

Strategic Information Resources Management Plan: Volume I

Fiscal Years 1992 - 1997



Agency for
International
Development

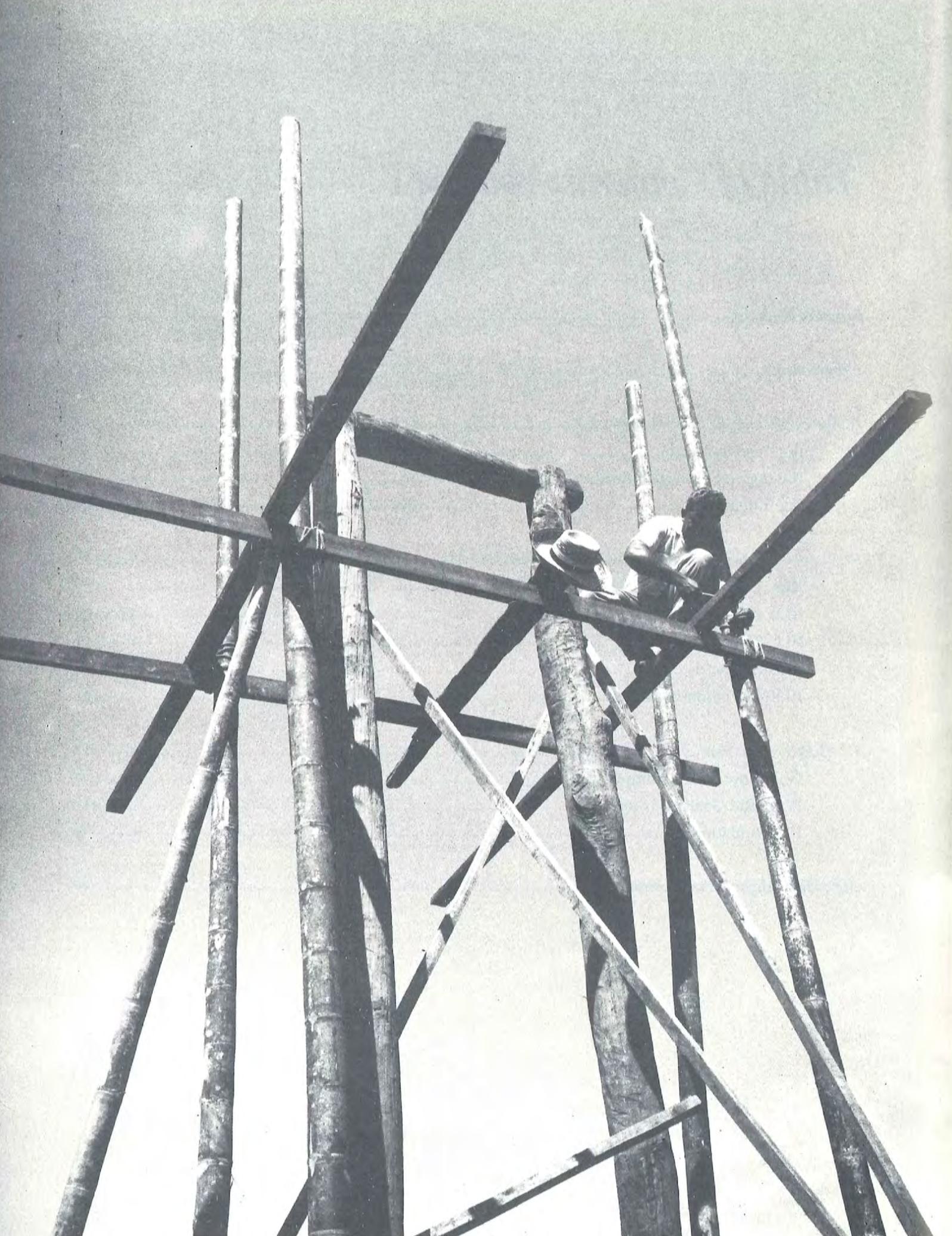
*Strategic Information Resources
Management Plan: Volume I*

Fiscal Years 1992 - 1997

November 1991

Table of Contents: Volume I

<i>Executive Summary</i>	i
<i>I. Introduction</i>	1
<i>II. Agency Mission and Organization</i>	3
II.A Agency Mission	3
II.B Agency Strategic Initiatives	4
II.C Organization	6
<i>III. Current Information Resources Management Environment</i>	11
III.A IRM Program Management	11
III.B Information Management	14
III.C Hardware	14
III.D Software	16
III.E Telecommunications	17
<i>IV. IRM Strategic Plan</i>	19
IV.A Governing Assumptions	19
IV.B IRM Goals and Strategies	21
IV.C Initiatives	26
<i>Appendix I: Major Systems Inventory</i>	35





Introduction

This is the first annual update of the A.I.D. Strategic Information Resources Management Plan. This plan covers the period FY 92-97 and reflects the completion of a significant number of initiatives, the revision of others, and the addition of several new initiatives. The plan also reflects significant changes which have occurred in the past year, both in the Office of IRM and in the Agency as a whole.

The Office of IRM was reorganized in 1991, reducing the number of divisions and aligning them functionally. The functions of telephone management, telegram management and data administration have been added to IRM's responsibilities. Substantial progress was made on the establishment of information engineering, data administration, and IRM strategic planning as integral parts of the IRM program.

Also during the past year, the Administrator has articulated a number of program and management initiatives designed to improve the management of A.I.D. programs, sharpen the focus of our programs around a limited number of key objectives, and im-

prove our ability to measure and evaluate program performance. The Agency was reorganized in May of 1991, narrowing the span of control for the Administrator, combining all administrative functions under an Associate Administrator for Finance and Administration, and also creating a strategic planning staff as a part of a top-level policy group in the Agency. Each of these changes impacts the management of the IRM function in the Agency. Indeed, the Administrator, in his description of the new organization, and in his initiative "Toward Strategic Management", emphasized repeatedly the need for "the information system of the Agency [to be] upgraded to meet program, accountability, and efficiency objectives, as well as to reduce vulnerability to misuse. The information resources strategy encompasses new hardware, software, better trained users and standardized data management to ensure that all personnel have accurate and reliable information."

This emphasis on strategic planning and the setting of business goals by the Administrator has been reflected in an increased emphasis on strategic IRM planning within the Agency. Over the next five years, A.I.D. will be focusing much of its information technology efforts towards more effectively meeting the needs of the management team responsible for the execution of the Agency's program overseas. This includes major efforts in the areas of redesigning the finance and administrative support systems required for program managers, and migrating to open systems platforms from the current proprietary minicomputer architecture. In addition, the Administrator's plans to streamline the Agency, as well as the pressures of the current budget climate, will require A.I.D. to emphasize standardization and integration of its automated systems, in order to avoid duplication of effort and data redundancy across Agency systems and offices.

Goals

This revised plan reflects the same fundamental IRM strategies and goals cited in last year's plan. The five IRM goals, which define the broad direc-

tions for the IRM program over the next five years, are:

1. Information Infrastructure

To develop an information infrastructure which will assure that A.I.D.'s information resources are prudently managed as a key Agency resource. This infrastructure includes facilities, equipment, methodologies, policies, standards and procedures which support Agency programs, goals and strategies.

2. Worldwide Connectivity

To provide worldwide connectivity which will allow A.I.D. staff to exchange and share information within their working groups, and with others in A.I.D./W and overseas missions to carry out their functions in order to increase productivity and efficiency.

3. Corporate Systems and Services

To provide timely, accurate, and secure information to support Agency missions and goals and to develop and maintain key resource management information systems (financial, personnel, contractual, project), which in turn will allow management to assure accountability and the prudent investment of Agency resources.

4. Technological Direction

To position the information resources management program so that A.I.D. will have the ability to incorporate new information management technologies and techniques that will be needed to address current and future Agency information management challenges.

5. Information Architecture

To improve the quality of information throughout the Agency for use by staff in decision making and

analysis through a systematic approach to the management of data resources. The information architecture (data, application, hardware) must accommodate rapid strategic and tactical changes of the Agency, in response to the pursuit of U.S. interests and A.I.D. goals.

Initiatives

The initiatives supporting these goals and the Agency's information resource management needs are contained in a separate volume, *Volume II: The Tactical Plan*. There are a total of 18 initiatives for the period FY 92 -97 as follows:

IPM-1 Strategic Business Plan. This refers to the need for an Agency-level strategic business plan. While FA/IRM is not in a position to implement this initiative, it will work with the Agency's new Strategic Planning Office to ensure that the IRM Strategic Plan fully supports the Agency's plan when it is formulated.

IPM-2 Information Engineering (IE). IE is a methodology for analyzing the Agency's business data needs, utilizing Computer Assisted Software Engineering (CASE) tools to integrate the analysis process with later systems development. The focus for FY92-93 is on completion of the Information Systems Plan and Business Area Analyses for each major area of the Agency. This methodology is expected to result in a reduction in redundant and incompatible systems, and in improved productivity for system developers.

IPM-6 Strengthen Field Support for IRM Activities. This initiative, which was not funded in FY91, was to address the need for increased IRM support to the missions. The strategy for FY92 and beyond is to assign at least one IRM staffer to each of the five regions in a support role, as funds and the appropriate personnel are available.

IPM-10 Quality Assurance Program. This new initiative for FY92 is to institutionalize QA programs and procedures within IRM. The result will be de-



creased system life cycle costs and improved user satisfaction.

IM-1 Data Administration. Continuing program. The focus for FY92-93 will be on data administration, data dictionary maintenance, and data modeling. Data administration is key to streamlining the Agency's inventory of systems and permitting data sharing across systems.

IM-5 ADP Security. Continuing program. The emphasis in FY92-93 will be on security policy formulation, conducting risk assessments, and bolstering security through the acquisition of appropriate hardware and software devices.

H-1 Excellence Through Automation (ETA). The objective of ETA is to acquire an additional 750 new desktop workstations by the end of FY93, which should bring all of A.I.D./W to 100%, in terms of workstation to employee ratio. This will improve employee productivity, and is the necessary first

step in the move to open systems, which will vastly decrease the Agency's hardware and software costs.

