

PD-ABP-746

DISC OPERATIONS ANALYSIS

FINAL REPORT

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prepared for

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EXECUTIVE SUMMARY

This report summarizes the results of an **operational analysis and evaluation of the Development Information Services Clearinghouse (DISC)**, operated by the LTS Corporation under Contract No. PDC-0232-C-00-0094-00 with the U.S. Agency for International Development. The analysis was performed during May and June 1992 by the author under a consulting agreement with LTS.

The primary objectives of the analysis were to (1) analyze and review current DISC operations; (2) compare existing operational plans, and guidelines with industry-accepted standards; (3) identify procedures, organizational staffing, or resource deficiencies; (4) develop recommendations to improve DISC effectiveness; and (5) document findings and recommendations in a written report.

The evaluation consisted of a review of existing documentation relating to the DISC contract, interviews with LTS contract management and supervisory staff, observation of current procedures and operations, interviews with A.I.D./CDIE management and major users of DISC services, discussion of preliminary recommendations, and development of a report documenting the study methodology and findings and presenting a plan for implementing the recommendations in order of highest priority.

To improve the quality and timeliness of DISC services the author recommends that the following major steps be taken:

Project Staff Organization

1. **Realign the primary focus and responsibility of the Project Director (PD) and Deputy Project Director (DPD) to conform more consistently to the Position Descriptions:**
 - The PD should spend more time on strategic planning, coordination, and liaison with CDIE, other A.I.D. components, and other contractors; promotion of the DISC and monitoring users' requirements; and overall technical direction of DISC operations.
 - The DPD should assume full responsibility for managing the day-to-day operations of the DISC and implementing any new services.
2. **Hire a full-time Project Administrator to facilitate the PD/DPD realignment, help schedule and monitor completion of special tasks, monitor expenses, and help develop cost/benefit analyses of operational options and new technologies and/or procedures.**

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3. **Redefine the Technical Processing Supervisor** position to focus primarily on providing liaison between the AED project manager and all LTS subcontract staff working on-site at 1601 N. Kent St.
4. **Delegate responsibility for contract-wide quality assurance** to a senior person outside of the project, and develop and implement a project-wide Quality Assurance plan.
5. **Use external consultants**, where appropriate, with in-depth technical expertise.

General Operations

1. **Develop procedures to track productivity closely** and to support cost-benefit studies, including productivity reporting forms, detailed process flow charts with matching estimates of the cost of each step; distinguish manual from computer-supported steps.
2. **Provide more contract-funded training.**
3. **Hold quarterly project review meetings** between Project Officer, DISC PD, DPD, and key supervisors
4. **Investigate feasibility of transmitting timesheet data directly to LTS administrative headquarters.**

Communications and Reporting

1. **Re-establish regular weekly meetings between the R&RS and DISC PDs** to discuss technical approaches and resolutions to any continuing problems involving both contracts.
2. **Participate in RM and IRM planning meetings** on topics affecting the DISC.
3. **Formally communicate** to CDIE, other A.I.D. staff, and managers of other CDIE contracts who regularly interact with DISC staff **the names of appropriate DISC persons to contact** for various functions, questions, or problems—and their backups.

Computer Operations

1. **Improve planning, tracking, and accountability of special tasks and studies in conjunction with the PA. Communicate progress on tasks or studies in process regularly.**
2. **Refine and re-assess assumptions relating to conversion to Banyan used in the Draft Issue Paper.**
3. **Install Windows as soon as possible.**
4. **Clarify the nature of support service to be provided to Evaluation and policy on installing additional packages, such as Harvard Graphics, Harvard Project Manager, and Lotus 1.2.3. Provide additional training to current staff and/or use consultant services if necessary.**
5. **Engage services of an expert in library automation to review ILS module incompatibilities, problems coordinating ILS, OCLC, and MINISIS acquisitioning and cataloging, and evaluate cost savings.**
6. **Conduct a cost/benefit study of the current ILS system and potential alternatives; engage the services of an expert consultant for this task.**
7. **Develop and implement communication channels for two-way communications with LAN users.**
8. **Invest in additional formal training of LAN users to help reduce the number of calls for assistance.**
9. **Study system use data to detect trends.**
10. **Investigate and remedy the reported limitation on port availability for DIC staff to access CDIE LAN.**
11. **Together with R&RS staff and IRM, establish and document criteria and procedures for updating the address database and for reporting updates to R&RS.**
12. **Investigate and document the cause(s) of missing PROJDOC records.**
13. **Establish a LAN users group with representation from all A.I.D. and contractor components served.**

