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COMMUNICATIONS DEVELOPMENT
A Preliminary Review of U.S. Government
Communications Activities for Developing Countries

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ACRONYMS USED IN THIS REPORT

AID	Agency for International Development
ATS	Applications Technology Satellite
CALS	Center for Advanced Learning Systems
CDC	Centers for Disease Control
DOC	Department of Commerce
DOD	Department of Defense
DOI	Department of the Interior
DOJ	Department of Justice
DOL	Department of Labor
DOT	Department of Transportation
ED	Department of Education
Eximbank	Export-Import Bank of the United States
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FAO	Food and Agriculture Organization of the United Nations
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
IIE	International Bureau of Education
IPDC	International Programme for the Development of Communication
ITA	International Trade Administration
ITS	Institute for Telecommunication Sciences
ITU	International Telecommunication Union
NASA	National Aeronautics and Space Administration
NIE	National Institute of Education
NOAA	National Oceanic and Atmospheric Administration
NSF	National Science Foundation
NTIA	National Telecommunications and Information Administration
OECD	Organization for Economic Cooperation and Development
OMB	Office of Management and Budget
OPIC	Overseas Private Investment Corporation
OTA	Office of Technology Assessment
PASA	Participating Agency Service Agreement
RSSA	Resource Support Service Agreement
SIG	Senior Interagency Group
TDP	Trade and Development Program
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPU	Universal Postal Union
USDA	Department of Agriculture
USGS	United States Geological Survey
USIA	United States Information Agency
USPS	United States Postal Service
USTR	United States Trade Representative
USTTI	United States Telecommunications Training Institute
VOA	Voice of America
WHO	World Health Organization
WMO	World Meteorological Organization

EXECUTIVE SUMMARY

This preliminary study attempts to ascertain the general scope and magnitude of U.S. Government communications assistance to developing countries. It includes a sample of some 25 Federal agencies and references to a separate but related study conducted by the U.S. Agency for International Development (AID).^{*} During 75 interviews conducted with various representatives of the 25 agencies, special emphasis was placed on determining:

- Types of communications development activities;
- Collaboration among agencies and/or between agencies and the private sector;
- Documentation available at each agency; and
- Approximate levels of U.S. investment in communications development.

The study is based on a broad sampling of programs representative of the variety of U.S. Government communications development activities. Its findings are at best introductory and do not represent a detailed analysis of specific programs or their implications.

A. THE LEVEL OF COMMUNICATIONS DEVELOPMENT ASSISTANCE

Interpretation of the findings on the level of communications development assistance is clouded by the lack of consensus among many agencies as to the meaning of "communications development." A key distinction, for example, is between activities that contribute to building a developing country's ability to use communications more effectively for its development, and activities that use modern communications technology to transfer information or provide training services. A second distinction revolves around the directness of the contribution—whether, for example, "loan guarantees," as distinct from loans themselves, should be counted as U.S. contributions. On the one hand, loan guarantees represent no real outlay of taxpayer dollars, but on the other,

^{*} New Solutions for Serious Problems: AID and Development Communications, U.S. Agency for International Development, August 1983.

without the guarantees private lenders might be unwilling to invest in developing countries.

Even slight variations in interpretation can alter the dollar investments reported here by significant percentages. Rather than trying to standardize each agency's viewpoint in the short time available, the authors have tried to point out in the report areas where differences in interpretation might be particularly important. The actual numbers quoted, however, reflect each agency's view of what it believes should be included in the definition.

A further complication is the lack of comparable figures for a single year. Some agencies reported figures for FY '82, others for FY '83 or '84; several agencies were unable to provide any figures at all. Generally the study is limited to a description of activities over the past two to three years, but any comparison of one agency to another should be sensitive to the large variations that occur in some agencies' budgets from one year to the next. The purpose of this study is not to judge the comparable contributions of various agencies, but rather to illustrate by example the variety and possible extent of activity now under way by Federal agencies.

Recognizing these limitations and using a fairly rigorous definition of communications development, the level of U.S. Government support identified in this preliminary study appears to range from approximately \$150 to over \$200 million a year during the last two to three years. Following a less rigorous definition of communications development, including loan guarantees as well as loans themselves, for example, this figure could easily triple.

This assistance is being provided for the most part through the project activities, loans, and grants of three of the agencies surveyed: AID, the Export-Import Bank of the United States (Eximbank), and the U.S. Information Agency (USIA). Estimates of average annual assistance by two of these agencies during the past two to three years were placed at roughly the following levels: \$90 million in project assistance through AID in FY '82, and about \$55 million in Eximbank loans as an average of FY '83-'84 loans. According to USIA's definition, much or all of that agency's work in the developing countries would be considered activity in the field of communications development. Using the same rigorous definition as that applied to AID and the Eximbank, some \$10-20 million in USIA programs should be added to the above figures. In all cases these figures represent a small percentage of the agency's overall program.

Another measure of U.S. support is the opportunity for training, offered to approximately 1,185 foreign participants in communications-related programs in FY '83.

In many agencies there appears to be more activity than is reflected in explicit budget items, largely because communications development is considered a subset of other activities. Thus, of the 26 agencies included in the study, 24 were found to have some kind of communications development activity, although only eight had sizeable investments in this area:

- Agency for International Development (AID)
- Department of Commerce (DOC)
- Department of the Interior (DOI)
- Export-Import Bank of the United States (Eximbank)
- National Oceanic and Atmospheric Administration (NOAA)
- Overseas Private Investment Corporation (OPIC)
- United States Department of Agriculture (USDA)
- United States Information Agency (USIA)

3. THE NATURE OF ASSISTANCE

While the level and type of assistance range from modest technical training programs to large-scale investments in telecommunications systems, overall communications development activity can be categorized into six areas:

- Loans, loan guarantees, loan insurance, and grants
- Technical assistance
- Training
- Monitoring and brokering
- Conference participation
- Field projects.

Three agencies stand out as the most significant contributors to communications development. AID is notable for its 18-year commitment to the field and its pioneering field experimentation with communications technology to meet critical human needs. Eximbank provides sizeable loans and loan guarantees that have permitted several key countries to modernize their communications technology. USIA's presence in some 100 developing countries and its specialized training program for broadcasters constitute a significant resource for professionals interested in information diffusion.

Other agencies whose programs include interesting examples of communications development assistance are:

- United States Department of Agriculture (USDA)
- National Oceanic and Atmospheric Administration (NOAA)
- Overseas Private Investment Corporation (OPIC)
- Federal Aviation Administration (FAA)
- National Aeronautics and Space Administration (NASA)
- National Science Foundation (NSF)

Two programs supported by more than one agency, although funded at modest levels, are of particular importance--the U.S. Telecommunications Training Institute (USTTI), and the International Programme for the Development of Communication (IPDC). USTTI represents an innovative collaboration of 20 leading U.S. private sector companies and four U.S. government agencies--USIA, AID, the Federal Communications Commission (FCC), and DOC's NTIA--to provide up-to-date training in telecommunications, tailored to developing country professionals. IPDC is an international program to enhance the communications capabilities of the developing world, an initiative that stems from a U.S. proposal at the 1978 UNESCO General Conference. While IPDC's administrative operations are partially supported by UNESCO, project funds for national, regional, and world-wide projects are developed through voluntary contributions. U.S. Government aid to support selected IPDC projects is in the form of bilateral assistance from AID and USIA.

C. RATIONALE FOR COMMUNICATIONS DEVELOPMENT ASSISTANCE

Agencies cite a variety of justifications for communications development assistance that reflect particular agency missions. These justifications are in line with the overarching U.S. interests in this area, as expressed by Secretary of State George Shultz in a letter to Senator Charles Percy in September 1983. Briefly stated, these interests are: 1) the free flow of information, 2) the advancement of international commerce, and 3) expanded access to information and communications capacity by developing countries.

D. INSTITUTIONAL AND FINANCIAL COORDINATION

While there is a considerable variety of communications development programs and activities among sponsoring U.S. Government agencies, there appears to be little substantive coordination among them in this area. AID

and USIA have each completed surveys of their own activities. The USIA study provides the number of educational and professional program participants who have specific communications interests.

Mechanisms such as Participating Agency Service Agreements (PASAs) and Resource Support Service Agreements (RSSAs) are common among some agencies, particularly USDA, AID, USIA, and NSF. While these mechanisms provide efficient means of transferring funds from one agency to another, they do not appear to serve as vehicles for substantive coordination of communications activities between those agencies.

The creation of the Office of the Coordinator for International Communication and Information Policy (T/CIP) within the State Department and the existence of the Senior Interagency Group on Communication and Information Policy (SIG) provide mechanisms for consultation and cooperation among some agencies.

E. EVIDENCE OF DUPLICATION AND POSSIBLE GAPS

No evidence of duplication of efforts among U.S. Government agencies in this area was uncovered in the study. Rather than focusing on duplication, a fruitful goal for future efforts would be to determine what might be done to make Federal communications development assistance even more effective. Another useful subject for future study is how well existing programs meet U.S. policy goals.

A diagnosis of gaps in U.S. assistance to communications development is premature. However, despite the limitations of this study, two areas did emerge as worthy of further exploration. First, broadcast television appears to be an area of only modest U.S. Government investment internationally, a fact that is particularly surprising given the U.S.'s extraordinary capacity in this information technology area. Second, communications research, with the exception of selected AID, NSF, and USIA programs, appears to receive surprisingly little attention. Perhaps a more important shortcoming that might be addressed is that the levels of funding for programs such as telecommunications and computer technology, and even for radio broadcasting, may now be falling far short of developing countries' needs in these areas.

F. CONCLUSION

The overall picture that emerges from this initial study reveals a set of diverse communications development activities receiving U.S. Government support. While the dollar investment in communications development represents only a small percentage of overall U.S. Government assistance to developing countries, the programs identified in the study appear to be making a significant contribution to the ability of many developing countries to use communications for development.

U.S. policy clearly reflects a concern with the role of communications in the free flow of information, expanded commerce, and the improvement of communication capabilities within developing countries.

The programmatic picture is punctuated by innovative mechanisms such as USTTI and by impressive research results such as those that have emerged from AID's 10 years of experimentation with instructional radio. The boundaries of communications assistance encompass all development sectors--agriculture, education, and health.

Nonetheless, there has been little comprehensive analysis of present programs in this field. The findings of this admittedly non-analytical study lead one to conclude that communications development has demonstrated a substantial potential to contribute to the achievement of U.S. policy goals and to help meet the urgent needs of developing countries around the world. Further, if properly financed, communications development could contribute in significantly greater proportion to the solution of serious development problems.

**COMMUNICATIONS DEVELOPMENT:
A Preliminary Review of U.S. Government
Communications Activities for
Developing Countries**

I. BACKGROUND STATEMENT

A. INTRODUCTION

The growing recognition of the importance of communications systems and services throughout the world and their potential contribution to U.S. foreign policy goals has motivated this initial examination of the extent and scope of international communications-related activities of U.S. Government agencies. As outlined by Secretary of State George P. Shultz these goals are:

1. "To promote an environment in which ideas and information can flow more freely among nations,"
2. "To support the advancement of international commerce through efficient and innovative use of communications resources," and
3. "To expand information access and communications capabilities of developing countries".*

The objectives of this survey were to discover, through brief interviews with a preliminary sampling of U.S. Government departments and agencies, the possible extent and variety of communications development assistance activities over the past two to three years. In particular, the study attempted to uncover:

- Types of communications development activities;
- Collaboration among agencies and/or between agencies and the private sector;
- Documentation available at each agency;
- Approximate levels of U.S. investment in communications development.

It was not the intention of this study to provide a comprehensive or rigorous review of U.S. Government activity in communications development. It presents, rather, a "snapshot" of U.S. involvement.

* Letter from Secretary Shultz to the Honorable Charles H. Percy, Chairman of the Senate Committee on Foreign Relations, dated September 21, 1983.

B. DEFINITION OF TERMS

The following definition of communications development, formulated for the Senior Interagency Group (SIG) Report on Communications Development Assistance, was used by the survey team to identify communications activity in the developing world:

"Communications covers a vast range of human activities. This study will deal with one significant part of the subject. It is communications as part of the overall Third World development process. The study will focus on those elements in this process which are directly relevant to U.S. development assistance interests, both public and private. This involves, a) expansion of the overall telecommunications infrastructure (e.g. telephony, radio, TV, and data processing), and b) the specific role of telecommunications in such sectoral development areas as health, education, and agriculture. Non-telecommunications activities (books, films, postal system, etc.) will be discussed only to the degree that they relate directly to specific development activities."^{*}

As the study progressed, this definition was detailed and expanded to include:

- Development communications planning
- Instructional technology planning and systems
- Television and radio production and broadcast services
- Computers for instruction, communication, and management
- Telephone systems
- Postal services
- Publications
- Satellites
- Remote Sensing

It was evident in virtually every interview that the SIG definition was interpreted in a wide variety of ways among different agencies. These differences were not resolved during the study, and consequently the findings should not be used to make comparisons between agencies. The need to present the preliminary findings in a consistent fashion was addressed by grouping the reported communications activities by: function, services used or supported, medium or mode employed, and geographic distribution.

* From the text of the Report on Communications Development Assistance, Senior Interagency Group on Communication and Information Policy, June 1983.

C. SCOPE OF WORK

The following departments and agencies were included in the initial scope of this study:

- Department of Agriculture (USDA)
- Department of Commerce, National Oceanic and Atmospheric Administration (NOAA)
- Department of Defense (DOD)
- Department of Education (ED)
- Department of Labor (DOL)
- Department of Transportation (DOT)
- Federal Communications Commission (FCC)
- United States Information Agency (USIA)

Discussions during the course of the study led to additional interviews with representatives of the following agencies:

- Department of Commerce (DOC), International Trade Administration (ITA)
- Department of Commerce, National Telecommunications and Information Administration (NTIA)
- Department of Health and Human Services (HHS)
- Department of Housing and Urban Development (HUD)
- Department of the Interior (DOI), including the United States Geological Survey (USGS)
- Department of Justice (DOJ)
- Export-Import Bank of the United States (Eximbank)
- Federal Aviation Administration (FAA)
- National Aeronautics and Space Administration (NASA)
- National Science Foundation (NSF)
- Office of Management and Budget (OMB)
- Office of Technology Assessment (OTA)
- Overseas Private Investment Corporation (OPIC)
- Trade and Development Program (TDP)
- Treasury Department
- United States Postal Service (USPS)
- United States Trade Representative (USTR)

The scope of this study excluded interviews with representatives of the Agency for International Development (AID). AID activities have been documented separately in an earlier study, New Solutions for Serious Problems: A.I.D. and Development Communications, August 1983.