H-2 Open Systems Migration. [formerly A.I.D./W Hardware (H-2), USAID Hardware (H-3), and USAID Software (S-4)]. This initiative was recast to focus on the new POSIX platforms; it includes acquisition, training, development of a detailed migration strategy for Washington and the field, and conversion of key applications for the missions.

H-4 Records Management. This initiative, which is being jointly undertaken by FA/IRM and FA/AS, was recast slightly to provide a more integrated IRM focus on how new technologies like CD-ROM and imaging fit within an overall records management program. The FY92 focus should be on formulating an integrated strategy for these technologies, with a view toward the Agency's total document management needs, including consideration of the "paperless office" concept.



H-5 Capacity Planning. This initiative was recast to focus on the LANs and UNIX platforms, and put in terms of one-time expenditures to bolster our capabilities to capture data, establish benchmarks and do modelling of capacity utilization on these platforms, so that system growth and utilization can be better planned and monitored.

H-6 Mainframe Computer Replacement. Studies are currently underway to validate the capacity constraints of the current system, as well as to assess the benefits of replacing the aging technology of the current mainframe with new generation equipment. The results of these studies will determine whether or not A.I.D. should acquire a new mainframe in FY93.

S-1 AWACS. This continuing program to replace the Agency's financial systems is a top priority of FM and IRM. The project is progressing on schedule.

S-2 Outsourcing Payroll/Personnel Systems. IRM, in conjunction with FM and HRDM, will complete the cost/benefit analysis and feasibility studies for this in FY92. Expected benefits include reduced costs and improved service.

S-3 A.I.D./W Information Systems. The list of priority systems development projects includes PMIS (including "modules" for EUR as a priority), Buy America, workforce planning, participant training, inventory tracking system for IRM, and integrated systems for FA/AS.

S-8 PRISM. This new project to develop a Program Performance Information System for Strategic Management is a top priority in order to strengthen the role of program evaluation in the Agency. This project is being led by PPC/CDIE.

T-1 Network Architecture Planning. Postponed in FY 91 due to the need to first develop appropriate telecommunications policies, this will be a major project in FY 92 - 93, involving defining network resource requirements, developing a physical and

logical network design, and evaluating alternative approaches for international data communications.

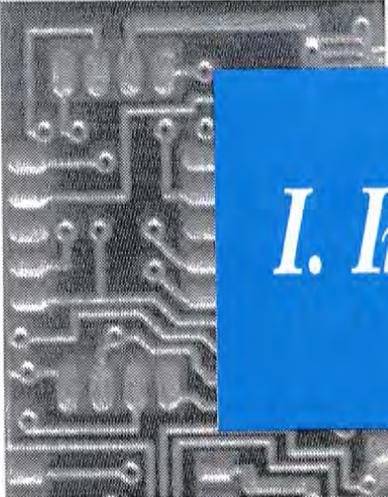
T-2 Telephone Management. This initiative will be concluded in FY92. The focus is on a one-time push to put procedures and controls in place to better manage A.I.D.'s costs for this DOS-provided service and to improve service quality.

T-3 Cable Room Upgrade. This initiative will require significant funds in FY 93 to replace hardware and software related to the cable distribution system, driven by system changes planned by the State Department. The improved system is expected to pay for itself through reduced maintenance, printing and staff costs.

Accomplishments

The 18 initiatives listed above define the steps A.I.D. will take over the next five years to reach its goals for the IRM program. Significant progress has been made on many of the continuing initiatives since last year's plan. In fact, a number of initiatives in last year's plan were completed, and are no longer listed in the plan. The completed initiatives included the reorganization of IRM, establishment of additional technical support centers throughout A.I.D./Washington, the acquisition of commercial software tools supporting the new methodology A.I.D. is adopting, and the development of a new contract information system and an improved time and attendance system. In addition, a number of initiatives by PPC/CDIE expanded the access of A.I.D. staff to technical information and support from a variety of sources.





I. Introduction

The Agency for International Development is the arm of the U.S. Government primarily responsible for assisting developing countries in increasing their productive capabilities, improving their quality of life, and developing their human and economic resources. A.I.D.'s programs, which are normally carried out on a bilateral basis, consist of two types: development assistance, ordinarily in the form of specific projects or groups of related projects, and economic support, usually in the form of outright transfer of funds and/or commodities. A.I.D.'s activity in each developing country is unique, reflecting the specific country circumstances. The methods employed to accomplish the Agency's objectives involve transfer of knowledge, expertise, and resources (funds, supplies, and commodities) and the education and training of local populations in the application and use of these resources. Information plays a key role throughout.

The purpose of IRM strategic planning is to set directions for management of information technology to accomplish the organization's goals and strategies. The plan is reassessed annually to reflect changes in the organization, its information requirements, and technology. The A.I.D. Strategic Information Resources Management Plan for FY 92 - 97 updates last year's plan, reflecting the completion of a significant number of initiatives, the revision of others, and the addition of several new initiatives. The fundamental goals and strategies of

the original plan remain the same. This document is organized in two parts — Volume 1: the Strategic Plan, containing an overview of the Agency, its IRM program and plan; and Volume 2: the Tactical Plan, providing details of each of the Plan's 18 initiatives, resource implications, and major milestones.







II. Agency Mission and Organization

II.A Agency Mission

Mission Statement

The Agency for International Development administers economic assistance programs that combine an American tradition of international concern and generosity with the active promotion of America's national interests. A.I.D. assists developing countries to realize their full national potential through the development of open and democratic societies and the dynamism of free markets and individual initiative. A.I.D. assists nations throughout the world to improve the quality of human life and to expand the range of individual opportunities by reducing poverty, ignorance and malnutrition.

A.I.D. meets these objectives through a worldwide network of country missions which develop and implement programs guided by six principles:

- support for free markets and broad-based economic growth;*
- concern for individuals and the development of their economic and social well-being;*
- support for democracy;*
- responsible environmental policies and prudent management of natural resources;*
- support for lasting solutions to transnational problems; and,*
- humanitarian assistance to those who suffer from natural or man-made disasters.*

A.I.D.'s mission as a foreign affairs agency of the U.S. government is to translate into action the conviction of our nation that continued American economic and moral leadership is vital to a peaceful and prosperous world.

The IRM plan supports the needs of the Agency, as reflected in its mission, strategic objectives, and organizational structure. This section provides background information on A.I.D., as a framework for understanding the IRM plan.

II.B Agency Strategic Initiatives

The Agency's goals and strategies, as stated in the revised mission statement, have been amplified recently by the Administrator in a series of six initiatives. These initiatives are lenses through which the Agency is looking ahead at the development challenges of the 1990s. They are:

Support for Democracy: ensuring the capacity to both nurture and sustain open and participatory forms of government around the world. The Democracy Initiative will focus A.I.D. experience, skills, and resources to:

- strengthen democratic and pluralistic institutions;
- expand democratic participation and practices throughout A.I.D.'s programs;
- establish democratization as an allocation criteria;
- establish rapid response mechanisms to democratic breakthroughs in client countries.

Business and Development Partnership: enhancing the competitiveness of American firms in responding to development needs in the emerging markets of the global economy. The Partnership Initiative includes the following activities:

- expanding the use of the capital projects fund to encourage U.S. firms to participate competitively in infrastructure projects;

- establishing a business and development network to match U.S. and developing country entrepreneurs in mutually profitable ventures;
- establishing a Business Advisory Council;
- identifying and supporting trade and investment pilot projects in target industries;
- strengthening the ties between A.I.D., U.S. universities, and their counterpart institutions in developing countries.

Family and Development: recognizing that families, not governments, must take the ultimate responsibility for the well-being, education and personal growth of their members, and identifying innovative ways to increase the mobilization of family resources to stimulate economic growth and social development. The objectives of this initiative are to:

- expand the use of the family as a critical unit of analysis in understanding client country societies;
- strengthen the participation of families in the development process;
- identify innovative ways to increase the mobilization of family resources to stimulate economic growth and social development;
- build on successful programs that have focused on the family as the key to the achievement of development objectives;
- use the family concept and analytical framework to improve and enrich the results of monitoring, research and evaluation of development impacts.

Environment: recognizing that environmental problems are closely linked with developmental concerns, and expanding and focusing A.I.D.'s environmental and natural resource interventions. The approaches to be used include:

- developing sound economic and environmental policies;
- strengthening institutions in the host country;
- involving the private sector in creative solutions.

Toward Strategic Management: a comprehensive undertaking to streamline and focus Agency management, with the expectation that fiscal pressures in the 1990s will require us to do fewer things, and do them very well. This initiative will focus on evaluating the program, tightening controls on funds, developing and rewarding the workforce, streamlining the portfolio and structure of the Agency, streamlining the process for design and approval of A.I.D. development projects, and obtain-

ing and using the best information technology to improve productivity.

The Administrator's Evaluation Initiative: focusing on strengthening the role of evaluation in the Agency as a critical part of the Administrator's emphasis on management excellence in A.I.D. The main elements of this initiative include:

- targeting assessments on strategic issues of performance and impact that will help senior management in making critical programming decisions and in reporting to Congress, OMB, and the public;
- assessing A.I.D.'s operational processes and management systems;



- undertaking regular, comprehensive reviews of A.I.D.'s program performance;
- expanding technical assistance, guidance, and training support to Missions in designing and implementing evaluation systems.

This emphasis on strategic planning and the setting of business goals by the Administrator has been reflected in an increased emphasis on strategic IRM planning within the Agency. In his description of the Agency reorganization plan, the Administrator stated, "The information system of the Agency is being upgraded to meet program, accountability, and efficiency objectives, as well as to reduce vulnerability to misuse. The information resources strategy encompasses new hardware, software, better trained users and standardized data management to ensure that all personnel have accurate and reliable information." Over the next five years, A.I.D. will be focusing much of its information technology efforts towards more effectively meeting the needs of the management team responsible for the execution of the Agency's program overseas. This includes major efforts in the areas of redesigning the finance and administrative support systems required for program managers, and migrating to open systems platforms from the current proprietary minicomputer architecture. In addition, the Administrator's plans to streamline the Agency, as well as the pressures of the current budget climate, will require A.I.D. to emphasize standardization and integration of its automated systems, in order to avoid duplication of effort and data redundancy across Agency systems and offices.