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14. **Include representatives of all user groups when planning changes/ additions to DIS databases or services.**
15. **Upgrade the XT workstations as soon as possible to at least a 386 level.**
16. **Provide additional training to DISC staff, both for specific technologies and general management improvement.**
17. **Have all requests for assistance from onsite staff flow through Pat Woodbury.**
18. **Explore the feasibility of setting up "private" E-mail mailboxes.**
19. **Investigate the connection and other computer-related problems reported by DIC staff on a priority basis and provide solutions wherever feasible.**
20. **Obtain and install another CD-ROM equipped computer in DIC, funds permitting.**
21. **Provide additional training in troubleshooting to DIC staff.**

Training/User Awareness

1. **Have the Training Officer report directly to the PD/DPD.**
2. **Add one staff person to focus on information-system and computer-technology training in missions. Person should have both librarian and development information background.**
3. **Include R&RS representation in meetings regarding selection of CD-ROM databases.**
4. **Review E-Mail training materials to determine whether relatively basic instruction and exercises should be added.**
5. **Resume periodic meetings of the training coordination committee to provide guidance to the Training Director.**

Acquisitions

1. **Reconstitute the acquisitions working committee and meet regularly to review results of various initiatives and reach concurrence on additional steps to take.**
2. **Monitor response to the cable closely and follow up as necessary.**
3. **Implement various suggested techniques for improving acquisitions compliance on an experimental basis and track results closely to help optimize allocation of resources to this function.**
4. **Increase sensitivity of R&RS staff to the downstream effects of acquisitions on the DISC contract.**
5. **Ensure that documents are processed into the system as quickly as possible.**

Cataloguing

1. **Perform a cost-benefit analysis of the suggested consolidation of databases via a set of common fields.**
2. **Conduct a study of the requirements for cataloguing/reproducing/disseminating media other than printed documents. As appropriate, acquire equipment needed to review such materials.**
3. **Develop a list of DISC cataloguing/database issues relating to electronic document delivery, and ensure that they are addressed in any A.I.D.-level directives regarding electronic delivery.**

Abstracting and Indexing

1. **Conduct a study of the feasibility of indexing documents online.**
2. **Examine and evaluate alternatives to the current abstract data-entry system that will increase efficiency and provide additional tracking capability.**
3. **Analyze abstracting/indexing productivity versus effort during the past 12 months and take corrective action as appropriate.**
4. **Develop regular formal mechanisms for obtaining qualitative feedback on abstracting/indexing quality from R&RS staff and other users.**

Micrographics

1. **Redefine the micrographics study option** as it applies specifically to DI operations and conduct the study as soon as possible.
2. **Participate as much as possible in the RM and IRM planning process.**
3. **Participate with IRM in prototypes of electronic document delivery.**
4. **Develop and implement a systematic microfiche Q.C. sampling plan and document results over time.**

Document Distribution

1. **Establish a schedule for completing the requirements analysis for a new document distribution computer module** and complete the analysis on a priority basis. Evaluate the feasibility of including an electronic link with the warehouse for inventory control.
2. **Begin tracking and reporting time from receipt of requests to their transmittal**, in addition to the time from receipt of request to delivery of materials to the requestor.
3. **Monitor and tally sources of problem blowbacks** to determine source of problem. Follow up periodically and take corrective action as needed, including replacement of diazos with silver intermediates as appropriate.
4. **Develop and implement use of a set of simple checklists for each DDU function** to be rigorously followed at each processing stage.
5. **Conduct cost-benefit study of upgrading fiche blowback equipment.**
6. **Contact a representative sample of users who do not return evaluation forms to determine reasons for the low response rate.**
7. **Implement capability to accept payment by credit card to facilitate orders over \$30 by requestors.**

8. **Educate users to the limitations on the reproduction quality of materials sent**, through careful explanations accompanying the materials, notice in DIC; reinforce through occasional communications to Bureaus/Missions.
9. **Follow up a sample of requests that have been priced but not ordered** to determine the reasons for not following through.
10. **Develop document-legibility standards** in conjunction with DI and R&RS staff and promulgate them in the field.
11. **In the new system design, add a "Ready" date field** to eliminate any statistical reporting inaccuracies caused by in-person pickups.

