers for understanding national positions, and for the presentation of regular demarches and U.S. position papers to key international players. The FY97 IO&P budget requests a \$3.6 million contribution to support the climate convention and international climate assessments.

Forests: As the world's largest producer and market for wood products, and the leader in biotechnology, the U.S. has an enormous stake in the sustainable use of the world's forests. Forest depletion has serious repercussions for global warming (they are huge carbon sinks), biodiversity conservation (they harbor untapped genetic resources), and agriculture (they prevent erosion and siltation). OES is a leader in the UN Commission on Sustainable Development's consideration of a wide range of forest issues -- trade, criteria and indicators, resource assessment, and certification -- through the Intergovernmental Panel on Forests (IPF). OES has also taken several direct actions in high priority areas to help promote sustainable use of forests. From Eastern Siberia to Suriname, OES has participated in efforts to assist local governments to plan the rational use of their forests, often in the face of foreign logging companies' pressure to trade short-term financial incentives for ecologically damaging clear-cutting deals in many of the world's remaining virgin forest areas. Key countries in the international debate are Brazil, Indonesia, Malaysia, Russia, Japan, Canada as well as countries of the European Union.

Fisheries: The sustainable use of the world's fisheries resources requires international cooperation and international institutions. Fisheries are the prototype "common property resources." Without cooperative efforts, particularly in light of more efficient fishing technology and gear, the world can quickly lose its fisheries to commercial extinction. In the last few years OES has succeeded in developing several strong global fish agreements, which if well implemented on a regional level will go a long way toward putting us on the right track for the future. Our focus will be on such implementation. The traditional problem areas such as Pacific salmon, tuna/dolphin and turtle/shrimp are international distractions which must be tended to as well. Key entities are Canada, China, Japan, Mexico, Russia, the South Pacific Forum Fisheries Agency and the European Union.

Marine Pollution: Pollution of the marine environment is caused by the deliberate dumping in the ocean of wastes, activities on land such as agricultural and industrial runoffs, sewage discharge and vessel discharge. These issues are addressed in a number of global and regional fora. Vessel discharge issues are addressed in the International Maritime Organization (a UN institution); dumping is regulated under the global London Dumping Convention; and, following the 1995 Washington Conference there is now a global program of action for addressing the land based activities. Our intention in 1996 is to continue with a variety of initiatives in the IMO, complete negotiations for modifications to the London Convention, and focus on implementing the Washington program of action. In this regard we are considering the initiation of negotiations toward a Pacific Basin wide marine environment protection agreement, which would necessarily involve EUR, ARA and EAP countries. Key countries are Canada, Chile, China, Indonesia, Japan, Malaysia, Norway, Russia, the European Union and the South Pacific Regional Environment Program.

Infectious Diseases: Despite medical advances, infectious diseases continue to represent a genuine health risk to U.S. citizens. This is due in large measure to modern transportation, international trade,

the growth of huge urban centers, the movement of migrant workers and refugees, and, most recently, antibiotic resistance. The Committee on International Science, Engineering and Technology (CISSET), chaired by the Under Secretary for Global Affairs, convened a Working Group to develop a coordinated strategy for combating infectious disease through the establishment of early detection and vigorous intervention. The result is a comprehensive plan which reviews the current U.S. role in the prevention, detection, reporting, and response to the global threat of emerging diseases and presents a list of recommendations for strengthening national and international infectious disease preparedness and response networks. An implementation group is now assigning responsibilities to key federal agencies in order to advance the report recommendations, and a Presidential Decision Directive (PDD) in support of these recommendations is expected soon. A key component of the strategy involves the formation of international alliances to combat these diseases, in particular with Japan, Asia Pacific Economic Cooperation Forum (APEC) member countries, and the European Union.

Economic and Trade Objectives: U.S. economic strength will depend increasingly on its scientific and technological base. Astutely crafted international policies for science and technology will enhance U.S. competitiveness, which, in turn, will translate into real economic benefits for U.S. workers and businesses. OES has several ways to use international science and technology initiatives to promote U.S. economic and trade objectives. (1) Working through U.S. technical agencies, we can promote linkages between scientific and engineering communities in key emerging markets to build critical S&T infrastructure, and thereby, improve prospects for U.S. exporters in foreign markets. (2) We can include private sector participation in cooperative activities, thereby ensuring that market/trade considerations are incorporated into our S&T activities. (3) Through our Science Offices abroad as well as our Washington resources, we can provide information to high technology firms on global trade opportunities and foreign technology developments. (4) We can improve research commercialization opportunities for American scientists by strengthening international observance of patents and intellectual property rights. (5) We can target specific sectors/opportunities such as: environmental technologies (\$400 billion market), Global Positioning System (\$8.5 billion market), biotechnology and pharmaceutical research.

OES OFFICES

A. Oceans (OES/O)

OES/O handles Arctic and Antarctic policies, oceans and coastal areas policies, maritime boundaries, Law of the Sea, marine science and technology affairs, marine environment protection, international fisheries policy matters including the conservation and protection of endangered species, and other marine resource issues. Responsibilities are divided among the following two offices.

1. Office of Marine Conservation (OMC)

This Office is responsible for formulating and implementing U.S. policy on a broad range of international fisheries issues. The office is involved in the negotiation of bilateral and multilateral fisheries agreements, participates in international fisheries conservation and management organizations and arrangements, and represents the U.S. in a variety of other fora. OMC was the primary office in the State Department responsible for the negotiation of the United Nations Straddling Fish Stocks and Highly Migratory Fish Stocks Treaty.

OMC is involved in efforts to ensure compliance with a global moratorium on large-scale high seas driftnet fishing, conserve threatened and endangered sea turtles, protect dolphins in the tuna fisheries of the eastern tropical Pacific Ocean, conserve and manage high-seas and transboundary resources, and formulate U.S. policy with regard to trade and the environment.

The office also maintains the fisheries relationship with Canada and Mexico off the Atlantic and Pacific coasts and in the Gulf of Mexico, and access arrangements for U.S. fishermen in the waters of other nations. The office has a leading role in the implementation of the south Pacific Tuna Treaty with 16 Pacific island nations. The office also administers provisions of the fishermen's Protective Act.

OMC is responsible for the negotiation and implementation of governing international fishery agreements (GIFAs), which provide foreign nations with fishing opportunities in the U.S. 200-mile zone, when available. Five such agreements are now in force. The office plays a major role in the coordination of U.S. actions regarding prosecutions of foreign vessels for violations of U.S. fisheries laws and regulations.

Office staff actively support and participate in the work of nine international fishery conservation and management organizations and arrangements, including the Pacific Salmon Commission (PSC), the International Commission for the Conservation of Atlantic Tunas (ICCAT), the International Pacific Halibut Commission (IPHC), the Inter-American Tropical Tuna Commission (IATTC), the North Pacific Anadromous Fish Commission (NPAFC), the North Atlantic Salmon Conservation Organization (NASCO), the Northwest Atlantic Fisheries Organization (NAFO), the Great Lakes Fishery Commission (GLFC), and the Central Bering Sea "Donut Hole" pollock fishery arrangement. The office is also engaged in the work of other international bodies, such as the United Nations Food and Agriculture Organization (FAO), the Organization for Economic Cooperation and Development (OECD), and the Asia-Pacific Economic Cooperation (APEC) forum. OMC staff serve as the Department's non-voting members on the eight domestic regional fishery management councils.

2. Office of Oceans Affairs (OA)

OA is responsible for general oceans policy issues and for marine environmental protection and polar policy. The office chairs various interagency working groups, such as Law of the Sea, land-based sources of marine pollution and follow-up activities to Chapter 17 of the United Nations Conference on Environment and Development relating to Oceans and Coastal Areas. It is the point of contact for the United Nations Global Conference on Sustainable Development of Small Island Developing States, and for numerous international organizations, such as the International Maritime Organization and the International Oceanographic Committee.

Marine Law and Policy Division (OA/MLP)

OA/MLP covers Law of the Sea, land-based sources of marine pollution, and the London Convention on the dumping of wastes at sea. It ensures navigation rights and negotiates maritime claims and boundaries. MLP is the contact for the South Pacific Regional Environmental Program and the Caribbean Regional Sea Program.

Marine Science and Technology Affairs Division (OA/MST)

OA/MST is responsible for multilateral and bilateral marine science affairs and for international coordination of marine science affairs, marine research vessel clearances and international scientific data exchange under existing bilateral oceans-related science and technology agreements.

Polar Affairs Division (OA/PA)

OA/PA coordinates Antarctic and Arctic policy, including oversight of the various treaties associated with Antarctica and the development of U. S. Positions under the Arctic Environmental Protection Strategy. OA/PA also is responsible for marine mammal issues, such as whaling.

B. Environment and Development (OES/E)

OES/E is responsible for policy formulation and action on international environmental and sustainable development. The directorate includes three offices.

Office of Environmental Policy (ENV)

ENV develops U.S. policy on environmental issues in the United Nations and other multilateral fora such as trade and the environment, the Commission for Sustainable Development, and the Basel Convention and related issues. The office also focuses on a variety of bilateral and regional issues, including NAFTA implementation, OECD Environment Policy Committee work, transboundary air pollution, and environmental issues in Russia, the Newly Independent States and Eastern Europe.

Office of Ecology and Terrestrial Conservation (ETC)

ETC develops policy on issues as diverse as biological diversity (including access to genetic resources, biosafety, and benefit sharing), forests, deserts, wildlife, wetlands, watershed development, and protected areas. ETC oversees the implementation of several international conventions such as the Convention on Biological Diversity, the Convention on International Trade in Endangered Species (CITES), the Desertification Convention, the Ramsar Convention (on wetlands of international importance), World Heritage Convention, and four bilateral Migratory Bird Treaties. In addition, ETC coordinates the International Coral Reef Initiative (with assistance from the Office of Oceans Affairs); participates in the International Tropical Timber Organization (ITTO), the Montreal Process to establish Criteria and Indicators of sustainable forest oversees U.S. participation in the World Conservation Union (IUCN). Finally, ETC has begun several bilateral initiatives aimed at helping countries find sustainable solutions to the temptation of overharvesting of their forests. ETC supports and oversees the U.S. Man and the Biosphere (ETC/MAB) Secretariat, which coordinated the U.S. MAB Program. U.S. MAB coordinates the development of a national network of biosphere reserves and facilitates U.S. involvement in a parallel international network. In this capacity, MAB is coordinating the development of an international ecological monitoring system, the Biosphere Reserve Integrated Monitoring (BRIM) program.

Office of Global Change (EGC)

EGC chairs the effort to develop and implement U.S. policy on global climate change and stratospheric ozone depletion. It is developing the U.S. initiative on joint implementation of commitments under the Framework Convention on Climate Change. EGC works closely with the DOE and EPA on the U.S. Initiative for Joint Implementation, which promotes partnership with the private and public sectors to reduce greenhouse gases in developing countries; and on the U.S. Climate Change Country Studies program, which assists countries to assess their greenhouse gas emissions and to develop strategies to mitigate their impact. EGC works with the Bureau of Economic and Business Affairs (EB) and the Department of Energy to develop U.S. policy on energy conservation and efficiency, and with the Department of the Treasury and EB to establish the Global environmental faculty (GEF) on a permanent and effective footing. ENV oversees Man and the Biosphere, (MAB) and addresses the coral reefs issue.

C. Science, Technology and Health (OES/S)

OES/S has two principal responsibilities integrating a wide range of OES issues as they arise in bilateral and regional relations and formulating and coordinating policy dealing with a broad spectrum of international science, technology, and health matters. The OES/S directorate has two offices:

1. Office of Science, Technology and Health (STH)

STH is responsible for coordinating multi-agency negotiations in science, technology, space, biotechnology, industry, and health matters.

2. Science, Space and Multilateral Cooperation Division (SMC)

SMC provides policy coordination for basic scientific research and space issues. Working with the White House, Department of Defense, NASA, and other agencies as well as with non-governmental organizations, SMC promotes international cooperation to advance U.S. space interests. The office also promotes U.S. S&T interests in various international fora to maintain access to foreign R&D programs to promote openness in research results, and to secure international support for large U.S. science projects.

Technology Competitiveness and Health Division (TCH)

TCH provides guidance on the international implications of U.S. policy and programs that address competitive technologies, and on international cooperation related to health and life sciences. The office coordinates reporting on foreign technology developments. TCH joins the Bureau of Economic and Business Affairs (EB) and other U.S. agencies to formulate economic policies dealing with technology flow.

TCH also addresses major international health concerns and coordinates with technical agencies and other Department of State bureaus. Major issues include infectious diseases and HIV/AIDS new and re-emerging; advances in biotechnology and biomedicine, including changes in regulatory structures; and health care infrastructure and health industry concerns.

TCH is responsible for the operation of the Science and Technology Reporting Information, Dissemination and Enhancement (STRIDE) Program, which distributes unclassified Department of State reporting on foreign research and development activities to the private sector, academic institutions, and federal agencies by the Commerce Department's National Technical Information Service (NTIS).

Office of Science and Cooperative Programs (SCP)

SCP manages the negotiation and execution of bilateral S&T agreements, including the management of associated joint funds. The office coordinates the U.S. Government process for authority to negotiate such agreements. SCP is the first point of contact for U.S. agencies seeking to negotiate cooperative S&T arrangements with foreign counterpart agencies. The office is divided into two geographic divisions and is staffed by "desk officers" responsible for specific country or regional accounts.

Western Hemispheric, African European and Newly Independent States Affairs (SCP/WNIS)

Current emphasis is on strengthening cooperative activities with Russia through the Gore-Chernomyrdin Commission, while expanding cooperation with the Newly Independent States and Baltic States; enhancing collaboration with Latin America, particularly Mexico, through the S&T component of the cabinet level commission on bilateral relations; developing a new S&T relationship with post-apartheid South Africa as the focal point of a regional strategy; restructuring cooperative S&T work with Central and Eastern Europe; and maintaining and expanding traditional links with western Europe and Canada by negotiating solutions to long-standing differences over intellectual property rights provisions in S&T agreements.

Middle East, Asia and Pacific Rim (SCP/MAPR)

Current emphasis is on supporting Middle East peace process activities, focusing on water, environment and regional economic development; developing new activities under the Gore-Mubarak initiative; managing on-going U.S. -Israel S&T cooperation; managing the U.S. India Fund as it enters a transition phase; managing and developing our bilateral relationships with China, Japan, and Korea; developing a new S&T cooperation with Vietnam; coordinating our bilateral activities in Asia and the Pacific Rim with APEC

EXECUTIVE DIRECTOR (OES/EX)

OES/EX reports to the Assistant Secretary. The office has four divisions -- the Financial Management Division, the Information Management Division, and the Personnel Management Division, and the Policy Support Division. General services and security support are provided from the Executive Director's office. This office also supports the Bureau of Democracy, Human Rights and Labor.

Financial Management Division (EX/FMD)

FMD tracks expenditures and allocates available funds; formulates and executes budgets for the OES Appropriation, DRL Appropriation, International Fishery Commissions, U.S. Bilateral Science and Technology Agreements, and Special Fund; and provides support services for travel.

Information Management Division (EX/IMD)

IMD provides information management services which require it to maintain the existing classified and unclassified computer systems, ensure full utilization of , and training on, the existing systems, and plan and implement the migration to "Open Systems."

Personnel Management Division (EX/PMD)

PMD provides all services related to personnel matters, both Civil Service and Foreign Service.

Policy Support Division (EX/PSD)

PSD provides a variety of services particularly on issues involving more than one division. These services include development of the annual Bureau Program Plan, Bureau management control and vulnerability actions, transmission of Bureau reporting guidelines, and coordination with the Office of the Inspector General (OIG) and General Accounting Office (GAO). PSD also manages the OES Special Fund (see below), the EST Officer Reporting Award and EST Officer Conferences, and efforts to strengthen the EST functions within the Department.

Eileen Claussen

Assistant Secretary, Oceans and International Environmental and Scientific Affairs

2201 C St. NW

Washington D.C. 20520

Tel: (202) 647-1554

David Colson

Deputy Assistant Secretary and Ambassador for Oceans

Tel: (202) 647-2396

Fax: (202) 647-0217

Office of Marine Conservation (OES/OMC)

Office of Ocean Affairs (OES/OA)

-Marine Law and Policy Division

-Marine Science Division

-Polar Affairs Division

Rafe Pomerance

Deputy Assistant Secretary for Environment and Development

Tel: (202) 647-2232

Fax: (202) 647-0217

Office of Environmental Policy (OES/ENV)

Office of Ecology and Terrestrial Conservation (OES/ETC)

-Man and the Biosphere

Office of Global Change (OES/EGC)

Anne Solomon
Deputy Assistant Secretary, Science, Technology and Health
Tel: (202) 647-3004
Fax: (202) 647-0217

Office of Science, Technology and Health (OES/STH)
-Science, Space and Multilateral Cooperation Division
-Technological Competitiveness and Health Division
Office of Science and Cooperative Programs (OES/SCP)
-Middle East, Asia and Pacific Rim Affairs Division
-Western Hemispheric and NIS Affairs Division

State HomePage: <http://www.dosfan.lib.uic.edu/index.html>

General DoS: <http://www.state.gov>

DEPARTMENT OF STATE
List of Overseas Environment, Science and Technology Officers

Overseas Offices

05-Jun-96

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Almaty	Kazakhstan	Daniel M. Bowen	ECON	7-3272-63-24-26	7-3272-63-38-83
Local Address:	99/97 Furmanova Street, Almaty, Republic of Kazakhstan 480012					
Mailing Address:	American Embassy Almaty, U.S. Department of State Washington, D.C.					
480012				Pouch Address:	c/o US Department of State Washington, D.C. 20521-7030	
US Embassy	Bangkok	Thailand	Jerry Lanier	ECON	66-2-205-4000	66-2-254-2990
Local Address:	American Embassy, 120/22, Wireless Road, Bangkok					
Mailing Address:	APO AP					
096546				Pouch Address:	c/o US Department of State Washington, D.C. 20521-7200	
US Embassy	Beijing	China	Marco DiCapua	EST	86-10-532-3831, ext.	86-10-532-6423
Local Address:	3 Xiu Shui Bei Jie #3; Beijing 100600					
Mailing Address:	Environment, Science and Technology Office FPO AP					
096521 0002				Pouch Address:	c/o US Department of State Washington, D.C. 20521-7300	
US Embassy	Bonn	Germany	Richard R. Ries	ECON	49-228-339-2183	49-228-339-2838
Local Address:	Deichmanns Ave 29 53170					
Mailing Address:	American Embassy Bonn, PSC 117, Box 280 APO AE					
009080				Pouch Address:	c/o US Department of State Washington, D.C. 20521-7400	

Overseas Offices

05-Jun-96

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Brasilia	Brazil	Xenia Wilkinson	ECON	55-61-225-9894	55-61-225-9136
Local Address: Avenida Das Nacoes, Lote 3						
Mailing Address: Unit 3500 APO AA 034030					Pouch Address: c/o US Department of State Washington, D.C. 20521-7500	
US Embassy	Bratislava	Slovak Republic	Christopher Sandro	ECON	42-7-330861	42-7-330096
Local Address: Hviezdoslavovo Namestie 4, 81102 Bratislava						
Mailing Address: American Embassy Bratislava, Department of State. Washington, D.C 081102					Pouch Address: c/o US Department of State Washington, D.C. 20521-5840	
US Mission to the Eu	Brussels	Belgium	Stephen V. Noble	ECON	32-2-513-3830	32-2-511-2092
Local Address: 40 Blvd du Regent, B-1000						
Mailing Address: USEU/ECON, PSC 82, Box 002 APO AE 009724					Pouch Address: c/o US Department of State Washington, D.C. 20521-7600	
US Mission to the	Brussels	Belgium	Paul Rambaut	NATO	32-2-728-4208	32-2-728-4625
Local Address: Scientific and Environmental Affairs Division, NATO, B-1110						
Mailing Address: PSC 81-Box 88 APO AE 009724					Pouch Address: c/o US Department of State Washington, D.C. 20521-7600	

Overseas Offices

05-Jun-96

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Budapest	Hungary	Steve Taylor	EST	36-1-267-4400	36-1-269-9326
Local Address: V. Szabadsag Ter 12, Budapest						
Mailing Address: Unit 1320 APO AE 009213					Pouch Address: c/o US Department of State Washington, D.C. 20521-4320	
US Embassy	Buenos Aires	Argentina	Jeffrey Lutz	EST	54-1-777-2186	54-1-777-0197
Local Address: 4300 Columbia, 1425						
Mailing Address: Unit 4334 APO AA 034034					Pouch Address: c/o US Department of State Washington, D.C. 20521-3130	
US Embassy	Canberra	Australia	John Michael Garne	ECON	61-6-270-581061	6-270-5825
Local Address: One Moonah Place, Canberra, A.C.T. 2600						
Mailing Address: APO AP 096549					Pouch Address: c/o US Department of State Washington, D.C. 20521-7800	
US Embassy	Caracas	Venezuela	Rebecca Gaghan	CONS	58-2-977-2011,4602	58-2-977-3448
Local Address: Calle F con Calle Suapure, Colinas de Valle Arriba, Caracas						
Mailing Address: U.S. Embassy-Caracas, Economic Section, Unit 4956 APO AA 034037					Pouch Address: c/o US Department of State Washington, D.C. 20521-3140	