II.C Organization

The Agency. The Administrator's focus on strategic planning and improving the management of A.I.D. has also led to a reorganization of the Agency headquarters organization, during 1991. The new organization, the result of a year-long review, streamlined the reporting structure of the Agency,

and placed all of the administrative functions, including IRM, under a single senior manager. In addition, a new office of Strategic Planning was created at a high level in the Agency, to advise the Administrator on long-range program planning issues. The organization is illustrated in Exhibit 1.

In addition to the components of A.I.D./Washington shown in the Exhibit, the Agency has over 70 overseas missions and posts throughout the world. These include three types of A.I.D. Country organizations where A.I.D. is carrying out bilateral economic assistance programs: A.I.D. Missions, A.I.D. Offices, and A.I.D. Sections of Embassies. In addition to these country organizations, A.I.D. has Offices for Multicountry Programs, Offices for Multicountry Services, and Development Assistance Coordination and Representation Offices.

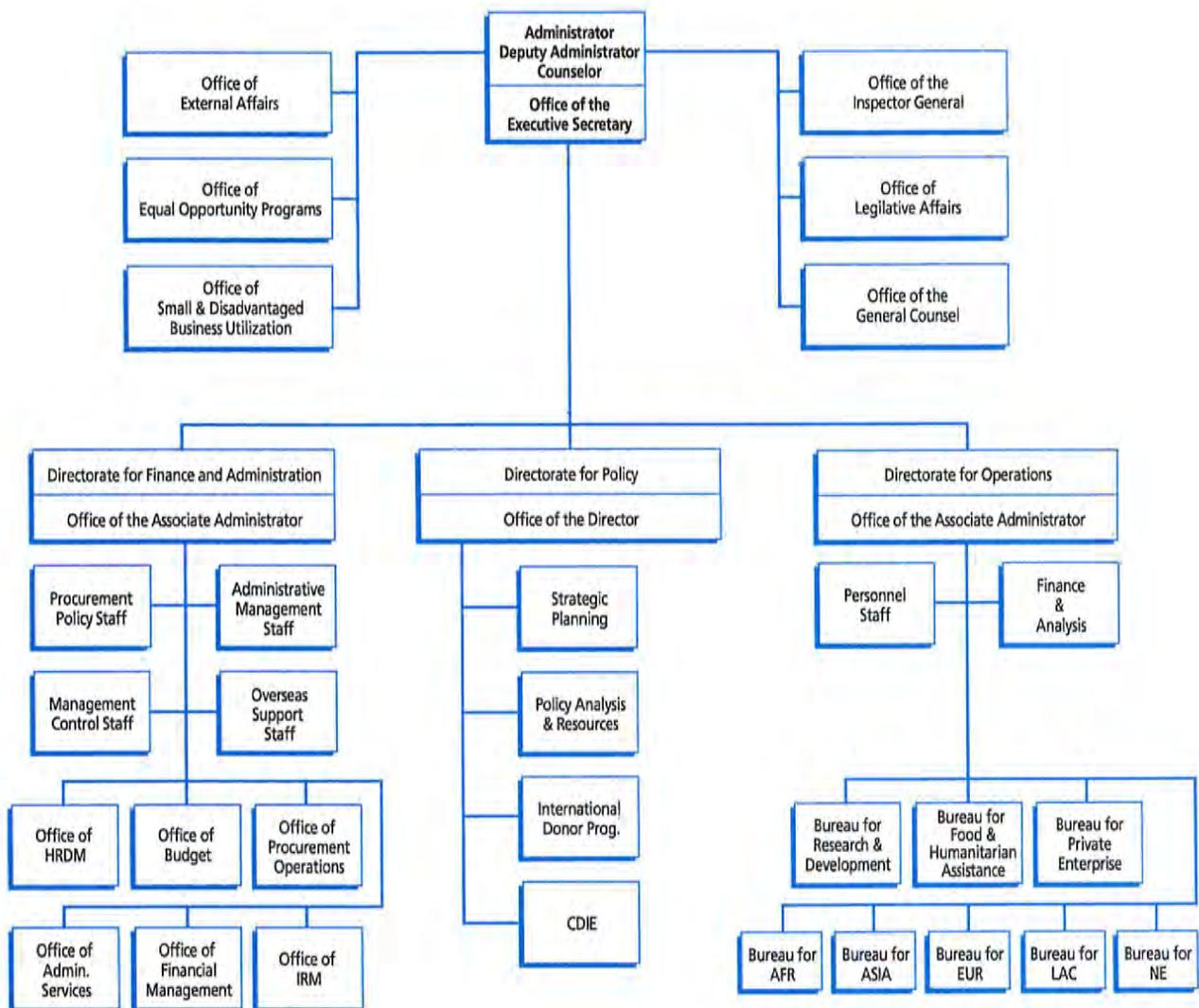
The IRM Function. The IRM function has also been reorganized during the past year. At the top level, the Administrator's reorganization created the Office of the Associate Administrator for Finance and Administration. This position, in keeping with the



Chief Financial Officers Act and the Paperwork Reduction Act, is designated as both the Agency's CFO and the Designated Senior Official (DSO) for IRM. The DSO, who must report directly to the head of the Agency, is the official responsible for carrying out the requirements of the Paperwork Reduction Act.

Exhibit 1

Agency for International Development



In addition to the DSO and the Office of IRM, the other major player in the area of IRM program management is the Information Management Committee (IMC). This committee is made up of senior representatives from the three directorates in A.I.D./Washington (Policy, Operations, and Finance and Administration), and meets periodically to guide IRM on key strategic issues, and to establish priorities for IRM initiatives.

Reporting to the Associate Administrator for Finance and Administration, the Director of the Office of Information Resources Management (IRM) supervises a newly reorganized and streamlined IRM organization, consisting of five divisions. This organization, and the functions of each division, are illustrated in Exhibit 2. The IRM organization reflects a number of significant changes since last year's plan was published. In addition to the reduction in the number of divisions from seven to five, three major functions, telephone systems management, telegram management and data administration, have been transferred to IRM from other organizations where they previously resided.

The Office of Information Resources Management (IRM) provides IRM program management for the Agency as well as a wide range of services. These include:

- Central computer operations, both IBM and Wang
- Hardware and software maintenance
- Telephone, cable, FAX and ICS systems and services
- New information systems development
- Acquisitions support for A.I.D./W and overseas automation equipment and software
- User support
- Advisory support for project/program funded automation components and activities

- New technology development (i.e., information engineering, migration to open systems, etc.)
- Office automation support through the Excellence Through Automation program and LAN network infrastructure management

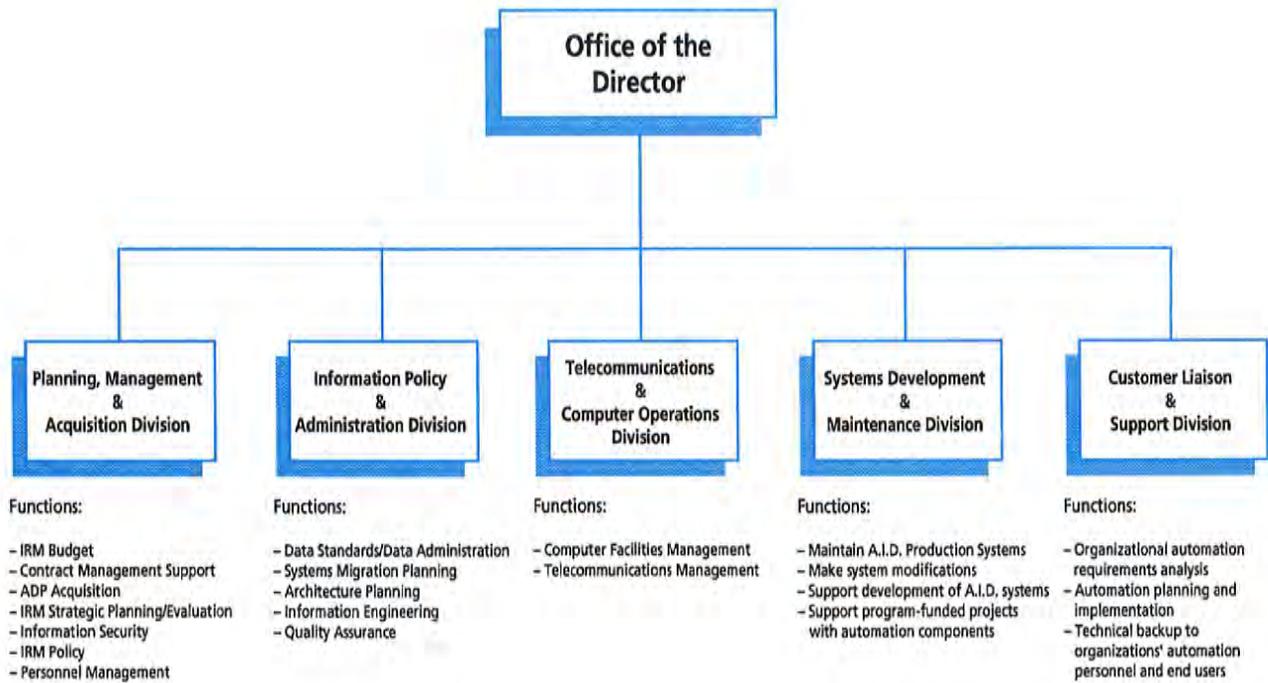
The services provided by the individual divisions are as follows:

Planning, Management and Acquisition Division (IRM/PMA). PMA is responsible for the planning, development, control and expenditure of the A.I.D. information technology budget. This includes development of the IRM strategic plan and the IRM budget, and tracking activities throughout the year to ensure that both financial and strategic performance targets are met. The division also provides all administrative support required by the Director and the other divisions, including personnel management, contracting support, training and travel management. The contracting support function is an extensive one, as this involves managing procurements and purchases not just for IRM, but for all IRM-related requirements of both the Washington offices and the overseas missions of A.I.D. In addition to these administrative support functions, the division also is responsible for the development of Agency-wide IRM policies and management of the information security program. PMA also oversees implementation of the Paperwork Reduction Act, establishes policies relating to central agency directives, and serves as the focal point in IRM for compliance review, managing the IRM review program and coordinating contacts with external regulatory agencies, such as GSA and GAO.