Publications

1. **Take an active role in attempting to even out work flow**, including liaison with input sources.
2. **Log in all incoming material/communications and track its disposition**, preferably with a conventional computerized correspondence/phone-log/tracking system.

Women in Development (WID)

1. **When requests are for multiple documents, send incomplete shipments** to avoid delaying the whole order.
2. **Explore ways for the DISC to provide reliable, up-to-date inventory-control information.**
3. **Determine whether it is possible to provide access to the CDIE LAN.**

DIC Support

1. **Evaluate cost/benefit of microfiching Inventory database documents.**
2. **For documents with color plates, add a flag in the database record** indicating, for example, "plates only reproducible by..."

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3. **Evaluate the cost/benefit of operating a color copier** or acting as an intermediary to buy copies from a local service, with and without direct charges to requestors. back, even to AID/W or missions.
4. **Advise AED of the request to convert the DIC photocopier to coin operation.**

Report Organization

This report is organized into five sections. **Section 1** summarizes the purpose and constraints of the study. **Section 2** describes the methodology followed in the analysis and evaluation. **Section 3** briefly summarizes the operational environment of the DISC and the major contract tasks. **Section 4** presents the findings and discussion of alternative solutions to problems identified, in the same sequence as the contract tasks. **Section 5** is a plan for implementing the recommended actions discussed in Section 4. Appendices A through H contain supporting details related to the study.

1. INTRODUCTION

1.1 BASIS FOR ANALYSIS

LTS Corporation has contributed to, or had full responsibility for, the DISC under contract/subcontract to U.S. A.I.D. for more than 12 years. Under the Statement of Work (SOW) to A.I.D. Contract Number PDC-0232-C-00-0094-00 (reproduced in Appendix D), current DISC responsibilities cover six functional areas: Systems Development, Operations, and Maintenance; Micrographic Services; User Services; Database and Technology Transfer; Special Projects; and Program Planning and Management.

Section C.8.4 of the SOW requires an evaluation of the contract beginning 36 months after contract award and, at A.I.D.'s direction, throughout the performance of the contract. The current 5-year contract is at about the midpoint. The operational evaluation reported here was performed in response to this requirement.

1.2 OBJECTIVES OF OPERATIONAL ANALYSIS

This analysis and evaluation was conducted with the overall objective of ensuring that the SOW functions are being performed by LTS effectively and efficiently. The desired output of this effort is an overall strategy and plan for implementing operational improvements.

This DISC operations analysis was performed with the following specific objectives:

1. Analyze and review current DISC operations;
2. Compare existing operational plans, procedures, and guidelines with industry-accepted standards to determine compliance with such practices;
3. Identify procedures, organizational staffing, or resource deficiencies;
4. Develop recommendations, ideas, and strategies that can be implemented to improve overall DISC effectiveness; and
5. Prepare written report containing findings and recommendations.

Section 2 of this report describes the methodology followed in meeting these objectives.

2. ANALYSIS METHODOLOGY

2.1 REVIEW EXISTING DOCUMENTATION

A wide range of relevant documentation was reviewed, including the statement of work of the current contract (as well as that of the R&RS contract), the LTS proposal, the Project Operations Manual, user evaluation forms, position descriptions, and various memoranda, reports, strategic plans, and other documents relevant to the DISC contract. A complete list of documents reviewed is contained in Appendix A.

2.2 CONDUCT INTERVIEWS AND OBSERVATIONS

More than 30 persons from A.I.D., LTS, and AED were interviewed in person to obtain a complete set of viewpoints regarding LTS contract performance. Appendix B lists all persons interviewed. Following preliminary orientation meetings with the DISC Project Director and CDIE/DI Director and Deputy Director, the investigator interviewed DISC staff to supplement the information contained in the documents reviewed, and to observe procedures, equipment, and facilities used to perform each contract task. After the DISC interviews were completed, key users of DISC services and products were interviewed from A.I.D. and other contractors to gauge the perceived quality and responsiveness of LTS operations and staff.

No attempt was made to ask users to rate the quality of DISC services quantitatively, since use of such scales was viewed as inappropriate for this operational evaluation; information therefore is anecdotal, and focuses on identifying general areas in need of improvement.