It should be noted, however, that AID activities in this area are exemplary, and include significant loans and grants, technical assistance, training, conference participation and support, large-scale field projects, and research. The AID projects emphasize radio, telephone, and

telecommunications, but include television, video, computers, print, film, audiocassettes, and a wide range of narrowband, satellite-delivered technologies such as audio teleconferencing, slow-scan television, and facsimile.

AID's activity is particularly noteworthy because it represents an 18-year commitment to communications research and to the development of impressive field experiments such as the Rural Satellite Program, the Radio Mathematics Project, the Radio Language Arts Project, the Basic Village Education Project, and others. These programs stand out because of their innovative and rigorous application of American scientific achievement to meeting basic human needs in some of the world's poorest countries. Although AID was not included in the interview phase of this particular study, information from AID's own study has been included selectively where it would enhance the reader's understanding of overall U.S. agency activity in the area of communications development.

A brief summary of AID's communications activities also appears in Appendix B of this report along with other agency profiles.

D. SURVEY METHODOLOGY

In establishing the survey methodology, the researchers prepared a set of preliminary survey topics, which were reviewed and approved by the contract monitors, and from which an open-ended interview guide was developed. Initial interviews were conducted with member agencies of the Senior Interagency Group on Communication and Information Policy (SIG). These interviews and a variety of other sources, including personal contacts and government telephone directories, were used to identify the remainder of the 75 individuals representing 25 government agencies who were interviewed in the course of the study. (AID is the twenty-sixth agency reported in some of the Exhibits that follow.) The interviews ranged in length from ten minutes to two hours.

The survey was designed to elicit similar information from each individual interviewed, but the diversity of agency activity dictated a wide range of responses. A number of follow-up interviews were conducted to verify information. Several of the agencies, including Eximbank, OPIC, AID, USIA, and NOAA, provided written documentation on their communications activities.

II. OVERVIEW OF COMMUNICATIONS ACTIVITIES IN DEVELOPING COUNTRIES

The information compiled from the survey interviews was synthesized by organizing communications activities in categories according to function, services used or supported, medium or mode employed, and geographic emphasis. Each of these categories is discussed in detail below. The function category proved the most useful for purposes of analysis and is therefore given more emphasis than the others.

A. COMMUNICATIONS ACTIVITIES CLASSIFIED BY FUNCTION

U.S. Government communications development assistance can be grouped in six principal functional areas:

- Loans, loan guarantees, loan insurance, and grants
- Technical assistance
- Training
- Monitoring and brokering
- Conference participation
- Field projects

1. Loans, Loan Guarantees, Loan Insurance, and Grants

Loans are defined as funds which must be repaid according to an agreed-upon schedule. Generally, loans for communications development are provided at below-market rates either to developing country governments or to businesses investing in developing countries. Several U.S. Government agencies make loans under these conditions, including Eximbank, OPIC, and AID.

Loan guarantees and loan insurance are also provided by Eximbank and OPIC. In these cases the loans themselves are often made by private banking enterprises and do not represent a direct use of taxpayer resources. From a substantive point of view, however, they do represent a U.S. Government contribution, as without the guarantee many developing countries would not qualify for the loans.

Grants are defined as funds which are allocated as part of an overall project or program with no requirement for repayment, and are often tied to joint funding provided by the receiving country.

Eximbank has recently begun offering loans at very favorable rates to developing countries, provided through a combination of Eximbank funds and AID

loans. The most recent example is a proposal offered to the Algerian telecommunications administration by Scientific-Atlanta, Inc. The package would give 90 percent financing at 8 percent interest for purchase of Scientific-Atlanta satellite communications network equipment. The Eximbank representative reported that this type of financing is offered to help offset the effects of the world-wide recession, a strong dollar, and attractive financing and development aid offered by other countries, such as France and Japan, which often result in equipment sales.

Eximbank's total exposure in loans, loan guarantees, and loan insurance for communications development is subdivided as indicated in Exhibit A. Eximbank estimates that 90 percent of this exposure is in developing countries.

OPIC offers services to U.S. companies that encourage them to invest in developing countries. These services include:

- Assistance in locating investment opportunities;
- Insurance to protect these investments; and
- Loans or loan guarantees to help finance projects.

Available OPIC figures indicate that investment insurance for developing countries for general communications purposes in FY '83 totaled approximately \$167 million. In addition, a limited number of OPIC loans are made through a "Special Projects" program which finances:

- Broker investments, that is, the pairing of suitable investors and projects, and
- Training programs in conjunction with manufacturing projects.

A small number of these training programs have included a communications component.

The AID study referenced above reports figures from FY '82 and does not discriminate between loans and grants. AID reports that it invested approximately \$90 million during FY '82 in communications development programs. Subsequent reports from the agency suggest that this annual figure could vary from \$20 to \$150 million, depending on the activities being defined as communications development and the specific year cited.*

* Minutes of SIG Working Group, May 23, 1984.

EXHIBIT A

EXIMBANK COMMUNICATIONS ACTIVITY
FISCAL YEAR 1983*
(in thousands of dollars)

<u>Category</u>	<u>Loans</u>	<u>Guarantee and/or Insurance</u>
Communication Equip., Misc.		\$26,422
Computers, Electronic	\$7,396	87,543
Earth Satellite Ground Station		127,500
Educational Material & Books		1,050
Electronic Components & Access.		9,550
Microwave Equipment		7,168
Photo & Cinema Equip. & Supply	122	48,456
Printed Matter, Misc.		1,980
Printing & Publishing Equip.	11,061	56,818
Radar Stations & Equip.	5,250	400
Radio & TV Broadcasting Equip.	5,983	22,966
Radio, TV, Stereo & Tape Sets		23,850
Sound Recorders & Reproducers		4,050
Tapes & Phonograph Records		4,000
Tel. & Teleg. Installations	2,798	23,868
TOTAL	\$32,610	\$445,821
 90% to developing countries	 <u>\$29,349</u>	 <u>\$401,058</u>

FISCAL YEAR 1984*
(in thousands of dollars)

<u>Category</u>	<u>Loans</u>	<u>Guarantee and/or Insurance</u>
Communication Equip., Misc.	\$7,006	\$26,121
Computers, Electronic	22,779	43,707
Earth Satellite Ground Station	5,100	
Educational Material & Books		1,050
Electronic Components & Access.	2,189	12,865
Microwave Equipment	4,769	12,862
Photo & Cinema Equip. & Supply		1,700
Printed Matter, Misc.		10,246
Printing & Publishing Equip.	4,097	31,474
Radar Stations & Equip.		400
Radio & TV Broadcasting Equip.	5,759	14,994
Radio, TV, Stereo & Tape Sets		155
Sound Recorders & Reproducers		2,100
Submarine Cable System		200
Tapes & Phonograph Records		2,400
Tel. & Teleg. Installations	11,070	11,696
Communications Sat. Ground Sta.	27,750	
TOTAL	\$90,519	\$171,970
 90% to developing countries	 <u>\$81,467</u>	 <u>\$154,773</u>

* Computer print-out provided by Eximbank.

Grants for feasibility studies and related planning services are offered through the Trade and Development Program (TDP). In addition, TDP co-finances, on a "reimbursable grant" basis, planning services for projects in which an investor intends to have equity participation. Approximately 10 percent of TDP services in FY '83-'84 has been for projects in the communications sector.

USIA incorporates modest monetary grants in its international visitor programs, academic exchanges, Voice of America (VOA) training workshops, and conferences and workshops offered by nonprofit U.S. organizations, but offers no loan programs.

NSF grants are made to specific projects in developing countries. Requests for grants must be made through a U.S. citizen or through a nonprofit U.S. institution. These grants are generally small, averaging \$5,000-10,000. The total NSF FY '83 budget for grants to projects in the developing world was \$3 million. Of this amount, total figures for communications grants were not available, but the authors believe they are likely to be relatively small.

In addition, grants in the form of stipends for participant expenses incurred by individuals attending training or degree programs in this country are provided by NSF, AID, State Department (Voluntary Cooperation Program), USIA, and NOAA.

2. Technical Assistance

Technical assistance is interpreted as the provision of individuals or groups of specialists to assist host country personnel for a defined period of time, under a specific scope of work. Both short-term consultants, whose assignments are usually less than three months, and long-term resident advisors, whose assignments range from one to five years, are included here. Technical assistance is often part of a larger project where equipment procurement; research, feasibility, and planning studies; engineering support; and systems management support may also play a role.

The U.S. Government contributes both directly and indirectly to technical assistance for communications development. Most Federal agencies interviewed for this study stated that their own agency funds are generally not spent on

international projects. The cost of these agencies' technical assistance is sometimes covered by interagency agreements such as PASAs and RSSAs with AID. AID also funds a sizeable amount of technical assistance through its own programs. It was also reported that recipient countries sometimes acquire matching funds for these services through loans obtained from international financial institutions such as multilateral banks. The U.S. Government, through the Treasury Department, is a major contributor to these institutions and therefore contributes indirectly as well.

In many cases, technical assistance in communications equipment operation is offered as part of a larger training project in an agency-specific subject area. For example, the Centers for Disease Control operated by the Department of Health and Human Services (HHS/CDC) offer technical assistance in the operation of radio broadcast equipment and telephone systems in order to further its goal of health information dissemination. Other agencies that include some communications activities within their broader developing country programs are DOD, DOI, FAA, NOAA, and DOT.

Examples from agencies providing communications-related technical assistance include:

- USDA: Two Tanzanians were trained in video production; equipment and expertise were provided, leading to the establishment of four regional production centers.
- HHS/CDC: Fifteen CDC professional staff assignments of two weeks to two months each are made each year for work in developing countries on family planning projects.
- USIA: Two VOA staff members were sent for one week to Kingston to work with 35 Radio Jamaica staff members on news-gathering and production techniques.
- USPS: The Postal Service provides technical assistance on an ad hoc basis for one to two weeks on postal-related topics such as facility development and postal operations.
- AID: Five instructional radio specialists have been provided to the Kenya Institute of Education for more than three years to develop a radio-based English teaching program for the first three grades of primary school. Similarly, more than 18 person/years of technical assistance have been provided to the Ministries of Health in Honduras, Ecuador, Peru, The Gambia, and Swaziland to use radio education to reduce infant mortality due to diarrheal dehydration.

3. Training

For the purpose of this investigation, training activities were defined as programs or services designed to prepare people to understand or apply communications systems or technologies. The survey revealed that there is a wide range of training programs administered by U.S. Government agencies, both within the U.S. and in developing countries, with communications technologies and techniques integral to the activity. It was also evident that some training programs employ communications more as an instructional tool than as a course of study, and are consequently not reflected in agency budgets for communications training.

Of the 11 Federal agencies in this survey that reported providing training, only USDA, USIA, NOAA, and the CDC have specific budget items for communications training. The remaining seven absorb these costs within other items in their project budgets. Training provided by CDC and FAA uses communications as an instructional tool.

The U.S. Telecommunications Training Institute (USTTI) was the most innovative approach to communications training uncovered in the study and, as a joint venture between the U.S. telecommunications industry and the U.S. Government, provides an interesting model of public and private sector collaboration. USTTI offers tuition-free training in telecommunications technologies and management techniques to qualified applicants from developing countries. In 1983, its first year of training, USTTI offered 17 training programs that provided training to more than 200 telecommunications managers, engineers, and technicians from 61 developing countries. Most of the training is provided by U.S. corporations, with AID, FCC, NTIA, and VOA offering courses as part of the U.S. Government's contribution. AID and USIA also provide funds to support the travel and per diem expenses of many participants. In-kind support, broadly defined as release time and associated expenses, for AID, FCC, or NTIA staff to plan and participate in USTTI seminars is an illustration of absorbed communications-related support for developing countries.

A total of approximately 1,185 communications-related training opportunities were offered to foreign participants in FY '83. A rough estimate of the number of participants in such programs identified in the survey is as follows:

- USDA 120 in 1983; 70 in 1984 (to date)
- FAA 225 in 1983 (many are pilots and technicians)
- NOAA 360 in 1983
- USIA/VOA Unknown in 1983; 97 in 1984 (to date)
- AID 250 in 1983
- DOI/USGS 30 to 40 (annually)
- USTTI 200 in 1983

Communications training programs that require sophisticated technology or access to specialized resources are often conducted in the U.S. VOA and AID are among the few agencies that provide training overseas.

In addition to the training opportunities mentioned above, it is estimated that USIA's International Visitor programs served approximately 700 visitors in the communications field in 1983, including both individual and group programs.

4. Monitoring and Brokering

Monitoring in the form of regular program review helps ensure that U.S. support is used effectively for the purpose originally intended, and is often based on evaluation criteria on which there is prior agreement. Monitoring helps track issues important to U.S. policy. Specific agencies in this study that monitor communications-related loans to ensure that U.S. funds are being spent in compliance with policy as expressed in contracts and agreements include:

- Eximbank
- OPIC
- AID
- Treasury Department
- OMB

The brokering function of certain Federal agencies is that of advocate, promoting U.S. products and services. It can also be defined as the process of matching communications needs with appropriate resources. There was evidence that several U.S. Government agencies in this study perform this role to some degree. The three agencies with specific responsibility for brokering the services and products of U. S. manufacturers and vendors are OPIC, the U.S. Trade Representative (USTR), and DOC's International Trade Administration (ITA), whose common concern is to ensure the continued competitiveness of U.S. products and services in the international marketplace. Future coordinated

efforts may be key to maintaining and enhancing the U.S. position in world markets.

OPIC has a small but unique program, entitled "Investment Encouragement," that makes available approximately \$500,000 annually for special projects in the category of "broker investment." This brokering role consists of finding suitable investors and matching them with viable projects.

5. Conference Participation

Conference participation, for purposes of this survey, includes attendance at international conferences, workshops, seminars, and committee meetings whose theme or principal agenda is related to communications. The event may take place in the United States or abroad and may not necessarily focus exclusively on developing countries. Participation in the World Administrative Radio Conferences (WARCs) or in conferences sponsored by the IPDC, ITU, or WHO are examples.