Information Policy and Administration Division (IRM/IPA). IPA is the "think tank" of the IRM office, with a relatively small staff but a high concentration of senior IRM analysts who provide expertise in information engineering, data administration, telecommunications and ADP systems architecture planning, and new technology research and development. IPA develops policies in these areas, and provides leadership to the rest of IRM and the Agency in implementing these new approaches.

Exhibit 2

Office of Information Resources Management

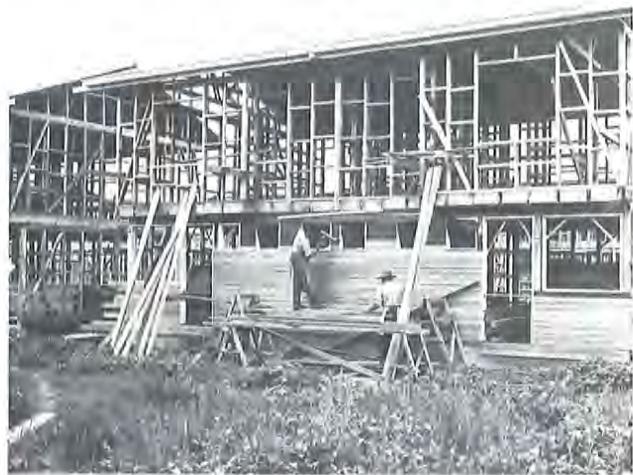


The division provides research and training for other parts of the organization on these technologies, and conducts cost/benefit analyses as appropriate. In addition, IPA is responsible for the Quality Assurance program in IRM.

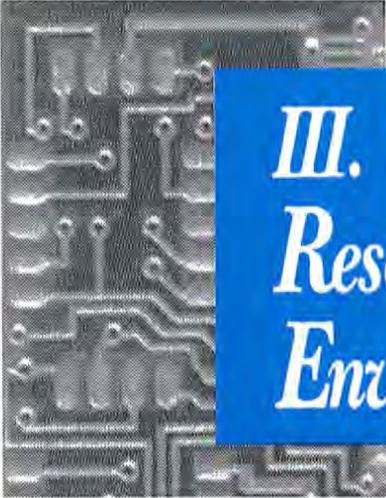
Telecommunications & Computer Operations Division (IRM/TCO). TCO is the operations division of IRM. It operates and maintains the IBM mainframe site, several Wang VS minicomputer facilities, and the Agency's telecommunications facilities, including LAN networks and servers located throughout A.I.D./W. This includes performance tuning of the hardware and operating system software. TCO maintains the Agency's automated systems disaster recovery plan for both the IBM and Wang systems. In addition to computer operations, TCO is responsible for administering the A.I.D./W telephone system. This involves close coordination with the Department of State, which owns the system in the majority of A.I.D. buildings which are shared with State. TCO also maintains the cable room distribution function, printing and distributing cables received through the DOS cable system.

Systems Development & Maintenance Division (IRM/SDM). SDM serves as the focal point within IRM for the development and maintenance of application systems for A.I.D. SDM directs the design, development, programming and implementation of automated systems for all platforms, largely through the efforts of contractor staff. Because of the large number of existing systems, and the continual need for modifications, the majority of SDM's resources are assigned to maintenance activities. A smaller staff is responsible for the development of new systems. SDM assists clients in their use of existing systems through responses to inquiries, training, and developing data extracts. SDM also acts as the Agency's data base administrator, managing A.I.D. data base software, coordinating the design and maintenance of A.I.D. data bases, and providing performance tuning, data base access control and data element dictionary maintenance.

Customer Liaison and Support Division (IRM/CLS). CLS, in contrast to the other divisions with their functional organization, is organized on a client basis, with three groups responding to the needs of the Agency's three directorates, independent offices, and overseas missions, and a fourth group providing technical and project support to all parts of the Agency. This latter group also maintains technical support centers in several A.I.D./W locations, where users can access personal computer tools not necessarily available in their offices, or obtain technical help with problems encountered in



their work. CLS coordinates the acquisition of hardware and software for A.I.D./W and missions, helping the client organizations to determine their requirements, and then forwarding the requests to PMA for procurement. Through its close contact with user organizations, CLS also provides valuable input to IRM policies, standards, and strategic directions.



III. Current Information Resources Management Environment

The current environment, as well as the Agency's strategic plan, is described using the organizational format recommended by GSA in its "Strategic Information Resources Management Planning Handbook". This approach breaks the IRM program down into five "program elements": IRM Program Management, Information (i.e., data) Management, Hardware, Software, and Telecommunications.

III.A IRM Program Management

GSA defines IRM Program Management as the overall management and control of IRM activities including the development and implementation of IRM policies and programs.

Organizational Issues. As discussed above, the reorganization of the Office of IRM has resulted in a better alignment of IRM functions by bringing telecommunications and data administration under the management of the IRM staff. Within IRM, the reorganization of divisions has created an Information Policy and Administration Division which provides a focal point for the Office's efforts to move forward in new technologies, including information

engineering, data administration, quality assurance, network architecture, and the migration to open systems and relational data base management system (RDBMS) technology. This small staff of senior IRM specialists serves as the think tank and pioneers for the Office of IRM, guiding the IRM program forward in these and other new technologies.

In another division created by the reorganization, Planning, Management and Acquisition, the strategic planning function has been institutionalized. This planning document, and the procedures that support the planning process and link it to the budget, have been developed by the planning staff in this division. In past years, IRM planning had largely been done by outside contractors, rather than being a true product of the IRM organization. A related development is the creation of a top level strategic planning office for Agency-wide issues, as a part of the Administrator's reorganization. It is expected that the IRM staff will coordinate with this new staff in linking the IRM strategic plan more closely with a more fully defined Agency strategic plan.

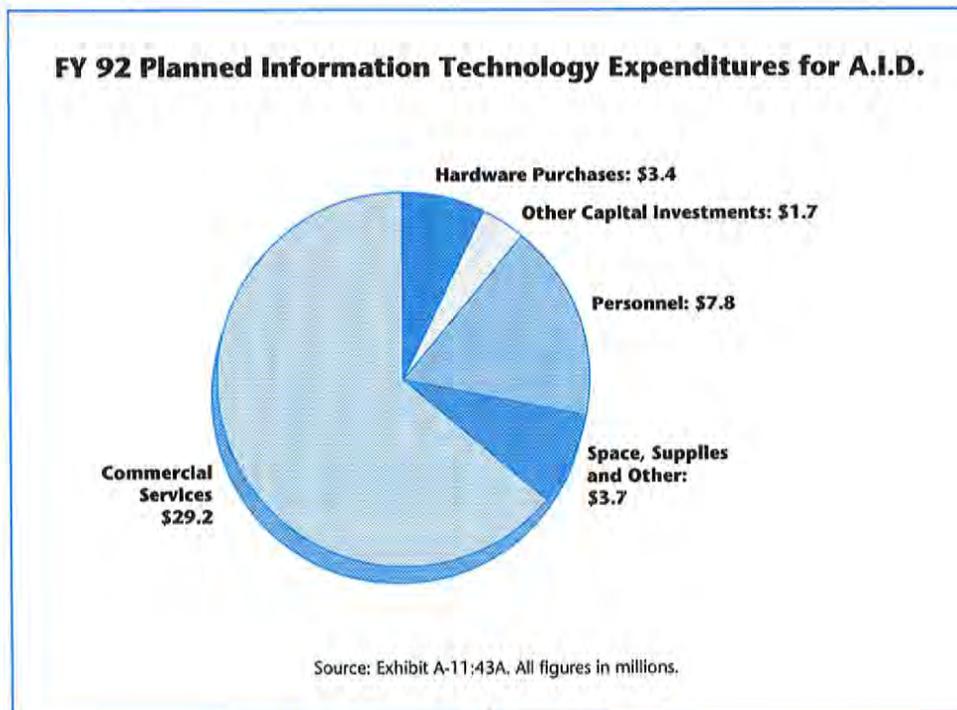
Life Cycle Development Methodology. The Agency has taken important first steps in implementing information engineering (IE) as the preferred systems life cycle methodology. The design for a new, integrated financial system, known as the A.I.D./Washington Accounting and Control System (AWACS), is being developed using IE techniques and CASE

tools. While this was the pioneer effort in the Agency, IRM is now beginning to do Information System Planning (ISP) for the Agency as a whole, and in FY92 and 93, will follow this with Business Area Analyses (BAAs) for the three or four major functional groupings. It is expected that this approach, using CASE tools, and the adoption of an RDBMS employing fourth generation language technology, will result in major changes to the system design and development process in the Agency. System developers' productivity is expected to increase dramatically in the next few years. While this new methodology will require extensive training, it is necessary to meet the demands for better management systems arising from the Administrator's management strategy.

Funding Issues. Funding for the information resources management program comes under two separate budgets — operating expenses, and program funds. The majority of information resources management expenses in Washington fall under operating expense budgets. Exceptions include projects that are part of development initiatives in support of recipient countries, and the Center for Development Information and Evalua-

tion (CDIE), which operates its own computer facility partially with program funds. Operating expenses are always limited, and funding a major capital investment, such as acquiring new POSIX-compliant platforms, out of recurring IRM budgets is difficult — although preliminary budget plans for FY93 offer some prospect of relief. A number of major systems efforts, including acquiring PCs and LANs for approximately 1,100 of the Washington staff, were accomplished using a specially authorized fund of approximately \$5.5 million during FY 89-91. These deobligation/reobligation funds are exhausted, however, and one of the challenges facing Agency management is how to complete the automation of the Agency and implement the new hardware and software systems called for in this plan. The Administrator's strategic plan alludes to the need to operate A.I.D.'s program in the face of declining staff and funding levels, and clearly automation is a major key to doing this well. Finding the funds is perhaps the most critical issue in IRM program management.

Total planned funding for information technology in A.I.D., as illustrated in the Agency "43A" submission to OMB for FY92, is shown in the chart below.





While these figures are somewhat dated, they show the relative distribution of spending. Direct funding for the Office of IRM represents about one half of the total spending.