2.2.1 Interview/Observe DISC Staff

Thirteen LTS management and supervisory staff members were interviewed to obtain information about the procedures they currently follow in performing their function(s); quantitative information where appropriate, such as number of the items contractually specified and the number currently being processed; sources of information they use and recipients of information/services they provide; problems encountered in performing their function; and suggestions for improving the service/function. Appendix C1 is a condensed copy of the Interview Guide used during the LTS staff interviews. In addition to asking this standard set of questions, the investigator observed the work space, work flow, and work storage and handling procedures to determine their adequacy for the assigned function.

2.2.2 Interview DISC Service Users

Sixteen users of DISC services, including A.I.D. components, staff of three contractors and one interagency agreement staff member, were interviewed. Interviewees were asked what service(s) they used most frequently, which LTS staff members they interacted with, their opinions regarding the timeliness and quality of the services provided, whether they had experienced any problems relating to the service, and whether they had any suggestions for service improvement. The Interview Guide shown in condensed form in Appendix C2 was used to ensure systematic data collection during these interviews.

2.2.3 Interview Senior A.I.D./CDIE Staff

Three senior CDIE directors were interviewed to solicit both general and specific opinions and observations regarding LTS' performance under the DISC contract. The CDIE Director and Deputy Director were interviewed at the beginning of the evaluation, for orientation and discussion of issues, and again after completion of most of the other interviews to discuss preliminary recommendations. As appropriate, the interviews covered some of the topics included on the DISC Service User Interview Guide.

2.3 DOCUMENT FINDINGS AND DEVELOP RECOMMENDATIONS

Information collected during the documentation review, interviews, and observations were correlated and analyzed to identify shared user opinions, establish areas requiring change, and gauge the priority of these changes. Where appropriate, procedures and productivity were compared with those within the investigator's experience. Where problems were identified, alternative solutions were considered and recommended approaches developed; these are discussed in Section 4. The recommendations were then incorporated into the prioritized Implementation Plan presented in Section 5.

The analysis focused primarily on methodological and administrative procedures and issues, and most recommendations are of a tactical nature for improving LTS' performance against contractual requirements. The time and budget constraints of the study precluded in-depth evaluations of each DISC processing step and evaluation of alternatives; where appropriate, recommendations for specific cost/benefit analyses are identified and discussed in Section 4 and listed in Section 5. It is also beyond the scope of this study to suggest substantive changes in A.I.D.'s policy or operating procedures as they pertain to the DISC contract.

3. OPERATIONAL ENVIRONMENT AND OVERVIEW OF CONTRACT TASKS

3.1 OPERATIONAL ENVIRONMENT

Between 1976 and 1981, LTS provided a variety of clearinghouse-related services under contract to A.I.D./CDIE (or its predecessor organization, S&T/DIU), including data analysis and preparation of abstracts of A.I.D. project documents and bibliographic material; development, maintenance, and refinement of the *A.I.D. Thesaurus*; editing and production of *A.I.D. Research and Development Abstracts*; and training of A.I.D. computer specialists. In 1981, most of these functions, as well as a wide range of additional functions related to operation of the A.I.D. Library, clearinghouse, and databases, were combined into a single contract, the A.I.D. Document and Information Handling Facility (DIHF); this contract was awarded to Computer Data Systems, Inc. (CDSI), with LTS as a major subcontractor. In 1984, LTS was awarded a five-year contract to operate the DIHF as the prime contractor. In 1990, the contract was renamed the Development Information Services Clearinghouse (DISC) to reflect its broader scope of activity. The primary focus of this contract has traditionally been on acquiring A.I.D. development-related documents and on subsequent technical (bibliographic) processing, storing document records in various computer databases and media, and disseminating copies of documents and computer records to requestors; on maintaining the computer equipment needed to support processing; and on training end-users. Since 1988, LTS has become increasingly involved in PC support, LAN management, and CD-ROM publishing as these new techniques have evolved. The principal users of DISC products and services are staff in USAID missions, A.I.D./W Bureaus and Offices, other A.I.D. contractors, LDC institutions, PVOs, Peace Corps, and other development organizations.