Overseas Offices

05-Jun-96

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Copenhagen	Denmark	Stephanie Kinney	EST	45-31-42-31-44, ext.3 45-31-42-80-75	
Local Address: Dag Hammarskjolds Alle 24, 2100 Copenhagen 0						
Mailing Address: APO AE 009716						
					Pouch Address: c/o US Department of State Washington, D.C. 20521-5280	
US Mission to the Eu	Geneva	Switzerland	Harlan K. Cohen	EST	41-22-749-4309	41-22-749-4880
Local Address: Mission Permanente Des Etats-Unis, Route de Pregny 11, 1292 Chambesy-Geneve						
Mailing Address: Mission Permanente Des Etats-Unis, Route de Pregny 11 1292 Chambesy-Geneve						
					Pouch Address: c/o US Department of State Washington, D.C. 20521-5120	
US Embassy	Hanoi	Vietnam		EST	844-431-500	844-431-510
Local Address: 7 Lang Ha Road, Ba Dinh District						
Mailing Address: PSC 461, Box 400 FPO AP 96521-0002						
					Pouch Address: c/o US Department of State Washington, D.C. 20520	
US Embassy	Helsinki	Finland	Catherine Hill-Her	ECON	358-0-171-931 ext.381	358-0-174-681
Local Address: Itainen Phistotie 14A, FIN 00140						
Mailing Address: APO AE 009723						
					Pouch Address: c/o US Department of State Washington, D.C. 20521-5310	

Overseas Offices

05-Jun-96

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Jakarta	Indonesia	Gary D. DeVight	ECON	62-21-360-360	62-21-386-2259
Local Address: Jalan Merdeka Selatan 5, Jakarta 10100						
Mailing Address: Box 1 APO AP 096520				Pouch Address: c/o US Department of State Washington, D.C.	20521-8200	
US Embassy	Jeddah	Saudi Arabia	George V. DeMeglio	USGS	966-2-667-4188 ext.53	966-2-665-8106
Local Address: American Consulate General, Palestine Road, Ruwais, P.O. Box 149 Jeddah 21411						
Mailing Address: Unit 62112 APO AE 009803 1307				Pouch Address: c/o US Department of State Washington, D.C.	20521-6320	
American Institute i	Kaohsiung	Taiwan	Ann Kathleen Breit	ECON	886-7-224-0154	886-7-223-8237
Local Address: 5th Floor, #2 Chung Cheng 3rd Road, Kaohsiung, Taiwan						
Mailing Address: 5th Floor, #2 Chung Cheng 3rd Road	Kaohsiung, Taiwan			Pouch Address: c/o US Department of State Washington, D.C.	00002-0521	
US Embassy	Kiev	Ukraine	Douglas J. Apostol	ECON	380-44-244-7345	380-44-244-7350
Local Address: 10 Yuria Kotsyubinskovo, 252053 Kiev 53						
Mailing Address: 10 Yuria Kotsyubinskovo 252053 Kiev 000053				Pouch Address: c/o US Department of State Washington, D.C.	20521-5850	

Overseas Offices

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Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Kuala Lumpur	Malaysia	John Wecker	ECON	60-3-248-9011	60-3-242-2207
Local Address: 376 Jalan Tun Razak, 50400 Kuala Lumpur						
Mailing Address: APO AP 096535 8152				Pouch Address: c/o US Department of State Washington, D.C. 20521-4210		
US Embassy	Kuwait	Kuwait	Nancy Mulenex	ECON	965-242-4151	965-244-2855
Local Address: P.O. Box 77 SAFAT, 13001 SAFAT, Kuwait						
Mailing Address: Unit 69000, Box 3 APO AE 009880 9000				Pouch Address: c/o US Department of State Washington, D.C. 20521-6200		
US Embassy	Lisbon	Portugal	Jonathan Kessler	ECON	351-1-726-6600	351-1-726-6559
Local Address: Avenida Das Forcas Armadas, 1600 Lisbon						
Mailing Address: PSC 83, APO AE 009726				Pouch Address: c/o US Department of State Washington, D.C. 20521-5320		
US Embassy	Ljubljana	Slovenia	Mahlon Henderson	POL/ECON	386-61-301-427	386-61-301-401
Local Address: Box 254, Prazakova 4, 61000 Ljubljana						
Mailing Address: American Embassy Ljubljana, Department of State. Washington, D.C. 020521 7140				Pouch Address: c/o US Department of State Washington, D.C. 20521-7140		

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US Embassy	London	United Kingdom	Raymond Arnaudo	EST	44-171-408-8038	44-171-409-1637
Local Address: 24 Grosvenor Square, London W1A 1AE, UK						
Mailing Address: PSC 801, Box 38 FPO AE 009498 4040					Pouch Address: c/o US Department of State Washington, D.C. 20521-8400	
US Embassy	Madrid	Spain	Helen B. Lane	ECON	341-577-4000	341-577-3943
Local Address: Serrano 75, 28006 Madrid						
Mailing Address: PSC 61, Box 22 APO AE 009642					Pouch Address: c/o US Department of State Washington, D.C. 20521-8500	
US Embassy	Mexico City	Mexico	S. Ahmed Meer	EST	52-5-211-0042 ext. 37	52-5-511-9980
Local Address: Paseo de la Reforma 305, Col. Cuauhtemoc, 06500 Mexico City, D.F.						
Mailing Address: P.O. Box 3087, Laredo, Texas 078044 3087					Pouch Address: c/o US Department of State Washington, D.C. 20521-8700	
US Embassy	Moscow	Russia	John C. Zimmerman	EST	7-095-956-4029	7-095-956-4296
Local Address: Novinskiy Bul' var 19/23, Moscow						
Mailing Address: PSC-77 APO AE 009721					Pouch Address: c/o US Department of State Washington, D.C. 20521-5430	

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Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Nairobi	Kenya	Alan B.C. Latimer	UNEP	254-2-334141	ext.419254-2-219595
Local Address: Moi/Haile Selassie Avenue, P.O. Box 30137						
Mailing Address: AMEMB, Unit 64100, Box 75 PO AE 009831						
US Embassy	New Delhi	India	Paul C. Maxwell	EST	91-11-600651, ext. 2391-11-687-2028	
Local Address: Shanti Path, Chanakyapuri 110021, New Delhi						
Mailing Address: American Embassy New Delhi, Department of State 020521 9000						
US Embassy	Oslo	Norway	Russ Trowbridge	POL	47-22-44-85-50	47-22-55-43-139
Local Address: Drammensveien 18, 0244 Oslo						
Mailing Address: PSC 69, Box 1000 APO AE 009707						
US Embassy	Ottawa	Canada	Teresa Chin Jones	ECON	613-238-5335	613-234-2588
Local Address: 100 Wellington Street, K1P 5T1						
Mailing Address: PO Box 5000 Ogdensburg, NY 013669 0430						

Overseas Offices

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Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Panama City	Panama	Andrew Erickson	ECON	507-227-1777	507-227-1964
Local Address:	Apartado 6959, Panama 5, Rep. de Panama					
Mailing Address:	AMEMB Panama, Unit 0945 APO AA					
					Pouch Address:	
					c/o US Department of State	
					Washington, D.C.	20521-9100
US Embassy	Paris	France	Jerome J. Bosken	EST	33-1-43-12-22-22	33-1-42-66-97-83
Local Address:	Science Section-A233, 2, avenue Gabriel, 75382 Paris Cedex 08					
Mailing Address:	Science Section-A233, PSC 116, Box A233 APO AE					
					Pouch Address:	
					c/o US Department of State	
					Washington, D.C.	20521-9200
National Aeronautics	Paris	France	James Zimmerman	NASA	33-1-43-12-21-00	33-1-42-65-87-6
Local Address:	NASA Office-A230, 2, avenue Gariel, 75382 Paris Cedex 08					
Mailing Address:	NASA-Embassy Paris, PSC 116 APO, AE					
					Pouch Address:	
					c/o US Department of State	
					Washington, D.C.	20521-9200
National Science Fou	Paris	France	Dr. Norbert M. Bik	NSF	33-1-43-12-2100	33-1-42-658768
Local Address:	NSF Office-A211, 2, avenue Gabriel, 75382 Paris Cedex 08					
Mailing Address:	NSF Office-A211, PSC 116, Box A211 APO, AE					
					Pouch Address:	
					c/o US Department of State	
					Washington, D.C.	20521-9200

Overseas Offices

05-Jun-96

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Mission to the Or Paris	Paris	France	Coleman J. Nee	OECD	33-1-4524-7431	33-1-4524-7468
Local Address: 19 Rue de Franqueville, 75016						
Mailing Address: APO AE 009777						
US Embassy	Prague	Czech Republic	Doug McNeil	POL	42-2-2451-0847, ext 2	42-2-531-193, 710
Local Address: Trziste 15, 118 01 Prague 1						
Mailing Address: PSC 115, Unit 1330 APO AE						
009213 1330	Pretoria	South Africa	Kenneth Thomas	EST	27-12-342-1048	27-12-342-2244
US Embassy						
Local Address: 877 Pretorius Street, Arcadia 0083						
Mailing Address: P.O. Box 9536, Pretoria						
000001	Riyadh	Saudi Arabia	Anni McConnell	ECON	966-1-488-3800	966-1-488-3278
US Embassy						
Local Address: American Embassy, Collector Road M, Riyadh Diplomatic Quarter, P.O. Box 94309, R						
Mailing Address: AMEMB, Unit 61307 APO AE 009803 1307						

Overseas Offices

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Rome	Italy	James Chamberlin	EST	39-6-4674-2135	39-6-4674-2663
Local Address: Via Vittorio Veneto 119/A, 00187 Rome						
Mailing Address: PSC 59, Box 100 APO AE					Pouch Address: c/o US Department of State Washington, D.C. 20521-9500	
009624						
US Embassy	Santiago	Chile	Larry Memmott	ECON	56-2-330-3397	56-2-330-3710
Local Address: Andes Bello 2800, Santiago						
Mailing Address: Unit 4104 APO AA					Pouch Address: c/o US Department of State Washington, D.C. 20521-3460	
034033						
US Embassy	Seoul	Korea	Frederick Crosher	POL	82-2-397-4159	82-2-722-1429
Local Address: 82 Sejong-Ro; Chongro-ku, Seoul						
Mailing Address: AMEMB, Unit 15550 APO AP096205					Pouch Address: c/o US Department of State Washington, D.C. 20521-9600	
American Institute i	Taipei	Taiwan	David J. Dolaher,	ECON	886-2-709-2000 ext. 2	886-2-706-3023
Local Address: #7 Lane 134, Hsin Yi Road, Section 3, Taipei, Taiwan						
Mailing Address: #7 Lane 134, Hsin Yi Road, Section 3 Taipei, Taiwan					Pouch Address: c/o US Department of State Washington, D.C. 00002-0521	

Overseas Offices

05-Jun-96

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Tel Aviv	Israel	David W. Mullenex EST	972-3-519-7373	972-3-517-3227	
Local Address: 71 Hayarkon Street, Tel Aviv, Israel						
Mailing Address: PSC 98, Box 100 APO AE				Pouch Address: c/o US Department of State Washington, D.C. 20521-9700		
009830 US Embassy	Tokyo	Japan	Gerald J. Whitman EST	81-3-3224-5500	81-3-3224-5229	
Local Address: 1-10-5, Akasaka, Minato-ku, Tokyo 107						
Mailing Address: Unit 45004, Box 235 APO AP				Pouch Address: c/o US Department of State Washington, D.C. 20521-9800		
096337 US Embassy	Vienna	Austria	Peter V. Londono EST	43-1-313-39	43-1-310-0370	
Local Address: Boltzmannngasse 16						
Mailing Address: A-1091, Unit 27937 APO AE				Pouch Address: c/o US Department of State Washington, D.C. 20521-9900		
US Mission to Intern	Vienna	Austria	Leroy Simpkins UNVIE	43-1-31339-74-3321	43-1-369-83-92	
Local Address: Obersteingasse 11, A-1190						
Mailing Address: Department of State Washington, D.C.				Pouch Address: c/o US Department of State Washington, D.C. 20521-9900		

Overseas Offices

05-Jun-96

Post:	City:	Country:	OIC:	Office:	Phone:	Fax 1:
US Embassy	Warsaw	Poland	George Kent	ECON	48-2-621-7137	48-2-628-3754
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Mailing Address: Unit 1340 APO AE				Pouch Address: c/o US Department of State Washington, D.C. 20521-1340		
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DEPARTMENT OF STATE

Bureau of Intelligence and Research

The Bureau of Intelligence and Research (INR) is the State Department's primary source for interpretive analysis of global developments. The INR was established in 1946 to provide the Secretary of State with timely, objective assessments, free of policy prescription or preferences. Its mandate is to tell policymakers what they need to know, not what they want to hear. The INR is also the focal point within the State Department for all policy issues and activities involving the Intelligence Community. The INR Assistant Secretary reports directly to the Secretary of State and serves as the Secretary's principal advisor for all intelligence matters.

In providing the Secretary and other key decision makers with expert, independent foreign affairs analysis, INR draws on all source intelligence, diplomatic reporting, and interaction with U.S. and foreign scholars. It responds rapidly to policy priorities, providing early warning and in-depth analysis of events and trends that affect U.S. foreign policy and national security interests. The analyses are not subject to approval by other parts of the Department or to formal coordination with other components of the Intelligence Community. The INR contributes to Community analyses such as National Intelligence Estimates, with a particular eye to relevance to policy needs.

The Bureau focuses on issues bearing on U.S. national security, economic well-being, and promotion of democracy, including reform and stability in Russia and other former communist states; economic challenges from competitors evolving trade relationships; global issues such as the environment, human rights, terrorism, weapons and military technology proliferation, and peace-keeping; international organizations and agreements; and conflict zones, including the Balkans, Africa, the Middle East, and the Korean peninsula.

INR coordinates the handling of issues that arise in the course of intelligence, security, counterintelligence, investigative, and special operations in support of the statutory authority of the Secretary of State and Chiefs of Mission for the conduct of foreign policy and oversight of all U.S. government activities overseas, including agencies like Central Intelligence Agency (CIA), National Security Agency (NSA), Federal Bureau of Investigation (FBI), Drug Enforcement Agency (DEA), and Justice. The Bureau sits on the National Counterintelligence Policy Board and works with the Bureau of Diplomatic Security on matters concerning security and security countermeasures. The INR also coordinates with the national security community on visa denials, intelligence sharing, and requirements and evaluation for collection in all intelligence disciplines. Finally, INR develops intelligence policy for the Department of State, ensuring that intelligence activities abroad are in harmony with U.S. policy and that collection resources and priorities are in accord with U.S. diplomatic interests and requirements.

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State HomePage: <http://dosfan.lib.uic.edu/index.html>

I. DEPARTMENT OF TRANSPORTATION

1. Aviation and International Affairs
 - a. Office of International Aviation
 - b. Office of Aviation and International Economics
 - c. Office of International Transportation and Trade
2. Office of Commercial Space Transportation
3. Federal Aviation Administration
 - a. Office of International Aviation
4. Federal Highway Administration
 - a. Office of International Programs

DEPARTMENT OF TRANSPORTATION
Aviation and International Affairs
Office of International Aviation
Office of Aviation and International Economics
Office of International Transportation and Trade

Science and Technology Cooperation

The Department of Transportation regularly participates in international cooperative science and technological (S&T) agreements with its foreign counterparts around the world. These agreements, referred to as Memoranda of Understanding (MOU) or Implementing Arrangements, recognize new developments in the field of transportation technology. Cooperative activities under these agreements make important contributions toward promoting, encouraging, and advancing safe, economical, efficient, and environmentally sound transportation systems. The agreements also provide for the participation of U.S. industry and academia.

The Department's S&T agreements usually cover all transport-related technologies in all modes such as land, water, rail and air transportation, intermodal transportation, safety promotion technology, shipbuilding, maritime safety, energy and environment, transportation for the handicapped and elderly, and information-related technology. There are approximately 18 transportation S&T agreements with foreign counterparts in Brazil, Canada, China, Finland, France, Germany, Hungary, Israel, Italy, Japan, Mexico, the Netherlands, Poland, Russia, Saudi Arabia, Spain, Sweden, and the United Kingdom.

The Department has also signed a S&T agreement with the Republic of South Africa for cooperation and technology transfer in the highway and transit areas; and a trilateral agreement with Canada and Mexico. Both agreements will include private sector and academia participation and strengthen transportation-related ties between the U.S. and participating countries.

A. Office of International Aviation

The Office of International Aviation is responsible for formulating, coordinating and executing the international aviation policy of the United States and for administering the economic regulatory functions related to foreign air transportation. These activities are required by the aviation subtitle (subtitle VII) of U.S. transportation law recodification of the Federal Aviation Act and the International Air Transportation Fair Competitive Practices Act and by some 80 bilateral and multilateral aviation agreements to which the United States is a party. The Office of International Aviation originates U.S. aviation negotiating positions with respect to foreign countries; coordinates negotiating policy, strategy and positions with the Department of State and other agencies and with the U.S. air carrier industry as required by law; and conducts or participates in those negotiations. The Office also receives formal and informal complaints from U.S. carriers experiencing difficulties in foreign markets and intervenes to resolve problems.

On the regulatory side, the Office receives, processes, and makes or recommends disposition of all U.S. and foreign air carrier requests for economic authority to operate between the U.S. and foreign points. It also determines the disposition of all tariff filings by U.S. and foreign airlines. The Office administers (and is responsible for reviewing and revising as needed) some 20 Parts of Title 14 of the Code of Federal

Regulations. Where unfair foreign practices harm U.S. aviation interests and negotiated solutions cannot be achieved, the Office's regulatory staff apply economic sanctions.

Because airlines may not operate internationally without economic rights from the foreign countries served and economic authority from the U.S. Government, these essential facilitative activities are among the most prominent and consequential in the Department, with individual negotiations and licensing decisions worth millions of dollars to the airlines and to the U.S. balance of payments.

Negotiations Divisions

The negotiating staff of the Office of International Aviation plans and executes U.S. strategy for achieving an equitable, procompetitive operating environment for U.S. airline services between the United States and foreign countries. It develops and coordinates U.S. policy positions and conducts bilateral and multilateral negotiations with foreign aviation officials. The negotiators also are the principal U.S. Government liaison with the aviation industry and U.S. communities on international matters. These geographic specialists work with State Department officers here and in embassies abroad, and directly with foreign officials, to resolve day-to-day air carrier problems outside the formal negotiating process. The negotiating staff are currently organized in three geographic divisions: Europe, Asia/Pacific/Africa, and Western Hemisphere.

International Data Systems

The International Data Systems Division, part of the negotiating unit, provides analytical support for both negotiating and licensing activities as well as for Congressional inquiries and testimony. The division also conducts major studies of various aspects of international aviation to inform policymakers in the Executive Branch and the Congress.

Pricing and Multilateral Affairs

The Pricing and Multilateral Affairs Division performs a variety of both regulatory and negotiating functions. The Division formulates the Department's policy on international aviation pricing issues and prepares and negotiates significant pricing provisions of bilateral and multilateral aviation agreements. Division analysts also conduct regulatory review of international fares and rates filed by U.S. and foreign air carriers to determine whether the proposed prices are consistent with public interest standards, Department rules and policy, and applicable international agreements. In addition, the Division performs cost analysis to determine the Standard Foreign Fare Level, a reference index of justifiable increases in airline charges which is required by the aviation subtitle. The staff reviews as well intercarrier agreements, mostly fare and rate agreements filed by the International Air Transport Association, to determine whether they should be approved and given antitrust immunity.

The Division is further responsible for managing aviation economic aspects of U.S. relations with a number of multinational organizations, including the International Civil Aviation Organization, the European Civil Aviation Conference, the European Union, and the World Trade Organization, the successor organization to the General Agreement on Tariffs and Trade. Division staff analyze aviation issues addressed by these organizations and represent the United States at multilateral meetings. This function will greatly expand in the future as the United States moves into more multilateral negotiations.

U.S. Air Carrier Licensing

The U.S. Air Carrier Licensing Division processes all requests by U.S. airlines for authority to serve specific foreign markets. The division uses simplified procedures to grant routine applications to serve countries where a liberal aviation regime affords broad market access. Where rights are limited, show cause or other hearing procedures are invoked to assure that all interested carriers are afforded an opportunity to apply, and that the best public interest result is achieved. The division also considers applications for transfer of international authority among U.S. carriers.

Another significant area of the division's responsibilities, provided in the aviation subtitle, is handling formal complaints filed by U.S. carriers seeking relief from unfair or discriminatory treatment in foreign countries.