Another issue related to funding is one of centralization versus decentralization. The IRM program in relation to the overseas missions is highly decentralized. The Office of IRM provides guidance, acquisition support, some installation support, maintenance coordination, and major common application systems. The decision to buy new hardware or software, or to develop new local applications, however, is up to the missions. In Washington, the picture is somewhat different. Most of the funds for automation efforts are allocated to the Office of IRM, which develops systems for, and supplies hardware and software to, Washington offices, within the limits of IRM's regular budget. In terms of application development, IRM

generally funds the development of corporate systems (e.g., finance, personnel, etc.), and other offices usually fund their own specific applications. The primary mechanism for allocating the scarce IRM resources is the Information Management Committee, which guides IRM in establishing priorities.

The extent to which mission buys of hardware and software drive IRM costs (since IRM provides system maintenance and support worldwide) is a subject of some concern. Various mechanisms to strengthen centralized control, including the possibility of service surcharges on mission orders, are being evaluated in response to these concerns.

III.B Information Management

The program element "Information Management", as defined by GSA, deals with the overall management and control of the agency's investment in information or data, including such issues as standardization and security.

Data Administration. The Agency's data administration program is still in its early stages. Studies have been conducted and a data dictionary tool selected. A data administration policy has been established within IRM, but the policy has not yet been implemented Agency-wide. The data administration staff are participating in the information engineering analyses for AWACS and for the Agency as a whole, and their efforts in data modelling will establish the framework for an effective data administration program as IE's Business Area Analyses are applied to all Agency system requirements during FY 92 - 93.

A related development is the acquisition of relational data base management technology to run on the LANs and open systems platforms to be acquired. The shift to RDBMS technology will improve the Agency's ability to manage and share data between systems, as well as accelerate the process of application development.

Security. The Agency has taken a number of steps to analyze and defend against security risks, and an ambitious program for the next several years has been laid out. At A.I.D.'s request, the National Security Agency conducted an information systems security assessment of A.I.D. to identify potential vulnerabilities in telecommunications and automated information systems. NSA recommendations were studied, and an effective approach to minimize potential losses and protect information resources has been developed.

A.I.D. has embarked on a dual track strategy to attain compliance with Federal security standards. Track 1 involves managing the day-to-day operations and contingencies that may arise and providing a level of assurance in data processing operations. For example, the Agency has secured contracts for disaster backup and for an off-site storage location for backup tapes. Track 2 involves the development and execution of a Strategic Plan for ADP Security. This plan consists of four major components:

- Security Policy Formulation (Infrastructure, Guidebook, Training, Sensitivity and Criticality Assessment Methodology)
- Risk Assessment (Risk Analyses, Countermeasure Cost Benefit Analysis, Sensitive Application Certification Reviews)
- Plans Administration (Facility Security Plan, Application Security and Continuity Plans, Installation Contingency and Disaster Recovery Plans)
- Certification and Accreditation (Applications Certified, Installations Accredited, Compliance with A-130, Agency Approval)

With the Agency moving toward the goal of everyone being on a single Wide Area Network, and with the fact that more of our program involves classified information, security has become a much greater priority in A.I.D..

III.C Hardware

A.I.D. currently has a three tier hardware architecture, including an IBM mainframe, a large number of Wang minicomputers, and a growing number of MS-DOS based PCs. Many of these PCs are linked via LANs. Each of these three tiers will require significant investments over the life of this plan. The

ultimate objective is an "open" architecture conforming to GOSIP and POSIX standards. This will eliminate the Wang minicomputers, with their proprietary operating systems, and provide for their replacement with POSIX-based minicomputers and file servers.

POSIX is a federal standard whose objectives include promoting portability of computer application programs across computers, and reducing training and conversion costs for applications development personnel. POSIX-compliant systems generally use the UNIX operating system. GOSIP is a federal standard for achieving interconnections and interoperability of computers and systems that are acquired from different manufacturers. The importance of the movement to open systems is that it will remove the barriers to interoperability that have existed, and make it easier for systems on different platforms to work together and share data. A related benefit is the reduction in prices that A.I.D. can expect as a result of increased competition.

A.I.D./Washington. At present, A.I.D./Washington has acquired PCs for almost 50% of its Washington staff, while the remainder use Wang terminals for word processing and communications. The effort to complete the installation of PCs for all Washington users is known as the "Excellence Through Automation" program, and is targeted for completion by the end of FY93, providing funding can be obtained through the budget process. In addition to acquiring PCs, LANs and LAN servers are being installed. As we begin to reach 100% of the staff in individual offices, the Wang mini serving that office can be excessed. In order to achieve the offsetting savings, however, local Wang-based applications will have to be migrated to the new platforms.

In addition to the file servers on the LANs, it is also expected that more powerful processors will be required, primarily as platforms for the relational data base management system being acquired. The Agency acquired a POSIX-based pilot system in late FY91, and will begin to acquire additional systems and convert application software in FY92. For ex-

ample, the AWACS system design team is evaluating the feasibility of processing in such a distributed mode, as opposed to operating on the mainframe.

In regard to the IBM 3083 mainframe, the Agency is beginning to experience signs of capacity bottlenecks during peak processing periods, and has begun a study to determine whether a new mainframe will be required in FY93. Reliance on mainframe processing to support centralized systems, shared data bases and some electronic mail functions is expected to continue. While the current indications of capacity problems are clear if not yet serious, the key to the study will be in predicting the usage trend for the mainframe over the next several years, i.e., will the planned "downsizing" reverse the trend of growing usage on the mainframe in time to avoid serious capacity crunches?

In addition to the apparent need to replace the CPU, the Agency replaced an aging laser printer, and added additional disk storage capacity in late FY91.

Missions. In the field, the Agency's reliance on the use of information technology to enhance productivity has increased significantly. All 70+ of the Agency's overseas posts have automation systems installed, ranging from Wang minicomputers to individual stand-alone microcomputers. Information systems used to support these locations vary considerably depending on the size and complexity of the A.I.D. program in each country. In some of the larger sites, integrated minicomputer information systems are used to account for and track project implementation. In other locations, A.I.D. project managers may use microcomputer technology to design projects and follow the impact of the A.I.D. program.

The next major step beyond installation of PCs and LANs will be the replacement of the field's proprietary Wang platforms with open system minicomputers running the UNIX operating system. The Agency's migration to open system platforms will be focused heavily on the field systems first. Efforts will begin in FY1992 to convert the major field automa-

tion systems from the current Wang-based software to run on the UNIX machines, beginning with the Mission Accounting and Control System (MACS) and the Mission Management Integrated System for Executive Officers (MMIS). MACS will be done in A.I.D./Washington, while the MMIS will be converted simultaneously in our Mission Systems Center in Costa Rica. Acquisition of these platforms in quantity will begin in the latter part of FY 1992, and rollout will be coordinated with the availability of converted software systems for field and Washington use. It is expected that the replacement of the Wang minicomputers will be phased over Fiscal Years 1992 through 1997.

In addition to the replacement of the field's main processors (i.e., Wang minis — the field does not utilize the mainframe), the Agency will continue to add PCs and LANs to field locations. For some of the smaller posts, these may be the primary processors, where investment in a larger platform is not warranted. Gateways will be provided to connect the LAN to a larger mission or to A.I.D./Washington.

III.D Software

The IRM systems inventory includes over 80 systems currently maintained on various platforms. (For a listing of those systems defined as "Major Information Systems", see Appendix I.) A.I.D. personnel develop applications in many different environments, including COBOL, IDMS and INQUIRE on the mainframe, COBOL and PACE on the Wang VS systems, and a wide variety of off-the-shelf packages for the PC, particularly dBASE III+ and Lotus 1-2-3. Generally, IRM provides development services to the Agency, largely through the use of contractors, although some offices in A.I.D./Washington and many overseas missions have developed systems independently. While in the past, standards for system development have not been rigorously enforced, the Agency's adoption of information engineering, CASE tools, and a formal data

administration program will provide a more structured methodology for future development efforts.

A major focus in the software area for the next few years will be to convert existing Wang proprietary software applications to run under the new RDBMS in a UNIX environment. As mentioned above, the primary effort over the next two years will be on mission systems, as they are completely dependent on the Wang processors, and A.I.D. cannot excess this equipment until both the new hardware *and the necessary software* are available. For A.I.D./Washington, new development in the UNIX environment is likely to be primarily for the new AWACS system, as discussed above. In addition, CIMS, The Housing Guaranty Program Management System, and various MS/AS support systems will need to be converted to the new platforms before the old Wang units can be released.

In addition to developing/converting systems for the new mid-range platforms, there is a large backlog of demand for mainframe applications. The list of priority projects far exceeds IRM's current resources for development, and IRM will work with the IMC on prioritizing systems, once the final budget for FY92 is determined and resource availability is known. Potential candidate systems include the Project Management Information System (PMIS), the Program Performance Information System for Strategic Management (PRISM), a "Buy American" tracking system, and new systems for workforce planning, participant training, inventory tracking for IRM, and integrated systems for the administrative services area.

One factor that will impact IRM's and the Agency's ability to meet the demand for new (and converted) systems is the information engineering methodology discussed above. One of the characteristics of this approach, and in particular of CASE tools, is that while the front end analysis tends to take longer than under the traditional methodology, the back end development process is greatly accelerated. While the Agency is still low on the learning curve in this area, it is expected that systems development productivity will greatly increase

over the next three years. This improvement in IRM's productivity will in turn enhance productivity Agency-wide, as tools are developed to facilitate the work of the Agency's professional and support staffs. This is vital to the Administrator's strategic management initiative, which calls for streamlining the Agency's structure, and "using the best information technology to improve productivity."

III.E Telecommunications

Effective in FY91, responsibility for voice communications and telegrams (cables) were transferred to the Office of IRM, which already had responsibility for data communications. This step provided for a more integrated management of the telecommunications function, and has heightened the focus on the need for a long-range telecommunications strategy. During FY91, IRM established telecommunications policies, and in early FY92, will begin the planning and analysis for a strategic network architecture.

The most noteworthy feature of A.I.D.'s telecommunications program is its almost total dependency on the Department of State (DOS).

Telephone System. A.I.D./Washington uses the DOS System 85 PBX to control on-site calls and as a gateway for all local, domestic, and international calls. A.I.D. has become increasingly concerned with the rising cost of and difficulty in controlling this service. A.I.D. has no effective control over technical issues, and the costs are rising at rates far in excess of inflation. The billing is untimely and inadequately detailed to permit sound cost management. During FY92, A.I.D. will conduct a systematic examination of alternatives to continued reliance on the DOS for some or all of its telecommunications, as a part of the network architecture analysis.