Since 1986, AED has held a related contract with CDIE to provide Research and Reference Services (R&RS). The primary focus of this contract is to develop information packages in response to requests, provide outreach and dissemination services, and technical assistance in library systems and research and reference services. During the past few years, in keeping with the R&RS focus, contractual responsibility for operating the Development Information Center (DIC) (formerly the A.I.D. Library), including responsibility for A.I.D. document acquisition and some technical processing, was transferred to the AED contract. However, the AED contract also requires that a fixed percentage of the total level of effort be subcontracted to a minority-owned small business; this requirement is met through a subcontract with LTS, under which LTS staff perform document acquisition, cataloging and other DIC support, computer operations, and training services. Most LTS staff performing under the subcontract are assigned to it full-time, although some divide their time between subcontract and DISC functions. Thus, AED is both a major user of DISC products and services, and is responsible for some functions being performed directly by LTS under the subcontract. LTS' ability to meet contractually required technical processing volumes is directly dependent on the number of documents acquisition—a function for which it is now only indirectly responsible.

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A third contract with CDIE is held by Pragma, which provides econometric modeling support to CDIE/E staff and to various A.I.D. bureaus. Pragma's interaction with LTS is almost exclusively related to LTS's maintenance of the CDIE LAN and other computer support.

In 1991, the DISC facility was moved to its current location on the 10th floor of 1500 Wilson Boulevard in Arlington, Virginia. Most of the DISC staff are located at this facility. However, to provide more convenient access to A.I.D. and contractor LAN users located at SA18 (1601 N. Kent Street), three computer support specialists are located at this building. Also on the second and half of the third floor of SA18 are housed CDIE/DI and /E personnel, most AED contractor staff, Pragma contractor staff, and CDIE/E contractor personnel. In addition, all of the LTS staff assigned full-time to functions being performed under subcontract to AED are located in this building to facilitate their interface with AED and with the DIC. IRM and RM staff are located across the street from SA18 in SA14 (the Gannett Building). Some LTS micrographics staff work, on a rotating basis, at various A.I.D. facilities in support of the RM "buy-in;" one LTS/DISC and one LTS/R&RS subcontract computer-systems staff member work at AID/W geobureau offices.

At building SA18, AED, Pragma, and LTS subcontract staff are closely commingled with A.I.D. direct hires. Even secretarial support is shared by government and contractor personnel.

To ensure smooth transitions during the various stages of CDIE's evolution since the 1970s, some staff have transferred—in some cases more than once—from A.I.D. to contractors, and from one contractor to another.

Despite the distribution of responsibility for CDIE operations among A.I.D. direct hire staff and contractors, the group essentially functions as one large office. However, the contractual and geographic conditions described in the preceding paragraphs have sometimes contributed to operational, logistical, and administrative difficulties in performing some DISC tasks. Although the scope of this evaluation is limited to DISC operations, the contractual and functional interrelationships described above required that they also be addressed. These conditions, and potential solutions to the problems they raise, are discussed where appropriate in Section 4.

Although primary funding for DISC operations is provided by CDIE/DI, some DISC tasks are funded through "buy-ins" from other A.I.D. organizational components, such as Women in Development, Africa Bureau, and Records Management. Most of the non-DI-funded tasks require functions similar to the those performed under the "core" contract; where feasible, to maximize staff utilization, LTS has assigned these tasks to existing functionally organized units of the DISC contract, rather than staff them independently. However, performance statistics and labor and fund expenditures must be separately tracked and reported each month for each buy-in activity.

DI Mission and Strategic Plan

Although the specific tasks for which the DISC contractor is responsible are detailed in the contract Statement of Work (Appendix D), the DISC Project Director also is a member of A.I.D. planning committees and must maintain a close awareness of changing Agency and user needs. To ensure that the DISC is well positioned to support DI during the remainder of the contract, it is useful to summarize the mission and strategic goals of the Development Information Program Strategic Plan, 1991-1995; some of the recommendations presented in Sections 4 and 5 of this report are based on these goals:

DI MISSION

- Preserve and promote Agency knowledge of planning, implementation, and evaluation of worldwide development projects.
- Provide research support to the development community.
- Promote use of information resources in LDCs
- Strengthen A.I.D.'s programs through the use of others' experience.

MAJOR DI STRATEGIC GOALS

1. Increase self-sufficiency in the Agency's ability to access its institutional memory.
2. Increase development experience available to A.I.D. in support of Agency projects, through cooperative arrangements with external resources and organizations active in foreign affairs and economic and social development.
3. Increase "ownership" in the Agency's institutional memory: institutionalize participation by Agency staff in the system.
4. Maintain a high level of quality and flexible service to A.I.D. Missions, A.I.D./Washington, its contractors, and host countries.
5. Increase involvement in, and provide proactive support to, Agency programs.
6. Establish mechanisms to support overseas Missions and other information centers, as well as those in host countries.
7. Play a lead role in assuring that all donors have the motivation and the ability to exchange experiential and technical documentation with one another.
8. Undertake an effective marketing program directed to A.I.D. Missions, A.I.D./Washington, its contractors, host countries and the development community.
9. Provide high-quality, cost-effective management of a comprehensive knowledge base of development experiences.