Conference participation may also include the sponsorship of or involvement in trade shows overseas. The Trade Promotion Office of ITA coordinates U.S. participation in international trade shows.

The survey revealed that most Federal agencies have budget provisions to reimburse staff for approved travel expenses incurred as participants in international conferences. In some projects these funds support participants from foreign countries who would otherwise be unable to attend. AID provides stipends to representatives from developing countries to attend conferences. Few agencies could provide specific details on the amount spent on international conference participation, nor was it possible to determine the number of people or the amount of time spent on international travel that was communications-related. It was apparent that U.S. agencies' participation in international conferences has a direct relationship to each agency's mission, but that this participation is relatively infrequent.

6. Field Projects

Field projects are defined as any agency-specific, long-term, on-site activity designed to effect substantial changes in a developing country. Field projects generally incorporate a mix of training and technical

assistance activities. Typically, field projects are supported either by grants or loans to the developing country involved.

AID's direct contribution to field project development has been extensive and ranges from a significant investment in Egypt's telephone system, to 10 years of systematic and related research on the use of radio to improve classroom instruction, to major research programs on communications support to agriculture and health initiatives.

USDA has field projects in Tanzania, Indonesia, and Portugal that incorporate communications. DOL has a billion dollar reimbursable services contract with Saudi Arabia that uses advanced communications technologies to support instruction.

CDC, with \$6 million in annual funding from AID, designed and implemented the Combating Childhood Communicable Diseases (CCD) Project in 12 African countries. This project includes the use of radio, telephone, and print media for dissemination of information, although these are not the primary focus of this activity.

Exhibit B is a summary chart of sample agency communications activities by function.

AGENCY COMMUNICATIONS ACTIVITY BY FUNCTION

	LOANS/ GRANTS	TECHNICAL ASSISTANCE	TRAINING	BROKERING/ MONITORING	CONFERENCE PARTICIPATION	FIELD PROJECTS	OTHER
AID	☆	☆	☆		◆	☆	COLLABORATES WITH AND FUNDS OTHER AGENCIES' PROJECTS
DOC				◆	◆		
DOD		◆	◆				PROVIDES FOR TRANS OF EQUIP FROM DOD TO HOST COUNTRY
DOI		◆	◆	◆			ASSUMES TRANSMN COSTS IN MICRONESIA FOR INTELSAT SERVICE
DOJ							INS HAS PERIPHERAL INTEREST
DOL						◆	PROMOTES DISTANCE LEARNING
DOT		◆					
ED					◆		
EXIMBANK	☆			☆			
FAA		◆	◆				
FCC		◆	◆		◆		USTTI SPONSOR
HHS/CDC		◆	◆			◆	INFORMATION DISSEMINATION EMPHASIS
HUD							MAINTAINS AN OFFICE FOR INTERNATIONAL AFFAIRS
NASA		◆			◆	◆	SUPPORTS OPERATIONAL USE OF ATS-1 and ATS-3
NOAA		◆	◆				MANAGES LANDSAT - U. S. GEOL SURVEY COORDS DIST
NSF	◆	◆	◆		◆	◆	SUPPORTS COMMUNICATIONS STUDIES
NTIA		◆	◆				USTTI SPONSOR
OMB				◆			
OPIC	◆			☆			MATCHES INVESTORS WITH PROJECTS
OTA				◆	◆		
TDP	◆						
TREASURY				◆			REPRESENTS U. S. IN BAL. OF TRADE ARRANGEMENTS
USDA		◆	◆			◆	EQUIP TRANS TO HOST COUNTRY AT PROJECT COMPLETION
USIA	◆	◆	☆		◆	◆	VISITOR PROGRAM, NEWS SERVICES, MATERIALS DISTRIB.
USPS		◆			◆		PROVIDES SURPLUS POSTAL EQUIPMENT
USTR				◆			

☆ Particularly Significant Emphases

B. COMMUNICATIONS ACTIVITIES CLASSIFIED BY TYPE OF SERVICE USED OR SUPPORTED

Many activities were identified during the study as using or supporting any of five categories of service: educational, library, telecommunications and broadcasting, postal, and studies and analyses.

1. Educational Services

Educational services are defined as instructional activities that support training and technical assistance programs available to developing countries. The definition of educational services is deliberately broad so as to encompass communications both as an instructional tool and as a course of study.

Although numerous short-term training programs could be included as educational services, this section will mention only a few long-term, ongoing educational programs.

- The FAA's Academy and Aeronautical Center in Oklahoma City trains over 400 foreign nationals per year as pilots, air traffic controllers, technicians, and flight inspectors, more than half of whom are from developing countries. Approximately 10 percent of the subject matter is communications-related.
- The VOA Training and Development Division in USIA offers an annual six-week radio broadcasting workshop for students from developing countries. Eight to 10 students are enrolled in each session. VOA plans to expand the one six-week session to two four-week sessions in late 1984.
- USDA's Office of International Training offers five courses specifically directed toward communications development. In 1983, 121 students from LDCs enrolled in these five courses. Seventy trainees received similar training in the first half of 1984. The average duration of USDA courses is six weeks.
- NOAA has established an extended program in meteorology, including remote sensing, that allows students from developing countries to work toward an M.A. or B.A. degree at selected U.S. universities. Short-term training is also available through NOAA. Approximately 200 students from LDCs enroll in NOAA training programs annually. There is also some training using Apple computers included in NOAA's Global Climatic Program.

2. Library Services

Evidence of specific, directed library support to communications development in developing countries was scant, although AID has contributed to the development of a large-scale communications library in Indonesia, as well as to a new program in Swaziland where a communications library plays an important role. USIA maintains 87 general libraries located in 58 developing countries, but these would typically have relatively small collections on communications. However, USIA deems these libraries to represent a unique source of information in many of these countries. NSF is currently developing a mechanism to provide 35-40 scientific and technical journals on a regular basis to libraries and universities in sub-Saharan Africa, possibly through coordination with USIA.

3. Telecommunications Services

A number of telecommunications services and technologies are associated with Federal agency projects in developing countries. For example, AID is investing sizeable resources in a large-scale pilot program testing the applicability of satellite-based telecommunications systems to rural development in Indonesia, the West Indies, and Peru.

Radio continues to be used widely throughout the developing world. VOA makes extensive use of radio for dissemination of information and provides "packaged programs" and "service feeds" to developing country radio stations. The Centers for Disease Control use radio to disseminate health information. AID has used radio extensively for many years as a primary medium of rural education in projects such as Radio Mathematics, Radio Language Arts, and Mass Media and Health Practices.

Television, both broadcast and closed circuit, is widely used in the developing world, although its use in conjunction with U.S. Government projects in the Third World has not been widespread. Limited facilities and equipment, high costs, and lack of relevant informational and educational program materials have inhibited its use. During the 1970s AID experimented with educational television in several countries, notably El Salvador, but presently has no major initiatives utilizing instructional television. The TV and Film Service at USIA now has a television production and distribution service. Worldnet, a USIA international video conferencing service, has added

an innovative dimension to press conferences by enabling journalists throughout the world to conduct live interviews with American leaders and policy makers via satellite.

4. Postal Services

Some communications activities utilize postal services in conjunction with training, technical assistance, or information dissemination. (The use of the mails for project management and administration was not considered in the study.)

- VOA makes extensive use of the postal system for distribution of packaged programs to USIS posts throughout the world.
- The International Bureau of Education, to which ED contributes, distributes microfiche by mail to member organizations.
- USGS distributes LANDSAT data by mail to the U.N. Environmental Programme for use by developing countries.
- USPS provides a variety of technical assistance to developing countries but does not promote its system by mail.

The use of postal services by U.S. Government agencies to support or promote communications activity in developing countries is limited. The absence of a highly-developed infrastructure is a contributing factor to the limited use of postal services in developing countries.

5. Studies and Analyses

Studies and analyses related to communications development are conducted by several of the agencies contacted. These are varied in nature, and range from feasibility studies for telecommunications networks to the evaluation of food supply through remote sensing data. Some examples are provided below:

- NTIA plans to analyze the requirements of the U.S. communications industry in the promotion of products and services.
- NOAA evaluates remote sensing data to determine future food supply levels in developing nations. This information is then cabled to the appropriate ministries. Training and technical assistance are also part of this program.

- NSF has carried out an evaluation study on the impact of commercial advertising on Indonesian television, as well as a study of the effectiveness of technology transfer methods.
- AED has supported an extensive series of analytical studies in communications development, including needs assessments, feasibility studies, and project evaluation. Among the examples are feasibility studies for satellite-based telecommunications networks in Peru, the Philippines, Senegal, Indonesia, the West Indies, and Yemen.
- TDP has financed several feasibility and pre-feasibility studies on telecommunications infrastructure development in Third World countries.

Other agencies that conduct or finance feasibility studies on communications-related endeavors include OTA, OPIC, and Eximbank.

Exhibit C is a summary chart of sample agency communications activity by type of service used or supported.

AGENCY COMMUNICATIONS ACTIVITY BY SERVICE

AGENCY	TELECOMMUNICATIONS				
	EDUCATION	LIBRARY	AND BROADCASTING	POSTAL	STUDIES & ANALYSIS
AID	◆	◆	☆		◆
USDA	◆		◆		
DOC					
DOD	◆		◆		
ED				◆	◆
HHS	◆		◆		
HUD					
DOI	◆		◆	◆	
DOJ					
DOL	◆				
DOT					◆
TREASURY					◆
EXIMBANK			☆		◆
FAA	◆		◆		
FCC	◆		◆		◆
NASA	◆		◆		
NOAA	◆		◆		◆
NSF	◆	◆	◆		◆
NTIA	◆		◆		◆
OMB					
OTA					◆
OPIC			◆		◆
TDP					◆
USIA	◆	☆	◆	◆	
USPS				◆	
USTR					

C. COMMUNICATIONS ACTIVITIES CLASSIFIED BY MEDIA OR MODE

In reviewing the information provided by the various agencies on their activities involving communications media, it was necessary to distinguish between activities that use a particular medium (video or computers, for example) as a vehicle to train or inform individuals in developing countries, and those that invest in building the capability of developing country people to use communications media to foster development. For purposes of this study, the former use shall be referred to as "medium-use," the latter as "medium-development." In the authors' view, the long-range benefits of medium-development tend to be more durable in contributing to a developing country's communications development program; however, examples of medium-use are provided to illustrate the breadth of familiarity with different media of the various Government agencies.

1. Television

Television and its associated technologies, videoplayers and videocassettes, are used by several agencies for medium-use purposes. The survey found, for example, that USIA's TV and Film Service produces television programming for its Satellite File, and uses video conferencing for its Worldnet international press conferences.

There was scant evidence of investments in television as a medium for development during FY '83, with several exceptions:

- NSF evaluated television as a tool for technology transfer in Indonesia.
- USDA is helping to set up video production centers and training production staff in Tanzania and India.
- AID is supporting the development of educational television production capability in Indonesia.

2. Radio

Radio, on the other hand, was being supported in both the medium-use and medium-development categories. Examples of the use of radio as a vehicle for information dissemination include the following:

- VOA uses radio broadcasts extensively to inform developing nations about current news developments and U.S. policy

positions. In addition, packaged radio programs and service feeds are provided to developing nations' radio stations and to USIA posts in these countries for redistribution.

- Radio is used in HHS/CDC's 3CD project for information dissemination.

Investments in building developing countries' capabilities to use radio as a medium for development include the following:

- Eximbank funds radio equipment purchases in developing countries.
- AID projects in over 20 countries assist host government personnel in applying radio to education, agriculture, health, population, and nutrition programs.
- VOA sponsors training in radio production for developing country personnel.
- USITT is offering several radio-related courses, including Broadcast Studio Operations and High-Frequency Broadcasting, to be conducted by VOA; and Broadcast Systems, Operations, and Management, conducted by the Harris Corporation.

3. Telephone

The use of telephone and associated narrowband technologies in the development process is ubiquitous, and is in many cases vital to the success of development efforts, as the telephone is often the only means of communicating between project offices. The examples of telephone as medium-use are therefore limited below to a few representative activities:

- VOA plans to use telephony for radio program distribution through its proposed Code-a-phone.
- Telephones are used as one means of information dissemination by HHS/CDC.

Support for telephony as medium-development includes:

- AID support for a rural communication services project in Peru, and for distance education projects using audio conferencing systems in Indonesia and the Caribbean.
- TDP has funded planning services for cellular telephone projects in Costa Rica and Peru.
- NASA continues to support ATS-1 and -3 for telephony service.

- Distance education by telephone will be a part of DOL's Center for Advanced Learning Systems (CALs) project.
- DOI supports telephony service in Micronesia and other countries in the Pacific Basin.
- Eximbank provides loans for telephony system expansion.
- OPIC provides loans for companies interested in telephony expansion in developing countries.
- AID has made a sizeable investment in the expansion of Egypt's telephone capacity.

4. Computers

Computers, like telephones, are becoming more commonplace in supporting development efforts, and the distinctions between medium-use and medium-development are difficult to make. The examples below are representative of activities identified in the survey.

Computers as Medium-Use:

- NASA uses computers for satellite tracking and switching.
- NSF uses computers in a computerized geographic data system in Mexico.

Computers as Medium-Development:

- FAA's training for air traffic controllers includes extensive computer activity.
- NTIA and FCC include computer-aided techniques in their course on radio spectrum management for USTTI. USTTI also offers courses in Computer Networks in Telecommunications, Information Systems for Telecommunications Management, and Uses of Microcomputers in Telecommunications, as well as other courses in digital technologies.
- AID is supporting the introduction of computers for management, information, and education in several development projects.

5. Print

Most communications-related training throughout the developing world relies heavily on print instructional materials. USIA has several print-based programs, including magazines targeted to various world regions, a book translation and dissemination service, printing centers in Manila and Mexico City, and centers to support foreign journalists in the U.S. It has explored the development of new textbooks for Africa. The USDA project in Tanzania emphasized traditional forms of communications, such as face-to-face, augmented by illustrated pamphlets and posters. In addition Eximbank has assisted in funding print-related endeavors such as a newsprint production mill in Mexico.

In most of these examples, print is being used simply as a medium of information transfer. A few programs, such as AID's investments in educational campaigns, are actually training developing country educators to use print media more effectively as a development tool.