Cable System. One initiative underway concerns the DOS cable system. The cable system is essentially a paper-based system developed by DOS to handle communications that may be sensitive from a national security or political standpoint. It is also the vehicle for controlling record traffic. However, users have come to regard the release and control features which are necessary for national security matters as being an unnecessary burden for normal administrative matters, and have come to rely increasingly on FAX and other means. The Agency's Washington Cable Room equipment has become outdated and inefficient, relying on a paper-based output system for the 1,300+ cables received daily. In FY93, the Agency will modernize this operation, providing for electronic (EMail) distribution of cables, thereby increasing efficiency and reducing maintenance and operating costs.

Local/Wide Area Networks. A.I.D./Washington currently maintains several Banyan VINES local area networks, as well as WangNets and several Novell LANs. A.I.D. has a WAN for routing IBM Systems Network Architecture (SNA) traffic, Wang Systems Networking traffic, Banyan VINES server to server connections, and SoftSwitch electronic mail exchange. As the number of PC users and LANs expands, all Washington users will be able to communicate with each other, with the POSIX platforms to be acquired and any remaining Wang systems, and with the mainframe. The detailed design for linking all of these systems, and the overseas posts, will be articulated in the network architecture strategy mentioned above.





IV.A Governing Assumptions

The Strategic Information Resources Management Plan is based on a number of management and technical assumptions which impact the accomplishment of IRM goals, strategies, and initiatives. The following section summarizes the limitations, conditions or constraints which affect A.I.D. and its information resources management environment.

IV.A.1 Management Assumptions

A.I.D.'s IRM Environment

- The Agency will continue to place emphasis on developing common administrative systems centrally and promoting the use of shared data.
- A.I.D. will continue to develop in-house ADP procurement expertise and acquire ADP hardware, software, and services through full and open competition and utilization of Small and Disadvantaged Business concerns.

- Communications with overseas missions will be increasingly important as responsibilities are decentralized to the field.
- A.I.D./Washington bureaus and overseas missions will continue to assign adequate numbers of qualified staff to perform systems management functions and take advantage of local in-house systems expertise.

Funding Assumptions

- Due to Federal budgetary constraints, total funding and personnel resources will be limited to current or lower levels for FY 92. A significant increase, primarily reflecting hardware acquisitions, has been requested for FY93.
- The uncertainties in the budget process make it difficult to establish and implement rational planning and project management mechanisms. The estimates in this plan are based on budget levels projected during November, 1991, after the Agency submitted its budget for FY92 - 94 to OMB, but before final decisions had been reached on either 92 or 93.

Personnel Assumptions

- End users' demands will continue to grow for more information and sophisticated communications and ADP equipment.
- End users will continue to become increasingly more computer and information literate.
- End users will come to regard computers as an essential utility, similar to the need for a telephone.

Technical Assumptions

- A.I.D. will continue to evolve to an "open" architecture that includes mainframes at the

headquarters, and LANs within bureaus and missions that include intelligent work stations.

- Conversion to the evolving LAN and “open systems” architectures will receive priority over routine changes to current applications.

External Factors

- Department of State will continue to provide contracting vehicles for hardware and software that may be used by the Agency if the vehicles are responsive to Agency needs. However, with the move to open systems, the Agency will rely more on increasingly complex and large-scale independent contracting vehicles.
- Department of State will continue to place emphasis on recovering operating expenses for services provided to supported agencies, such as cable and telephone, through the Foreign Assistance Administrative System (FAAS).
- Improvements in telephone planning, budgeting, billing, and work processing are heavily dependent on the cooperation and capabilities of State and AT&T.

Governing Policies

- Revisions are being made to several OMB circulars: A-109, and A-130. These changes will impact on the management of IRM programs and the strategic plan.

IV.A.2 Technology Trends and Assumptions

These technology assumptions relate to the general technical environment in which the Agency projects it will operate during the planning horizon of this document.

Hardware Technology

The integration of computer and telecommunications technologies will continue to be the major area of emphasis in the industry. Mainframes will primarily be used for repositories of widely shared corporate data and systems, and for systems requiring significant computational capacity and speed. Price/performance ratios will continue to decline, making increased capabilities less expensive. Microcomputer technology will provide an ever-expanding range of options and capabilities that will make this technology as ubiquitous as the telephone.

Most organizations with significant coordinating functions and responsibilities will evolve to tightly integrated networks, with gateways to a wide range of local computational facilities and peripherals, and access to remote sites and client, vendor, and related organizations' facilities. Although peripherals, such as printers and storage devices, will continue to drop in price, an ever-expanding list of devices and technologies will dictate that they be shared on the network.

The industry will continue to move to “open” architecture standards such as GOSIP and POSIX, but will be constrained by the rapidity of technological innovation and the vendors' desires to maintain a competitive edge through their unique version of “standards”.

Software Technology

The cost of applications development and the ever-growing portfolio of existing systems to be maintained will continue to be a major area of concern for all organizations. A combination of increased use of off-the-shelf software and the introduction of Fourth Generation Languages (4GL) and CASE tools will be the major solutions to the software staffing dilemma. The 4GL and CASE tools will be closely integrated with data base management systems and provide improved documentation for the entire systems life cycle. More importantly, within

the next five years the CASE tools will provide near full function code generation capabilities that will enhance productivity in both the new development and maintenance arenas.

Systems portability will continue to be a management objective, in order to force competition in the hardware environment. In response to this situation, the POSIX standard will become a true standard for most multi-user environments.

End-user tools (e.g., spreadsheets, graphics, word processing, languages) will continue to grow in availability, functionality, and value. Management will be faced with a growing dilemma regarding how it can capitalize on the widespread use of these tools without constraining users' creativity.

Telecommunications Technology

The telecommunications industry will produce a number of reasonable alternatives to the DOS cable system. However, the Department will continue to use cables — its historic means of communication — to conduct its business. Although Agency policy requires the use of the cable system as the official means of communication with the field, the Agency will continue to acquire alternative means, such as FAX and E-mail, to conduct its business.

Data Management Technology

The promises made by data administration and data base administration proponents over the last several years will begin to be realized over the next five years as a full range of functioning DBMS and CASE tools are placed in operation. Data modeling will become prevalent and will lead to increased data sharing and overall operational efficiencies. The opportunity to capitalize on data sharing will result in increased emphasis on data/systems stewardship and participation by the user community.

IV.B Information Resources Management Goals and Strategies

The Agency's Information Resources Management program exists to support the goals and objectives of the Agency. IRM provides the tools and the information needed to manage the Agency's programs. Given the Agency's mission, there are three principal ways in which IRM support is critical to the success of the Agency:

- Providing the administrative control mechanisms to enable sound stewardship of the considerable resources the Agency administers in support of developing countries;
- Providing the institutional memory and critical evaluation facilities to program managers in Washington and around the world, as they attempt to design programs to meet specific needs of individual client countries;
- Providing direct IRM support for ADP-related projects in developing countries.

Five information resources management goals were established in last year's strategic plan to support the Agency's mission. These goals: Information Infrastructure, Worldwide Connectivity, Corporate Systems and Services, Technological Direction, and Information Architecture, maximize the value, quality, and use of agency information. The following section explains these goals, and the progress which has been made during the last year toward achieving them.

Goal 1: Information Infrastructure

Develop an information infrastructure which will assure that A.I.D.'s information resources are prudently managed as a key Agency resource. This infrastructure includes facilities, equipment, meth-

odologies, policies, standards and procedures which support Agency programs, goals and strategies.

Strategies:

- Clarify the information resources management organization and define information resources management roles and responsibilities for each organizational element.
- Integrate the information resources management planning and budgeting functions.
- Define information resources management policies, procedures, standards, and methodologies, which are integrated through a life cycle development methodology.
- Increase proactive support to A.I.D. managers, professionals, and administrative staff in Washington and overseas.
- Decentralize support to the bureaus/offices and missions, to facilitate widespread streamlining of operations and improvement in productivity.

Progress Update

During the last year, A.I.D. has made significant progress in strengthening its IRM infrastructure. Accomplishments include the following:

- The reorganization of the Information Resources Management organization, which positioned IRM to manage the information resources management program more effectively. Personnel were reallocated in order to strengthen or develop programs which are key elements in the new infrastructure, such as security, policy, strategic planning, data administration, information engineering, establishing a Life Cycle Methodology, and the migration to open systems.
- An IRM strategic planning group was formed to institutionalize the planning process, and to link the strategic plan to the budget. This linkage is key, since funding is an essential element in carrying out the strategic initiatives in the plan.
- The data administration function was incorporated into the IRM organization during the reorganization, in an attempt to organizationally integrate information resources management technical disciplines. A few information management activities, however, still exist outside of the IRM organization.
- A Life Cycle Methodology has been selected, software procured and policies and procedures are being established to implement this methodology.
- An effort to update information resources policies was launched and an internal directive system reinstated to define information management policies, procedures, and standards. Outdated sections of the A.I.D. handbooks pertaining to IRM are being rewritten to incorporate new policies and procedures.
- The telecommunications study to be completed early in FY 92 will provide a framework of policies and procedures which can be used to develop telecommunications strategies.
- In the area of information security, additional resources have been allocated to develop policies and procedures to secure agency data and systems. A disaster recovery site has been acquired to provide a backup for critical agency systems on the mainframe. In addition, virus software has been procured to protect PC systems.
- A new Technical Support Center was opened in Main State, and the Rosslyn site was assigned additional staff in order to provide a more productive and responsive service to clients.



Goal 2: Worldwide Connectivity

Provide worldwide connectivity which will allow A.I.D. staff to exchange and share information within their working groups, and with others in A.I.D./W and overseas missions to carry out their functions in order to increase productivity and efficiency.

Strategies:

- Provide more cost effective management of telecommunication systems.
- Develop a network architecture which maximizes connectivity, taking advantage of both existing and new technologies in a cost-effective manner.
- Assess the advantages of A.I.D. obtaining and managing its own telephone systems versus continuing as a customer of the Department of State.
- Improve communications between overseas missions and A.I.D./W via a new network strategy.
- Install E-Mail in all offices in A.I.D./W and missions.
- Provide all qualified staff desktop access to a work station; link work stations to local area networks; and link networks to gateways to larger systems (minicomputers/mainframes).