3.2 DISC CONTRACT TASKS

The primary objective of the DISC contract as specified in the Statement of Work (Appendix D) is to provide access to A.I.D.-generated development experience for program planners, project designers, managers and evaluators, technicians, researchers, and decision-makers in A.I.D. and A.I.D. contract organizations; LDC institutions; the U.S. public; international development organizations; U.S. government agencies; and commercial firms and other interested individuals and organizations. In addition, the DISC facility will provide access to development information generated by other U.S. institutions, international development organizations, LDC institutions, and commercial publishers.

Specifically, the original SOW specifies that the following tasks be performed:

- **Receive, select, and check for duplication documents forwarded by the R&RS contractor; purchase non-A.I.D. reference materials (C.3.1)**
- **Prepare standardized bibliographic citations (descriptive cataloguing) (C.3.2)**
- **Abstracting (C.3.3) and Indexing (C.3.4)**
- **Data Entry (C.3.5)**
- ***A.I.D. Thesaurus* Maintenance (C.3.6)**
- **Development Information System (DIS) hardware, software, and database maintenance, update, and exploitation and on-site support for CDIE microcomputer systems, LANs, and other telecommunications systems (C.3.7.1)**
- **Create and maintain computerized micrographics information system (APDMS), including management and inventory control of microfiche masters and internegatives and associated documents (C.3.7.2)**
- **Provide micrographic services relating to the A.I.D. "Institutional Memory" (DIS) and records management (APDMS) systems (C.4)**
- **Receive, log, analyze, and fulfill requests for A.I.D. development documents, microfiche, audiovisuals, electronic data, computer software, and other non-A.I.D. materials in accordance with prioritized response times (C.5.1)**
- **Desktop publish and print *A.I.D. Research and Development Abstracts* (ARDA), and about 40 other products per year, including special bibliographies, acquisition lists, briefing portfolios, presentation graphics, annual reports, training materials, and other special publications; receive,**

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store, and distribute bulk quantities of documents, publications, and development materials (C.5.2)

- **Provide professional training services regarding the DIS, MicroDIS, and CD-DIS CD-ROM** for decision-makers and program managers; project designers, implementers, and evaluators; and information specialists, librarians, and research analysts; present DISC-related briefings; prepare bimonthly user awareness announcements; provide liaison and technical assistance services on-site at A.I.D facilities to assist with use of any DISC services; develop and produce CDIE outreach products; develop program to gather and analyze users' feedback and evaluations of CDIE's services. (C.5.3.1)
- **Provide professional services to train A.I.D. staff regarding the APDMS system** and produce and distribute related brochures and manuals (C.5.3.2)
- **Develop, maintain, document, and provide training and technical assistance for the manual and automated support systems** to provide increased accessibility and decentralization of the DIS database and A.I.D. institutional memory systems (C.6)
- **Provide support for the following special projects:**
 - **Women in Development Office (WID).** Publication storage and distribution, online database services, newsletter printing and dissemination, mailing-list maintenance, and response to document requests (C.7.1)
 - **Office of Planning and Budgeting (PB).** Data entry services related to the Office of Planning and Budgeting information system (C.7.2)
 - **Office of Population.** Select, purchase, acquire, and distribute journals and other development materials; and maintain a mailing list of population specialists (C.7.3)
 - **Option for additional special-project technical assistance tasks** on request (C.7.4)
 - **Option for microfilming program records of four Agency bureaus/offices** to be included in APDMS (C.7.5)
- **Program planning and management:**
 - **Develop and maintain annual implementation plans** (C.8.2)