Exhibit D is a summary chart of sample agency communications activities by medium or mode.

AGENCY COMMUNICATIONS ACTIVITY BY MEDIUM/MODE

AGENCY	TELEVISION	RADIO	TELEPHONE	COMPUTER	PRINT
AID	◆	☆	☆	◆	◆
USDA	◆				◆
DOC					◆
DOD	◆			◆	◆
ED					◆
HHS		◆	◆	◆	◆
HUD					
DOI					◆
DOJ					
DOL			◆		◆
DOT					◆
TREASURY					
EXIMBANK		☆	☆		◆
FAA	◆			◆	
FCC		◆		◆	◆
NASA			◆	◆	
NOAA				◆	
NSF	◆			◆	◆
NTIA				◆	
OMB					
OTA					
OPIC		◆	◆	◆	
TDP			◆	◆	
USIA	◆	☆	◆		◆
USPS				◆	
USTR					◆

☆ *Particularly Significant Programs*

D. COMMUNICATIONS ACTIVITIES CLASSIFIED BY GEOGRAPHIC AREA

Communications-related services provided or supported by U.S. Government agencies can be grouped in three geographic categories: some projects are world-wide in scope, some have a regional emphasis, and others concentrate on individual countries.

1. World-wide

- USIA and its subsidiary, VOA, have a presence in some 100 developing countries.
- AID-supported projects are found in approximately 70 developing countries. Of these, some 50 are projects with communications components.
- The Course Development and Overseas Projects Branch of the USDA conducts a number of courses on ~~communications~~ development for Third World personnel working in the agricultural sector. Applicants are accepted from throughout the developing world.
- The FAA's Academy and Aeronautical Center provides training, a portion of which is communications, to foreign nationals from throughout the world. Records for 1983 reveal that the largest number of trainees from developing countries came from Saudi Arabia, Panama, and Thailand.
- CDC is presently involved in 30 "bilateral" agreements in cooperation with AID and WHO. Although CDC's projects are not classified as communications projects, CDC makes extensive use of the mass media to promote and implement project goals.
- The Office of the USTR and ITA in DOC, on behalf of their private sector constituency, operate on a world-wide basis.
- Although Eximbank has a world-wide mandate, recent loan agreements seem to indicate that Latin America has been the major recipient of Eximbank telecommunications loans and loan guarantees in the last year.
- One hundred and twenty-seven countries have subscribed to NOAA's data brokering services. Developing countries, however, are underrepresented, perhaps because costs for the services have risen dramatically in the last two years.
- TDP provides planning services for a number of AID-graduate and non-AID middle- to upper-income developing nations.

2. Regional

Several of the communications activities mentioned during the study focus on regional assistance:

- CDC's 3CD Project presently serves 12 African countries.
- DOI, honoring its commitment to the Pacific Trust Territories that have opted for independence, continues to maintain an active interest in Pacific Basin communications.
- NOAA has provided satellite and data information training opportunities to nine countries in South and Southeast Asia. A similar program is planned for Sahelian Africa.
- Latin America has been the focus of several Federal agency communications projects, training programs, grants and loans. The following U.S. Government agencies are presently involved in some communications-related activity in Latin America: DOT, FAA, NOAA, NSF, USPS, DOD, and Eximbank.
- Communications activities in sub-Saharan Africa are supported by the following Federal agencies: USDA, HHS/CDC, NASA, NOAA, and NSF.

3. Country by Country

As mentioned above, AID has some 50 projects in developing countries that have communications components. Among the countries that have AID-supported projects with a primary communications emphasis are:

- Indonesia
- Peru
- Jamaica
- Dominican Republic
- Kenya
- Honduras
- The Gambia
- Liberia

The following countries have two or more projects supported by other U.S. Government agencies. (These were not included in the regional programs list.)

- Bangladesh - NOAA and HHS/CDC
- People's Republic of China - DOC, ED, NOAA, and NTIA
- Egypt - NOAA, NSF, and USPS
- India - NOAA and USDA
- Indonesia - USDA and NSF
- Korea - DOD and USPS
- Mexico - NTIA and USPS
- Panama - NOAA and USPS
- Saudi Arabia - DOL and FAA

Exhibit E shows the regional emphasis of the communication activity in U.S. agencies.

COMMUNICATIONS ACTIVITY: REGIONAL EMPHASIS

ASIA



AID
NOAA
USDA
TDP
NSF
USIA

MIDDLE EAST



AID
DOL
DOD
USIA

LATIN AMERICA



AID
NOAA
DOT
FAA
EXIMBANK
DOD
NSF
USIA
USPS
TDP

AFRICA



AID
USDA
USIA
HHS/CDC
NASA
NOAA
NSF

III. OVERVIEW OF U.S. GOVERNMENT AGENCY COMMUNICATIONS ACTIVITIES BY LEVELS OF PRIORITY

A. PRINCIPAL CONTRIBUTORS

As reported above, three agencies stand out as the principal contributors to communications development as defined in this study. Eximbank loans for communications development totaled approximately \$29 million in FY '83 and some \$80 million in FY '84, for a two-year average of approximately \$55 million. Where FY '82 figures were available, AID reported approximately \$90 million of that fiscal year's funds earmarked for communications projects. AID officials estimate that annual investments could range from \$20 to \$150 million, depending on the range of activities included in the definition of communications development. USIA reports approximately \$145 million as its entire budget for developing countries in FY '84. A tighter definition of communications development could reduce this figure by one-half to two-thirds. While these numbers represent a sizeable dollar figure, they are still a relatively small percentage of their agencies' total activity.

Among these three agencies, the types of activities supported are significantly different:

- Eximbank tends to focus on infrastructure development programs, such as loan guarantees to Mexico's two communications satellites, which would have difficulty acquiring funding otherwise.
- AID stresses communications as a tool to meet human needs.
- USIA assistance emphasizes information dissemination and training opportunities for developing country personnel.

B. OTHER IMPORTANT CONTRIBUTORS

There are several other Federal agencies that have communications development projects involving developing countries, some of which are funded by the agencies themselves, others by the country involved or by a third party such as the World Bank, WHO, or UNDP. NTIA and FCC, for example, absorb the costs of their participation in USTTI. DOL, in cooperation with the Treasury Department, has an extensive project in Saudi Arabia that is paid for entirely by the Saudi Arabian Government. USPS provides technical assistance and surplus equipment at its own expense. DOI's continued support for

telecommunication services in the Pacific region and the NSF grants for projects in developing countries are other illustrations of agency-funded activities.

C. LIMITED CONTRIBUTORS

Finally, there are Federal agencies whose communications-related activity in developing countries is relatively limited. It may consist of participation at an occasional conference whose theme is broad enough to include communications development or, on occasion, a staff person may be given a short-term assignment in a developing country. Agencies whose primary focus is to monitor communications activities in developing countries are also included in this category.

D. INTERAGENCY RELATIONSHIPS

While there is a considerable variety of communications development programs and activities among sponsoring U.S. Government agencies, there appears to be little substantive coordination among them in this area. The creation of the Office of the Coordinator for International Communication and Information Policy (T/CIP) within the State Department and the existence of the Senior Interagency Group on Communication and Information Policy (SIG) provide mechanisms for consultation and cooperation among some agencies.

Mechanisms such as Participating Agency Service Agreements (PASAs) and Resource Support Service Agreements (RSSAs) are common among some agencies, particularly USDA, AID, USIA, and NSF. While these mechanisms provide efficient means of transferring funds from one agency to another, they do not appear to serve as vehicles for substantive coordination of communications activities between those agencies.

Consistent with its mandate to assist developing nations, AID has supported interagency relationships that facilitate the efforts of other agencies in developing countries. It also cooperates with funding agencies, both within and outside of the U.S. Government; provides financial aid for USTTI trainees and sponsors one course for USTTI; and, at the international level, funds IPDC and works with UNDP, WHO, and other organizations to advance the development of Third World countries in communications. Over the past years, AID has had interagency relationships with several Federal agencies

managing or supporting communications-related projects in developing countries, including:

- DOI's USGS Office of International Geology and the EROS Data Center, working in conjunction with AID and developing countries, provide assistance in analysis and application of remote sensing data through training courses and workshops.
- Eximbank and AID have entered into a relationship to offer mixed-credit funding for communications-related projects.
- HHS/CDC receives \$6 million annually from AID for its health information dissemination projects in developing countries.
- NASA's Lewis Research Center is conducting research on using solar power to provide low-cost, reliable electricity for small communications earth stations, with support from AID's Office of Energy.
- NOAA's Early Warning program was developed at the request of AID and receives \$2.5-3 million in AID funding annually. The NOAA/NESDIS Assessment and Information Services Center (AISC) prepares special assessment reports for AID which are used to estimate the magnitude of drought impact, potential for food shortage deficits, and/or disaster assistance needs.
- NSF and AID have co-funded the Remote Sensing Center in Cairo. They also cooperated in sponsoring a workshop on the Relationship between Communications Technology and Economic Development in April 1984.
- NTIA's Institute for Telecommunication Sciences (ITS) cooperated with AID in conducting a parametric study of small earth station requirements for the AID Rural Satellite Program.
- OPIC and AID cooperated in sponsoring Telemission, linking U.S. business investors with Caribbean government and business leaders.
- USDA's projects respond to priority needs identified by AID. AID provides funding for many field projects, some of which incorporate a significant communications component.
- USIA's VOA Training of Liberian Technical and Programming Personnel Project was funded in part by AID.

Exhibit F details Federal agency collaboration in communications development activities.

FEDERAL COMMUNICATIONS COLLABORATION IN COMMUNICATIONS ACTIVITIES

	AID	DOC	DOD	DOI	DOJ	DOL	DOT	ED	EXIMBANK	FAA	FCC	HHS/CDC	HUD	NASA	NOAA	NSF	NTIA	OMB	OPIC	OTA	TDP	TREASURY	USDA	USIA	USPS	USTR
AID				●		●		●			●		●	●	●	●		●				●	●	●		
DOC									●	●											●					●
DOD					●																●					●
DOI	●												●									●				
DOJ			●											●												
DOL	●																					●				
DOT																						●				●
ED																								●		
EXIMBANK	●																				●					
FAA		●																			●					
FCC		●																								●
HHS/CDC	●																									●
HUD																										
NASA	●			●																						
NOAA	●																									
NSF	●																									
NTIA	●									●																
OMB																										
OPIC	●																			●						
OTA																					●					
TDP		●						●								●										
TREASURY			●			●																●				
USDA	●																									●
USIA	●							●								●										
USPS	●																									
USTR		●		●					●	●												●				

E. BILATERAL RELATIONSHIPS

Although a number of agencies have cooperative agreements with developing countries that include funding, personnel provisions, and other in-kind support, direct country (bilateral) communications agreements were mentioned by only five agencies other than AID. Of these five, four mentioned the People's Republic of China. These agencies were:

- USIA/VOA - China, Korea
- NOAA - China
- DOC - China
- ED - China
- DOL - Saudi Arabia

F. MULTILATERAL RELATIONSHIPS

This survey identified 11 examples of multilateral relationships that included a communications component. These were between the U.S. Government and:

- ITU
- OECD
- UNDP
- UNEP
- WMO
- World Bank
- UNESCO
- WHO
- FAO

Only two of the international organizations can be considered multilateral communications agencies: the ITU, with its broad mandate as an international telecommunications regulatory agency, and the UNESCO-based IPDC, which is one of the few multilateral agencies whose charter specifically mandates communications development support.

The U.S. contributes to all of the international agencies listed above. Without further study, however, it is not possible to determine level of effort for communications-related activity of a multilateral nature in developing countries.

G. PRIVATE-SECTOR RELATIONSHIPS

While a number of private sector organizations participate in some way in the area of communications development, the most innovative collaboration between the public and private sectors occurs through USTTI, already described briefly above. Due to the relative importance of this activity, the authors have added a brief profile of USTTI activities to Appendix B. The participating private-sector firms involved in USTTI courses include:

- Academy for Educational Development, Systems Services Division
- AT&T
- Amateur Radio Relay League
- Aeronautical Radio, Inc.
- Collins Transmission Systems Division/Rockwell International
- COMSAT
- Digital Equipment Corporation
- E. F. Johnson Co.
- Harris Corp./Broadcast Division
- IBM Corporation
- ITT
- M/A-COM
- MCI
- Motorola
- Northern Telecom
- Racal-Milgo
- Spectrum Planning
- Taurio Corporation
- TRT Telecommunications
- Western Union Telegraph Co.

IV. FINDINGS

A. LEVEL OF SUPPORT

1. Precise staff and budget figures for communications activity in developing countries are not readily available from most agencies interviewed.
2. In 17 out of 26 agencies reviewed, including AID, funding for communications-related projects in developing countries was absorbed within existing budgets.
3. The three largest contributors uncovered in this preliminary survey were the Eximbank, AID, and USIA. Further analysis of each organization's activities is required to understand more fully the amount and relative significance of their respective contributions.
4. Documentation on communications-related programs in developing countries was available from a few agencies, including NOAA, AID, USIA, OPIC and Eximbank.* Other agencies provided no literature on their international activities.

B. PROGRAM SERVICES

1. Technical assistance appears to be the most frequent type of communications development activity among Federal agencies. Technical assistance is offered by 14 of the 26 agencies reviewed, ranging from short-term consultancies to long-term programs.
2. Training programs and services are offered by 11 of the 26 agencies contacted, ranging from one-day workshops to 90-day courses of study.
3. No pattern emerged across U.S. Government agencies regarding personnel assignments for technical assistance and field projects, or length of training programs.
4. It is estimated that approximately 700 of the 2,500 USIA international visitors in 1983 were classified as communications specialists.