Foreign Air Carrier Licensing

This division handles all foreign air carrier applications for operating authority (except Canadian air taxi registration) and most retaliatory orders directed against foreign air carriers. Unlike the U.S. Air Carrier Licensing Division, which deals with air carriers whose fitness is determined from officially noticeable data, the Foreign Air Carrier Licensing Division performs fitness analysis of its applications in addition to resolving the public interest issues.

Foreign carriers file docketed and undocketed applications for section 402 permits and long-term exemptions, and undocketed applications for short-term exemptions, charter statements of authorization (for all Fifth Freedom charters, certain Third and Fourth Freedom charters, long-term wet leases, blocked-space arrangements and code sharing), permits for foreign aircraft agricultural and industrial operations and other forms of authority. The division also produces orders imposing/rescinding Part 213 schedule filing requirements on foreign carriers, orders disapproving the schedules, and orders subjecting foreign carriers to Third and Fourth Freedom charter approval.

B. Office of Aviation and International Economics

Office of Aviation and International Economics (OAIE) is responsible for developing an analytically based, medium- to long-term view of the airline industry's operating and competitive structures, incorporating ideas, concepts, and information developed through an active dialogue with the academic community and other outside experts. The OAIE serves as an independent source of analytical input to the Department's aviation and international affairs policy-setting function.

The OAIE develops a research agenda designed to address significant emerging airline industry issues and conducts internal studies of those issues and designs and oversees studies by outside contractors. It is responsible for identifying and providing economic analysis of airline industry trends for use in the development of medium- to long-term negotiating strategies. It monitors industry developments and insures that Department policy and concepts remain consistent with those developments. The Office produces recurrent reports regarding the ongoing restructuring of the domestic and international airline industries for dissemination to decision makers and other offices. It also develops action plans for longer-term analytical needs and processes such as the development of economic models to aid in policy decision making and new data systems necessary to keep abreast of the changing airline industry structure.

C. Office of International Transportation and Trade

This office provides departmental leadership and coordination on international transportation policy issues relating to maritime and surface transport, trade facilitation, security, technical assistance and cooperation programs and international secretariat activities. The office initiates, develops, coordinates, and reviews departmental and government-wide policies relating to international trade relevant to transportation and represents DOT at international meetings and on interagency and international bodies relating to these activities. The Office of International Transportation and Trade negotiates, coordinates, and implements cooperative research arrangements with foreign governments and international organizations and also develops and participates in technical assistance projects.

The Office is an advocate for U.S. businesses abroad and supports trade missions and technical assistance where potential trade returns are high. It also supports the training of foreign officials on the use of U. S. equipment and procedures. Targeted product areas would include aircraft, air traffic control, railway locomotive and signaling equipment, engineering, consulting and construction management, as well as pollution control and cleanup technology, trucks, buses and port management.

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DOT's AIA HomePage: <http://www.dot.gov:80/dotinfo/ost/aviation/>

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Office of the Associate Administrator
for
Commercial Space Transportation

The Office of the Associate Administrator for Commercial Space Transportation [TA1] (1), established in 1984, has carried out the Department of Transportation's goal of enhancing the viability and international competitiveness of the U.S. commercial space transportation industry, consistent with the needs of the commercial, military, intelligence, and civil government space transportation industries. The commercial space industry is a strategic and growing sector: satellite communications is already a \$6.5 billion international industry and over \$580 million represents the U.S. commercial space transportation industry.

The primary responsibilities of the Office are:

- to license and regulate the U.S. commercial space transportation industry to ensure public health and safety, safety of property, and national security and foreign policy interests of the U.S.;
- to encourage, facilitate and promote commercial space launches by the private sector;
- to recommend appropriate changes in and assist in the development of new Federal statutes, treaties, regulations, policies, plans and procedures relating to commercial space launch issues including space launch technology development; and
- to facilitate the strengthening and expansion of the United States space transportation infrastructure.

The Office supports the U.S. Trade Representative (USTR) in negotiations and monitors foreign compliance with space launch trade agreement with countries whose economies are in transition in order to ensure that U.S. commercial space industry is not disadvantaged by those non-market economies. The Office chairs the USTR Working Groups on Information, that monitor compliance with the China, Russia and Ukraine (when completed) space launch trade agreements; collect and analyze data on launch prices, terms, conditions, and quantities; and provide findings regarding compliance.

In cooperation with Department of Defense (DoD), National Aeronautics and Space Administration (NASA), and Department of Commerce (DoC), the Office will seek to enhance the international competitiveness of the U.S. commercial space transportation industry through joint implementation of the Plan transmitted in response to the President's National Space Transportation Policy. The Office will conduct research on space transportation technology to help attain the goals and objectives articulated by the report of the Next Generation Space Launch Vehicles Working Group of the interagency Coordinating Committee on Transportation Research and Development.

The Office also monitors the commercial launch market and prepares industry projections and launch forecasts on a regular basis.

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DOT's CST HomePage: <http://www.dot.gov/dotinfo/faa/cst/ocst.html>

(1) The Office of the Associate Administrator for Commercial Space Transportation was formerly the Office of Commercial Space Transportation (OCST). On November 16, 1995, OCST was transferred intact from the Office of the Secretary within the Department of Transportation (DOT) to DOT's Federal Aviation Administration.

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Office of International Aviation

The Office of International Aviation (AIA) is concerned with United States and Federal Aviation Administration (FAA) objectives in international aviation. The AIA specifically performs the following functions:

- Serves as the focal point for guidance and coordination of the international activities of the agency, maintaining liaison with foreign and domestic organizations.
- Develops and coordinates policy, plans, and programs to achieve U.S. and agency objectives in international aviation.
- Gives guidance and advice to the FAA Administrator and other officials of the agency on policy, political, and economic matters that may affect U.S. international aviation objectives and policies as well as information on specific international developments relating to the international aviation concerns of the agency.
- Maintains liaison with the U.S. Department of State, U.S. civil air attaches, and other aviation reporting officers abroad and provides aviation advice and assistance to them.
- Serves as the agency's focal point in relations with international organizations affecting aviation; provides for agency participation in meetings of international organizations, and is responsible for the development and coordination of agency views on positions for such meetings through the Interagency Group on International Aviation (IGIA) or otherwise.
- Provides secretariat services for IGIA.
- Manages the agency's foreign assistance programs, including those conducted in cooperation with other agencies of the U.S. Government, foreign governments, and international organizations.
- Serves as a point of contact for the U.S. aviation industry with respect to agency policies and programs affecting international civil aviation.
- Inspects and evaluates the overall conduct of agency international aviation activities and advises the heads of major FAA components regarding international programs, accomplishments, and problems.
- Sets priorities and provide guidance to international staffs in FAA domestic organizations having broad international responsibilities.
- Provides specialized administrative support necessary for the international activities of the agency and advises and assists other FAA components in carrying out specific administrative aspects of the international activities assigned to them, as required.
- Negotiates agreements and arrangements concerning the international aviation activities of the agency.
- Coordinates activities, as appropriate, with FAA components having primary responsibility for domestic policy and program development.

The Office of International Aviation has two divisions and four branches. Three branches are responsible for programs in their respective geographic areas: the Americas Region, the Europe, Africa,

and Middle East Region, and the Asia-Pacific Region. The fourth, the Global Issues Branch, is responsible for cross-cutting and global policy issues and certain administrative functions.

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DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
Office of International Programs

Overall Philosophy

The Office of International Programs directs FHWA technical assistance and technology exchange programs and coordinates activities with foreign governments and multilateral institutions. The FHWA is committed to maintaining a leadership position in the development and application of highway related technologies, and maintaining the U.S. highway sector's competitive position in international markets. To this end, the Office of International Programs has developed a special international focus in three critical areas:

1. Technology

The FHWA has adopted an aggressive policy to search for, exchange, and transfer state-of-the-art highway technology that can provide immediate benefits to U.S. researchers, practitioners, and transportation users. The Office of International Programs manages the following programs in this area:

- The International Technology Scanning Program seeks out foreign innovation in highway and transportation technology and works with state and local governments, the private sector, and academia, to adapt it for domestic use.
- The FHWA Foreign Visitor's Program provides international highway professionals visiting the U.S. with an introduction to the FHWA's technical expertise and the Federal-aid Highway System. It also arranges visits to State or local government offices, industry associations, and other transport-related organizations. Over 400 international visitors took advantage of this program in 1995.
- The Office of International Programs manages the FHWA's participation in international organizations such as the World Road Association (formerly the Permanent International Association of Road Congresses), the Organization for Economic Cooperation and Development, and the International Road Federation. The International Programs Office also coordinates with various trade associations and industry groups such as the American Council of Engineering Consultants and the American Association of Road and Transportation Builders Association.
- The FHWA has assisted in establishing technology exchange centers to introduce state-of-the-art U.S. highway technology abroad, as well as obtain information from others. The FHWA is also one of the founding members of INTERCHANGE, a global highway-oriented technology transfer network. The FHWA's INTERCHANGE node (link-up) is managed within the Office of International Programs.

2. Government Sector Technical Assistance

The Office of International Programs has a long history of cooperating with foreign governments as they develop their road institutions and systems. Today, the FHWA continues this commitment by working with country governments and multilateral institutions on a variety of programs and projects. Overall the Office of International Programs manages two types of agency-approved technical assistance programs for developing countries in transition:

- **Technical:** including project design activities; skill training; visitor programs; and technical expertise during natural disasters.
- **Administrative:** establishing organization structures; financing strategies; educational programs; and coordination with other governmental entities.

The Office of International Programs also manages the FHWA's bilateral relations with its foreign counterparts and coordinates with the DOT/Office of the Secretary, the Departments of State and Treasury, other Federal agencies, and international lending institutions. Additionally, it manages the FHWA's participation in international organizations. This includes some of the organizations previously mentioned, such as the World Road Association, as well as assisting foreign countries to establish counterparts to U.S. organizations such as the American Association of State Highway and Transportation Officials and the Transportation Research Board.

3. Private Sector Facilitation

The FHWA is continuing to work closely with U.S. industry to monitor foreign transport and highway sectors for potential opportunities for U.S. firms. Activities include:

- Providing technical support for U.S. firms bidding on foreign contracts;
- Supplying logistical support for trade missions; and
- Coordinating U.S. participation in highway and transport exhibits at international technical exhibits.

Logistical Support

The Office of International Programs provides logistical support, including briefings, travel, protocol, and other similar activities for the Administrator, Deputy Administrator, and Executive Director. It also provides similar support to OST and other modes during joint foreign activities.

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FHA General: <http://www.dot.gov/affairs/index.htm>

II. U.S. GOVERNMENT AGENCIES

-Including those affiliated with the Executive and Legislative branches of the Government

A. ENVIRONMENTAL PROTECTION AGENCY

1. Office of International Activities

B. THE LIBRARY OF CONGRESS

1. Federal Research Division

C. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

D. NASA SCIENCE AND TECHNOLOGY INFORMATION OFFICE

E. NATIONAL SCIENCE FOUNDATION

F. NUCLEAR REGULATORY COMMISSION

G. OFFICE OF SCIENCE AND TECHNOLOGY POLICY

ENVIRONMENTAL PROTECTION AGENCY (EPA)

Office of International Activities

The Environmental Protection Agency's Office of International Activities (OIA) leads the Agency's international programs. Providing management and coordination on behalf of the EPA Administrator, OIA works closely with EPA program (e.g., air, water, and waste) and regional offices, other federal agencies, international organizations, and foreign governments to achieve U.S. environmental objectives overseas.

OIA is organized into four offices:

- Office of Western Hemisphere & Bilateral Affairs provides expertise on key countries or geographic regions
- Office of International Environmental Policy provides expertise on media and cross-media issues and international organizations
- Office of Technology Cooperation and Assistance provides expertise on international training and information, environmental capacity-building, and technology diffusion
- Office of Management Operations provides operational support, and expertise on budget, personnel, acquisition management, and travel

Major countries (e.g., Canada, China, Mexico, Russia) and programs are covered through cross-office teams involving members of two or more of the offices.

OIA's specific functions include:

- Coordination, management, and oversight of EPA's cooperative programs with Mexico, Canada, and other priority countries and regions,
- Coordination, management and oversight of policy initiatives and programs undertaken in cooperation with the Organization for Economic Cooperation and Development, the North American Commission for Environmental Cooperation, the United Nations Environment Program, the United Nations Development Program, the World Bank, the International Maritime Organization, the World Health Organization, and other intergovernmental bodies.
- Development and implementation of international technology diffusion and technical assistance policy and programs, including technology promotion and environmental capacity-building programs in key regions of the world, and
- Development of policy and programs on selected global and/or regional environmental issues.

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THE LIBRARY OF CONGRESS

Federal Research Division

The Library of Congress's Federal Research Division (FRD) is dedicated to performing foreign language and international and domestic research and analysis exclusively for agencies of the United States Government. Federal agencies task FRD to research specific areas or topics on a direct labor charge basis.

The FRD has 50 staff members organized into two geographic area specialty sections, including a dedicated S&T unit with a global focus and a production- management section, which is responsible for editing, graphic art, and automation. The staff uses the extensive foreign serial and monograph collection of the Library - which subscribes to some 200,000 serial titles, 80,000 being of non-English language origin and undertakes both social science and technical research. The FRD analysts have impressive language capabilities and conduct research in more than 25 languages, translating their own documentation as needed for particular projects.

The FRD collects, analyzes, and evaluates materials available in the Library of Congress and other repositories and databases to produce documents, analytical studies, bibliographies, chronologies, abstracts, translations, automated databases, and other client-directed services. The FRD produces the widely used Area Handbook/Country Studies Series both in hard copy and electronic formats and has developed public-use databases offered by the Library of Congress on the Internet on missing in action and unaccounted for personnel from the Korean War, the Cold War, and the Vietnam Conflict. The products have been developed using a variety of multimedia and multi-processing technologies. Depending on client needs, products are developed either in hard copy or electronic formats (or both) and delivery by traditional means as well as state-of-the-art electronic media.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The National Aeronautics and Space Act of 1958 established the National Aeronautics and Space Administration (NASA), and directs NASA to conduct space activities devoted to peaceful purposes for the benefit of all humankind; to preserve the leadership of the United States in aeronautics and space science and technology; and to expand the knowledge of the Earth and space.

Strategic Enterprises and Functions

The NASA Strategic Plan establishes a framework that encompasses externally focused Strategic Enterprises and internally focused Strategic Functions. There are five Strategic Enterprises and four Strategic Functions.

Strategic Enterprises:

1. **Mission to Planet Earth:** NASA's Mission to Planet Earth is dedicated to understanding the total Earth system and the effects of humans on the global environment and encompasses the study of Global Change and the laying of a foundation for long-term environment and climate monitoring and prediction. A component of this enterprise is promoting extensive international collaboration.
2. **The Aeronautics Enterprise:** NASA's Aeronautics Enterprise will pioneer the identification, development, verification, transfer, application, and commercialization of high-payoff aeronautics technologies. It seeks to promote economic growth and security and to enhance U.S. competitiveness through safe, superior, and environmentally compatible U.S. civil and military aircraft and through a safe, efficient national aviation system.
3. **Human Exploration and Development of Space:** The Human Exploration and Development of Space Enterprise seeks to bring the frontier of space fully within the sphere of human activity for the benefit of America and all humankind in this and future generations. It will open the space frontier by exploring, using, and enabling the development of space. In exploring space, its aim is to learn how to travel to a destination and to characterize and map it. In using space, its aim is to learn how to live and work there, to take advantage of its unique environment to conduct research and generate technology, and to make use of its resources. In the long term, the purpose of the Enterprise are to enable routine operating capability within the inner solar system, to explore this space regularly, and to enable the eventual establishment of permanent, self-sufficient settlements in space. Cooperating with other nations to share the benefits and costs of exploring and using space will be a strategy under this Enterprise.
4. **The Scientific Research Enterprise:** NASA contributes to the creation of new scientific knowledge by exploring the Solar System and the Universe beyond and by studying the space environment and its effects on biological and physical processes. The Enterprise maintains scientific leadership, strengthens education and scientific literacy, develops and transfers technologies to promote U.S. competitiveness, fosters international cooperation to enhance programs and share their benefits, and sets the stage for future space ventures.
5. **Space Technology Enterprise:** The Space Technology Enterprise contributes to the international competitiveness of U.S. industries by developing dual-use products and processes; proactively transferring technology to aerospace and non-aerospace industries in order to enhance U.S. competitiveness; developing new and innovative space technologies to improve the performance and lower the cost of future space missions; and developing technology to revitalize access to space.

Strategic Functions:

NASA's Strategic Functions provide capabilities required by the Strategic Enterprises. NASA's four Strategic Functions are:

1. **Transportation to Space:** Providing transportation to space --getting from the Earth's surface into space and back-- is a strategic function required by the Enterprises.
2. **Space Communications:** Electronic access to space is essential to the success of all agency missions and encompasses the Tracking and Data Relay Satellite System and the Deep Space Network.
3. **Human Resources:** Development of policies, systems, and programs to ensure that it plans, acquires, develops, and retains the human resources required to achieve its mission with innovation and excellence.
4. **Physical Resources:** Availability of the necessary real estate, facilities, equipment, aircraft, and information resources for performing world class research, development, and operations.

International Cooperation

NASA promotes and seeks international cooperation, which has been, and will remain, an integral element of our Nation's civil space program. International cooperation spreads the cost burden of space activities, enhances U.S. mission capabilities through access to international capabilities; and advances U.S. foreign policy goals. NASA will continue to pursue mutually beneficial cooperative activities in aeronautics and space with other nations, consistent with the National Aeronautics and Space Act's mandate to encourage peaceful international cooperation. NASA is also mindful of the need to strengthen American competitiveness.

International Space Activities Summary

The International Space Station, the largest international scientific and technological endeavor ever undertaken, is taking shape in factories and laboratories of 13 nations around the world. With the Space Station, a permanent laboratory will be established in a realm where gravity, temperature and pressure can be manipulated in a variety of scientific and engineering pursuits that are impossible in ground-based laboratories.

The Space Station is forging new partnerships with the other spacefaring nations of the world which include the partners in the project: Canada, Japan, Russia and nine member nations from the European Space Agency who will contribute the following elements to the Space Station:

- Canada is providing a 55-foot long robotic arm to be used for assembly and maintenance tasks on the Space Station.
- The European Space Agency is building a pressurized laboratory.
- Japan is building a pressurized laboratory with an exposed platform for additional experiments.
- Russia is providing three research modules, a service module with its own life support and habitation systems, and a Science Power Platform that supplies about 20 kw of electrical power.

Cooperative International Programs

NASA engages in various forms of cooperation and collaboration with national space agencies all over the world. Many of these relationships take the form of framework agreements, intergovernmental agreements, agency-to-agency memoranda of understanding, collaborative projects, joint research projects, joint operation of facilities and equipment, and data exchange agreements. Countries that have major projects or study agreements with NASA include: Argentina, Australia, Belgium, Brazil, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Norway, Russia, Spain, Sweden, Switzerland, and the United Kingdom. NASA also carries out extensive cooperation with the regional European Space Agency (ESA).

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NASA HomePage: <http://www.nasa.gov/>

NASA Center for Aerospace Information: <gopher://gopher.sti.nasa.gov>

Gopher serves <http://www.sti.nasa.gov/gophers.htm>

World Wide Web Servers: <http://www.sti.nasa.gov/www.htm/>

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Science and Technology Information Office

The Space Act of 1958 directs the National Aeronautics and Space Administration to disseminate "information concerning its activities and the results thereof" and to "preserve the role of the United States as a leader in aeronautical and space science and technology." To fulfill these mandates, NASA established a system of scientific and technical information acquisition, processing, publication, announcement, dissemination, and interchange. The purpose of the system is to promote the highest R&D quality and minimize unnecessary duplication.

The NASA Science and Technology Information (STI) Database encompasses the basic and applied sciences related to aeronautics and space science and technology. The emphasis of the database shifts as the NASA mission evolves. The primary subject divisions include aeronautics, astronautics, chemistry and materials, engineering, geosciences, life sciences, mathematical and computer sciences, physics, social sciences, and space sciences. Since 1962 more than three million documents have been added to the NASA STI Database. These documents include both foreign and domestic aerospace-related technical reports and published literature. Organizations participating in the collection and processing of information to be included in the database are NASA Center for Aerospace Information (CASI), the European Space Agency (ESA), the Israel Space Agency (ISA), the Japanese National Space Development Agency (NASDA), and Defense Information Services (DIS) of Australia.

The NASA Center for Aerospace Information acquires NASA, NASA contractor and grantee reports; reports issued by other government agencies, domestic and foreign institutions, universities and commercial firms; translations in report form; NASA-owned other U.S. Government agency, and foreign patents and patent applications; and foreign domestic dissertation and thesis material emphasizing aeronautics, space sciences and supporting disciplines. All current and unlimited reports are announced in the Electronic Bi-weekly announcement journal, *Scientific and Technical Aerospace Reports* (STAR), available on the STI program's Internet World Wide Web home page at URL <http://www.sti.nasa.gov>.