Operational Environment/Task Overview

- **Design and implement a system to capture and evaluate user feedback information** in all task areas of the contract; submit periodic user evaluation reports (C.8.3)
- **Conduct an evaluation of the DISC contract** beginning 36 months after contract award (C.8.4)
- **Establish effective internal management controls, including utilization of input from an independent quality assurance program** to improve the effective and efficiency of each task are in the contract; conduct annual contract performance reviews with A.I.D. (C.8.5)
- **Maintain an Operations Manual** covering procedures for performing all DISC services and functions, including computer systems documentation; maintain authority files for institutional names, projects, contracts, document types, countries, sectors, and report-number series for cataloguing; develop and maintain user training manuals relevant to the APDMS (C.8.6)
- **Provide cross training of professional personnel** to prepare for changing workload conditions, shifting job priorities and program emphasis, and changing information service demands (C.9.2)
- **Conduct specialized systems studies and plans, including**
 - Conduct a technical feasibility/applicability and cost/benefit study of the commercially available alternatives for acquiring, storing, accessing, and disseminating A.I.D. project documents and reports (C.8.7.1)
 - Acquire a new minicomputer and associated software that supports MINISIS; assist in the disposition of the original system; procure three new desktop computers and a new laser printer; upgrade the Netware software to support 386 generation computers and upgrade modems to 9600 baud (C.8.7.2)
 - Upgrade microfiche duplicator equipment
- **Participate in meetings of the CDIE/DI Advisory Committee** (C.8.8)

Appendix F provides a concordance between sections of the DISC contract SOW and sections of Section 4 of this report where each topic is discussed.

3.3 R&RS SUBCONTRACT TASKS

The following R&RS contract functions are performed by LTS staff under subcontract to AED (sections in parentheses refer to the AED contract Statement of Work, reproduced in Appendix E):

- **Acquisition** of current A.I.D. project and program documents (PD), retrospective technical reports and research studies (PN), A.I.D. classified documents, and audiovisual report forms of A.I.D. multimedia materials (C.6.3)
- **DIC functions**, including Technical Operations supervision, OCLC cataloguing, ILL Technician, and Receptionist/technician (C.4)
- **Computer support** (C.2.3, C.4, C.6)
- **Publication production**, including *Requests & Responses*, *New This Month* Bulletin, and *Women in Development Newsletter* (C.5)

4. FINDINGS

4.1 GENERAL FINDINGS AND OBSERVATIONS

In general, LTS operates the DISC and provides related services in accordance with the contract requirements for quantity, quality, and timeliness. Users particularly appreciated LTS' rapid LAN implementation and excellent LAN support. Users and managers of user groups were uniformly favorably impressed with the dedication and responsiveness of DISC managers and supervisors. Most operations and communications are reasonably well documented. Project staff have excellent skills and often extensive experience performing the day-to-day technical operations of the DISC.

Most users interviewed were satisfied or very satisfied with the quality, quantity, and usually with the timeliness of services provided, but some problem areas were identified. A perception exists on the part of some users and senior CDIE staff that LTS staff focus almost exclusively on the technical and product-delivery aspects of the contract, at the expense of a more active involvement in strategic planning based on a better understanding of users' needs. Many of the reported problems appeared to be more attributable to faulty communications than serious technical or staff deficiencies.

Good *quantitative* statistics are maintained, but analysis and interpretation of the numbers is lacking. Costs of specific activities are difficult to determine from the available documentation because productivity measures (for functions where such measures are appropriate) are unavailable or are not regularly reported. No formal surveys of DISC users have been conducted that would assign *values* to specific services/products or to service/product features. Lack of either cost or benefit data make it very difficult for LTS and A.I.D. to make informed decisions regarding DISC service/product priorities or to respond to budget reductions.

The author strongly recommends that every "production"-function staff member keep more detailed records of productivity (on a daily basis) and that supervisors tally and track such information weekly. For some functions, such as cataloguing, abstracting, and (eventually) indexing, much of this information can be gathered electronically. Simplified forms should be developed for each applicable function so that no more than 1 or 2 minutes is required to enter the required information. Records also should be maintained by non-production staff on a daily/weekly basis so that estimates are provided of time spent on each discrete activity. The primary purpose of implementing this system is to determine as accurately as possible the cost of each DISC function, rather than to be used as a management or supervisory cudgel. Without such cost information it is impossible to perform a cost/benefit analysis. Productivity levels also should be correlated with existing guidelines and standards, where they are available, adjusting as necessary for the specific requirements of processing A.I.D./DIS documents. Eventually, the information gathered could be used to establish expected productivity levels and to detect productivity trends of individuals and groups so that timely action can be taken (either with respect to an individual or relative to the task definition itself).