Progress Update

– The Excellence Through Automation Project has resulted thus far in about 50% of A.I.D./Washington staff receiving microcomputers with networking capability to share documents, files, and transmit E-Mail messages. In addition, Softswitch software has provided increased connectivity allowing users to share information between the VS and the LAN, thereby increas-

ing the number of users who can communicate electronically.

– A.I.D. had assigned a senior analyst to work full time with DOS to coordinate A.I.D.'s participation in the procurement of the new satellite network, known as DOSTN. Due to delays and the eventual cancellation of that procurement, A.I.D. has begun to consider alternative network acquisition strategies.

– A total of 39 missions are now able to communicate with A.I.D./Washington via E-Mail. Plans have been developed to expand this number in FY92 through a number of pilots of various platforms/LAN topologies, and to provide connectivity to the new Eastern Europe missions through MCI-Mail services.

– A telephone study was begun in the last quarter of FY91 to assess the pros and cons of remaining with the Department of State for telephone service versus acquiring services directly.

Goal 3: Corporate Systems and Services

Provide timely, accurate, and secure information to support Agency missions and goals. Develop and maintain key resource management information systems (financial, personnel, contractual, project), which in turn will allow management to assure accountability and the prudent investment of Agency resources.

Strategies:

- Acquire proven state-of-the-art systems development technology, tools, and resources and provide training to enhance system development capabilities.
- Triage some old systems and improve others.
- Develop or acquire new systems.

- Incorporate data standardization, security, and portability objectives in modification efforts.
- Utilize the Information Engineering methodology to define a Strategic Information Systems Plan and Business Area needs, in order to reduce redundancy and incompatibility in Agency systems.

Progress Update:

- The A.I.D./Washington Accounting and Control System (AWACS) project to replace the current accounting system is well underway with the assessment of requirements, using information engineering methodology and CASE tools.
- The Contract Information Management System (CIMS) has been implemented.
- The conversion of the American Electronic Time and Attendance System to a PC environment was completed.
- An Agency-wide Strategic Information Systems Plan began in late FY91.

Goal 4: Technological Direction

Position the information resources management program so that A.I.D. will have the ability to incorporate new information management technologies and techniques that will be needed to address current and future Agency information management challenges.

Strategies:

- Maintain contacts with information technology vendors
- Perform research and development activities
- Facilitate transitions to new technologies.

Progress Update:

- The Agency has begun to migrate to an Open Systems environment, based on Federal standards such as GOSIP and POSIX, to achieve interconnection and interoperability of computers and systems that are acquired from different manufacturers. Its first step in this direction was the implementation of a Local-Area-Network architecture, which represents a shift in direction from the proprietary mini-based architecture. In addition, the procurement of an RDBMS to run on POSIX platforms will be completed in early FY92. Efforts have begun to migrate MACS to the new platform.
- The Agency is in the process of significantly expanding the use of Computer Assisted Software Engineering (CASE) tools as a critical element of a revised life cycle methodology. Key information specialists have received training on this leading edge technology, and the Agency has begun to develop an Information Systems Plan. This methodology will be expanded and applied to all major information systems development projects.
- The Agency has initiated a pilot in one bureau exploring the potential of Lotus Notes to eliminate paper forms and redundant data entry.

Goal 5: Information Architecture

Improve the quality of information throughout the Agency for use by staff in decision making and analysis, through a systematic approach to the management of data resources. The information architecture (data, application, hardware) must accommodate rapid strategic and tactical changes of the Agency, in response to the pursuit of U.S. interests and A.I.D. goals.

Strategies:

- Improve the structure of Agency information to determine what data the Agency should be generating to meet agency goals, and how the data is defined.
- Develop information architectures (data, application, and hardware) which will eliminate data redundancy and the widespread maintenance of “cuff records”.
- Improve the accessibility and accuracy of data by investing in a central data administration program.
- Develop a data base approach that promotes integration across existing and planned hardware platforms.

Progress Update:

- IRM has begun to institutionalize the data administration function through the development of data standards, policies, and procedures. Data administration staff are participating in key system development projects throughout the Agency.
- The Agency Information System Plan, begun in FY91, will define corporate data needs at a high level. This will be followed by individual Business Area Analyses in FY92-93 which will define the data needs of major functional areas in more detail.

IV.C Initiatives

Based on these goals and strategies, the Agency has identified 18 projects as major initiatives. A major initiative is one that is deemed critical to accomplishing an Agency goal, objective, or mission. It also may require allocation of large resource com-



mitments; be perceived as having high visibility within the Agency or warranting special management attention; or be necessary to fulfill statutory requirements.

These projects are intended to close the gaps between the Agency's projected information needs and the current capabilities of the IRM program. Exhibit 3 shows the relationship between these initiatives and the IRM goals. The numbering scheme reflects the structure recommended by GSA for categorizing IRM planning activities.

Completed Initiatives. Exhibit 3 shows a number of gaps in the numbering sequence, which result from the completion of some initiatives from last year's plan. The “success stories” from last year's plan include:

Exhibit 3

IRM Initiatives in Support of IRM Goals

	Information Infrastructure	Worldwide Connectivity	Corporate Systems and Services	Technological Direction	Information Architecture
IPM-1 Strategic Business Plan	X	X	X	X	X
IPM-2 Information Engineering	X		X	X	X
IPM-6 Strengthening Field Support	X				
IPM-9 Quality Assurance	X				
IM-1 Data Administration	X		X		X
IM-5 ADP Security	X				
H-1 Excellence Through Automation	X	X			
H-2 Open Systems Migration	X	X	X	X	
H-4 Records Management	X			X	X
H-5 Capacity Management and Planning	X	X	X		
H-6 Mainframe Computer Replacement	X				
S-1 A.I.D./Washington Accounting and Control System			X		
S-2 Outsourcing Personnel and Payroll Systems			X		
S-3 A.I.D./W Information Systems			X		X
S-8 PRISM			X		
T-1 Network Architecture Planning		X		X	
T-2 Telephone Management	X				
T-3 Cable Room Upgrade	X	X			

IPM-3 IRM Integration. IRM has successfully reorganized, and has institutionalized the IRM planning and control process in FY91.

IPM-4 Life Cycle Development Methodology. The LCDM is a new automated technology for developing systems more quickly. This was acquired in FY91.

IPM-8 Technical Support Centers in Each Major AID/W Location: The successful establishment of a satellite center in Main State in FY91, and the decision not to establish centers at additional locations in A.I.D./W, means that this initiative is completed.

IPM-9 Technical Assistance Programs for Africa, et al. (PPC/CDIE Initiative) This initiative, which provided for the assignment of technical staff resources to each regional bureau, has been completed.

IM-2 RDBMS for PCs and LANs. The Relational Database Management System (RDBMS) procurement should be completed by early FY92. (Actual acquisition is spread over 3-4 years.) An RDBMS will provide fourth generation software technology to run on the open systems platforms which will replace the existing proprietary equipment. This software will both improve system developers' productivity, and make access to data easier for the users.

IM-4 Access to Other Organizations' Data. (PPC/CDIE Initiative) This initiative established access to other international organizations' developmental data bases, providing program/project officers access to social, economic, political, and cultural data about individual countries.

S-5 Contract Information Management System (CIMS). Development of CIMS was completed in FY91, and the system moved into a production mode. CIMS serves as the Agency contracts data system and also as a management information system for the Office of Procurement.

S-6 American Electronic Time & Attendance System (AETA) Conversion/ Migration. This represents another successful system completion in FY91. AETA replaced the old, paper-based time and attendance cards, improving productivity and shortening the lag time between recording the data and updating the employee's record.

S-7 Installation of PC-based Development Information System. (PPC/CDIE Initiative) This initiative, which expanded the number of installations of the MicroDIS to 175 worldwide, was completed in FY91. This provided improved access to the Agency's institutional memory on past projects to mission staff.

T-5 Telecommunications Policy Study. This initiative, which will be completed by early FY92, will lay the groundwork for the continuing initiative on developing a network architecture strategy.

Continuing and New Initiatives. Detailed descriptions of each initiative in the current plan are provided in *Volume II: The Tactical Plan*. Summary descriptions are provided in the following paragraphs.

IRM Program Management

IPM-1 Strategic Business Plan

Over the years, the Agency has promulgated its mission, goals, and strategies through a variety of vehicles, but has lacked a consolidated Agency-wide integrated business plan, providing clear direction. In recognition of this, the Agency reorganization included the formation of a Policy Directorate which is tasked, inter alia, with Agency Strategic Planning. IRM will work closely with this new group to better integrate Agency goals and strategies with the IRM program.

IPM-2 Information Engineering

Information is recognized as a valuable resource in A.I.D. The Agency has adopted the Information Engineering methodology, including the use of CASE tools, for system development efforts in order to maximize the productive use of information resources and to reduce the high costs of systems development and maintenance. Part of the Information Engineering methodology is the development of an Information Systems Plan (ISP), which will begin in early FY 1992 to define, at a high level, the Agency's information requirements. This will be followed in FY 92 and 93 by Business Area Analyses (BAAs), providing more detailed analysis of specific broad functional areas. The goal is to produce an integrated view of the Agency's total information needs and to eliminate redundant and inconsistent data.

The Information Engineering Approach is already being used for the development of the A.I.D./Washington Accounting and Control System (AWACS) project, the redesigned financial system for the Agency. During FY 91, the ISP for AWACS was completed, followed by a number of BAAs.

CASE tools have been acquired by both IRM and the AWACS team, and a growing number of staff are being trained in their use. Part of this initiative is to institutionalize the use of this new methodology and tools, and make this the standard approach for all systems development. CASE tools are expected to result in substantial cost savings in systems development, documentation, and maintenance.

IPM-6 Strengthening Field Support

As the missions' automation capabilities have increased, so have their expectations for services to support these technologies. IRM plans to improve the responsiveness and effectiveness of support services to field operations by establishing regional information management support centers located in each of the five geographic regions. These centers will be gradually phased in over the next several years as funding permits.