The ESA provides access to European aerospace literature and plays a vital role in acquisitions, translations, and processing. A 1964 NASA-ESA agreement initiated exchange of reports and computerized data. More recently, arrangements have been undertaken with the ISA, NASDA, and DIS. The foreign material comes from over 80 countries and more than 7 exchange agreements. About 85 percent of the foreign material is in English. Comprehensive online computer searches of the NASA STI Database are available through NASA RECON, an online bibliographic system.

As an additional service, NASA makes available its Automatic Document Distribution Service (ADDS) and Standing Order Service (SOS). These services provide automatic distribution of selected NASA documents announced in STAR. Full text copies of individual documents are also available to register users in either paper copy or microfiche form through an online ordering system or by letter, telephone, or fax request. Videos can also be ordered.

The CASI is an integral part of a nationwide network of professionals who use traditional and advanced technologies to meet public information needs. NASA CASI offers researchers an infrastructure of people

and systems that facilitates access to STI worldwide. CASI is committed to helping researchers gain quick access to the STI they need in their day-to-day work.

The users include NASA and its contractors, other government agencies and their contractors, universities in the U.S. and around the world, U.S. companies and international partners. CASI offers aerospace-related information on aeronautics, astronautics, chemistry and materials, engineering, geosciences, life sciences, mathematical and computer sciences, physics, social sciences, and space sciences on two online systems: ARIN (Aerospace Research Information Network) and RECON (Research Connection).

ARIN is a menu-driven, online catalog system providing author, title, subject, and keyword access to nearly 400,000 holdings available at 14 NASA-affiliated libraries. ARIN also contains holdings for an early aviation collection from about 1915 to 1958. RECON is a command-driven system providing information on nearly 3 million aerospace-related technical reports and journal literature. The database records come from a variety of sources in more than 80 countries. The RECON information system offers access via the Internet and enables the user to search the inverted files and create and manipulate sets. Moreover, the registered RECON user can conveniently order documents online. Registered users are eligible for three document ordering and delivery services ADDS, SOS, and the Secondary Distribution Service (individual document ordering).

The Automatic Document Distribution Service (ADDS) allows formal reports to be ordered by subject division, series, and subject category. Paper copy and/or microfiche are automatically distributed and invoiced at a prepaid flat rate that varies according to the option chosen. With SOS NASA scientific and technical unlimited reports are available in paper copy and or microfiche to registered organizations. Copies are distributed automatically and invoices are sent monthly for only those reports received. With the Secondary Distribution Service, you can order full text copies of individual documents cited in the NASA STI Database. This is an on-demand document request service that affords quick and convenient access to the vast reference holdings of stock copies and microfiche stored at CASI.

CASI distributes a number of current awareness products designed to keep users up-to-date on regular additions to the STI Database. The most notable of these tools is Electronic STAR (*Scientific and Technical Aerospace Reports*), an abstract index journal that provides comprehensive coverage of worldwide aerospace-related reports. It is a major product of the NASA STI Office. STAR lists current, publicly available reports entered into the NASA STI Database during the 2-week period preceding publication. Each STAR citation includes an informative abstract of about 150 to 300 words.

Answers to questions are readily available by contacting:

NASA Access Help Desk
NASA Center for AeroSpace Information
800 Elkridge Landing Road
Limthicum Heights, MD 21090-2934
Tel: (301) 621-0390
Fax: (301) 621-0134
E-Mail: help@sti.nasa.gov

NASA STI Database Internet Access

The NASA STI Database, which contains bibliographic citations of aerospace-related research can be accessed through the Internet. A wide range of aerospace related topics are listed with new citations and abstracts posted each week.

The NASA Center for AeroSpace Information Technical Report Server (CASI TRS) database contains bibliographic citations and abstracts for publicly available aerospace documents, journals articles, and conference proceedings collected since 1987.

- Access to the CASI TRS and other NASA STI electronic products and services is through the NASA STI home page - <http://www.sti.nasa.gov>.
- The CASI TRS database is a part of the NASA Technical Report Server (NTRS) service. NTRS, operated by the NASA Langley Research Center, is a common access point to other NASA servers and databases. The URL for the NTRS is - <http://techreports.larc.nasa.gov/cgi-bin/NTRS>.

The full-text of documents cited on the CASI TRS and NTRS databases are available in paper or microfiche from the NASA Center for AeroSpace Information.

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NASA STI HomePage: <http://www.sti.nasa.gov>

NTRS Technical Reports: <http://techreports.larc.nasa.gov/cgi-bin/NTRS>

NATIONAL SCIENCE FOUNDATION

Overview

The National Science Foundation (NSF) is an independent agency of the United States Government which is responsible for the health of basic science and engineering research in the United States, as well as for mathematics, science, and engineering education at all levels. Most of its annual research budget of over \$2 billion is spent in competitive grants to investigators at U.S. universities and other research institutions in support of basic research projects. Detailed and varied information about NSF may be obtained via NSF's home page on the World Wide Web: <http://www.nsf.gov>. Specific, current information related to NSF's international activities can be obtained via NSF's international home page: <http://www.nsf.gov/sbe/int>), or directly through other, linked websites, as described in the paragraphs which follow.

The National Science Foundation Act of 1950, as amended, gives the Foundation broad authority to support and engage in international cooperation (refer to <http://www.nsf.gov/sbe/int/intmssn.htm>). As a result, a substantial number of its grant awards involve some science or engineering activity beyond the borders of the United States. In some cases these are large, multinational undertakings; in others they are small-scale collaborations between individual investigations; in yet others the international activity is travel to an international scientific meeting to exchange information, or increasingly the sharing of research data across the global Internet. A database containing titles, principle investigators, and abstracts for all NSF grants made since 1989 is accessible via the World Wide Web: <http://www.nsf.gov/wais/awards.htm>, or via the "Grants with International Dimensions" menu option on NSF's international home page (<http://www.nsf.gov/sbe/int>). Grants with international dimensions can be located by searching on appropriate key words, such as country or region of interest.

Support for International Science and Engineering Activities

The Foundation offers two broad approaches for support of international science and engineering activities, depending on the objectives of the investigator: (1) support through NSF's disciplinary programs, and (2) support through the Division of International Programs (INT). Details about all these approaches are available via the World Wide Web: <http://www.nsf.gov/sbe/int/support.htm>. A brochure entitled International Opportunities for Scientists and Engineers, which describes activities available through the Division of International Programs, is available free of charge from the NSF Forms and Publications Unit: Fax (703) 644-4278, Internet: pubs@nsf.gov, Request NSF Publication #96-14.

International Science and Engineering Information and Data

In addition to supporting research projects with international dimensions NSF, through its Division of Science Resources Studies (SRS) periodically compiles, analyzes, and publishes compilations of statistical data on international science and technology investments, activities, and capabilities as a logical extension of the Foundation's legislative mandate to "...provide a central clearinghouse for the collection, interpretation, and analysis of data on the availability of, and the current and projected need for, scientific and technical resources in the United States." This division also publishes occasional in-depth special analyses of science and technology resources and capabilities in selected regions of the world. Current

information on these and other NSF statistical reports and analyses are available via the World Wide Web:
<http://www.nsf.gov/sbe/srs/stats.htm>.

The National Science Foundation maintains offices in Japan (Tokyo) and Europe (Paris), both of which prepare brief, occasional reports of interest to NSF program staff and management which are also available to the public. Recent reports may be accessed through the international Statistics, Reports, and Other Information World Wide Website <http://www.nsf.gov/sbe/int/intstats.htm> by selecting the "Reports from NSF Overseas Offices" menu option. A list of recent reports, as well as copies of individual reports, may also be obtained from the NSF Division of International Programs, Fax: (703) 306-0474, Internet: pnobles@nsf.gov. The above referenced website also provides alternative access to NSF's statistical reports and to the home pages of many of the National Science Foundations foreign counterpart organizations.

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Summary HomePages:

NSF HomePage: <http://www.nsf.gov>

International HomePage: <http://www.nsf.gov/sbe/int>

NSF International Cooperation: <http://www.nsf.gov/sbe/int/intmssn.htm>

NSF Grants: <http://www.nsf.gov/wais/awards.htm>

NSF International Science and Engineering Activities: <http://www.nsf.gov/sbe/int/support.htm>

NSF Statistical Reports: <http://www.nsf.gov/sbe/srs/stats.htm>

NSF International Statistics, Reports, and Other Information: <http://www.nsf.gov/sbe/int/intstats.htm>

NSF Science and Technology Information System: <gopher://stis.nsf.gov>

NUCLEAR REGULATORY COMMISSION

The Nuclear Regulatory Commission (NRC) is an independent regulatory agency of the U.S. Government. The Commission proper consists of a Chairman and four Commissioners, all appointed by the President and confirmed by the Senate. Headquarters of the NRC is in Rockville, MD. Four regional offices are located in Philadelphia, Atlanta, Chicago, and Dallas. Total staff numbers about 3,100.

The mission of the NRC is to assure that civilian uses of nuclear materials in the United States -- in the operation of nuclear power plants and fuel cycle plants, and in medical, industrial and research applications -- are carried out with adequate protection of public health and safety, of the environment, and of national security. The agency also has a role in combating the worldwide proliferation of nuclear materials.

Recognizing that efforts to assure the peaceful, safe, and environmentally acceptable uses of nuclear power necessarily involve international cooperation, the NRC has long maintained extensive contacts and regular exchanges of information with other nations. These cooperative programs are carried out through bilateral relationships, as well as through a number of multilateral institutions. As regulator of the world's largest civil nuclear program and long-term sponsor of nuclear safety research, the NRC has the capability to contribute substantially to international nuclear programs --while benefiting from the experience of and experimentation by foreign nuclear operations -- in such areas as nuclear power plant safety, radiation protection, the safeguarding of nuclear materials and their physical protection, waste management, and the decommissioning of nuclear facilities.

The NRC's international program has three broad objectives:

1. Supporting U.S. foreign policy objectives.
2. Helping to enhance U.S. national security.
3. Improving the safety of NRC-licensed facilities in the United States.

Several technical NRC offices are involved in monitoring foreign nuclear programs and disseminating the information obtained to users in the U.S. Arrangements for obtaining information through exchange agreements are usually made by the Office of International Programs. Nuclear safety information exchange agreements are in effect with counterpart agencies in 32 countries. NRC also cooperates in multilateral nuclear activities through the International Atomic Energy Agency in Vienna and the OECD Nuclear Energy Agency in Paris. Additional cooperation is carried out with the European Community in Brussels, the G-7 consortium of economically advanced nations, and the G-24 group of nations providing economic assistance to the countries of Central and Eastern Europe.

The NRC also participates in U.S. Government activities under the EURATOM agreement with the European Atomic Energy Community of the European Community.

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NRC HomePage: <http://www.nrc.gov>

OFFICE OF SCIENCE AND TECHNOLOGY POLICY

The Office of Science and Technology Policy (OSTP) was established by the National Science and Technology Policy, Organization, and Priorities Act of 1976 (P.L. 94-282). OSTP's responsibilities are to:

- advise the President in policy formulation and budget development on all questions in which Science and Technology (S&T) are important elements;
- lead an interagency effort to develop and implement S&T policies and budgets that are coordinated across Federal agencies;
- articulate the President's S&T policies and programs to the Congress, and address and defend the need for appropriate resources;
- foster strong partnerships among Federal, State, and local governments, and the scientific communities in industry and academe, and
- further international cooperation in S&T activities.

OSTP's Director, Dr. John H. Gibbons, also serves as the Assistant to the President for Science and Technology. In this capacity, he manages the National Science and Technology Council (NSTC) and the President's Committee of Advisors on Science and Technology (PCAST).

OSTP's Director and four Associate Directors, are Presidentially-appointed and Senate-confirmed. OSTP is organized into four divisions:

1. Science Division
2. Technology Division
3. Environmental Division
4. National Security and International Affairs Division

National Science and Technology Council (NSTC)

President Clinton established the National Science and Technology Council (NSTC) by Executive Order 12881 on November 23, 1993. This cabinet-level council is the principle means for the President to coordinate science, space, and technology policies across the Federal government.

President Clinton directed the NSTC to:

- coordinate the S&T policy making and implementation process across Federal agencies;
- ensure that S&T policy decisions are consistent with the President's stated goals;
- ensure that S&T issues are considered in the development and implementation of Federal policies and programs, and
- further international cooperation in S&T activities.

The NSTC fosters a strategic approach in determining how S&T can help resolve complex societal needs. Today's problems demand contributions from different fields of study and a team approach from the agencies that make up the Federal R&D enterprise. The NSTC provides an interagency strategic

management system to foster teamwork and enhances the ability to identify opportunities for interdisciplinary solutions.

One of the most important tasks that the NSTC performs is to prepare coordinated R&D strategies and budget recommendations to orient S&T toward achieving national goals. To do so, the Council established nine goal-oriented committees. Each committee is chaired by a senior official from a Federal agency, and co-chaired by a representative from the White House Office of Science and Technology Policy (OSTP). These committees are as follows:

- Committee on Health, Safety, and Food
- Committee on Fundamental Science
- Committee on Information and Communication
- Committee on Environment and Natural Resources
- Committee on Civilian Industrial Technology
- Committee on Education and Training
- Committee on Transportation
- Committee on National Security
- Committee on International, Science, Engineering, and Technology

Ad hoc working groups are also established as needed to review and coordinate specific policies or programs. For example, the NSTC has provided an effective forum to resolve cross cutting issues such as an interagency review of the future role of the U.S. national laboratories.

President's Committee of Advisors on Science and Technology

President Clinton established the President's Committee of Advisors on Science and Technology (PCAST) by Executive Order 12882 at the same time that he established the NSTC. The PCAST serves as the highest level private sector advisory group for the President and for the NSTC. The Committee members are distinguished individuals appointed by the President, and are drawn from industry, education and research institutions, and other nongovernmental organizations. The Assistant to the President for Science and Technology co-chairs the Committee with a private sector member selected by the President.

The formal link between the PCAST and NSTC ensures that national needs remain an over-arching guide for the NSTC. The PCAST provides feedback about Federal programs and actively advises the NSTC about S&T issues of national importance.

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Executive Secretary: National Science and Technology Council & PCAST
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Tel.: (202) 456-6100

Intergovernmental Affairs and Policy
Timothy Newell
Tel.: (202) 456-6020

National Science and Technology Council - Committee Structure

Committee on Health, Safety, and Food R&D

Member Agencies:

HHS Phil Lee, Chair

USDA Cathie Woteki

FDA David Kessler

Committee on Information and Communication R&D

Member Agencies:

DoD Anita Jones, Chair
NSF Paul Young

Committee on National Security

Member Agencies:

DoD Paul Kaminski, Chair
DoE Vic Reis

Committee on Civilian Industrial Technology

Member Agencies:

DoC Mary Good, Chair
DoE Martha Krebs

Committee on Fundamental Science

Member Agencies:

NSF Neal Lane, Chair
NIH Harold Varmus

Committee on International Science, Engineering and Technology

Member Agencies:

DoS Tim Wirth, Co-Chair
AID Carol Lancaster, Co-Chair
HHS Phil Lee
DoE Dan Wriecher

Committee on Environment and Natural Resources

Member Agencies:

NOAA Jim Baker, Co-Chair
DoI Ronald Pullium, Co-Chair
EPA Robert Huggett
DoE Christine Ervin

Committee on Transportation R&D

Member Agencies:

DoT Mort Downey, Chair
NASA Robert Whitehead

Committee on Education and Training R&D

Member Agencies:

DoE Madeleine Kunin, Chair
DoL Tom Glynn
NSF Luther Williams

OSTP HomePage: http://www.whitehouse.gov/WH/EOP/OSTP/html/OSTP_HOME.html

III. MILITARY SERVICES

A. U.S. AIR FORCE

1. Air Force Office of Scientific Research

B. U.S. ARMY

1. Advisory Group for Aerospace Research and Development
(AGARD)
2. Army Corps of Engineers
3. Army European Research Office - Europe
Army Research Office - Far East
4. Army Research Laboratory
5. Army Material Command

C. U. S. NAVY

1. Office of Naval Research

U. S. AIR FORCE

Office of Scientific Research

The Air Force Office of Scientific Research (AFOSR) oversees the entire Air Force basic research investment portfolio. The Office is responsible for planning, managing, and controlling a high-quality basic research program. Using a carefully balanced research portfolio, AFOSR research managers create new technology and advance current technology, enabling users in the Air Force and U.S. industry to produce world-class, militarily significant and commercially valuable products. In addition, AFOSR manages significant portions of the basic research investment for the Department of Defense, Advanced Research Projects Agency, and Ballistic Missile Defense Organization.

AFOSR has four scientific directorates which manage programs in about 40 research areas. The four scientific directorates are: 1) Aerospace and Materiel Sciences, 2) Physics and Electronics, 3) Chemistry and Life Sciences, and 4) Mathematics and Geosciences. A fifth directorate, Academic and International Affairs promotes initiatives of USAF interest with both educational and international organizations. This directorate supports a variety of science and engineering programs with university faculty members and graduate students and joint initiatives with foreign scientists and institutes.

To further international science and technology connections, AFOSR has two overseas offices: European Office of Aerospace Research and Development (EOARD) in London and Asian Office of Aerospace Research and Development (AOARD) in Tokyo. The primary EOARD and AOARD functions are to identify and understand foreign research and technology programs, to arrange technology interchange between USAF and foreign scientists and engineers, to support the Engineer and Scientist Exchange Program, to support workshops and conferences, and to generate and monitor contracts and grants.

AFOSR reports to Headquarters, Air Force Materiel Command, Director of Science and Technology.

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E-Mail: FUJISHIS@aoard.yokota.af.mil

AFOSR HomePage: <http://watt.seas.virginia.edu/~rbc2z/docafosr.html>

Air Force General: <http://www.hq.af.mil>

Air Force Material Command: <http://oasum1.wpafb.af.mil:12000>

U.S. ARMY

Advisory Group for Aerospace Research and Development (AGARD)

The Advisory Group for Aerospace Research and Development (AGARD) is an Agency of the North Atlantic Military Committee within the North Atlantic Treaty Organization (NATO). The AGARD Headquarters is located in the outskirts of Paris, France.

The mission of AGARD is to bring together the leading personalities of the NATO nations in the fields of science and technology relating to aerospace for the following purposes:

- Recommending effective ways for the member nations to use their research and development (R&D) capabilities for the benefit of the NATO community;
- Providing scientific and technical advice and assistance in the field of aerospace R&D (with particular regard to its military application) to the Military Committee;
- Continuously stimulating advances in the aerospace sciences relevant to strengthening the common defense posture;
- Improving the cooperation among member nations in aerospace R &D;
- Exchanging scientific and technical information;
- Providing assistance to member nations for the purpose of increasing their scientific and technical potential, and
- Rendering scientific and technical assistance to other NATO bodies and to member nations in connection with R&D problems in the aerospace field as requested.

The AGARD is organized around three main elements: the National Delegates Board which is the governing body; the AGARD staff which is the executive body, and the scientific and technical panels, together with the Aerospace Applications Studies Committee (AASC) and the Technical Information Committee (TIC), which constitute the expert bodies of the Agency.

There are seven AGARD Panels composed of about 450 members, who are experts actively engaged in R&D or management in academic institutions, government establishments or industrial enterprises related to the aerospace field.

Each Panel defines a program of meetings, lectures and publications in its own specialty. Panel members are responsible for enlisting the necessary support and participation from their own countries. The detailed areas of interest of each Panel vary fairly rapidly as the field of aerospace science and technology expands and as interactions between specialist areas become more or less relevant. In very general terms, the mission of each Panel is to fulfill the AGARD mission within its own area of scientific and technical interest and competence. The following outlines the current areas of interest of each Panel.

Aerospace Medical Panel is concerned with the effects of aerospace environment factors on pilot performance, including biological, psychological, and medical requirements in space. The Panel has

stimulated research activities in the field of air crew medical standards, human factors related to accident prevention, ergonomics and human engineering in equipment design.

Fluid Dynamics Panel concentrates on theoretical and practical problems in fluid dynamics related to the design and operation of aerospace vehicles. Its work ranges from the study of the fundamental physics of airflow to the development and use of advanced testing facilities and equipment.

Flight Vehicle Integration Panel is concerned with the engineering aspects of air and space vehicle design, integration, testing, operation, and cost. All classes of manned and unmanned aerospace vehicles are addressed, including airplane, rotor craft, missiles, unmanned air vehicles, transatmospheric vehicle, spacecraft and launchers.

Mission System Panel is concerned with the engineering techniques and technologies employed in highly integrated aerospace mission systems. Both air and spaceborne systems (manned and unmanned) are covered.

Propulsion and Energetics Panel is concerned primarily with stimulating research in combustion processes. This includes problems of propulsion systems, energy production and conversion and their application to propulsion systems, and research in the fields of both combustion and the aerodynamics of turbomachines rockets, and ramjets.