* "Climatic Assessment Technology: Disaster Early Warning and Technical Assistance in the Developing World"
"New Solutions for Serious Problems: AID and Development Communications"
"A Guide to USIA Programs in Communications Development"
"U.S. Government International Exchange and Training Programs"
"Overseas Private Investment Corporation"
"OPIC Programs for Investment Encouragement"
"Export-Import Bank of the United States: 1983 Annual Report"

5. An estimated 1,185 participants from developing nations received some communications-related training through U.S. Government agencies during FY '83.
6. USTTI is an innovative collaborative effort between the private sector and four U.S. Government agencies. NTLA, FCC, USIA, and AID contributed to training for 203 participants in 1983.
7. Distance education, although presently receiving increased attention by DOL, has been used extensively only in AID-sponsored radio education and telecommunications programs, and has been demonstrated during several USIA visitor programs.
8. The use of the telephone as a telecommunications medium in support of, or in conjunction with, communications projects in the developing world was mentioned by eight Federal agencies. Radio and print, however, continue to be the dominant media in communications development within the developing countries.
9. The use of video as an instructional tool was cited by USDA and FAA. NSF has funded a study now under way to evaluate the use of television and other media for technology transfer in Indonesia. USIA was the only Federal agency to distribute programs for broadcast television service in developing countries.
10. The use of microcomputers as an instructional and administrative tool was mentioned by eight agencies:
 - AID
 - HHS/CDC
 - FAA
 - FCC
 - NASA
 - NOAA
 - NTLA
 - USPS
11. Although agencies such as USDA and HHS/CDC have projects whose focus is regional or country specific, there were no distinct geographic patterns for communications activity in developing countries.
12. Survey respondents tended to describe their agencies' international mandates as world-wide.
13. The survey revealed no significant utilization of the postal service as an adjunct to communications development.
14. General library support was being provided by USIA, which maintains 37 libraries in 58 developing countries. Tailored library support in communications was being provided by AID through programs such as those in Indonesia and Swaziland.

C. FINANCING

1. Several agencies conduct training programs in developing countries on a cost-reimbursable basis. Participants in training programs conducted in the U.S. are often eligible to receive stipends provided by AID.
2. The only U.S. Government agencies reviewed that reported making loans to developing countries for communications development are Eximbank, OPIC, and AID. Monetary grants for projects in developing countries are made by USIA, AID, and NSF.
3. Some type of collaboration with AID to provide technical assistance or training for developing countries is common among several of the Federal agencies contacted.
4. Funding for feasibility studies for communications projects is available from agencies such as Eximbank, OPIC, TDP, and AID.
5. One respondent estimated that NSF grants awarded to foreign students attending U.S. institutions of higher education total millions of dollars per year. Although one can assume that a portion of these grants goes toward communications education, the number of students from developing countries receiving these grants and their areas of study is unknown, because each recipient institution maintains its own records in these areas.

D. ADMINISTRATION

1. Federal agencies that track communications-related activity in developing countries were grouped in a monitoring category. Agencies such as Treasury, AID, OMB, OPIC, and Eximbank monitor specific projects to ensure that U.S. funds are spent in compliance with contracts and agreements. CDC and USGS also perform monitoring functions with a focus on information collection and dissemination.
2. Three Federal agencies were identified as serving a brokering or facilitating function on behalf of U.S. manufacturers, vendors, and service providers:
 - USTR
 - DOC
 - OPIC
3. Some U.S.-funded projects transfer equipment to the host country upon completion of U.S. involvement:
 - DOD
 - USDA
 - NASA
 - AID
4. Agencies such as USPS and FAA make available used or surplus equipment to developing countries. Shipping costs are usually the responsibility of the recipient and are often an important barrier.

V. OBSERVATIONS

- A. It is difficult to measure both the actual and relative value of communication services provided by the U.S. to the developing world. Actual figures are often not categorized as communications, and available estimates are difficult to interpret in terms of any one agreed-upon definition.
- B. There appears to be more Federal agency communications-related activity in developing countries than is reflected by specific budget items, personnel assignments, or agency charter.
- C. Communications-related activity in developing countries provided or supported by U.S. Government agencies lacks substantive coordination.
- D. Collaborative efforts among Federal agencies are evident but follow no distinct pattern. Typically, collaborative efforts have evolved from ad hoc arrangements or on a case-by-case basis. Support from AID is one common denominator for several interagency cooperative efforts.
- E. Although there are visible efforts by DOC and Eximbank to promote private sector collaboration, there appear to be few coordinating mechanisms between Federal agencies and the U.S. private sector for developing country activities. USITI, a nonprofit private agency, is the exception and is the best example of a mechanism which enables the U.S. Government and the private sector to work together in communications.
- F. Communications technologies and techniques are generally viewed as useful tools in conducting training programs for developing countries, rather than as courses of study.
- G. With the exception of AID and a few USIA programs, communications-related activity by Federal agencies in the developing world has not typically reached the poorest of Third World people.
- H. Certain U.S. Government agencies are negotiating service contracts directly, often with middle-level developing countries, such as Mexico, China, Korea, and Saudi Arabia.
- I. NIH, CDC, FAA, NOAA, DOI, and USPS all have electronic programs such as databases that could be made available to developing countries if the infrastructure necessary for using the technology were available in the participating countries.
- J. Both NOAA and USGS offer an established training program in remote sensing. NSF and AID also fund the Remote Sensing Center in Cairo, Egypt, which provides additional training opportunities.

- K. ~~Eximbank~~ and AID both provide below-market rates for loans to developing countries.
- L. Although research projects on the effectiveness of telecommunications in developing countries have been funded and conducted by NSF, AID, and USIA, there is no evidence that other Federal agencies are conducting research on the effects and value of their communications involvement in the developing world.

VI. CONCLUSION

Findings from the small sample of institutions contacted in this survey suggest that communications development assistance is often a subset of other U.S. Government activities, and consequently its full significance may go unnoticed.

The survey reveals a lack of precise information about the extent and/or the trends of international communications-related activities in U.S. Government agencies. While there is some indication of collaboration among agencies, there is little evidence of substantive coordination of communications-related activity at this time.

Agencies such as DOC and Eximbank have a mandate to promote the advancement of international commerce in developing countries. USIA's primary focus is information transfer to the developing world concerning U.S. views on international communications and ways of handling information. AID focuses on assistance aimed at increasing the capacity of developing nations to use modern communications to meet critical human needs. Other agencies, such as USDA and CDC, see communications techniques and technologies as vehicles to achieve specific goals in agriculture and health education.

The authors believe that opportunities for a still greater contribution to U.S. policy goals and the needs of developing countries around the world could be created through an expanded program of communications development, although further study is clearly needed on how to exploit and expand those opportunities most effectively.

APPENDIX A

AGENCIES INCLUDED IN PRELIMINARY REVIEW

Agency for International Development (AID)
Department of Agriculture (USDA)
Department of Commerce (DOC)
 International Trade Administration (ITA)
 National Oceanic and Atmospheric Administration (NOAA)
 National Telecommunications and Information Administration (NTIA)
Department of Defense (DOD)
Department of Education (ED)
Department of Health and Human Services (HHS)
Department of Housing and Urban Development (HUD)
Department of the Interior (DOI)
Department of Justice (DOJ)
Department of Labor (DOL)
Department of Transportation (DOT)
 Federal Aviation Administration (FAA)
Export-Import Bank of the United States (Eximbank)
Federal Communications Commission (FCC)
National Aeronautics and Space Administration (NASA)
National Science Foundation (NSF)
Office of Management and Budget (OMB)
Office of Technology Assessment (OTA)
Overseas Private Investment Corporation (OPIC)
Trade and Development Program (TDP)
Treasury Department
United States Information Agency (USIA)
United States Postal Service (USPS)
United States Trade Representative (USTR)

ADDITIONAL SUMMARY PROFILE

United States Telecommunications Training Institute (USTTI)

APPENDIX B

AGENCY SUMMARIES

The information presented in the following summaries reflects the perceptions of those interviewed in the course of this preliminary survey. As noted earlier, the diversity of agency activities is reflected in the broad interpretation of communications development represented.

There is no standardized way to track agency communications development activities, so clearly-defined dollar amounts and specific project activities are difficult to determine. However, this was an initial attempt to give a sense of agencies' involvement.

AGENCY: AGENCY FOR INTERNATIONAL DEVELOPMENT (AID)

I. GENERAL INTERNATIONAL ACTIVITY

AID carries out assistance programs designed to help the people of developing countries develop their human and economic resources, increase productive capabilities, and improve the quality of human life.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

Communications-related activities in developing countries supported by AID have been documented in the study, New Solutions for Serious Problems: A.I.D. and Development Communications, August 1983. The findings of that study indicated that funding levels for the incorporation of communications technologies and methodologies in AID projects for FY '82 were as follows:

Total obligated funds:	\$4,866,446,000
Communications-related obligated funds:	91,002,000
Represents 1.8% of total	

The central focus of AID is to serve basic human needs and economic development, particularly of the rural poor. To these ends, AID assistance in communications is directed most typically to facilitating the use of existing communications infrastructure in support of development programs in such sectors as agriculture, rural development, nutrition, population planning, health, and education. Communications activities are usually designed as elements of broader development projects, rather than as communications projects as such. These programs are found in every region of the developing world.

AID programs cover a broad range of functions that include technical assistance, training, field projects, conference participation and support, and loans and grants. The media that are used most frequently to facilitate the development process are radio, print, and telephone. However, television and video, audiocassettes, film, two-way radio, computers, slow-scan television, facsimile, and electronic blackboard have all been used. AID has made a major effort to test satellite communications applications (using some of the above technologies) in developing countries.

III. LEVEL OF EFFORT

Projects with major communications components were funded at the following levels for FY '82 in the regional bureaus:

Bureau for Latin America and the Caribbean	\$3,207,000
Bureau for Asia	2,037,000
Bureau for Africa	9,273,000
Bureau for the Near East (Primarily Economic Support Fund)	64,667,000

In addition, the Bureau for Science and Technology (S&T) funds a number of world-wide projects. The communications-related level of support by S&T in FY '82 was \$11,818,000.

In all, AID is assisting some 50 developing countries in their efforts to use communications to promote development and improve the quality of life.

AGENCY: DEPARTMENT OF AGRICULTURE (USDA)

I. GENERAL INTERNATIONAL ACTIVITY

The USDA has a wide range of communications-related activity at the international level. The Course Development and Overseas Projects Branch of the USDA, which has been in operation for 10 years, provides training in managing government organizations, project implementation, and training of trainers.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

Many of USDA's courses deal in part or entirely with agricultural communications development. In addition, the International Research Division is implementing a five-year project in India developing the extension service's communications production capability.

USDA's communications development activities are summarized as follows:

A. By Function

Technical training, agricultural communications training, communications skills for development, and implementation of management skills are examples of USDA courses of study.

B. By Type of Service

Educational, technical assistance.

C. By Media/Mode

TV, video, print.

D. By Country/Region

Throughout the developing world, in response to demand.

E. Collaborative Efforts

USDA courses are funded through AID, the World Bank, FAO, UNDP, and the individual countries. Field projects not funded directly through USDA are typically funded through AID. AID provides funding for the expenses of about 65 percent of the classroom participants, for a total of nearly \$2 million annually.

III. LEVEL OF EFFORT

In addition to its course development activity, USDA will spend \$400,000 on the five-year project in India.

IV. SPECIFIC PROJECTS

A. Training

The number of participants in communications courses in 1983-84 included:

- o Communications and Media Strategies for Agriculture and Rural Development; 1983 - 15; 1984 - 7.
- o Development and Operation of Agricultural Extension Programs (two sessions); 1983 - 51; 1984 - 44.
- o Application and Diffusion of Agricultural Research Results to the Community Level; 1983 - 14; 1984 - 9.
- o Communications Planning and Strategy; 1983 - 22; 1984 - 10.
- o Communications Skills for Development Professionals; 1983 - 19.

Totals for these courses were 121 in 1983 and 70 in 1984 to date.

Fifty-three additional courses in agriculture and rural development are conducted on land-grant university campuses which work through the International Office of USDA. These courses are funded by the World Bank, the FAO, UNDP, AID, and individual countries. Courses can also be requested for presentation abroad, with funding by AID. These requests are increasing rapidly. The special request area is moving toward provision of a series of courses, taught by consultants.

B. Special AID-funded Projects

These projects generally last from three to five years but sometimes as long as six or seven years. Some examples follow:

- o Tanzania - Training for Rural Development
This project, which focuses on the implementation of management skills, started on the village level and eventually developed into a national system. Eleven Tanzanians came to the U.S. in the late 1970s for the core training of trainers course. Two of these participants

were communications professionals who were instrumental in introducing video at the village and regional levels. The video component consisted of small 1/2" equipment carried in Landrovers. Four regional training centers were established, each of which has video production facilities. One of the two communications people has since returned to the U.S. to learn communications media and graphics, and two other groups of mixed agricultural and communication specialists have been trained.

- o **Indonesia - Project Rural Development**
This project began with the training of two staff, one in agriculture and one communications specialist. Since then Indonesia has sent large groups (15-25 participants) to the U.S. for specialized courses in training of trainers and management of training.
- o **Portugal - Procalfer Project**
This program started with the goal of improving soil conditions in northern Portugal. The communications component (using video as a training tool) was initiated by the Ministry of Agriculture, which used the Procalfer Project as its focus. USDA aided the ministry in developing video production and video editing capabilities. Two courses in training of trainers were also taught.

C. International Research Division Projects

- o The University of Poona in India is a regional university with a mandate to develop educational technology and communications. Over a five-year period USDA will assist in developing training in the design and production of educational programming materials, culminating in a production center for the Indian satellite program. USDA will spend a total of \$400,000 on this project, financed by PL480 funds.

AGENCY: DEPARTMENT OF COMMERCE - INTERNATIONAL TRADE
ADMINISTRATION (ITA)

I. GENERAL INTERNATIONAL ACTIVITY

ITA plays an important role within DOC in establishing trade policy relating to international, including developing country, issues.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

ITA serves as broker between buyer and seller when a telecommunications system is being purchased.

ITA works with NTIA on communications-related trade issues that affect the provision of services and the acquisition of equipment. ITA also coordinates U.S. participation in international trade shows.

B. By Country/Region

ITA's policy and trade activities are world-wide. However, a direct country agreement with China provides for a telecommunications package to include both products and services.

C. Collaborative Efforts

ITA works closely with DOC Country Desks, other agencies, Eximbank, TDP, and OPIC to promote U.S. communications equipment sales abroad.

III. LEVEL OF EFFORT

The budget for such activities is very low. Support increases in direct proportion to trade activities.

AGENCY: DEPARTMENT OF COMMERCE - NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION (NOAA)

I. GENERAL INTERNATIONAL ACTIVITY

NOAA's international activities include its satellite weather data exchange, meteorological training, and early warning global climatic programs. Each of these directly involves developing countries.