IPM-10 Quality Assurance

In FY 92, IRM will establish a formal quality assurance program to help ensure that IRM systems development activities are being performed in the most effective manner possible. Policies and procedures will be developed which will integrate QA techniques into all system development activities. Since resources are not available to establish a separate QA staff to function in an independent auditor role, the approach will be to make QA procedures a formal part of each systems development project, for which the project manager will be held accountable. The quality assurance effort will focus on ensuring that the software meets the requirements and specifications that it was designed for, that systems have been properly tested, and that appropriate checkpoints have been met at various stages in the software development cycle.

Information Management

IM-1 Data Administration

The Agency Administrator, in his strategic management initiative, has recognized the need for standardized data management so that Agency staff has access to accurate and reliable information. Currently, Agency data resides in a variety of systems, causing duplication, inconsistencies, and additional maintenance and data entry costs. Staff often resort to "cuff records", rather than relying on official records.

To meet this challenge, the Agency has adopted a more systematic approach to data by establishing a formal data administration function in IRM to manage and maintain corporate data resources. This function encompasses data standardization, integrity, sharing, policy, architecture, and modeling. The data administration staff will work closely with system developers and users to promote and enforce the use of standardized data definitions throughout the Agency.

IPM-5 ADP Security

IRM is in the process of improving its overall ADP information security worldwide. Policies and procedures are being developed to ensure the continuity of essential information systems services; to prevent misuse and unauthorized destruction or alteration of information system data and applications; and to protect against accidental and deliberate disclosure of sensitive or classified information.

Hardware

H-1 Excellence Through Automation (ETA)

Over the past two years, the Agency has begun to build a Washington office-wide infrastructure by in-



stalling industry standard PCs and Banyan networks. Staff productivity has been increased through the use of these office automation tools; in addition to the typical suite of word processing, spreadsheets and data base packages, improvements in communications have resulted from the implementation of EMail and document sharing capabilities.

The project is well underway; 15 LANs have been installed in 6 A.I.D./W locations creating an area-wide network, serving approximately 1,200 Agency staff. The ETA project continues to move toward its goal of a one-to-one ratio of LAN-based PCs to employees, with the end of FY93 as the target for completion.

H-2 Open Systems Migration

This initiative consolidates and refocuses three initiatives contained in last year's plan: the A.I.D./W Hardware Initiative, the U.S.A.I.D. Hardware Initiative, and the U.S.A.I.D. Software Initiative. The focus of these initiatives dealt, at least to some degree, with migrating to an open systems environment, and therefore they were combined into a coordinated strategy.

In the past, the Agency relied on vendor-specific technology, which created barriers to making information systems operating on different manufacturers' platforms work together and share information. In addition, the proprietary architecture carried high maintenance costs and provided limited capability. To improve access to information, provide lower acquisition and maintenance costs, and comply with Federal guidelines, the Agency has begun a high priority effort to migrate to an open systems environment.

Over the next five years, key information systems will be converted to the new environment. Key systems targeted to begin conversion in FY92 are the Mission Accounting and Control System (MACS), and the Mission Management Information System (MMIS). In FY93, the conversion effort will turn to the Contract Information Management System (CIMS) and proprietary A.I.D./W and mission systems.

H-4 Records Management

Records management is the process by which the Agency creates and maintains the corporate memory. This initiative, which is being jointly undertaken by FA/IRM and FA/AS, deals with the impact of technology on the records management program. This includes both the need to formulate an integrated strategy for the use of new technologies such as CD-ROM and imaging, and the need to recognize records management responsibilities where no document is being created, i.e., the growing use of electronic transactions. The Agency has

undertaken a number of pilot efforts with these new technologies, but a formal architectural strategy for the cost-effective use of these technologies is needed before further investments are made. In addition, records management requirements must be integrated with the Agency's new Life Cycle Development Methodology, to ensure that these requirements are considered as new systems are developed.

H-5 Capacity Management and Planning

As the Agency expands the use of LANs and moves toward an open systems environment, it becomes critical to plan for the capacity necessary to support current and future information requirements on these platforms. While the Agency has the software tools needed to perform this function on the mainframe, this initiative is to build those same capabilities for the midrange platforms, and to effectively manage capacity on these platforms as their use expands over the next five years.

H-6 Mainframe Computer Replacement

The Agency's mainframe has been upgraded twice in its six year life, and cannot be upgraded again. Nevertheless, there are increasing signs of capacity bottlenecks, as workloads have increased much more rapidly than predicted over the past few years, due to new systems development and the added burden of the Softswitch LAN communications package. Most mission-critical systems currently reside on the mainframe, so it is essential to keep these systems operational even as some are being migrated to the new open systems platforms. The Agency has contracted with FEDSIM to conduct a thorough analysis of current and projected mainframe capacity utilization. Based upon the outcome of FEDSIM's study, the Agency is prepared to begin procurement of a new mainframe for FY93. Alternatives are currently being explored to identify a cost effective acquisition vehicle.

Software

S-1 A.I.D./Washington Accounting and Control System

The current Agency Financial Accounting and Control System (FACS), has many major problems and vulnerabilities. Since the accounting system is such a critical management information system, the Agency has established a high priority project to design and develop a replacement system, known as AWACS. In FY 91, the design effort was begun, using the information engineering methodology and CASE tools. The project will continue over most of the life span of this plan, with implementation of initial modules scheduled for FY 94.

S-2 Outsourcing Personnel and Payroll Systems

The Agency's personnel and payroll systems are almost 20 years old, and are difficult to maintain and modify to keep pace with required legislative changes. OMB has strongly encourage smaller Agencies to seek another agency to provide cross-servicing for these functions, in the interest of government-wide cost savings. IRM is conducting a study to explore the feasibility and cost/benefit of outsourcing these systems, and will recommend a solution for implementation by mid- FY 92.

S-3 A.I.D./W Information Systems

In conjunction with the Agency Administrator's management initiative, the Agency is committed to improving program accountability and efficiency, as well as reducing vulnerabilities and redundancy. To meet these objectives, the Agency has planned a number of systems development projects to be undertaken over the next several years. This portfolio of systems includes the Project Management Information System (PMIS), a "Buy America" tracking system, workforce planning, various support systems for FA/AS, and a participant training system. Funding to support all of these efforts has not been determined as this plan was written.

S-8 Program Performance Information System for Strategic Management (PRISM)

The Administrator has established a special initiative to improve performance measurement and accountability in the Agency. In support of this, the Center for Development Information and Evaluation is leading an effort to develop a new information system to collect and analyze critical measures of program performance. This system may turn out to be a collection of systems, with actual performance data being kept on the mission level systems, with uploads for reporting purposes. This will require the development of standard data definitions across the Agency, a feat of no small difficulty since host countries tend to keep their statistics (on the economy, health, etc.) on a local, non-standard basis.

Telecommunications

T-1 Network Architecture Planning

The growing use of LANs in A.I.D./W, the dissatisfaction with the current systems for international communications, the planned replacement of Wang VS systems with open systems platforms, and significant technical advances in the communications arena all point to a need for a comprehensive communications strategy for A.I.D. During FY 91, communications policies were established and system user needs were inventoried. During FY 92-93, the Agency will develop an overall network architecture and begin its implementation.

T-2 Telephone Management

A.I.D.'s telephone costs have been rising far more rapidly over the past several years than either inflation, the growth in demand, or trends in commercial telecommunications costs would indicate. This is the result of the Agency's status as a "captive customer" of the Department of State for telephone service. This initiative will analyze cost-effective alternatives to the current approach, and make

recommendations for either an alternative means of providing telephone service, or a renegotiated agreement with DOS.

T-3 Cable Room Upgrade

The Agency is heavily dependent on the DOS cable system for communication with its overseas missions, with approximately 1,300 incoming cables received daily. In an effort to automate as much of this process as possible, the Agency plans to replace the outdated and expensive Agency cable distribution system in FY93.

A three pronged approach will be taken. The first step will be an upgrade to the Automated Message Analysis and Distribution System (AMADS) to provide a more accurate system for message routing and distribution. Secondly, the Agency will replace the Remote Automated Reproduction and Collation System (REARCS) which will, in conjunction with AMADS, support electronic routing of incoming messages to recipients via E-Mail, and do away with the printing and distribution of hard copies. Thirdly, A.I.D. will invest in hardware and software that will allow outgoing telegrams to be routed electronically from A.I.D.'s Telegram Distribution Center to the Department of State Receiving Center.

Appendix I. Major Systems Inventory

The following six systems have been defined as major information systems, based on the definition provided in OMB Circular A-130, and for purposes of the GSA-mandated IRM Review program. A-130 defines a major information system as “an information system that requires special continuing management attention because of its importance to an agency mission; its high development, operating or maintenance costs; or its significant impact on the administration of the agency programs, finances, property, or other resources.”

FACS: The “Financial Accounting and Control System” (FACS) is the primary financial management system for the Agency. It is mainframe-based, and provides both on-line and batch processing for users in the Office of Financial Management. Due to its age, limitations, and difficulty in maintaining, a replacement system, AWACS, is under development, as discussed elsewhere in this plan.

AETA: The “American Electronic Time and Attendance” system (AETA) was developed to replace the timecards used in A.I.D. It is available on the IBM mainframe, Wang VS systems, and PC platforms. It is used by timekeepers both in Washington and overseas on a biweekly basis, with the overseas time and attendance data being transmitted to Washington via the DOS cable system.

RAMPS/NAPS: The “Revised Automated Manpower and Personnel System” (RAMPS), and the “New American Payroll System” (NAPS) are, respectively, the Agency’s personnel and payroll systems. These systems are mainframe-based, approximately 20 years old, and are scheduled for replacement. The plan contains an initiative to find another agency to provide cross-servicing to replace these systems.

MACS: MACS is the “Mission Accounting and Control System”. It is the primary accounting system for overseas missions, and runs on a Wang VS platform. MACS is an on-line, interactive system that is updated immediately as new transactions are input. It is being converted to run on a POSIX-compliant platform during FY92.

CIMS: The “Contract Information Management System” (CIMS) is a Wang VS-based system for gathering and recording contractual actions. The output is used by the Office of Procurement for internal Agency management reporting purposes and for its external reporting responsibilities.

PTIS: The “Participant Training Information System” (PTIS) is a mainframe-based system used to provide statistical data on the A.I.D.-funded participant training program. The system includes information on A.I.D.-funded training of host country participants in the U.S., and on third country training of participants outside the U.S.