Structures and Materials Panel efforts are in the areas of structural heating, structural material developments, and structural loading and response problems. Typical areas of discussion include optimum structural design methodology, materials processing, structural reliability and maintainability.

Sensor and Propagation Panel is concerned with aerospace sensor technology/sensor systems and use of electromagnetic radiation at all frequencies. This comprises the sensor, the target, the external environment and propagation through the atmosphere and space.

The Aerospace Applications Studies Committee is responsible for the organization, management and technical reviews of systems-oriented studies which cross the boundaries of the disciplines of individual AGARD Panels, and often deal with the military applications of emerging technologies.

The Technical Information Committee is concerned with all aspects of scientific and technical information as an integral part of the aerospace and defense R&D process. The Committee has three specific objectives: to assist the aerospace and defense R&D efforts in the NATO nations by promoting effective handling and transfer of scientific and technical information; to improve cooperation among member nations in the management of scientific and technical information and to foster and improve the exchange of such information; and to provide advice and support to AGARD and the NATO Community in the development of information support and services.

The most tangible form of output resulting from AGARD activities is that represented by AGARD publications. About 80 or 90 are issued each year, in categories which constitute a simple and easily recognizable set of aerospace technical literature. The categories are as follows:

AGARDOGRAPHS constitute the principal formal category of publications for work prepared by or on behalf of AGARD Panels. An AGARDOGRAPH pertains to a single, clearly defined subject, and comprises material generally agreed to be of lasting interest.

REPORTS deal, generally and not at great length, with subjects of more limited scope (such as a specific item of research work), that are expected to be of relatively short-term interest.

ADVISORY REPORTS differ from REPORTS in that they also contain advice and/or recommendations for action, such as the initiation of further research on a particular subject. They are usually addressed primarily to a specific readership.

CONFERENCE PROCEEDINGS are reports of Panels' Technical Meetings, and generally include the full text of the papers that were presented at the Meeting, and an account or summary of the discussions which followed.

LECTURE SERIES publications consist of the full texts of presentations made at Lecture Series. They are normally published in full, and made available to persons attending the lectures and to others concerned.

Documents produced by the AGARD Panels and Committees are available through the NASA Center for Aerospace Information (CASI), 800 Elkridge Landing Road, Linthicum Heights, MD 21090, or from the Defense Technical Information Center (DTIC), Cameron Station, Alexandria, VA 22304.

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Within the United States, the Department of the United States Air Force is the executive agent for all matters dealing with AGARD. The Point of Contact is:

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Army General: <http://www.army.mil>

AGARD Technical Panels

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U. S. ARMY

Corps of Engineers

International Activities

The following is a list of international scientific and technology exchanges the Corps participates in for the benefit of the domestic civil works program:

The U.S. - Japan Natural Resources Exchange in the areas of seismic engineering for dams and large structures, coastal engineering for storm damage protection, and environmental technology for managing contaminated dredge material.

The Permanent International Association of Navigation Congresses (PIANC) to foster progress on inland and maritime navigation and port development matters. Forty countries are members of PIANC.

The International Commission on Large Dams (ICOLD) to foster planning, design, construction and operation of dam projects. Eighty-three countries are members of ICOLD.

Under the U.S. - Finland Agreement on Science and Technology, the Corps is cooperating with the Technical Research Centre of Finland on cold regions pavement design and geotechnics, concrete technology and on the action of ice on structures.

London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter. The Corps is a member of 62 country member participants.

Contracts with Foreign Countries

Contracts in the fields of environmental quality and civil engineering sciences with academia and researchers from Australia, Denmark, Greece, India, Italy, Ireland, Netherlands, Russia, Sweden, and the United Kingdom.

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ACE HomePage: <http://bbsun.usace.army.mil>

<http://www.cecer.army.mil>

U.S. ARMY
Army Research Office - Europe
A Division of the U.S. Army Research, Development and Standardization
Group-UK
Army Research Office - Far East

The U.S. Army has a large research and development (R&D) program. Research is conducted not only in the Army research laboratories but also in a number of universities throughout the United States, Europe, the Middle East, and some countries in the Far East.

To manage such large R&D programs, funding agencies must keep abreast of the global developments in their scientific area of interest. In recent years the investment in manpower, research facilities, and project funding has been growing very fast, not only in the Western countries but also in the Eastern countries, particularly the Pacific Asian region.

A profusion of information is published in various forms all over the world. To filter this information to identify real scientific advancements, personal contacts must be established with the research leaders, exchange visits must be made, and conferences and workshops on focused issues must be held. Realizing the importance of this approach, the Army Research Office (ARO) has established two overseas offices. The European Research Office, in London, is a Division of the U.S. Army Research, Development and Standardization Group (USRDSG), which covers all European and Middle Eastern countries. The Army Research Office-Far East (ARO-FE), in Tokyo, covers Pacific Asian countries including Australia and India.

Objectives:

- Monitor technological activities within their geographical area of operation and make the Army R&D community aware of all significant developments and/or research results relevant to the needs of the Army in particular and the DoD in general.
- Promote the exchange of scientific information and collaboration between Army scientist, and those in the geographical area of operation.
- Arrange exchange visits of selected scientists and sponsor or co-sponsor technical meetings and workshops on topics of interest to the Army's R&D program objectives.
- Respond to requests for technical information or assistance from Army laboratories and scientists.
- Coordinate activities with overseas U.S. military service offices such as the Office of Naval Research and the Air Force Office of Scientific Research and other national and international agencies.

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U.S. ARMY

Army Research Laboratory

The Army Research Laboratory (ARL) is the Army's corporate laboratory for combat materiel. The mission of ARL is to execute fundamental and applied research to provide the Army the key technologies and analytical support necessary to assure supremacy in future land warfare. Currently, we are organized into 11 technical directorates that are focused in five business areas. Our five business areas are:

1. **Digitization and Communications:** ARL provides basic and applied research in digitization and communications science for Force XXI. Battlefield digitization gives tomorrow's Army two distinct advantages. The first is a shared situational awareness among all friendly elements, giving each system and its command cells a common view of the total picture. This real-time access to accurate battlefield information, coupled with high-speed computational capabilities, will allow the commander to decide the best course of action. The second advantage is real-time force synchronization, which effectively multiplies the combat power brought to bear on the enemy. Digitization ensures that the common picture viewed by the front line unit is shared by combat and service support elements and that the picture is transmitted instantaneously and without error. At ARL, four technical goals - assimilation, analysis, distribution, and sensing - are part of a balanced program that will ultimately reduce the uncertainty with which the commander must deal, enabling him to follow the principles of warfare and take advantage of the enemy's weaknesses.
2. **Armor/Armaments:** Research and development in armor and armaments are critical to the success of the Army's modernization objectives of protecting the force, conducting precision strikes on enemy forces throughout the battlefield, and dominating the maneuver battle. Lighter-weight armor systems with reduced vulnerability, and armaments with improved hit probability and lethality, will enable the Army to dominate the future battlefield, enhance deployability and mobility of Army combat systems, and reduce ammunition logistics burdens.
3. **Soldier System:** The soldier system mission area will assure that soldiers can operate effectively on the high-tech battlefield and survive in its lethal environment while reducing their equipment weight and workloads. A reduced force structure now mandates increases in soldier capabilities to maintain or improve effectiveness. The increasing technical sophistication of Army systems places enormous burdens on the individual soldier to perform complex tasks with complex systems. Consequently, the Army's current soldier system initiative must be expanded to encompass the anticipated range of soldier missions. For the 21st century land warrior, large numbers of computer systems and components must be developed and fielded as major components of the future soldier system.
4. **Air and Ground Vehicle Technology:** The air and ground vehicle technology mission area will develop the technologies needed to extend the life of current combat vehicles, provide components for future systems, and shorten the design and development cycle by enabling flexible, affordable manufacture of the next generation of equipment. The Army needs research advances in vehicle propulsion, structures, manufacturing technology, and related areas to assure effective, survivable, and affordable air and ground vehicle systems for the future Army. Lightweight, fuel-efficient systems with increased component durability will give the future field soldier aircraft and ground vehicles that have the performance edge to win on the battlefield and a reduced wartime "logistics tail", with lower peacetime operating and support costs.

5. **Survivability/Lethality Analysis:** ARL is responsible for the development of vulnerability and lethality assessments of all fielded and developmental Army weapon systems and soldiers. The survivability and lethality analysis mission area provides vulnerability, lethality, and survivability assessments of all fielded and developmental Army weapon systems and soldiers, integrated across all battlefield threats and conditions, as well as developing the tools, techniques, and methodologies to predict battlefield performance that allow these assessments to be performed efficiently and the results to be authoritative. Survivability/lethality analysis is a DoD regulatory requirement for systems that proceed through the materiel development cycle to production and fielding.

ARL Directorate Locations

Over the next 2 years, ARL will consolidate its elements into two primary locations. Adelphi Laboratory Center and Aberdeen Proving Ground, both in Maryland. In addition to the two primary locations, ARL will maintain specific activities at White Sands Missile Range as well as at NASA-Langley in Hampton, Virginia, and NASA-Lewis in Cleveland, Ohio.

Primary Locations

Adelphi, Maryland

- Battlefield Environment
- Physical Sciences
- Information Science & Technology
- Sensors

Aberdeen Proving Ground, Maryland

- Advanced Simulation and High Performance Computing
- Human Research and Engineering
- Survivability/Lethality Analysis
- Technology
- Materials

White Sands Missile Range

- Survivability/Lethality Analysis

NASA Lewis Research Center, Cleveland, Ohio

- Vehicle Propulsion

NASA Langley Research Center, Hampton, Virginia

- Vehicle Structures

International Programs

The resources of the Army are coupled with those of other countries for joint development of technologies useful both to the Army and to our international partners which will increase the effectiveness of allied forces by making the most efficient use of collective research and development. Research and development activities are being leveraged by emphasizing bilateral and multilateral R&D to increase international technology base cooperation. Through the cooperative initiatives the

development costs of weapons systems and combat support equipment can be reduced and systems interoperability with our allies enhanced.

The ARL international R&D programs have been primarily directed toward Australia, Canada, Central Europe, the former Soviet Union, France, Germany, Israel, Japan, Korea, Scandinavia, South America, and the United Kingdom. The scientists and engineers have participated in exchange programs at foreign laboratories and initiated many joint international technology base projects under Nunn program legislation. Technology working Groups have been established with France, Israel, and Germany to facilitate the technical review of existing Data Exchange Annexes, technical cooperation proposals and other international agreements.

ARL has completed an International Program Guidebook which was prepared to aid and stimulate ARL S&E participation in international program activities. Areas covered include the following:

- Proposing and Conducting New Cooperative Programs: The Memorandum of Understanding
- Nunn Cooperative R&D Programs
- Foreign Comparative Testing
- International Loan Program
- Engineer and Scientist Exchange Program
- Summer International Exchange Program for Scientists and Engineers
- Data Exchange Annex: Initiating/Implementing DEAs
- Setting-up and Conducting Technical Working Groups

ARL personnel participate in the following Multinational Forums:

NATO

- Conference of National Armaments Directors (CNAD)
 - The Defense Research Group (DRG)
 - NATO Army Armaments Group (NAAG)
- Four Power Senior National Representatives (SNR)
- Advisory Group for Aerospace Research and Development (AGARD)

English Speaking

- The Technical Cooperation Program
- American, British, Canadian, Australian (ABSA) Armies

Other

- Conference of American Armies (CAA)

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ARL HomePage: <http://fcim.csD.C..com/fcimis/arl.html>

<http://info.arl.army.mil/>

UNITED STATES ARMY
Army Materiel Command
International Cooperative Program Activity

On 1 October 1994, the U.S. Army Materiel Command International Cooperative Programs Activity (ICPA) was formally established. Mr. Michael Fisette is the Director of the ICPA, while also serving as the Principal Deputy for Technology, reporting to Deputy Commanding General, AMC.

The ICPA is composed of the Bilateral Programs Division and Multilateral Programs Division located at Headquarters, U.S. Army Materiel Command in Alexandria, VA, the International Materiel Evaluation Division located at Aberdeen Proving Ground, MD, and the U.S. Army Research, Development and Standardization Groups (USARDSG) in Australia, Canada, France, Germany, and the United Kingdom.

The ICPA is the Army Center of Excellence for international cooperative programs solutions to the U.S. Army's needs for battlefield interoperability, superior materiel and world-class research and technology.

The mission of the ICPA is to:

- Provide centralized management and guidance of Army international cooperative programs
- Provide overseas presence in selected countries
- Promote multinational force compatibility
- Negotiate and monitor international agreements
- Identify opportunities for cooperation
- Facilitate U.S. access to foreign research, technology, and materiel
- Provide linguistic services

The ICPA international activities as of 1 January 1996:

- 28 countries with Master Data Exchange Agreements
- 257 Defense Data Exchange Annexes
- 30 Cooperative Research and Development MOUs
- 1,240 NATO Standardization Agreements (STANAGs)
- 400 ABCA Quadripartite Standardization Agreements (QSTAGS)
- 19 Equipment Loans
- 32 Scientist and Engineer Exchanges
- 11 Nunn Amendment Cooperative R&D Projects

In addition, the ICPA provides support to TRADOC's Bilateral Staff Talks, simultaneous interpretation, translation, and linguistic certification to Army users worldwide, matrix support to the Army's PEO and PM community, and coordination of Army participation in numerous international fora to include:

- NATO
- Advisory Group for Aerospace R&D (AGARD)
- Defense Research Group (DRG)
- America, Britain, Canada, Australia (ABCA)
- The Technical Cooperation Program (TTCP)

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COL James Bald, Commander, USARDSG-GE
COL Hank Atwood, Commander, USARDSG-United Kingdom.
Dr. Rodney Smith, Chief, Bilateral Programs Division
Mr. Aaron Mahr, Chief, Multilateral Programs Division
Mr. Robert Bloom, Chief, International Materiel Evaluation Division
LTC Charles Hintze, Commander, USARDSG-Australia
LTC Ron Janowski, Commander, USARDSG-Canada
Ms. Theresa Norman, Administrative Officer

AMC HomePage: <http://www.dtic.dla.mil/amc/>

UNITED STATES NAVY

Office of Naval Research

The Chief of Naval Research (CNR) maintains two field offices:

Office of Naval Research European Office (ONREUR), in London, England
Office of Naval Research Asian Office (ONRASIA), in Tokyo, Japan

In carrying out its mission to keep the American scientific community informed of progress in foreign science and technology, the foreign offices establish and maintain liaison with scientific research and development agencies throughout the world; seek out and report accomplishments and trends in research; and evaluate implications and possible applications to U.S. research programs. To these ends, the office emphasizes numerous activities: identifying new directions in research of potential interest to ONR and the Navy; monitoring progress in technical areas closely aligned with ongoing and planned research programs of ONR and the Navy; interpretive reporting of current and planned S&T programs of importance (potential importance) to ONR and the Navy; comparing of foreign S&T to related work in the United States; identifying new directions for foreign S&T efforts as well as identifying upcoming leaders and investigators abroad in technical areas of significance to ONR and the Navy; representing the Chief of Naval Research in various international bilateral, multilateral and NATO Cooperative RDT&E programs and scientific and technical information exchange programs; and cooperating with other U.S. Government S&T agencies and establishments (as resources permit).

The ONREUR is headed by a commanding officer and a scientific director. Technical staff consists of three civilian scientists/engineers, typically from academe or Navy laboratories, and one military officer. The ONRASIA is composed of a civilian Technical Director with four civilian scientists/engineers drawn from the same sectors as for ONREUR. Support staff serve each office. Appointments are typically for two years, with candidates identified from various technical disciplines, depending on current Navy S&T requirements. In addition, several short term focussed assessors are identified by ONR Program Officers each year to conduct studies of six months or less.

All scientific personnel for these offices must have a current awareness on an international scale of their technical areas, including the content of relevant U.S. Navy programs. These scientists and engineers are charged to pursue liaison activities (as described above) primarily where S&T is done, i.e., at foreign research laboratories and institutes. Staff scientists report their findings directly via e-mail to their ONRHQ sponsors, and also place their unclassified reports on the Internet at the addresses listed on the following page. In addition to these reports, co-located Air Force and Army scientists and technologists also compile their reports into a common database maintained by each office, accessible via the Internet.

The foreign field offices may be contacted at:

Commanding Officer
Office of Naval Research European Office
PSC 802 Box 39
FPO AE 09499-0700
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Fax: 44-171-514-4924
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ONREO HomePage: <http://www.ehis.navy.mil/homepage.htm>

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Office of Naval Research Asian Office
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ONRAO HomePage: <http://www.itd.nrl.navy.mil/onra/>

ONRHQ POC:
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Navy Online: <http://www.ncts.navy.mil>

IV. SELECT PRIVATE SECTOR ORGANIZATIONS

A. BATTELLE

B. CRITICAL TECHNOLOGIES INSTITUTE

1. Federally-Funded Research and Development Center operated by RAND

C. INTERNATIONAL TECHNOLOGY RESEARCH INSTITUTE

1. Japanese Technology Evaluation Center
2. World Technology Evaluation Center

D. TRANSPORTATION TECHNOLOGY EVALUATION CENTER

E. ICROELECTRONICS AND COMPUTER CONSORTIUM INTERNATIONAL LIAISON OFFICE

F. SEMATECH

BATTELLE

Battelle is an international technology company that invests in the scientific and engineering base to support key areas of national security. These areas include chemical and biological defense, munitions and ordnance, intelligence, arms control and nonproliferation technology, defense systems engineering, and information systems engineering. Using its scientific and engineering expertise, Battelle supports intelligence community missions with a range of product and services, including:

- state-of-the-art analyses
- weapons systems/technology assessments
- trend studies and forecasts
- simulation modeling, conceptual design
- software development, analysis tools
- hardware development and exploitation

In the area of foreign scientific and technical information, Battelle has provided the intelligence community with support for more than 40 years. Battelle's multi-disciplinary staff of scientists, engineers, country experts, data management personnel, and open source information specialists apply expertise and technology in identification and acquisition; processing and storage; search, retrieval, and manipulation; and enabling technologies R&D.

In the area of finding sources, Battelle has worked to refine open source identification methodologies to identify and exploit new sources containing information relevant to intelligence. Open source material also includes foreign gray literature -- hard to identify/obtain items such as conference papers, preprints, and technical reports. Battelle has identified many collections of foreign gray literature, work that has been done for the Community Open Source Program Office (COSPO), Foreign Broad.C.ast Information Service (FBIS), and the National Air Intelligence Center (NAIC).

As part of its open source database building and maintenance activities, Battelle processes all open source information for the CIRC (Central Information Reference and Control) system, a predominantly S&T database supporting Government analysts. Over the past 15 years, Battelle staff, fluent in 24 languages and knowledgeable in many scientific subjects, have selected, indexed, translated, and quality-assured an average of 250,000 documents a year for CIRC, from publications of 40 countries. Battelle also created a user-friendly, alternative graphical user interface for CIRC. This effort is intended to allow intelligence analysts and information specialists to spend less time learning the database command structure and more time analyzing documents.

Recognizing similarities in scope between CIRC and other Government S&T databases such as NASA's RECON (REmote CONsole) database, Battelle, National Air Intelligence Center (NAIC), and National Aeronautics and Space Administration (NASA) have investigated arrangements to perform database tasks more cooperatively, including jointly exploiting Library of Congress foreign technical reports. In another application, a specialized technical database is under development to provide value-added information to analyst. The data set will consist of critical foreign technical information that has been

partially analyzed. Battelle supported the project through the original system design phase, and by identifying, collecting, and processing data.

Battelle has helped design or implement software tools available on the NAIC node of the COSPO-sponsored Open Source Information System (OSIS). One such tool is the Data Base Recommendation System (DBRS) which recommends databases and other sources of information to use for particular research topics or regions of interest.

In the R&D arena, Battelle conducts research on methods to facilitate technological improvements and to allow open source material to be better exploited in the future. This research includes investigating applications of scanning, optical character recognition, machine indexing, and machine translation to improve input processing systems. Battelle's work with the CIRC input program provides an ideal laboratory from which to test the operational efficiency of these technologies. In the broader context of R&D, the Pacific Northwest National Laboratory (PNNL), run by Battelle for the Department of Energy, helped to revolutionize computer multimedia through its involvement in the development of CD-ROM technology. PNNL also is working closely with the National Ground Intelligence Center (NGIC) and CIA/ORD to implement visualization technologies in analyst tool chests. These technologies will help analysts more easily identify and extract patterns and processes from large volumes of open source material.

Battelle has pursued efforts to improve the post-processing of open source information by filtering database output before it reaches the analyst. As an example, when confronted with large volumes of database output, an analyst first separates records on a target person from other people who have the same name. Battelle has developed algorithms to address this "Same Name/Different Person" problem.