- o The National Environmental Satellite, Data, and Information Service (NESDIS) provides on-the-job training at its various U.S. facilities on meteorological satellite and data information to promote weather data gathering and exchange in developing countries. NESDIS provides lecturers to international workshops and training courses in cooperation with international organizations such as the WMO, as well as hosting such workshops.
 - 152 persons trained in 1983
- o The Overseas Operations Division manages a program to provide students from developing countries with either long- or short-term training in all phases of meteorology. Stipends for students are provided by the WMO, the State Department's Voluntary Cooperation Program, AID, or the student's country.
 - 200 persons trained in 1983
- o Global Climatic Impact Assessment Technology for Drought/Disaster Early Warning and Technical Assistance for the Developing World predicts food shortages caused by drought, with sufficient lead-time to initiate disaster assistance. This program operates in conjunction with the AID office of U.S. Foreign Disaster Assistance. In developing countries, the program works with the national meteorological services, agricultural economics and statistics offices, and agencies responsible for food security management.
 - 16 persons trained in the U.S. in 1983.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

Communications-related training and technical assistance are found primarily in the Global Climatic Impact program for predicting food shortages, where computer-based assessment models have been developed, using data from weather satellites, that measure rainfall, estimate drought effects, assess

crop conditions, and provide large-scale climate analysis. Developing country personnel are trained to use Apple computers to access world-wide databases and to use the assessment model for their own environments.

B. By Type of Service

Again, communications-related services are found in the Global Climatic Impact program, specifically in the development of the software for early warning of drought-caused food shortages, and in information services such as the world-wide weather databases.

C. By Media/Mode

The computer is the medium for the activities described above.

D. By Country/Region

The communications-related Global Climatic Impact program is currently operating in:

- o Bangladesh
- o India
- o Indonesia
- o Malaysia
- o Nepal
- o Pakistan
- o Philippines
- o Sri Lanka
- o Thailand

The program plans to expand in 1985 to:

- o Costa Rica
- o Dominican Republic
- o Ecuador
- o Haiti
- o Jamaica
- o Peru
- o the Sahelian countries.

E. Collaborative Efforts:

1. NOAA manages the operational component of the LANDSAT remote sensing program. LANDSAT data distribution is managed by DOI

2. The Voluntary Cooperation Program (State Department), AID, and WMO provide stipends for students.

III. LEVEL OF EFFORT

NOAA estimates that its short-term per-student training costs run about \$1,000 per month. The current budget of the Global Climatic Impact program is about \$4 million. The difference between this total budget and NOAA's contribution—\$700,000 in FY '83, and \$1.4 million in FY '84—is provided by AID.

AGENCY: DEPARTMENT OF COMMERCE - NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION (NTIA)

I. GENERAL INTERNATIONAL ACTIVITY

A new NTIA initiative places emphasis on assisting U.S. industry in the promotion of its telecommunications products and services to developing countries. This is an outgrowth of NTIA's original mandate to respond to private sector interest by providing information about telecommunications domestically and internationally. The perceived potential of LDC markets for the telecommunications industry is the principal reason for the recent initiative. Although no funds have been allocated for this activity to date, one full-time staff person has been assigned to the project.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

1. Training

NTIA has been active in the design and implementation of USTTI from its beginning. NTIA, with the FCC, offers a USTTI course on radio spectrum management. LDC visitors are received regularly at NTIA offices.

2. Technical Assistance

NTIA has done feasibility studies on spectrum management in Papua New Guinea and Venezuela.

B. By Type of Service

NTIA provides technical and applications information on telecommunications.

C. By Media/Mode

NTIA policy planning efforts cover the broad range of telecommunications-related media.

D. By Country/Region

Current and proposed activities are taking place or are planned in:

- o China
- o Mexico
- o Papua New Guinea
- o Venezuela

E. Collaborative Efforts

There seems to be a movement toward collaboration with other agencies. The new LDC initiative may bring increased collaborative activities with AID, which currently has a RSSA with NTLA's Institute for Telecommunication Sciences (ITS) for a study of thin-route earth station requirements.

III. LEVEL OF EFFORT

One person has been assigned to work on the LDC initiative. Two NTLA professionals are assigned to work with USTTI for the four-week workshops on radio spectrum management.

AGENCY: DEPARTMENT OF DEFENSE (DOD)

I. GENERAL INTERNATIONAL ACTIVITY

DOD provides a wide variety of training for military personnel from developing countries, in which new technologies are introduced, communications capabilities are upgraded, and support personnel are trained.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

Training and technical assistance are provided, ranging from basic to advanced, including training packages in surveillance and in equipment operations and maintenance. DOD also sells and trades communications equipment and services.

B. By Media/Mode

Print, videotape, and computer.

C. By Country/Region

DOD has world-wide involvement. Latin America has received special attention in recent years.

Korea's Optical Net was cited as an example of DOD technical training that left trained people in place to operate the equipment. Optical Net is used by both military and civilian sectors. In another instance, DOD has acquired satellite terminals for use in Turkey that are now operated by the PTT for both civilian and military communications. DOD often leaves communications equipment and trained local personnel behind when it moves from one location to another.

E. Collaborative Efforts:

There is very little collaboration with other agencies on communications-related activity.

AGENCY: DEPARTMENT OF EDUCATION (ED)

I. GENERAL INTERNATIONAL ACTIVITY

The Department of Education has a broad-based relationship with the International Bureau of Education (IBE) in Geneva, the Organization for Economic Cooperation and Development (OECD), and UNESCO.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

Through the National Institute of Education (NIE), ED has participated in communications-related studies with UNESCO.

III. LEVEL OF EFFORT

A. Staff

Release time and travel expenses have been available for NIE-UNESCO studies.

B. Budget

ED provides minor support to microfiche distribution of education information, at a level of approximately \$1,000 per year

AGENCY: DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)

I. GENERAL INTERNATIONAL ACTIVITY

HHS is involved in some health activities internationally that are coordinated by its Office of International Affairs. The HHS Centers for Disease Control (CDC) have 30 country agreements with developing countries. These activities are supported by AID (\$6 million) and WHO.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

CDC's activities in developing countries are generally in the form of technical assistance:

- o CDC uses print, radio and TV to disseminate health education information.
- o Data collection on selected health conditions in developing countries makes use of print and telephone.
- o The 3CD Project (Combating Childhood Communicable Disease) uses radio and telephones.

B. By Type of Service

The services HHS/CDC provides to developing countries are primarily educational and informational.

C. By Media/Mode

The programs of CDC use telephone, radio, TV, computers, and print media.

D. By Country/Region

CDC's activities are world-wide. There is some programmatic emphasis, however, on Africa, as seen in the 3CD project.

III. LEVEL OF EFFORT

HHS makes \$1.5 million available annually to CDC's international activities. It is estimated that 10 percent, or \$150,000 of this, is communications-related.

AGENCY: DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

I. GENERAL INTERNATIONAL ACTIVITY

HUD participates in the Organization for Economic Cooperation and Development (OECD) and other international forums but does not support or manage any international projects.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

The Office of International Affairs at HUD reports no communications-related activity in developing countries.

AGENCY: DEPARTMENT OF THE INTERIOR (DOI)

I. GENERAL INTERNATIONAL ACTIVITY

DOI'S international involvement includes the U.S. Geological Survey (USGS) LANDSAT data brokering and remote sensing training, and DOI'S work with the Trust Territories of the Pacific. The latter has generated a mix of communications activity.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

- o Through DOI's efforts there are now seven INTELSAT B earth stations operating in Micronesia: four in the Federated States of Micronesia, two in the Marshalls, and one in Palau. COMSAT put up the investment for the system, and each government leases a minimum of 10 circuits. DOI underwrites some costs, at less than \$1 million annually.
- o DOI has had some involvement with other Pacific Basin countries through the ATS-1 experimental satellite, which has enabled institutions such as the University of the South Pacific to extend services to the Federated States of Micronesia. However, the imminent demise of ATS-1 has diminished extensive network development.
- o The need for continued dialogue with international agencies with interests in the Pacific, such as UNDP or ITU, involves DOI in international meetings and conferences.
- o USGS operates the EROS Center, which sells LANDSAT data and imagery.
- o USGS offers technical assistance and training in remote sensing data interpretation to developing country personnel. Approximately 30-40 participants are trained annually.

III. LEVEL OF EFFORT

Most costs for DOI activity in communications assistance are absorbed within agency budgets. Expenses for participants in training programs are paid either by the participant's country or through stipends from AID, UN agencies, or the government of Canada.

AGENCY: DEPARTMENT OF JUSTICE (DOJ)

I. GENERAL INTERNATIONAL ACTIVITY

The Department of Justice reports no activity in the communications development area. One member from the Antitrust Division sits on the SIG board. The Antitrust Division's activity is limited to filing comments with the FCC and enforcing regulations through lawsuits.

AGENCY: DEPARTMENT OF LABOR (DOL)

I. GENERAL INTERNATIONAL ACTIVITY

DOL has a long history of involvement in international programs, with emphasis on labor-related interests such as manpower training and development, vocational training, and occupational health and safety. DOL is interested in working with developing countries, contingent on cost reimbursement. International activity is not budgeted by DOL, thus such activities must pay their own way. The Office of Foreign Relations at DOL is charged with responding to foreign governments.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

In recent years, with advances in technology, communications has been increasingly incorporated in DOL's activities, as evidenced in the projects outlined below.

A. Center for Advanced Learning Systems (CALS)

- o CALS provides a methodology for introducing and transferring advanced U.S. human resources development technologies to other countries. CALS has a sophisticated instructional materials center in Washington, D.C., with the latest technology, including computers, videoplayers, and videodiscs. Training materials have been developed and adapted for use in foreign countries.
- o CALS hosts an average of two potential international clients each week.
- o CALS conducts short-term workshops, such as a recent AID-supported one-week workshop in Panama for the private sector. CALS will also assist other countries in defining labor, manpower, and training needs.

B. Vocational Training Centers in Saudi Arabia

- o A \$1.5 billion, 10-year effort now in its ninth year, the Saudi Arabia project is DOL's major international activity. Approximately \$1 billion of this funding is for construction of more than 30 prevocational and vocational training centers.
- o DOL has 50-60 full-time professionals in Saudi Arabia developing training programs for these centers.

- o Although telecommunications systems are being incorporated in the centers, there will be no major computer system and no interactive capability other than phones among the centers.

C. Competency-based Instructional Training Programs

- o DOL is assisting the Bahamas, with support from The World Bank, in establishing a competency-based training program with a "distance learning" component. The initial three-year, \$2-million effort will be increased by 25 percent the next year.

III. LEVEL OF EFFORT

As discussed above, all international activities must be self-supporting, with the overhead from contracts (about 27 percent of each contract dollar) supporting DOL management efforts in other areas.

AGENCY: DEPARTMENT OF TRANSPORTATION (DOT)

I. GENERAL INTERNATIONAL ACTIVITY

DOT provides a variety of technical assistance to developing countries. Arrangements are generally coordinated through AID on a cost-reimbursable basis. FAA (see separate profile) has more of an international focus than do other DOT offices.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

Such activities are relatively limited, and generally comprise a small part of some other DOT project. Communications activity at DOT is represented mainly by transportation and road systems.

AGENCY: DOT - FEDERAL AVIATION ADMINISTRATION (FAA)

I. GENERAL INTERNATIONAL ACTIVITY

The FAA is active world-wide in providing training and assistance through the Office of International Aviation, especially through FAA's Academy and Aeronautical Center and visitor program. The goal is to promote international air safety while maintaining U.S. preeminence in the aviation industry.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

Over 400 foreign nationals are trained yearly at FAA's Academy and Aeronautical Center, where approximately 10 percent of the course material is communications-related. In FY '83 224 trainees were from developing countries.

B. By Type of Service

FAA does not regularly provide communications equipment to client countries, although surplus radar equipment has been made available to developing countries in the past.

C. Collaborative Efforts

FAA collaborates with DOC, State, USTR, and DOT in promoting sales of equipment and services.

III. LEVEL OF EFFORT

Services provided are reimbursed by the client country or by other Federal agencies.

AGENCY: EXPORT-IMPORT BANK OF THE UNITED STATES (Eximbank)

I. GENERAL INTERNATIONAL ACTIVITY

Eximbank is a U.S. Government institution that facilitates and assists in the financing of export sales of U.S. goods and services. It provides direct loans to foreign buyers and financial guarantees to private lenders to finance sales of equipment.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

Eximbank provides loans, loan guarantees, and loan insurance to facilitate the purchase of U.S. goods, including communications equipment, by foreign buyers.

B. By Type of Service

The levels and categories of loans and financial services provided for the purchase of general communications equipment during FY '83 and FY '84 are reflected in the following exhibit. Eximbank estimates that 90 percent of these loans and services went to developing countries.

Although loan guarantees and insurance do not provide the same level of support as direct loans, much of the above communications equipment could not have been purchased without these facilitative services.

Eximbank hopes to make funds available for feasibility studies with some provision for repayment if the study results in U.S. involvement in project implementation. It is assumed that U.S. firms will be more competitive and can influence purchases if they have been involved in a U.S.-sponsored feasibility study.