Battelle's major technology centers are located in the United States and Europe. Other facilities, offices, and representatives are strategically placed in more than 50 cities worldwide. Battelle has a variety of contract vehicles to accommodate a client's requirements and needs. At any time, there are several contracts in place that can be used for the establishment of special and ad hoc tasks.

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THE CRITICAL TECHNOLOGIES INSTITUTE

The Critical Technologies Institute (CTI) was established in 1992 by an Act of Congress and is a Federally-Funded Research and Development Center (FFRD.C.) operated by RAND, a private, nonprofit research institute that also operates three FFRD.C.s engaged in national security research. The CTI provides analytical support to the White House Office of Science and Technology Policy by identifying near-term and long-term objectives for research and development; analyzing the production capability and economic viability of technologies; and providing options for achieving R&D objectives. The Institute also facilitates collaboration between industry, universities, and government agencies and sponsors technology workshops, seminars, research fellowships, and internships.

The Institutes work ranges from developing key information tools to investigating policy questions. Research centers on four topics:

1. Federal R&D Portfolio

The CTI is constructing a comprehensive, real-time accounting of federal R&D activities and spending. It identifies the various existing federal data sources, developed an organizational framework that allowed these data to be merged into a common, relational database, and then develops an easily searchable online database for federal R&D spending and activities. This database, called "Radius" ("for research and development in the United States"), allows users to track federal R&D activity from cabinet and agency level budgets down to the program and project levels.

The CTI has been studying the issue of metrics for investment in science that offers options for evaluating returns on investment in science based on prior empirical work and feedback from practitioners, stockholders, and the policy community. Program evaluation, aggregate estimates of the returns to R&D, and development of goals and milestones, are some of the issues being studied.

Another effort has involved CTI assisting the Committee on Environment and Natural Resources (CENR) of the National Science and Technology Council in formulating performance milestones for environmental and natural resources research in order to strengthen links between science and policy. The CTI has developed a template for constructing performance milestones that can be used to ensure that research strategies are meeting criteria for a well-balanced environmental R&D program.

2. Space Policy

The CTI provides research into the evolution and applications of the Global Positioning System (GPS) in order to assist OSTP and the National Science and Technology Council assess alternative national policy objectives, opportunities, and vulnerabilities in the exploitation of GPS as a national resource. The project has been undertaking three tasks:

- assessing GPS policy issues-related to national security, foreign policy, economic competition, and technology, and making recommendations on how diverse elements may be integrated for national benefits
- assessing alternative policies

- providing policy recommendations and supporting rationale

Another effort involves the analysis of aeronautics and space policy issues of interest to OSTP in conjunction with space-related programs, technologies, and national policies. The effort involves analysis of space-related matters coming before OSTP and the NSTC which include:

- the enhancement of the contribution of NASA programs to economic growth
- the development of less costly, more competitive space launch systems
- the convergence of U.S. civil and military polar-orbiting weather satellite systems
- commercial remote sensing
- the future of the Landsat program

3. Education and Training

In support of the NSTC, CTI has been conducting a study to help create a national strategy for promoting the effective use of technology in education and training and outline the elements of a federal strategy for overcoming them. The study has identified four major barriers:

- difficulties financing acquisition of equipment
- few examples and limited evidence concerning effectiveness of computer technology in the classroom
- inadequate supply of and market for high-quality software
- limited computer skills of teachers and school administrators

4. Environment and Health

Environment Technology

CTI has provided analytic support for a series of technical workshops and policy symposia designed to improve understanding of industry views on environmental technology issues. Activities have included

- developing a Geographic Information System (GIS), a database for managing very large set of geographical information
- soliciting and integrating industry views

Earthquake Hazard Reduction

The National Earthquake Loss Reduction Program has been addressing two fundamental goals:

- understanding the earthquake threat
- using that understanding to limit earthquake losses.

The CTI's role has been to provide analytic support for the formulation of a national strategy for addressing the two basic goals.

Seminars and Workshops Program

The CTI support an active program of workshops and seminars to facilitate industry and academic input on specific technologies and to help foster collaboration among government, industry, and universities.

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INTERNATIONAL TECHNOLOGY RESEARCH INSTITUTE

Japanese Technology Evaluation Center

World Technology Evaluation Center

Transportation Technology Evaluation Center

International Technology Research Institute

The International Technology Research Institute (ITRI) is at Loyola College in Baltimore, Maryland, and is the umbrella organization that houses three centers for assessment of foreign technology. The Japanese Technology Evaluation Center (JTEC) and the World Technology Evaluation Center (WTEC) are supported by the National Science Foundation under a cooperative agreement. Over the 12 year history of the program, 15 separate branches in six agencies of the Federal Government (including NSF) have supported JTEC and WTEC studies.

The Transportation Technology Evaluation Center (TTEC) has the mission of assessing foreign technology in vehicles, transportation, and construction methodology and highway systems and is supported by the Federal Highway Administration. The TTEC is reviewed in a separate section.

Mission

The JTEC program was initiated in 1983 by the U.S. Department of Commerce and the National Science Foundation (NSF) which assumed leadership of the program in 1984. The purpose and goal of JTEC was to inform policy makers, strategic planners and managers from government and private industry about the status of selected high technologies in Japan in comparison to those in the U.S. The WTEC program was established subsequently to provide similar studies of countries other than Japan.

The JTEC/WTEC program has the twin missions of helping the United States better understand the international competition it faces in science and technology and helping to identify opportunities for international collaboration in pre-competitive research. It does this by establishing a world-class benchmark for each technology studied and comparing the different approaches being taken in research programs around the world. This international perspective can offer new insights on the direction of U.S. research programs.

Each JTEC or WTEC study provides a current view of the status of research, development and/or applications of a particular technology in one or more foreign countries. It also provides a snapshot of a particular technology and its relationship to a possible range of products and, in most cases, includes a review of mechanisms for R&D support in the subject country(ies).

Japanese Technology Evaluation Center

In the first few years of the program, most of the studies focused on Japan, reflecting concern over Japan's growing economic prowess. Studies were largely defined by a few federal mission agencies that contributed most of the funding, such as the Department of Commerce, the Department of Defense, and the Department of Energy.

The early JTEC methodology involved assembling a team of U.S. experts (usually six people from universities, industry, and government), reviewing the extant literature, and writing a final report. Within a few years, the program began to evolve. First, there were site visits, with panels traveling to Japan for a week, visiting 20-30 industrial and research sites. As interest in Japan increased, a larger number of agencies became involved as co-sponsors of studies. Over the 10 year history of the program, 15 separate branches in six agencies of the Federal Government (including NSF) have supported JTEC studies.

The JTEC studies have contributed significantly to U.S. benchmarking of Japan's technological enterprise. Some have estimated that JTEC has been responsible for over half of the major Japanese technology benchmarking studies conducted in the United States in the past decade. The reports have also been widely cited in various competitiveness studies. The JTEC studies have been valuable sources of information for both U.S. and foreign researchers, suggesting potential new research topics and approaches, as well as opportunities for international cooperation.

World Technology Evaluation Center

In recent years there has been an increasing awareness among the sponsors of the JTEC program that the technological challenge facing the United States comes not only from Japan but also from Europe and, potentially, from many other parts of the world. This inspired the formation of the World Technology Evaluation Center. The WTEC completed its initial assessment, on European nuclear instrumentation and controls (I&C) technology, in late 1991. The detailed review of the world's major nuclear I&C technology suppliers was completed in 1993 with the publication of the WTEC Monograph on "Instrumentation, Control, and Safety Systems of Canadian Nuclear Facilities". The second international assessment, completed in 1993, examined satellite telecommunications technology in Europe, Japan, and Russia.

A WTEC panel completed a global assessment in the area of research submersibles and related undersea technologies in Russia, Ukraine, Finland, France, Germany, and the United Kingdom. WTEC has also completed an assessment of advanced display technologies with a panel that visited Russia, Ukraine, and Belarus in October of 1993, and has collaborated with the Civil Engineering Research Foundation in an assessment of civil engineering technologies in Western Europe. Current study topics include metal casting and rapid prototyping technologies (in W. Europe and Japan), and submarine technologies (E. Russia).

Methodology

The objective of ITRI, through JTEC, WTEC, and TTEC studies, is to produce an up-to-date report on the outcomes of current R&D efforts in a specific field for a specific geographic area. The report is a rendering of the judgments of the leading U.S. experts as to the value -- scientific, technical, and industrial -- of the technologies they have observed abroad. A study answers the following questions:

- What is the world-class benchmark?
- What is the competitive environment?
- What are the opportunities for cooperative ventures?
- Are there different approaches being taken abroad?
- Is our research emphasis correct?

A panel for a study nominally has six members, but often seven or more, who travel to a host country for site visits and discussions with researchers to reach conclusions about the state of the observed technology. Panelists are chosen for their own special expertise in and knowledge of the technology under study, both domestically and abroad. Thus they are able to compare this R&D to that in the United States. The results are initially presented in workshops attended by representatives from the public and private sectors who critique the preliminary findings. The panels' written reports are distributed by the National Technical Information Service (NTIS), where they have become best-sellers with leading U.S. and Japanese firms, universities, and the science counselors of the embassies in Washington.

Thousands have received gratis copies because of workshop attendance, hosting of panels, etc. The results are also presented in books and articles by the panelists. Studies are usually the subject of national press accounts; a sample of these publications is listed in the bibliography. Although ITRI is planning to try out a number of revisions to this methodology in the coming year, this approach has yielded successful results in over 30 studies conducted to date involving a dozen countries and over 200 panelists and other participants.

Scope of Coverage and Dissemination

Beginning in 1990, as mentioned above, ITRI began to broaden the geographic focus of the studies, which has been accomplished through WTEC. As interest in the European Community (now the European Union) grew, Europe was added as an area of study. With the breakup of the former Soviet Union, visits to previously restricted research sites opening up there were organized. These most recent WTEC studies have focused on identifying opportunities for cooperation with researchers and institutes in Russia, Ukraine, and Belarus, rather than on assessing them from a competitive viewpoint.

Attendance at JTEC/WTEC workshops (in which panels present preliminary findings) has increased, especially industry participation. Representatives of U.S. industry now routinely number 50 percent or more of total attendance, with a broad cross section of government and academic representatives making up the remainder. The JTEC and WTEC studies have also started to generate increased interest beyond the science and technology community, with more workshop participation by policymakers and better exposure in the general press (e.g., *Wall Street Journal*, *New York Times*). Publications by JTEC and WTEC panel members based on the studies have increased, as has the number of presentations by panelists at professional society meetings.

Objectives

The JTEC/WTEC continues to evolve in response to changing conditions. New initiatives are aimed at the following objectives:

- Expanded opportunities for the larger science and technology community to help define and organize studies. Under a program designated as CISAR (Community Initiated State of the Art Reviews), universities and industry (preferably working together) may originate concepts and become partners in JTEC and WTEC studies. As of early 1996, two university-industry groups are conducting studies under this arrangement.
- Increased industry sponsorship of JTEC and WTEC studies. For example, NSF recently funded a team organized by the Polymer Science & Engineering Department at the University of Massachusetts (Amherst) to visit Japan for two weeks studying biodegradable plastics and polymers R&D there. Twelve industrial firms put up over half the funds.

Through the Japanese Technology Evaluation Center (JTEC), World Technology Center (WTEC), and Transportation Technology Evaluation Center (TTEC) program, ITRI seeks to provide a better understanding of cutting edge research that is being conducted outside the U.S. and improve the awareness of international developments that can significantly enhance the scope and effectiveness of international collaboration.

List of JTEC/WTEC Studies and Panel Chair Person(s), 1992-95

JTEC/WTEC has initiated over 40 foreign technology studies over the past 12 years. The following JTEC and WTEC studies were done from 1992 through March of 1995.

JTEC Panel Report on Machine Translation in Japan

Jaime Carbonell, Carnegie Mellon University (Co-Chair)
Elaine Rich, MCC (Co-Chair)

JTEC Panel Report on Database Use and Technology in Japan

Gio Wiederhold, Stanford University (Chair)

JTEC Panel Report on Bioprocess Engineering in Japan

Daniel Wang, MIT (Chair)

JTEC Panel Report on Display Technologies in Japan

Lawrence E. Tannas, Jr., Tannas Electronics (Co-Chair)
William E. Glenn, Florida Atlantic University (Co-Chair)

JTEC Panel Report on Material Handling in Japan

Edward H. Frazelle, Georgia Institute of Technology (Co-Chair)
Dick Ward, Material Handling Industry (Co-Chair)

JTEC Panel Report on Separation Technologies in Japan

C. Judson King, University of California at Berkeley (Chair)

JTEC Panel Report on Knowledge-Based Systems in Japan

Professor Edward Feigenbaum, Stanford University (Chair)

NASA/NSF Panel Report on Satellite Communications Systems and Technology

Joseph N. Pelton, University of Colorado (Co-Chair)
Burton I. Edelson, George Washington University (Co-Chair)

WTEC Study on Instrumentation, Control, and Safety Systems of Canadian Nuclear Facilities

Robert E. Uhrig, Oak Ridge National Laboratory & the University of Tennessee
Richard J. Carter, Oak Ridge National Laboratory

JTEC Panel Report on Advanced Manufacturing Technology for Polymer Composite Structures in Japan

Dick J. Wilkins, University of Delaware (Chair)

WTEC Panel Report on Research Submersibles and Undersea Technologies in Finland, France, Russia, Ukraine, and the United Kingdom

Richard J. Seymour, Texas A&M University (Chair)

Civil Engineering Research Foundation (CERF) Task Force on European Constructed Civil Infrastructure Systems and R&D (WTEC Panelists Only)

Richard L. Tucker, Construction Industry Institute (WTEC Chair)

JTEC Panel Report on Micro-electro-mechanical Systems in Japan

Kensall Wise, University of Michigan (Chair)

JTEC Panel Report on Electronic Packaging in Japan

Michael J. Kelly, Georgia Institute of Technology (Chair)

WTEC Panel Report on Advanced Display Technologies in Belarus, Russia, and Ukraine

William Doane, Kent State University (Chair)

JTEC Panel Report on Optoelectronics in the United States and Japan

Stephen Forrest, Princeton University (Chair)

ITRI Monograph on Benchmark Technologies Abroad: Findings From 40 Assessments, 1984-94

Dr. R. D. Shelton, Director ITRI

JTEC Panel Report on Biodegradable Polymers and Plastics in Japan

Robert W. Lenz, University of Massachusetts

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ITRI HomePage: <http://www.itri.loyola.edu>

TRANSPORTATION TECHNOLOGY EVALUATION CENTER

The Transportation Technology Evaluation Center (TTEC) of Loyola College in Baltimore, Maryland, was established in April 1993 under contract with the Federal Highway Administration (FHWA), U.S. Department of Transportation. As a division of Loyola's International Technology Research Institute (ITRI), TTEC assesses foreign transportation technology for possible implementation in the United States. More specifically, TTEC obtains innovative technological information from abroad that could improve efficiency and effectiveness of the domestic highway program. Delegations of U.S. experts are sent to the developed countries in Europe and the Pacific Rim to research and gather information about technological innovations and research advancements for dissemination to the domestic highway community.

Background

The FHWA developed the International Technology Scanning Program in response to Section 6003 of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. As indicated, "The Secretary is authorized to engage in activities to inform the domestic highway community of technological innovations abroad." As applied in this program, the term "scanning" refers to the approach of study generally known as benchmarking.

The success of ITRI's JTEC/WTEC benchmarking studies was recognized by FHWA research and development experts who solicited the assistance of Loyola College to facilitate their scanning program.

Scope and Method

The TTEC has the following responsibilities of assembling the delegations of U.S. professionals, composed of representatives from Federal, State, and city planning levels, from academia, and from the private sector; identifying foreign transportation experts in governments, universities, and the private sector; establishing contact; coordinating meetings; and providing logistical arrangements.

Upon completion of the scanning sessions, a member of the delegation, designated as report facilitator, collaborates with TTEC to compile the information collected into a report of results. The TTEC also disseminates the results to the highway community through workshops and technical presentations. In addition, individual delegates disseminate findings to colleagues and professional societies.

Scanning Reviews Undertaken in 1993

1. European Intermodal Programs: Planning, Policy, and Technology

Four representatives visited Belgium, the Netherlands, and Germany to discuss and report on European experiences with intermodal freight transportation policies and systems. The objective was to observe and document information on European Union methods and experiences in the planning and administration, system development, environmental compliance, financing, marketing, and operation of increasingly complex and capital-intensive intermodal freight systems and facilities. Report published September 1994.

2. Pedestrian and Bicyclist Safety:

Seven representatives visited England, the Netherlands, Germany and Switzerland to learn practices and policies for improving pedestrian and bicyclist safety and promoting use of these modes. Topics covered included roadway facilities, educational and promotional programs, traffic enforcement issues, and other relevant pedestrian and bicyclist research. Report published December 1994.

3. Contract Administration Techniques for Quality Enhancement Study Tour:

Fifteen representatives traveled to Germany, France, Austria, and Spain to evaluate European contract administration procedures. The primary objective was to link innovative contract administration practices with high quality levels of highways construction in Europe and, if such linkage could be verified, determine whether practices were potentially adaptable for use in the United States. Topic included bidding/award procedures, design issues, quality control, environmental impact, and acceptance of materials and products. Report published June 1994.

4. National Personal Travel Surveys:

Six representatives traveled to the United Kingdom, Denmark, the Netherlands, Sweden, France, and Germany. The purposes of the visits were to seek out innovative methodological approaches to transportation survey design and operations, review European experiences with different kinds of institutional arrangements, and investigate new ideas in survey content and data collection methods. Report published September, 1994.

5. Advanced Transportation Technology:

Seven representatives visited Denmark, Germany, France, and the Netherlands to survey European technology and to observe and document developments in evolving computer-based technologies such as artificial intelligence, expert systems, neural networks, computer enhanced inspection, modeling and test methodologies. In addition to assessing the state of ongoing research in evolving computer-based technologies, the delegation was to determine how European countries test innovations and put them into practice. Report published December, 1994.

Scanning Reviews Undertaken in 1994

1. Highway Safety Management Systems:

Six representatives traveled to Japan to examine safety management offices and research centers for information about cutting-edge technology concepts. They visited Australia and New Zealand to examine broad-based safety management systems initiatives and implementations, conducting interviews with those responsible for maintenance at all levels.

2. Issues and Options in Highway/Commercial Vehicle Interaction -- Phase I, North America:

This study was designed in two parts: Phase I, benchmarking in North America; Phase II, Europe. The team of experts visited Canada, Mexico, and the United States, focusing on both current practices in truck components/pavement design and on new and emerging technologies that have potential for long-range

application for extending pavement life and at the same time allow for increased productivity in terms of the amount of good transported. Specific vehicle, vehicle component, and pavement designs having a negative impact on highway infrastructure were also evaluated. The primary objective is to determine relationships between trucks and pavement damage to support decisions for a national policy on truck size and weight, axle-tire-suspension characteristics, cost allocation, and alternative pavement design and rehabilitation strategies.

Scanning Reviews Undertaken in 1995

1. Issues and Options in Highway/Commercial Vehicle Interaction -- Phase II, Europe:

The delegation that visited North America in 1994 traveled to France, the United Kingdom, Germany, the Netherlands, and Sweden. See above description of objectives.

2. Speed Management and Enforcement Technology:

Twelve representatives visited the Netherlands, Germany, Sweden, and Australia to focus on the comprehensive development and implementation of speed management programs. Emphasis was placed on techniques to identify speed problems, efforts to establish speed limits, methods to inform the community of the dangers of speeding, techniques to involve the community, the judiciary, and the police in program development, and evaluation techniques and results. Application of automated enforcement technologies in comprehensive speed management programs were also reviewed.

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MICROELECTRONICS AND COMPUTER TECHNOLOGY CORPORATION

Global Technology Services

The mission of the Microelectronics and Computer Technology Corporation's (MCC) Global Technology Services (GTS) is to track high-technology research and development abroad and inform the MCC member companies of important trends and developments. The GTS staff, consisting of research analysts and information specialists, monitors the technical areas where MCC conducts consortial research projects: semiconductor packaging and interconnect for low-cost portable electronics, interface technology, network architectures, and system design and integration. The Global Technology Services group primarily monitors R&D activities in Asia and Western Europe.

Global Technology Services delivers information to MCC members in a variety of ways, including a detailed bi-monthly technical report on foreign technology called the "MCC Global Technology Monitor". Other vehicles include in-depth technical reports on leading-edge research activity, briefings at member sites, frequent translations of research reports and technical articles, member consultations with GTS analysts, and a major electronic database (175,000 records and full text reports) that covers R&D in Japan and Europe. An additional benefit to MCC members is participation in a GTS Strategic Technology Tour to Europe or Asia. These tours, of seven to ten days duration, focus on technology topics of immediate interest to member companies. In addition, GTS staff members regularly respond to queries from MCC members for in-depth information on particular projects, firms, or topics.

The information offerings of Global Technology Services are designed not only to keep MCC members abreast of developments abroad in microelectronics, computing, and software, but to support the strategic decisions that North American firms must take to position themselves in the fast-moving world of global R&D. We know that to succeed in the next decade, MCC members must understand their competitors in Europe and Asia as well as understand the domestic competition, monitor technology policy and research activity around the world and choose the foreign partners that best match their needs. The role of GTS is to help MCC members meet these challenges in a rapidly changing world.

MCC Global Technology Services Member Benefits and Programs

- **Global Technology Monitor:** GTS' bi-monthly technical report, the Global Technology Monitor, covers the most advanced overseas technology trends for an audience of several thousand researchers, managers, and strategic planners in MCC member organizations. The Global Technology Monitor is also distributed electronically via e-mail to subscribers.
- **Detailed Technical Reports:** Periodically, GTS prepares in-depth technical reports on fields of current importance to MCC members. Past topics include computer architecture in Japan, low-voltage device technology, advanced R&D in battery technology, and copper-polyimide packaging technology.
- **Briefings:** The GTS research analysts use the knowledge they acquire in tracking the technical literature and through visits and contacts made during visits abroad to prepare presentations and briefings for delivery at MCC member companies' sites.

- **Strategic Technology Tours:** Using its international contacts, GTS coordinates seven- to ten-day tours in Europe and Asia consisting of visits to leading developers and users of a technology or set of related technologies. Joining GTS staff on these tours are small groups of researchers, research managers, and strategic planners from MCC member firms who have expertise in the technology domain in question. The goals of these tours are to evaluate the state-of-the-art in the organizations visited; to exchange views on technology trends with leading foreign research organizations; and to establish personal contacts abroad that may open possibilities for joint research projects or broader business relationships.
- **Consultation with GTS analysts:** The GTS staff includes specialists in both Asia and Europe and is available to MCC members for consultation on foreign research, projects and technology. GTS foreign contacts number more than 3000 researchers and government officials around the world.
- **MCC Database:** The GTS electronic database contains approximately 175,000 bibliographic, abstract, and full-text records of Asian and European technical literature, trade journals, newspapers and other publications. The database is used to support technology tracking activities and is available to the MCC membership via the Internet and a secure World Wide Web server. GTS also has access to a variety of commercial external databases, both international and domestic, as well as subscriptions to major business and R&D newsfeeds.
- **Workshops and International Forums:** Several times a year, GTS conducts workshops on global technology and has recently begun a series of international forums conducted in conjunction with major international conferences and similar events.
- **Supplier Qualification and Partner Identification:** GTS receives requests from the MCC membership for assistance in assessing the capabilities of potential international suppliers, in identifying appropriate partner organizations abroad for joint projects and business activities, and in introducing potential licensees for technology.
- **Translations:** GTS translates a wide variety of foreign technical literature, with an emphasis on Japanese-to-English translation. GTS also offers translation services in Chinese, French, German, and Korean. These translations are available, wherever consistent with copyright restrictions, to the entire MCC community.

Global Technology Services Customers

Global Technology Services benefits are available to all regular employees of MCC member organizations. GTS provides somewhat different sets of services to the various levels of MCC membership, with MCC shareholders enjoying the broadest set of services.

In its coverage of foreign technology, GTS provides technical information for the specialist, as well as strategic analysis for planners with more general responsibilities. Users of the MCC GTS in MCC member firms includes the following:

- Researchers who work in fields from semiconductor packaging, to optical communications, to computer-supported cooperative work environments, where groups in Asia and Europe are doing highly advanced work.
- Research managers who are responsible for maintaining an awareness of what the competition is doing worldwide in their technical areas.

- Strategic R&D planners who seek to design future R&D initiatives so their firms are positioned to compete effectively in the global economy.
 - Competitive analysts who must know as much about the activities of companies, laboratories, and government projects abroad as they do about domestic scene.
 - Senior managers who need timely, incisive coverage of general trends in technology abroad to help them set the right directions for their organization.
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SEMATECH

Competitive Analysis Group

The Competitive Analysis Group (CAG) of SEMATECH is within the Internal Technical Support Division, which reports to the Chief Operating Officer.

The CAG's mission is to understand the practices, strategies, developments, and trends of the world's leading edge producers (i.e., technical and manufacturing leaders) in order to provide competitive information and awareness to SEMATECH executive staff and technical programs/projects, as well as the member company community.

Currently, the group is made up of eight analysts, each of whom specializes in a specific area of semiconductor technology (process, equipment, design, modeling, packaging/assembly, etc.) or has a foreign language/regional industry expertise. Most analysts are two-year assignees from SEMATECH's member companies.

Projects include research and analysis activities for developing profiles of corporations and foreign countries; foreign semiconductor factory activity assessments; standard industry indicators and industry forecasts; assistance in developing the semiconductor industry's National Technology Roadmap; process modeling; foreign information translation/distribution activities; as well as foreign information gathering/assessment activities.

Sources include a broad network of individuals throughout the U.S. semiconductor industry as well as from overseas public literature sources, including domestic and foreign language publications and on-line services as well as industry-specific consultant reports/studies. In addition, members of the group, along with members from other SEMATECH or member company groups, routinely visit foreign industry/government organizations, leading edge producer facilities, and foreign equipment suppliers, as well as attend industry seminars, trade shows, and meetings.

The group meets routinely (face-to-face and by teleconference) with counterpart groups within each of the SEMATECH member companies and hosts two on-site meetings per year to present and discuss its project deliverables/status, determine action items, prioritize/plan new projects, and network.

Project deliverables are generally in the form of SEMATECH confidential or Member Company Confidential reports, meetings, and/or presentations.

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SEMATECH HomePage: <http://www.sematech.org/semi-sematech/general.htm>

APPENDIX: "A"
INTERNET GUIDE
TO
UNITED STATES
SCIENCE AND TECHNOLOGY COMMUNITY

USA FEDERAL DEPARTMENTS

1. U.S. DEPARTMENT OF AGRICULTURE: <http://www.usda.gov>

Agricultural Research Service: <http://www.ars.usda.gov/>
Economic Research Service: <http://www.econ.ag.gov/>
Foreign Agricultural Service: <http://ffas.usda.gov/ffas/>
International Cooperation and Development: <http://ffas.usda.gov/ffas/intertec.html>
World Agricultural Outlook Board: <http://www.usda.gov/>
Forest Service: <http://www.fs.fed.us/>

2. THE DEPARTMENT OF COMMERCE: <http://www.doc.gov/>

Bureau of Export Administration: http://www.doc.gov/resources/BXA_info.html
International Trade Administration: <http://www.ita.doc.gov>
Office of Air & Space Commercialization: <http://www.doc.gov/oasc.html>
National Institute of Standards and Technology: <http://www.nist.gov>
<http://www.fedworld.gov/preview/preview>
National Oceanic and Atmospheric Administration: <http://www.noaa.gov>
National Technical Information Service: connect to Fedworld - <http://www.fedworld.gov>
National Telecommunications and Information Administration: <http://www.ntia.doc.gov>
Institute for Telecommunication Sciences: <http://www.its.bldrdoc.gov/Home.html>
Patent and Trademark Office: <http://www.uspto.gov>
Technology Administration: <http://www.ta.doc.gov/otphome/otp.htm>
TA's International Technology Policy and Programs Page:
<http://www.ta.doc.gov/itp/itp.htm>
TA's Asia-Pacific Region Page: <http://www.ta.doc.gov/aptp/aptp.htm>
TA's Japan Page: <http://www.ta.doc.gov/aptp/japan/japan.htm>
TA's China Economic Area: <http://www.ta.doc.gov/aptp/china/cea.htm>
TA's Republic of Korea Page: <http://www.ta.doc.gov/aptp/korea/rokpage.htm>
TA's USA Page: <http://www.ta.doc.gov/itp/usa/usahome.htm>

TA's Canada Page: <http://www.ta.doc.gov/itp/can/csthome.htm>
TA's Mexico Page: <http://www.ta.doc.gov/itp/mex/mexico.htm>
TA's Russia and NIS Page: <http://www.ta.doc.gov/itp/nis/nishome.htm>
TA's Israel Page: <http://www.ta.doc.gov/itp/israel/page2.htm>
TA's Egypt Page: <http://www.ta.doc.gov/itp/egypt/egypt.htm>
TA's Office of Technology Policy Reports: <http://www.ta.doc.gov/itp/public.htm>

3. DEPARTMENT OF DEFENSE: <http://www.dtic.mil/defense/defenselink/>

Ballistic Missile Defense Organization: <http://www.acq.usd.mil/bmdo/bmdolink/html/>

Defense Mapping Agency: <http://www.dma.gov/>

http://www.dtic.dla.mil/defense/defenselink/pubs/ofg/of_dma.html

Defense Nuclear Agency: http://www.dtic.dla.mil/defense/defenselink/pubs/ofg/of_dna.html

Defense Technical Information Center (DTIC): <http://asc.dtic.dla.mil/>

<http://www.dtic.mil>

Gopher: gopher.dtic.mil

DTIC/DOD Information Analysis Centers:

CBIAC, Chemical Warfare, Chemical Biological Defense IAC:

<http://www.dtic.mil/iac/cbiac/cbiachp.htm>

<http://www.battelle.org/cbiac/cbiachp.htm>

CIAC, Ceramics IAC: <http://cindas.www.ecn.purdue.edu/ciac/>

CRSTIAC, Cold Regions Science and Technology IAC:

<http://www.usace.army.mil/crstiac/>

<http://www.usace.army.mil/crel/>

CSERIAC, Crew System Ergonomics IAC:

<http://www.dtic.mil/iac/cseriac/IAC.HTML>

DACS, Data Analysis Center for Software:

<http://www.utica.kaman.com:8001/>

DASIAC, DOD Nuclear Information and Analysis Center:

<http://www.dtic.mil/iac/gaciac/GCHMPG.HTML>

GACIAC, Guidance and Control IAC:

<http://www.dtic.mil/iac/gaciac/GCHMPG.HTML>

<http://gaciac.iitri.com/>

HTMIAC, High Temperature Materials IAC:

<http://cindas.www.ecn.purdue.edu/htmiac/>

IRIA, Infrared IAC:

<http://www.erim.org/IRIA/iria.html>

MIAC, Metals IAC:

<http://cindas.www.ecn.purdue.edu/mmciac/>

MMCIAC, Metal Matrix Composites IAC:

<http://cindas.www.ecn.purdue.edu/mmciac/>

MTIAC, Manufacturing Technology IAC:

<http://www.dtic.mil/iac/mtiac/MTIAC.HTML>

<http://mtiac.hq.iitri.com/mtiac.html>

NTIAC, Nondestructive Testing IAC:

<http://www.dtic.mil/iac/ntiac/ntiachome.html>

RAC, Reliability Analysis Center (Electronic and Mechanical):

<http://iitri.com/RAC/>

SURVIAC, Survivability/Vulneability IAC:

<http://surviac.flight.wpafb.af.mil/>

TWSTIAC, Tactical Warfare Simulation and Technology IAC:

<http://www.dtic.mil/iac/twstiac/twstiach.html>

DTIC/Military Service Information Analysis Centers: NA

Defense Technology Security Administration:

http://www.dtic.dla.mil/defenselink/pubs/ofg/of_dtsa.html

DOD International Programs: <http://www.acq.osd.mil>

4. DEPARTMENT OF ENERGY: <http://www.doe.gov/>

Office of Non-proliferation and National Security: <http://www.nn.doe.gov/nn/>

Office of Nuclear Energy, Science, and Technology: http://apollo.osti.gov/budget/ne_oda.html

Office of Scientific and Technical Information: <http://www.doe.gov/html/osti/ostipg.html>

Center for the Analysis and Dissemination of Demonstrated Energy Technologies:

<http://apollo.osti.gov/etde/abtede/green.html>

5. DEPARTMENT OF HEALTH AND HUMAN SERVICES: <http://www.os.dhhs.gov/>

Food and Drug Administration: <http://www.fda.gov>

National Institutes of Health: <http://www.nih.gov/>

- National Cancer Institute: <http://www.nci.nih.gov>

- National Eye Institute: <http://www.nei.nih.gov>

- National Heart, Lung and Blood Institute: <http://www.nhlbi.nih.gov/nhlbi/nhlbi.html>

- National Institute of Allergy and Infectious Diseases: gopher://gopher.niaid.nih.gov

- National Institute of Dental Research: <http://www.nidr.nih.gov>

- National Institute on Alcohol Abuse and Alcoholism: <http://www.niaaa.nih.gov>
- National Institute on Drug Abuse: <http://www.nida.nih.gov>

John E. Fogarty International Center for Advanced Study in the Health Sciences:
<gopher://gopher.nih.gov.70/11/res/fogarty>

International Cooperative Biodiversity Group: <gopher://gopher.nih.gov.70/11/res/fogarty>

6. DEPARTMENT OF THE INTERIOR: <http://info.er.usgs.gov/doi/doi.html>

Territorial and International Affairs:

<http://info.er.usgs.gov/doi/territorial-International-Affairs.html>

- The U.S. Fish and Wildlife Service: <http://www.fws.gov/>
- National Park Service: <http://www.nps.gov/>
- National Biological Survey: <http://www.nbs.gov/>
- U.S. Geological Survey: <http://info.er.usgs.gov/doi/usgs.html>
- Bureau of Reclamation: <http://info.er.usgs.gov/doi/bureau-of-reclamation.html>
- Bureau of Land Management: <http://www.blm.gov/>
- Minerals Management Service: <http://www.mms.gov/>
- Office of Surface Mining Reclamation and Enforcement:
<http://info.er.usgs.gov/doi/office-of-surface-mining.html>

7. DEPARTMENT OF JUSTICE: <http://www.usdoj.gov/>

The Executive Office for National Security

8. DEPARTMENT OF STATE: <http://www.state.gov>

Bureau of Oceans, International Environmental and Scientific Affairs

- Oceans
- Environment and Development
- Science, Technology and Health Directorate

List of Overseas Environment, Science and Technology Officers

Bureau of Intelligence and Research

9. DEPARTMENT OF TRANSPORTATION: <http://www.dot.gov/>

Aviation and International Affairs: <http://www.dot.gov:80/dotinfo/ost/aviation/>

- Office of International Aviation
- Office of Aviation and International Economics
- Office of International Transportation and Trade

Office of Commercial Space Transportation: <http://www.dot.gov/dotinfo/faa/cst/ocst.html>

Federal Aviation Administration: <http://www.faa.gov/>

- Office of International Aviation

Federal Highway Administration: <http://ctivolpe.dot.gov/ohim/>

- Office of International Programs

10. USA GOVERNMENT AGENCIES

ENVIRONMENTAL PROTECTION AGENCY: <http://www.epa.gov/>

- Office of International Activities

THE LIBRARY OF CONGRESS: <http://www.loc.gov/>

Federal Research Division

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION: <http://www.nasa.gov/>

NASA SCIENCE AND TECHNOLOGY INFORMATION OFFICE:

<http://www.sti.nasa.gov>

NTRS Technical Reports: <http://techreports.larc.nasa.gov/cgi-bin/NTRS>

NATIONAL SCIENCE FOUNDATION: <http://www.nsf.gov>

NSF International HomePage: <http://www.nsf.gov/sbe/int>

NSF International Cooperation: <http://www.nsf.gov/sbe/int/intmssn.htm>

NSF Grants: <http://www.nsf.gov/wais/awards.htm>

NSF International Science and Engineering Activities: <http://www.nsf.gov/sbe/int/support.htm>

NSF Statistical Reports: <http://www.nsf.gov/sbe/srs/stats.htm>

NSF International Statistics, Reports, and Other Information:

<http://www.nsf.gov/sbe/int/intstats.htm>

NUCLEAR REGULATORY COMMISSION: <http://www.nrc.gov>

OFFICE OF SCIENCE AND TECHNOLOGY POLICY:

http://www.whitehouse.gov/WH/EOP/OSTP/html/OSTP_HOME.html

11. MILITARY SERVICES

Air Force Office of Scientific Research: <http://watt.seas.virginia.edu/~rbc2z/docafosr.html>

Advisory Group for Aerospace Research and Development (AGARD): NA

Army Corps of Engineers: <http://bbsun.usace.army.mil>

Army Research Laboratory: <http://fcim.csdc.com/fcimis/arl.html>

<http://info.arl.army.mil/>

Army Material Command: <http://www.dtic.dla.mil/amc/>

Office of Naval Research: <http://www.onr.navy.mil>

<http://www.ehis.navy.mil/homepage.htm>

Office of Naval Research Asian Office: <http://www.itd.nrl.navy.mil/onra/>

12. INTELLIGENCE COMMUNITY

Central Intelligence Agency (CIA): <http://www.odci.gov/>

Foreign Broadcast Information Service (CIA): http://www.lib.msu.edu/dbases/db_00090.htm

National Security Agency: <http://131.89.1.14/defenselink/locator/records/000035.html>

Central Imagery Office: <http://www.awpi.com/IntelWeb/US/CIO/>

National Reconnaissance Office: <http://www.awpi.com/IntelWeb/US/NRO/>

<http://airspacemag.com/WebDir/Sites/NationalReconnaissanceOffice.ht>

Defense Intelligence Agency: <http://www.awpi.com/IntelWeb/US/Defense/DMA>

Air Force Intelligence Office: <http://www.awpi.com/IntelWeb/US/Defense/AirForce/AFIA>

Army Intelligence Office: <http://www.awpi.com/IntelWeb/US/Defense/Army/AIA/fag.html>

Office of Naval Intelligence: <http://www.odci.gov/ic/usic/ni.html>

Marine Corps Intelligence Activity: <http://mctssa.gw.usmc.mil/cisd/LAS.html>

National Ground Intelligence Center (Army):

<http://www.awpi.com/IntelWeb/US/Defense/Army/NGIC>

National Air Intelligence Center (NAIC): <http://tecnet2.jcte.jcs.Mil:8000/cybrspke/factlist.html>

13. SELECT PRIVATE SECTOR ORGANIZATIONS

Battelle: <http://www.battelle.org/default.htm>

Critical Technologies Institute: <http://www.rand.org:80/centers/cti>

Federally-Funded Research and Development Center operated by RAND

International Technology Research Institute: <http://www.itri.loyola.edu>

- Japanese Technology Evaluation Center

- World Technology Evaluation Center

Transportation Technology Evaluation Center: <http://itri.loyola.edu>

National Academy of Sciences: <http://www.nas.edu>

- Office of International Affairs
- Board on Science and Technology for International Development
- Board on Science and Technology and Economic Policy

Microelectronics and Computer Consortium International Liaison Office: <http://www.mcc.com>

SEMATECH: <http://www.sematech.org/semi-sematech/general.htm>

14. SELECT SCIENCE AND TECHNOLOGY TRADE ASSOCIATIONS

American Association for the Advancement of Science: <http://www.aaas.org/aaas.html>

American Association for Artificial Intelligence: <http://www.aaai.org>

American Electronics Association: <http://www.aeanet.org>

American Institute of Physics: <http://www.aip.org/>

Association for Computing Machinery: <http://www.acm.org>

Association for Educational & Image Management: <http://www.aect.org>

Association for Science-Technology Centers: <http://www.astc.org>

Electronic Frontier Foundation: <http://www.eff.org>

Electronic Industries Association: <http://www.eia.org>

Graphic Communications Association: <http://gca.sgml.com>

Information Technology Association of America: <http://www.ita.org>

Institute of Electrical & Electronics Engineers Computer Society: <http://www.computer.org>

Institute of Industrial Engineers: <http://www.iienet.org>

Interactive Multimedia Association: <http://www.ima.org>

International Communications Industries Association: <http://www.usa.net/icia>

International Disk Drive Equipment & Materials Association: <http://www.idema.com>

Internet Society: <http://www.isoc.org>

Society for Applied Learning Technology: <http://www.salt.org>

Society for Information Management: <http://www.simnet.org>

Tele-Communications Association: <http://www.tca.org>

Unix & Advanced Computing Systems Professional & Technical Association: <http://www.unix.org>

U.S. Product Data Association: <http://www.elib.cme.nist.gov/nipde>

Note: For the latest Internet update on the Federal Government contact FedWorld:
<http://www.law.vill.edu/Fed-Agency/fedwebloc.html>