FISCAL YEAR 1983
(in thousands of dollars)

<u>Category</u>	<u>Loans</u>	<u>Guarantees and/or Insurance</u>
Communication Equip., Misc.		\$26,422
Computers, Electronic	\$7,396	87,543
Earth Satellite Ground Station		127,500
Educational Material & Books		1,050
Electronic Components & Acces.		9,550
Microwave Equipment		7,168
Photo & Cinema Equip. & Supply	122	48,456
Printed Matter, Misc.		1,980
Printing & Publishing Equip.	11,061	56,818
Radar Stations & Equip.	5,250	400
Radio & TV Broadcasting Equip.	5,983	22,966
Radio, TV, Stereo and Tape Sets		23,850
Sound Recorders & Reproducers		4,050
Tapes and Phonograph Records		4,000
Tel. & Teleg. Installations	<u>2,798</u>	<u>23,868</u>
TOTAL	<u>\$32,610</u>	<u>\$445,621</u>
90% to developing countries	<u>\$29,349</u>	<u>\$401,058</u>

FISCAL YEAR 1984
(in thousands of dollars)

<u>Category</u>	<u>Loans</u>	<u>Guarantees and/or Insurance</u>
Communication Equip., Misc.	\$7,006	\$26,121
Computers, Electronic	22,779	43,707
Earth Satellite Ground Station	5,100	
Educational Material & Books		1,050
Electronic Components & Acces.	2,189	12,865
Microwave Equipment	4,769	12,862
Photo & Cinema Equip. & Supply		1,700
Printed Matter, Misc.		10,246
Printing & Publishing Equip.	4,097	31,474
Radar Stations & Equip.		400
Radio & TV Broadcasting Equip.	5,759	14,994
Radio, TV, Stereo & Tape Sets		155
Sound Recorders & Reproducers		2,100
Submarine Cable System		200
Tapes & Phonograph Records		2,400
Tel. & Teleg. Installations	11,070	11,696
Comm. Satellite Ground Station	<u>27,750</u>	
TOTAL	<u>\$90,519</u>	<u>\$171,970</u>
90% to developing countries	<u>\$81,467</u>	<u>\$154,773</u>

C. By Media/Mode

As demonstrated in the table above, Eximbank provides loans and services for the purchase of a wide variety of communications equipment, including telephone, radio, television, and print, as well as computers.

D. By Country/Region

Countries identified as receiving loans and financial services for communications purposes in FY '83 and FY '84 included:

- o Argentina
- o Barbados
- o Israel
- o Korea
- c Mexico

E. Collaborative Efforts

Eximbank and AID have recently collaborated to offer a type of mixed credit for project financing—loans at more favorable rates using a combination of Eximbank and AID funds. One of the first proposals of this type was to Algeria, for the purchase of satellite communications network equipment; this proposal is still pending. No proposals for this mix of financing have been accepted to date.

III. LEVEL OF EFFORT

Communications-related loans and services made up the following percentages of total Eximbank spending in FY '84:

<u>Fiscal Year</u>	<u>Percent of Loans</u>	<u>Percent of Guarantees and Insurance</u>
1983	3.8%	5.2%
1984	11.3%	2.6%

AGENCY: FEDERAL COMMUNICATIONS COMMISSION (FCC)

I. GENERAL INTERNATIONAL ACTIVITY

The FCC's international interests extend to developing countries because of its responsibility for radio spectrum regulation in the U.S. Technical assistance is provided by the FCC through the ITU, with funding often provided through UNDP. The ITU Fellowship Program in the U.S. is administered by the FCC which identifies suitable training programs at U.S. companies, educational institutions, and other Government agencies. The FCC distributes technical studies as requested to LDCs; participates in international forums on communications policy, such as the World Administrative Radio Conferences (WARCs); was a principal architect of USTTI; and continues to offer a USTTI course with NTIA on radio spectrum management.

The FCC's international interests are reflected in the Office of Science and Technology (OST), the Common Carrier Bureau, the Private Radio Bureau, and the Broadcasting Bureau. In addition, the Chairman of the FCC has a full-time aide to advise him on international matters.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

- o Training (primarily through USTTI); conferences (WARCs); international forums on communications policy; technical studies.
- o Technical assistance provided on request.
- o Technical studies produced and available to LDCs.

B. By Type of Service

One of the FCC's major contributions to developing countries, in terms other than dollars or personnel, are the results of technical studies conducted by the FCC and shared with other countries. OST, for example, has had numerous requests from developing countries for its studies on cellular radio and land mobile communications. Developing countries using FCC research findings have been able to make quantum leaps in adapting or adopting new technology.

C. By Media/Mode

Radio, print, computer.

D. By Country/Region

International.

E. Collaborative Efforts

The FCC, in cooperation with NTIA, supports USTTI through course offerings. The FCC also works closely with ITU Fellows. Requests for technical assistance to be provided by the FCC are usually channeled via the UNDP, with the ITU responsible for coordination and funding. The FCC responds to requests for technical assistance on a country by country basis. Availability of outside funding and staff time influence the FCC response. FCC professional staff are given release time from other responsibilities to work on international activities such as WARC's or the ITU Fellows Program.

II. LEVEL OF EFFORT

Up to 75 FCC staffers have been devoting some portion of their time to WARC-related matters. No estimate was available regarding the percentage of time devoted to communications activity in developing countries. Occasionally, at the request of a foreign country or the ITU, the FCC will assign a staff person to work in a foreign country for up to one year. All expenses for such assignments are reimbursed by the client country through the ITU or AID.

AGENCY: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

I. GENERAL INTERNATIONAL ACTIVITY

General international activity still centers around the use of the experimental ATS-1 (Pacific Basin) and ATS-3 (Atlantic) satellites. NASA does not fund technical assistance programs for or in developing countries.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. BY Function

The ATS-1 satellite is used to coordinate University of the South Pacific educational programs. NASA also trains technicians and engineers to operate satellite tracking facilities in Spain, Australia, and Senegal.

B. By Type of Service

Disaster warning and disaster relief have been among the important applications of ATS-1. An example of potential NASA communications activity in developing countries is the experimental work being conducted at NASA's Ames Space Flight Center on small earth stations for use with INTELSAT. Funding for this activity has been cut, however, and unless an organization is found to acquire and use the earth stations, NASA's already limited activity in the developing world will diminish even further.

C. By Media/Mode

Satellite-based audioconferencing takes place using ATS-1. Voice levels, however, are of poor quality. NASA continues to support tracking stations for low-orbit satellites and emergency landing facilities for the space shuttle, some of which are in developing countries. The training of local personnel to operate such facilities and equipment has become necessary. For example, NASA has an arrangement with Senegal to use the international airport at Dakar for emergency shuttle landings. NASA provided on-the-job training to local airport personnel in Dakar.

D. By Country/Region

In the South Pacific, and world-wide satellite tracking facilities.

AGENCY: NATIONAL SCIENCE FOUNDATION (NSF)

I. GENERAL INTERNATIONAL ACTIVITY

The International Programs Division of NSF is engaged in a range of projects with developing countries, most of which receive their primary funding from other government agencies, with small grants (\$5,000 to \$10,000) or less frequently, matching funds from NSF. The role of NSF is often that of facilitator or monitor of such projects. All NSF programs must be initiated by U.S. institutions and have some perceived benefit to the Americans involved, such as the Remote Sensing Center (RSC), in Cairo, Egypt.

- o RSC was begun in 1971, a cooperative venture between the Egyptian Academy of Scientific Research and Technology (funded by Egyptian government), Oklahoma State University, and NSF, to explore the application of remote sensing to environmental and engineering projects in Egypt.
- o RSC employs 65 scientists and resource specialists.
- o NSF budget for RSC for FY '84 was \$130,000, and is expected to remain the same in FY '85.
- o RSC also receives funding from AID and other regional and international organizations.
- o RSC staff also arrange international conferences and symposia and present study results to various U.N. committees and bodies.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. Studies with East-West Center

NSF has cooperated with the East-West Center's Institute of Culture and Communication in several activities, including a study of television in Indonesia, which led to the Indonesian government's decision to ban television advertising; an assessment of the effectiveness of technology transfer; and a study of the social impact of new road construction.

B. Scientific and Technical Journals for Africa

A current project is developing a mechanism to provide scientific and technical journals to libraries and universities in sub-Saharan Africa, at

little or no cost to the receiving institutions, possibly in cooperation with USIA. The project would provide libraries with 35-40 journals on a monthly or quarterly basis. There would be minimal impact on NSF funds, as NSF would serve only as the project facilitator.

C. Computer and Semi-conductor Projects in Latin America

Several projects involving these technologies, such as computerized geographic information data systems for Mexico, have been ongoing for several years. The Mexican project is funded primarily through other sources, with a \$5,000 grant from NSF.

D. Workshops

NSF and AID cooperated in sponsoring an April 1984 workshop on the Relationship between Communications Technology and Economic Development.

III. LEVEL OF EFFORT

Total annual budget for international activity is \$10 million, of which \$3 million goes to developing country programs. Most projects receive grants between \$5,000 and \$10,000, with a maximum of about \$20,000. The level of funding for the Remote Sensing Center was atypical, and was due to its massive scope and the sophisticated technologies involved.

AGENCY: OFFICE OF MANAGEMENT AND BUDGET (OMB)

I. GENERAL INTERNATIONAL ACTIVITY

A participant in SIG from its inception, OMB's role is to monitor other Federal agencies' plans and actions in developing countries. OMB works with USTR on SIG-related matters.

AGENCY: OFFICE OF TECHNOLOGY ASSESSMENT (OTA)

I. GENERAL INTERNATIONAL ACTIVITY

OTA is not a program or funding agency, but rather a research arm of the United States Congress.

OTA staff regularly attend international meetings on telecommunications policy issues. OTA also conducts studies that address international telecommunications issues and collaborates with other Federal agencies (i.e., NTIA) in the study of timely telecommunications issues.

OTA's interest in communications-related activity in developing countries directly reflects that of Congress. OTA's role in the developing world is best described as one of monitoring.

AGENCY: OVERSEAS PRIVATE INVESTMENT CORPORATION (OPIC)

I. GENERAL INTERNATIONAL ACTIVITY

OPIC offers loans and other assistance to U.S. businesses in order to encourage their investment in developing countries.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. By Function

OPIC provides the following services to U.S. companies, some of whose activities are communications-related:

- o Assistance in locating investment opportunities;
- o Insurance to protect these investments;
- o Loans or loan guarantees to help finance projects.

B. By Type of Service:

In FY 83 OPIC provided the following services for telecommunications investments:

- o Direct loans for communications projects - \$570,000
- o Political risk insurance - \$104,138,000
- o Letter-of-credit guarantee - Approximately \$63,000,000
- o "Special Projects" offered a limited number of loans for training associated with larger projects. A small number of these contained a communications component.

C. By Media/Mode

- o OPIC provides loans and insurance for a variety of telecommunications media, including radio, telephone, computer, videocassette recorders, etc.
- o In 1983 OPIC, in cooperation with AID, sponsored a two-way satellite television broadcast linking U.S. business investors with top officials and business leaders in the Caribbean for the purpose of information exchange.

D. By Country/Region

OPIC's clientele is world-wide.

III. LEVEL OF EFFORT

Available OPIC figures indicated an approximate total of \$167,138,000 allocated for communications-related guarantees and insurance in FY '83. Direct loans for communications projects totaled \$570,000 in FY '83. No direct loans were granted for communications projects in FY '84. The following table indicates the types of communications assistance provided by OPIC in FY '83.

OVERSEAS PRIVATE INVESTMENT CORPORATION

COMMUNICATIONS ACTIVITY

FISCAL YEAR 1983

(in thousands of dollars)

<u>Country</u>	<u>Project Description</u>	<u>Insured Investment</u>
China	Modernize telephone cable manufacturing plant	\$4,616
China	Sale and installation of earth satellite ground station	473
Dominican Rep.	Expansion of telephone service	25,655
Egypt	Sale and installation of telephone switching facilities	28,325
Honduras	Supply and installation of telephone exchange	2,826
Korea	Delivery and installation of telephone exchanges	1,465
Korea	Installation and sale of telephone equipment	7,325
Malaysia	Manufacture audio products and components	8,300
Philippines	Manufacture and assemble electronic equipment	895
Saudi Arabia	Computerized data retrieval system	20
Saudi Arabia	Sale and installation of microwave system	18,875
Taiwan	Expansion of facility making radios, stereos, cable TV accessories	1,515
Taiwan	Manufacture microwave components	250
Uruguay	Publish telephone directories	<u>3,598</u>
TOTAL		<u><u>\$104,138</u></u>

AGENCY: TRADE AND DEVELOPMENT PROGRAM (TDP)

I. GENERAL INTERNATIONAL ACTIVITY

TDP promotes economic development in developing countries by financing planning services for projects leading to the export of U.S. goods and services. Every TDP-sponsored project must meet the following criteria:

- o Development priority
- o U.S. export potential
- o Funding availability
- o Potential for project implementation
- o "Friendly" nation status

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

Approximately 10 percent of TDP services provided during FY '83 and FY '84 has been for projects in the communications sector. Two examples of such projects are:

- o Philippines Telecommunications Study: In FY 1982, TDP approved a \$150,000 grant to finance the application of U.S. telephone outside plant, mechanical switching, and transmission equipment standards to a proposed expansion and upgrading of the Philippines telecommunications system. The German government had already made several offers to finance a similar study, using German standards, with the intention of better positioning German suppliers for the follow-on equipment sales. The use of U.S. standards will give American firms an advantage in the Philippines' procurement of some \$550 million in equipment and services.
- o Guatemala National Load Dispatch Center: In FY '83, TDP approved a \$225,000 feasibility study of basic design guidelines for a National Load Dispatch and Global Communications Center for the Instituto Nacional de Electrificación de Guatemala (INDE). TDP's objectives in doing the study were to assist INDE in modernizing the Guatemalan communications system and to establish a U.S. firm as the project's technical expert with the intention that the project be implemented on a turnkey basis with U.S.-based financing. Strong competitive proposals came from Brown Boveri of Switzerland, Siemens of Germany, Canadian Aviation Electronics of Canada, and one or two others from Italy and Canada.

TDP's communications activities are summarized as follows:

A. By Function

- o TDP finances feasibility studies and other planning services through grants.
- o TDP co-finances, on a "reimbursable grant" basis, planning services for projects in which an investor intends to have equity participation.
- o TDP serves as the coordinating and authorizing agency for the provision of government-to-government technical assistance on a fully reimbursable basis.

B. By Type of Service

TDP's planning services include but are not limited to:

- o Definitional studies
- o Pre-feasibility studies
- o Feasibility studies
- o Technology symposia
- o Technology orientation missions

C. By Media/Mode

Services for telephony and computer projects have been funded during the last two fiscal years.