**APPENDIX "B":
MAJOR LEGISLATION,
PROGRAMS AND ACTIVITIES
OF
UNITED STATES SCIENCE AND TECHNOLOGY
COMMUNITY**

LEGISLATION

Agricultural Marketing Act of 1946 (7 U.S.C. 1621 1627) (Sect. I.A.2: USDA-ERS)
Comprehensive Crime Control Act of 1984 (Sect. I.G.1: DOJ-ONS)
Defense Production Act (Sect. I.B.1: DOC-BXA)
Department of Energy Organization Act of 1977 (Sect. I.D.1: DOE-ONNS)
Endangered Species Act (ESA) (Sect. I.F.1: DOI-TIA)
Energy Reorganization Act of 1974 (Sect. I.B.1: DOE-ONNS)
Export Administration Act (Sect. I.B.1: DOC-BXA)
Federal Technology Transfer Act of 1986 (Sect. 1.B.8: DOC-NTIA/TTS)
Foreign Assistance Act (Sect. I.F.2: DOI-TIA)
Freedom of Information Act of 1974 (Sect. I.E.1: HHS-FDA)
Intelligence Authorization Act (Sect. I.G.1: DOJ-ONS)
Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 (Sect. IV.D.1: TTEC)
Japanese Technical Literature Act of 1986 (Sect. I.B.6: DOC-NTIS)
Marine Mammal Protection Act (Sect. I.F.1: DOI-TIA)
National Aeronautics and Space Act (Sect. II.C: NASA)
National Science and Technology Policy, Organization, and Priorities Act of 1976 (Sect. II.G: OSTP)
National Science Foundation Act of 1950 (Sect. II.E: NSF)
National Security Act of 1947 (Sect. I.D.1: DOE-ONNS)
Nuclear NonProliferation Act of 1978 (Sect. I.D.1: DOE-ONNS)
Omnibus Diplomatic Security and Anti-terrorism Act of 1986 (Sect. I.G.1: DOJ-ONS)
Omnibus Trade and Competitiveness Act of 1988 (Sect. I.B.10: DOC-TA)
Space Act of 1958 (Sect. II.D: NASA-STIO)
Trade Expansion Act of 1962 (Sect. I.B.1: DOC-BXA)
USGS Organic Act (Sect. I.F.2: DOI-USGS)

PROGRAMS

Advanced Technology Program (ATP) (Sect. I.B.4: DOC-NIST)
Area Handbook/Country Studies Series (Sect. II.B.1: LOC-FRC)
Asia-Pacific Technology Program (Sect. I.B.10: DOC-TA)
Annual Report to Congress on Foreign Policy Controls (Sect. I.B.1: DOC-BXA)
Baldrige National Quality Award (Sect. I.B.4: DOC-NIST)
Credit Guarantee Program (Sect. I.A.3: USDA-FAS)
Civilian Industrial Technology Committee (Sect. I.B.10: DOC-TA)
Counterproliferation Initiative (Sect. I.C.1: DOD-DNA)

Defense Priorities and Allocations System (Sect. I.B.1: DOC-BXA)
 Earthquake Mitigation Training Program (Sect. I.F.2: DOI-USGS)
 Electronics, Computer Systems, Telecommunications, and Sensory Industry Technical Advisory
 Committees (Sect. I.B.1: DOC-BXA)
 European Technology Program (Sect. I.B.10: DOC-TA)
 FedWorld (Sect. I.B.6: DOC-NTIS)
 FHWA Foreign Visitor's Program (Sect. I.I.4: DOT-OIP)
 Foreign Cooperative Investigations Program (Sect. I.G.1: DOJ-ONS)
 Foreign Market Development Cooperator Program (Sect. I.A.3: USDA-FAS)
 Global Telemetered Seismic Network Program (Sect. I.F.2: DOI-USGS)
 Interagency Volcano Disaster Assistance Program (VDAP) (Sect. I.F.2: DOI-USGS)
 International Cooperation and Development Program (ICD) (Sect. I.A.3: USDA-FAS)
 International Nuclear Safety Program (INSP) (Sect. I.D.1: DOE-ONEST)
 International Opportunities for Scientists and Engineers (Sect. II.E: NSF)
 International Technology Scanning Program (Sect. I.I.4: DOT-OIP; Sect. IV.D.1: TTEC)
 International Traffic in Arms Regulations (Sect. I.C.7: DOD-DTSA)
 Japan Technology Evaluation Center (JTEC) Program (Sect. I.B.4: DOC-NIST)
 Japan Technology Program (Sect. I.B.6: DOC-NTIS)
 Manufacturing Extension Partnership (MEP) (Sect. I.B.4: DOC-NIST)
 Market Promotion Program (Sect. I.A.3: USDA-FAS)
 Market Research Reports (Sect. I.B.2: DOC-ITA)
 National Defense Stockpile (Sect. I.B.1: DOC-BXA)
 National Earthquake Loss Reduction Program (Sect. IV.B.1: CTI)
 Nunn-Lugar/Cooperative Threat Reduction (CTR) Program (Sect. I.C.1: DOD-DNA)
 NIST Laboratory Programs (Sect. I.B.4: DOC-NIST)
 NSF Grants with International Dimensions (Sect. II.E: NSF)
 OECD Working Group on Innovation and Technology Policy (Sect. I.B.10: DOC-TA)
 President's Committee of Advisors on Science and Technology (PCAST) (Sect. II.G: OSTP)
 President's National Science and Technology Council (Sect. I.B.10: DOC-TA)
 Presidential Title V Report for the White House Office of Science and Technology Policy (Sect. I.H.1:
 DOS-OES)
 Science and Technology Reporting Information, Dissemination and Enhancement (STRIDE) Program
 (Sect. I.H.1: DOS-OES)
 Standard Foreign Fare Level (Sect. I.I.1: DOT-AIA)
 State Technology Extension Program (Sect. I.B.4: DOC-NIST)
 Techno-Growth House Program (Tsukuba City, Japan) (Sect. I.B.10: DOC-TA)
 Trends in Commercial Space Report (Sect. I.B.2: DOC-OASC)
 U.S. - Civil Industrial Technologies Arrangement (Sect. I.B.10: DOC-TA)
 U.S. Climate Change Country Studies Program (Sect. I.H.1: DOS-OES)
 U.S. - Israel Science and Technology Commission (Sect. I.B.10: DOC-TA)
 U.S. - Japan Joint High Level Advisory Panel (Sect. I.B.10: DOC-TA)
 U.S. - Japan Machine Translation Center Pilot Program (Sect. I.B.10: DOC-TA)
 U.S. - Japan Manufacturing Technology Fellowship Program (Sect. I.B.10: DOC-TA)
 USGS Global Change and Climate History Program (Sect. I.F.2: DOI-USGS)
 World Energy Resources Program (Sect. I.F.2: DOI-USGS)
 World Technology Evaluation Center (WTEC) Programs (Sect. I.B.4: DOC-NIST)

Worldwide Earthquake Risk Management Program (Sect. I.F.2: USGS)

BILATERAL ACTIVITIES

- Advisory Group for Aerospace Research and Development (AGARD), Technical Information Panel (TIP) (Sect. I.C.4: DOD-DTIC; Sect. III.A.1: UGARD)
- DTIC - Information Exchange Agreements: Australia, Canada, Germany, the Netherlands, France, and the United Kingdom (Sect. I.C.4: DOD-DTIC)
- Indo-U.S. Science and Technology Subcommittee (Sect. I.B.5: DOC-NOAA)
- International Pacific Halibut Commission (IPHC) (Sect. I.B.5: DOC-NOAA)
- Pacific Salmon Commission (Sect. I.B.5: DOC-NOAA)
- Summer Institute in Japan Program (Sect. I.E.3: HHS-NIH/FIC)
- Treaty Between the Government of the United States and the Government of Canada regarding Pacific Salmon (Sect. I.B.5: DOC-NOAA)
- U.S. - Brazil Science and Technology Initiative (Sect. I.B.5: DOC-NOAA)
- U.S. - Canada Hydrographic Commission (USHC) (Sect. I.B.5: DOC-NOAA)
- U.S. - Canada Joint Ice Working Group (Sect. I.B.5: DOC-NOAA)
- U.S. - Canada Military Cooperation Committee (MCC) (Sect. I.B.5: DOC-NOAA)
- U.S. - Canada Memorandum of Agreement on Climate (Sect. I.B.5: DOC-NOAA)
- U.S. - China Cooperation in Atmospheric Science and Technology (Sect. I.B.5: DOC-NOAA)
- U.S. - China Cooperation in the Field of Marine and Fishery Science Technology (Sect. I.B.5: DOC-NOAA)
- U.S. - China Nature Conservation Protocol (Sect. I.F.1: DOI-TIA)
- U.S. - Finland Agreement on Science and Technology (Sect. III.B.2: USA-COE)
- U.S. - France Cooperative Science Program in Oceanography (Sect. I.B.5: DOC-NOAA)
- U.S. - France Space Cooperation (Argues) (Sect. I.B.5: DOC-NOAA)
- U.S. - India Fund (Sect. I.F.1: DOI-TIA)
- U.S. - Indonesia Memorandum of Understanding on Climate (Sect. I.B.5: DOC-NOAA)
- U.S. - Israel Cooperation in Marine and Freshwater Science and Technology (Sect. I.B.5: DOC-NOAA)
- U.S. - Japan Common Agenda (Sect. I.E.3: HHS-NIH/FIC)
- U.S. - Japan Consultative Committee on Fisheries (Sect. I.B.5: DOC-NOAA)
- U.S. - Japan Cooperative Cancer Research Program (Sect. I.E.2: HHS-NIH)
- U.S. - Japan Cooperative Program in Natural Resources (UJNR) (Sect. I.A.6: USDA-FS; Sect. I.B.5: DOC-NOAA)
- U.S. - Japan Natural Resources Exchange (Sect. III.B.2: USA-COE)
- U.S. - Mexico Agreement on Scientific and Technical Cooperation (Sect. I.B.5: DOC-NOAA)
- U.S. - Mexico Border Health Association (Sect. I.E.2: HHS-NIH)
- U.S. - Russia Agreement on Cooperation in Studies of the World Ocean (Sect. I.B.5: DOC-NOAA)
- U.S. - Russia Intergovernmental Consultative Committee (ICC) (Sect. I.B.5: DOC-NOAA)
- U.S. - Russia Working Group VIII - Agreement on Cooperation in the Field of Environmental Protection (Sect. I.B.5: DOC-NOAA)
- U.S. - Saudi Arabia Technical Cooperation in a Meteorological and Environmental Program (ARSAD Project) (Sect. I.B.5: DOC-NOAA)
- U.S. - United Kingdom Advance Microwave Sounding Unit (Sect. I.B.5: DOC-NOAA)
- U.S. - United Kingdom Stratospheric Sounding Unit (Sect. I.B.5: DOC-NOAA)

MULTILATERAL ACTIVITIES

Antarctic Treaty (Sect. I.B.5: DOC-NOAA)
Asia-Pacific Economic Cooperation (APEC) Forum (Sect. I.H.1: DOS-OES)
APEC Energy Working Group (Sect. I.D.3: DOE-OSTI)
APEC Industrial Science and Technology Working Group (Sect. I.B.10: DOC-TA)
Australia Group (AG) (Sect. I.B.1: DOC-BXA)
Basel Convention (Sect. I.H.1: DOS-OES)
Biological and Toxin Weapons Convention (Sect. I.B.1: DOC-BXA)
Biosphere Reserve Integrated Monitoring (BRIM) Program (Sect. I.H.1: DOS-OES)
Chemical Weapons Convention (Sect. I.B.1: DOC-BXA)
Childhood Vaccine Initiative (CVI) (HHS-NIH)
Colombo Plan Bureau (Sect. I.E.2: HHS-NIH)
Commission for Sustainable Development (Sect. I.H.1: DOS-OES)
Commission of the European Communities (Sect. I.E.2: HHS-NIH)
Comprehensive Test Ban Treaty (CTBT) (Sect. I.D.1: DOE-ONNS)
Conference of Parties to the Convention on Wetlands International Importance (Sect. I.F.1: DOI-TIA)
Convention on Biological Diversity (Sect. I.H.1: DOS-OES)
Convention Concerning the Protection of the World Cultural and Natural Heritage (Sect. I.F.1: DOI-TIA)
Convention for the Conservation of Antarctic Seals (Sect. I.B.5: DOC-NOAA)
Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Basin (Sect. I.F.1: DOI-TIA)
Convention on International Trade in Endangered Species of Flora and Fauna (CITIES) (Sect. I.F.1: DOI-TIA)
Convention on Wetlands of International Importance (Ramsar Convention) (Sect. I.F.1: DOI-TIA; Sect. I.H.1: DOS-OES)
Council of Europe Pompidou Group (Sect. I.E.2: HHS-NIH)
Council on Science and Technology for the Americas (COSTA) (Sect. I.E.3: HHS-NIH/FIC)
Direct Readout Services (Sect. I.B.5: DOC-NOAA)
Energy Technology Data Exchange (ETDE): Australia, Brazil, Canada, Denmark, Finland, France, Germany, Italy, Japan, The Netherlands, Norway, Poland, Republic of Korea, Spain, Sweden, Switzerland, and the United Kingdom (Sect. I.D.3: DOE-OSTI)
European Civil Aviation Conference (Sect. I.I.1: DOT-AIA)
European Organization for Research and Treatment of Cancer (Sect. I.E.2: HHS-NIH)
European Space Agency (Sect. II.C: NASA)
Federation Dentaire Internationale (Sect. I.E.2: HHS-NIH)
Fogarty International Research Collaboration Awards (FIRCA) (Sect. I.E.3: HHS-NIH/FIC)
Food and Agriculture Organization (FAO) (Sect. I.B.5: DOC-NOAA)
General Agreement on Tariffs and Trade (GATT) (Sect. I.I.1: DOT-AIA)
Global Environment Facility (Sect. I.B.5: DOC-NOAA)
Gore-Chernomyrdin Commission (Sect. I.H.1: DOS-OES)
Great Lakes Fishery Commission (GLFC) (Sect. I.H.1: DOS-OES)
Inter-American Tropical Tuna Commission (IATTC) (Sect. I.B.5: DOC-NOAA)
Intergovernmental Oceanographic Commission (IOC) (Sect. I.B.5: DOC-NOAA)
Intergovernmental Panel on Climate Change (IPCC) (Sect. I.B.5: DOC-NOAA)

International AIDs Vaccine Master Contract (Sect. I.E.2: HHS-NIH)
 International Agency for Research on Cancer (Sect. I.E.2: HHS-NIH)
 International Association for Dental Research (Sect. I.E.2: HHS-NIH)
 International Bureau of the World Intellectual Property Organization (Sect. I.B.9: DOC- PTO)
 International Civil Aviation Organization (ICAO) (Sect. I.B.5: DOC-NOAA; Sect. I.I.1: DOT-AIA)
 International Collaboration for Oral Health Research (Sect. I.E.2: HHS-NIH)
 International Collaboration in AIDs Research (ICAR) Program (Sect. I.E.2: HHS-NIH)
 International Collaboration in Infectious Disease Research (ICIDR) Program (Sect. I.E.2: HHS-NIH)
 International Commission for the Conservation of Atlantic Tunas (ICCAT) (Sect. I.B.5: DOC-NOAA;
 Sect. I.H.1: DOS-OES)
 International Commission on Large Dams (ICOLD) (Sect. III.B.2: USA-COE)
 International Cooperative Biodiversity Groups Program (ICBG) (Sect. I.E.3: HHS-NIH/FIC)
 International Coral Reef Initiative (Sect. I.H.1: DOS-OES)
 International Council for the Exploration of the Sea (ICES) (Sect. I.B.5: DOC-NOAA)
 International Council for Scientific and Technical Information (ICSTI) (DOE-OSTI)
 International Council of Scientific Unions (ICUS) (Sect. I.B.5: DOC-NOAA)
 International Council on Monuments and Sites (Sect. I.F.1: DOI-TIA)
 International Global Positioning System Network (CIGNET) (Sect. I.B.5: DOC-NOAA)
 International Group of Funding Agencies for Global Change Research (IAI) (Sect. I.B.5: DOC-NOAA)
 International Hydrographic Organization (IHO) (Sect. I.B.5: DOC-NOAA)
 International Maritime Organization (IMO) (Sect. I.B.5: DOC-NOAA; Sect. I.H.1: DOS-OES; Sect.
 II.A.1: EPA-OIA)
 International Nuclear Information System (INIS) (Sect. I.D.3: DOE-OSTI)
 International Research Institute for Climate Prediction (IRICP) (Sect. I.B.5: DOC-NOAA)
 International Road Federation (Sect. I.I.4: DOT-OIP)
 International Space Station (Sect. II.C: NASA)
 International Standards Organization (Sect. I.E.2: HHS-NIH)
 International Trade in Endangered Species (CITES) (Sect. I.H.1: DOS-OES)
 International Training and Research Program on Environmental and Occupational Health (Sect. I.E.3:
 HHS-NIH/FIC)
 International Training and Research Program on Population and Health (Sect. I.E.3: HHS-NIH/FIC)
 International Union Against Cancer (Sect. I.E.2: HHS-NIH)
 International Union for the Conservation of Nature and Natural Resources (IUCN) (Sect. I.B.5: DOC-
 NOAA)
 International Whaling Commission (Sect. I.B.5: DOC-NOAA)
 Law of the Sea (Sect. I.H.1: DOS-OES)
 London Dumping Convention (Sect. I.B.5: DOC-NOAA; Sect. I.F.1: DOS-ONS; Sect. III.B.2: USA-
 COE)
 Missile Technology Control Regime (MTCR) (Sect. I.B.1: DOC-BXA)
 Montreal Protocol/Stratospheric Ozone Depletion Convention (Sect. I.B.5: DOC-NOAA)
 NATO's Industrial Planning Committee (Sect. I.B.1: DOC-BXA)
 New Forum (new COCOM) (Sect. I.B.1: DOC-BXA)
 Non-Proliferation Treaty (Sect. I.D.1: DOE-ONNS)
 North American Commission for Environmental Cooperation (Sect. II.A.1: EPA-OIA)
 North American Free Trade Agreement (Sect. I.F.1: DOI-TIA)
 North Atlantic Fisheries Organization (NAFO) (Sect. I.H.1: DOS-OES)

North Atlantic Salmon Conservation Organization (NASCO) (Sect. I.B.5: DOC-NOAA; Sect. I.H.1: DOS-OES)
 North Pacific Anadromous Fish Commission (NPAFC) (Sect. I.H.1: DOS-OES)
 North Pacific Marine Science Organization (PICES) (Sect. I.B.5: DOC-NOAA)
 Nuclear Suppliers Group (NSG) (Sect. I.B.1: DOC-BXA)
 Organization for Economic Cooperation and Development (OECD) (Sect. I.H.1: DOS-OES; Sect. I.I.4: DOT-OIP; Sect. II.A.1: EPA-OIA)
 Open Skies Treaty (Sect. I.B.1: DOC-BXA)
 Organization of American States (Sect. I.E.2: HHS-NIH)
 Organization of European Cancer Institutes (Sect. I.E.2: HHS-NIH)
 Pacific Island Network (Sect. I.B.5: DOC-NOAA)
 Pacific Salmon Commission (Sect. I.H.1: DOS-OES)
 Pan American Health Organization (Sect. I.E.2: HHS-NIH)
 Patent Cooperation Treaty (Sect. I.B.9: DOC-PTO)
 Permanent International Association of Navigation Congresses (PIANC) (Sect. III.B.2: USA-COE)
 Regional Seas Programs in the Caribbean and in the South Pacific (Sect. I.B.5: DOC-NOAA)
 Scholars-in-Residence Program (Sect. I.E.3: HHS-NIH/FIC)
 Specially Protected Areas and Wildlife Protocol under the Wider Caribbean Protocol (Sect. I.F.1: DOI-TIA)
 Tropical Oceans Global Atmosphere (TOGA) (Sect. I.B.5: DOC-NOAA)
 United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) (Sect. I.B.5: DOC-NOAA)
 United Nations Conference on Environment and Development relating to Oceans and Coastal Areas (Sect. I.H.1: DOS-OES)
 United Nations Development Program (Sect. II.A.1: EPA-OIA)
 United Nations Environment Program (UNEP) (Sect. I.B.5: DOC-NIST; Sect. II.A.1: EPA-OIA)
 United Nations Food and Agriculture Organization (FAO) (Sect. I.H.1: DOS-OES)
 United Nations Framework Convention on Climate Change (FCCC) (Sect. I.B.5: DOC-NOAA)
 United Nations International Decade for Natural Disaster Reduction (IDNDR) (Sect. I.F.2: DOI-USGS)
 U.S. Army Materiel Command International Cooperative Programs Activity (ICPA) (Sect. III.B.5: USA-AMC)
 U.S. Desertification Convention (Sect. I.F.1: DOI-TIA)
 Very Long Base Line Interferometry (Sect. I.B.5: DOC-NOAA)
 Western Hemisphere Convention (Sect. I.F.1: DOI-TIA)
 World Bank (Sect. I.F.1: DOI-TIA; Sect. II.A.1: EPA-OIA)
 World Conservation Union (Sect. I.F.1: DOI-TIA)
 World Data Centers (Sect. I.B.5: DOC-NOAA)
 World Health Organization (Sect. I.E.2: HHS-NIH; Sect. II.A.1: EPA-OIA)
 World Meteorological Organization (WMO) (Sect. I.B.5: DOC-NOAA)
 World Road Association (Sect. I.I.4: DOT-OIP)
 World Trade Organization (Sect. I.F.1: DOI-TIA; Sect. I.I.1: DOT-AIA)

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