D. By Country/Region

TDP focuses on providing services to AID-graduate and non-AID middle-to upper-income developing countries. Countries served during FY '83 and FY '84 include:

- o Brazil
- o China
- o Colombia
- o Costa Rica
- o Guatemala
- o Jamaica
- o Korea
- o Peru
- o Philippines
- o Singapore
- o Thailand

III. LEVEL OF EFFORT

TRADE AND DEVELOPMENT PROGRAM
COMMUNICATIONS ACTIVITY
FISCAL YEAR 1983
(in thousands of dollars)

<u>Country/Region</u>	<u>Project Description</u>	<u>Amount</u>
Brazil	Telecommunications training	\$ 6
Costa Rica	Cellular telephones	75
Guatemala	National Load Dispatch and Global Communications Center	225
Korea	Domestic satellite	100
Philippines	Telecommunications	550
Singapore	CAD/CAM	50
Thailand	Computer requirements	<u>34</u>
TOTAL		<u><u>\$1,040</u></u>

FISCAL YEAR 1984
(in thousands of dollars)

Chile	TDMA & digitalization	\$350
China	Optical fibers plant	290
China	Multi-carrier facility	410
Colombia	Telecommunications	500
Peru	Cellular telephones	185
World-wide	Telecommunications definitional mission	<u>124</u>
TOTAL		<u><u>\$1,859</u></u>

PENDING

Argentina	Domestic satellite	400
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Total allocated for services in the communications sector in FY '83 and FY '84:	<u><u>\$2,899</u></u>
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AGENCY: TREASURY DEPARTMENT

I. GENERAL INTERNATIONAL ACTIVITY

Treasury is responsible for U.S. participation in multilateral development banks and for the analysis of the economic feasibility of projects.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

Such activities are conducted only indirectly, through loans made for telecommunications projects through multilateral banks.

III. LEVEL OF EFFORT

Treasury has consulted on loans to telecommunications projects made by two multilateral banks at the levels indicated below:

	<u>World Bank</u>	<u>Int'l. Dev. Assn.</u>
1979	\$100.0 m	0
1980	66.0 m	65.0 m
1981	0	329.5 m
1982	230.8 m	57.5 m
1983	0	57.0 m

Figures do not indicate trends. Projects have a two-to-three year planning period before financing requests are made, which accounts for the diversity of funding from year to year.

AGENCY: UNITED STATES INFORMATION AGENCY (USIA)

I. GENERAL INTERNATIONAL ACTIVITY

USIA considers most of its activities to be communications-related, even though not all of them specifically support communications development. USIA expenditures for developing countries totaled \$145 million in FY '84, double the allocation for Eastern Bloc countries.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

A. BROADCAST-RELATED PROGRAMS

o VOICE OF AMERICA - Training and Development Division

VOA's Training and Development Division began in 1982 to provide broadcast training for developing country personnel in programming, production, and broadcast technology.

o VOICE OF AMERICA - Broadcast Operations

In addition to its broadcast transmissions, the office of Broadcast Operations sends "packaged programs" to USIA posts abroad for use by local radio stations. It also prepares "service feeds" to provide news items, reports, and features, primarily to Latin America, in the form of script material for use by local radio, or for taping by USIS posts for local distribution.

o USIA - TV and Film Service

The TV and Film Service acquires or produces programs for foreign television or USIS post use. These materials are translated into several languages. A satellite-transmitted half-hour program of short features on U.S. life and culture is beamed to 80 USIS posts once a week. Worldnet—a videoconferencing service for international press conferences—is being tested currently and will probably become a permanent service. USIA is in the process of negotiating a contract for two hours of satellite time daily.

USIA's broadcast related activities may be summarized by category as follows:

1. **By Function**

The broadcast programs offered by these divisions provide training and technical assistance (in the form of usable program material) for radio and television.

2. **By Type of Service**

Educational services are provided by several of VOA's established course offerings. These include the Third World Broadcasting Workshop, and the Technical Training Program soon to be offered through USTTI. Telecommunications services are provided through the supply of "packaged programs" and "service feeds" for radio, as well as through television program material.

3. **By Media/Mode**

Radio and television

4. **By Country/Region**

- o VOA country-specific training programs have served personnel in Liberia, Jamaica, St. Vincent, Sri Lanka, China and Korea. Other training courses, including one offered through USTTI, are open to personnel from all developing countries.
- o VOA field units are located in Latin America, Africa and the Far East. "Service feeds" are directed toward Latin America, although VOA is considering expanding African services. The uniformity of language in Latin America makes it much easier to provide material there.
- o The TV and Film Service sends programming material to 30 USIS posts world-wide.

5. Level of Effort

- o VOA Training and Development Division's FY '83 budget was \$585,750, rising to \$935,000 in FY '84.
- o VOA Broadcast Operations is in the process of conducting a survey which will determine whether increased funding is warranted. This decision will be reflected in the FY '86 budget.
- o The TV and Film Service appears to be one of the fastest growing departments in USIA. Budget projections for FY '84 are \$28 million, rising to \$40 million in FY '85.

The percentage of the above figures that qualifies as communications development assistance under the SIG definition is unknown.

B. EXCHANGE AND VISITOR PROGRAMS

- o USIA - Office of International Visitors (IV)

The IV program involves both grantees (individuals and groups) who are funded for a visit to the U.S., and voluntary visitors, who receive assistance in scheduling professional visits while in the U.S. It was estimated that approximately 700 visitors were from the communications field in 1983. One theme area for group visits is "communication;" at least 84 visitors participated in group projects in this area in 1983.

- o USIA - Academic Exchange Programs Division

This division administers the Fulbright Program in conjunction with the Department of Education. There is no way at present to identify communications-related activities in this program, but a review of 1981 and 1982 suggests that approximately 50 participants a year are communications professionals.

- o USIA - Private Sector Programs

The office of Private Sector Programs funds participants in conferences and workshops. Third World journalists have been funded to attend two communications conferences.

USIA's exchange and visitor programs can be summarized by category as follows:

1. **By Function**

Visitor and academic exchange programs provide for some training. Grants are provided for conference and workshop participation.

2. **By Type of Service**

Educational services are provided through visitor and academic exchanges, which often include demonstrations of telecommunications equipment and techniques.

3. **By Media/Mode**

Programs for participants have demonstrated television, telephone, radio, and microelectronic technologies, and have provided hands-on experience in computer operation.

4. **By Country/Region**

Opportunities for participation are open to persons from all developing countries.

5. **Level of Effort**

- o The budget for IV programs has risen sharply from \$18 million just a few years ago to \$28 million in FY '84. The FY '85 budget is projected to be about \$35 million.
- o Funding for the Fulbright Program has increased considerably in the last three years, from \$40 million in FY '81 to \$60 million in FY '84. Another 20 percent increase is anticipated for FY '85.
- o The Private Sector Programs budget for journalism or communications exchange-of-persons is approximately \$500,000 annually.

The percentage of the above figures that qualifies as communications development assistance under the SIG definition is unknown.

C. PRINT-RELATED PROGRAMS

o USIA - Press and Publications

Press and Publications produces six magazines, each with a particular audience focus; a wire service on Administration activities for foreign press use; pamphlets of topical speeches; and photo features for foreign press use. USIA also operates printing plants in Manila and Mexico City.

o USIA - Book Program Division

The book program, designed to promote translation and/or publication of American books overseas, and to distribute these to appropriate organizations abroad, has been cut back substantially. From 12 million books distributed in 1967, only 67,000 were distributed in 1983.

o USIA - Foreign Press Centers

USIA operates Foreign Press Centers in Washington, New York, and Los Angeles, to provide working space and background briefings on issues of interest to foreign correspondents. Tours on thematic subjects are also sponsored.

USIA's print-related programs may be summarized by category as follows:

1. By Type of Service

The Book Program Division is primarily educational, as is the purpose of the background briefings for foreign correspondents.

Library services are provided by 87 libraries maintained by USIA in 58 developing countries.

2. By Media/Mode

Print

3. By Country/Region

These programs operate world-wide.

4. Level of Effort

- The Press and Publications budget is \$14 million annually. The program has a total staff (overseas and in Washington) of 449.
- The Book Program Division budget has declined substantially in the past 10-15 years. The program is hoping to begin rebuilding in the next couple of years through a \$12 million enhancement package slated for FY '86.
- Program costs for Foreign Press Centers were \$188,434 in FY '83 and \$380,495 in FY '84. The program is expanding in terms of space, caliber of persons used for briefings, and number of correspondents served.

The percentage of the above figures that qualifies as communications development assistance under the SIG definition is unknown.

In addition to the above budget figures, USIA contributed \$700,000 to the IPDC during FY '83-'84. Of this amount, \$200,000 was given to USTTI for participant scholarships.

AGENCY: U.S. POSTAL SERVICE (USPS)

I. GENERAL INTERNATIONAL ACTIVITY

The USPS operates without a specific budget for international activity and does not receive funding from outside the agency. Most of its international activities are related to its participation in the Universal Postal Union (UPU). For example, a 15-year study of postal codes was conducted by UPU with support from USPS. The benefits from UPU studies, programs, and services accrue to developing countries in need of assistance in upgrading postal services.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

USPS communications-related activity in developing countries is evident in four areas: conference participation, studies, technical assistance, and equipment grants.

A. Technical Assistance

Most of USPS's requests for technical assistance from developing countries come through UPU, via UNDP. USPS has no voice in determining how UPU channels its resources to developing countries, because it does not contribute to the UPU special fund. USPS has granted requests for modest technical assistance or surplus equipment from developing countries.

- Although most technical assistance is for traditional postal service, USPS also assists developing countries with new electronic technologies such as international facsimile. USPS makes its software for the electronic international mail service, known as Intelpost, available at no charge to those countries with the technical capability to interconnect with the system.
- Stateside technical assistance has provided two Honduran postal officers two months working with the USPS, with USPS providing their per diem. Similarly, USPS provided two months of technical assistance to Korean postal officials, and a two-week course and two-week tour of postal facilities for an emerging Micronesian nation, covering all expenses except travel.
- Overseas, USPS has conducted a two-week course on express mail in Egypt, a one-week program on facility development in Liberia, and a training course on financial audit

procedures in Mexico. USPS has also provided technical assistance to Panama on express mail, and to Bermuda on automated counter operations in small post offices. In each case, USPS covered all costs.

B. Equipment Grants

The market value of surplus equipment transferred to developing countries is relatively low. The cost of transporting the equipment is a serious constraint to donations such as:

- Five surplus mobile post offices provided to Lebanon (Lebanon paid for their transportation).
- Ten surplus jeeps for Liberia.
- Other equipment to Panama and Bermuda.

III. LEVEL OF EFFORT

USPS has no staff exclusively for international activity. The Program Manager of International Postal Affairs estimates that he devotes 25 to 30 percent of his time on international matters related to developing countries. Costs incurred by USPS in responding to requests for assistance are absorbed within existing budgets.

AGENCY: UNITED STATES TRADE REPRESENTATIVE (USTR)

I. GENERAL INTERNATIONAL ACTIVITY

USTR acts as an international broker, facilitating the sale of U.S. equipment and services overseas, and negotiating international trade agreements.

USTR collaborates with 15 Federal agencies, particularly:

- o DOD
- o State
- o Treasury
- o DOL
- o FCC

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

USTR is marginally involved in the SIG. USTR does not fund or support any communications-related activity in developing countries.

Owing to its unique role in bringing together U.S. Government agencies and the U.S. telecommunications industry, the U.S. Telecommunications Training Institute is described in summary form below.

UNITED STATES TELECOMMUNICATIONS TRAINING INSTITUTE (USTTI)

I. GENERAL INTERNATIONAL ACTIVITY

USTTI is a joint venture between the U.S. Government and the U.S. private sector to train communications professionals from developing countries around the world.

II. SPECIFIC COMMUNICATIONS DEVELOPMENT ACTIVITIES

Through USTTI, U.S. telecommunications corporations, in cooperation with the Federal Government, offer technical and managerial training in telecommunications to participants from developing countries. USTTI's activities may be categorized as follows:

A. By Function

Training courses are offered in:

- o Communication Policy
- o Radio Spectrum Management
- o Network Planning
- o Information Systems
- o Network Technical Control
- o Satellite Management
- o Broadcast Management
- o Transmission Systems
- o Supervisory Management
- o Terminal Equipment
- o Record Networks
- o Store and Forward Switching
- o Circuit Switch Management

B. By Type of Service

Educational, technical assistance.

C. By Media/Mode

TV, video, telephone, computer, print.

D. By Country/Region

Sixty-one developing countries participated in USTTI program during 1983-84:

- | | | |
|----------------------|----------------|----------------|
| o Antigua | o Botswana | o Bahrain |
| o Aruba | o Cameroon | o Cyprus |
| o Bahamas | o Congo | o Egypt |
| o Belize | o Ethiopia | o Israel |
| o Bolivia | o Gambia | o Jordan |
| o Brazil | o Ghana | o Kuwait |
| o Chile | o Guinea | o Lebanon |
| o Dominica | o Ivory Coast | o Qatar |
| o Dominican Republic | o Kenya | o Saudi Arabia |
| o El Salvador | o Liberia | o Turkey |
| o Guatemala | o Madagascar | o Yemen |
| o Guyana | o Malawi | |
| o Haiti | o Nigeria | o Fiji |
| o Honduras | o Rwanda | o Hong Kong |
| o Jamaica | o Senegal | o India |
| o Mexico | o Sierra Leone | o Indonesia |
| o Trinidad | o Swaziland | o South Korea |
| o Venezuela | o Sudan | o Pakistan |
| | o Tanzania | o Philippines |
| | o Zambia | o Singapore |
| | o Zaire | o Taiwan |
| | o Zimbabwe | o Thailand |

E. Collaborative Efforts

1. Federal Agency Collaboration

The FCC, NTIA, AID, and USIA all collaborate in sponsoring courses and funding participants. The FCC and NTIA also donated personnel time during the Institute's initial months to aid in setting up the organization.

2. Private Sector Collaboration

The following corporations support USTTI activities by offering courses, services, or administrative and scholarship funds:

- o Academy for Educational Development, Systems Services Division
- o AT&T International
- o Aeronautical Radio, Inc.
- o Collins Transmission Systems Division/Rockwell International Corporation
- o COMSAT
- o Digital Equipment Corporation

- o E. F. Johnson Co.
- o GTE International
- o Harris Corporation, Broadcast Division
- o International Business Machines Corporation (IBM)
- o International Telephone and Telegraph (ITT)
- o M/A - COM
- o Merrill Lynch and Company
- o MCI Telecommunications Corporation (MCI)
- o Motorola, Inc.
- o Northern Telecom
- o Racal-Milgo
- o RCA Global Communications
- o Spectrum Planning
- o Taurio Corporation
- o TRT Telecommunications Corporation
- o The Wall Street Journal
- o The Western Union Corporation
- o Westinghouse Corporation
- o Xerox Corporation