4.2 PROJECT ORGANIZATION AND MANAGEMENT

This section provides a general overview of project organization and management observations and issues. More detailed information, and specific recommendations related to staffing, general operations, and communications and reporting are contained in Section 4.8.5.

4.2.1 General Issues

This section discusses general issues regarding staffing and management of the DISC contract. Issues relating to specific contract requirements for operations management (Section 4.8.5 of the SOW) are discussed in section 4.8.5. Solutions to several problems discussed under specific tasks also are frequently related to staffing, management, training, and/or communication procedures. Recommendations on these topics are summarized at the end of this section.

Both CDIE management and DISC service users generally praised the LTS staff's day-to-day management of the contract and attention to management issues. LTS staff were also judged pleasant people to work with. However, some questions were raised regarding the skills of LTS managers and supervisors in dealing with long-term strategic planning and policy issues. LTS would like to become more involved in information systems design and work at A.I.D. Bureaus, but feels that as a result of this perceived shortcoming, they are sometimes excluded from the planning and decisionmaking process relating to implementation of such systems. In areas where LTS has the most expertise to offer, such as records management, they are sometimes held back from active planning participation by a lack of close coordination between CDIE and FA/AS/ISS/RM.

Several LTS members expressed concern that, although LTS is expected to participate more in the strategic planning process, contract funds do not support training and education to prepare them better. More training is viewed as highly desirable, not only to stay abreast of new services, equipment, software, techniques, and standards, but to enhance their understanding of the worldwide development community and their information needs.

A common theme expressed by both AED and LTS managers and supervisors is that the basic missions of the two contracts are mutually misunderstood; this lack of understanding is sometimes cited as the source of perceived problems. Although LTS staff's technical skills are recognized and appreciated, the perception is that they lack a good understanding of the development community and their information needs. Regularly scheduled meetings between the AED and LTS Project Directors have not been held for some time. As a result, some inter-contractor problems are either ignored or are raised at inappropriate fora, such as the weekly CDIE/DI Director's meeting.

As discussed in Section 4.8.5, some A.I.D. and contract staff were unclear about specific staff responsibilities, backup staff, and internal and external communications. Some DISC users commented that occasionally the DISC could not provide requested technical or

administrative information because the staff person normally assigned to that function was absent.

The position of Technical Processing Supervisor under the LTS subcontract to AED has remained unfilled because of a lack of agreement regarding the functions this person will perform and the qualifications they should have. Absence of this person is perceived to be the source of a considerable amount of miscommunication between AED and LTS. AED would like this person to act in an on-site management liaison capacity representing all LTS subcontract staff, rather than act in a strictly technical supervision role in the DIC.

4.2.2 Project Organization

Before the recent Reduction in Force resulting from funding cutbacks from RM, the DISC staff consisted of 54 persons, 10 of whom were part-time employees. Two positions were unfilled. In addition, 4 full-time employees and 3 part-time were assigned to functions performed under the subcontract with AED. As shown in Figure 4-1, the project is headed by the Project Director (PD) and Deputy Project Director (DPD), with contract administrative support and a receptionist; staff are generally organized into functional groups headed by supervisors. Use of this functional consolidation, rather than multiple groups based on source of funds, helps optimize staff utilization and backup and facilitates cross-training. Staffing-level adjustments/reassignments in response to fluctuating work flow and funding cutbacks like current RM reduction have been timely. Ensuring availability of backup staff in the Document Distribution Unit (DDU) has sometimes been difficult; some of the recently furloughed RM staff will be available as backup for the immediate future, but additional steps should be taken to ensure adequate on-call staff.

Current LTS position descriptions for the PD and DPD clearly show a focus by the PD on interaction/coordination/planning/strategy development with CDIE, other A.I.D., and other contractors; and a focus by the DPD on managing day-to-day technical operations. However, the PD currently spends large amounts of time on technical and operational details, while the role of the DPD as internal day-to-day project manager is not always clear to persons outside of the DISC.

Consideration was given to assigning the DPD to spend up to half-time on-site at building SA-18 to supervise subcontract staff working there and coordinate more closely with AED management. Such assignment would reduce the amount of time the DPD would spend managing DISC staff. This function can probably be fulfilled better by the "Technical Processing Supervisor" (after redefining the position description).

4.3 SYSTEMS DEVELOPMENT, OPERATIONS, AND MAINTENANCE

This section discusses the findings and recommendations concerning each DISC contract task, in the sequence contained in the contract Statement of Work (SOW).

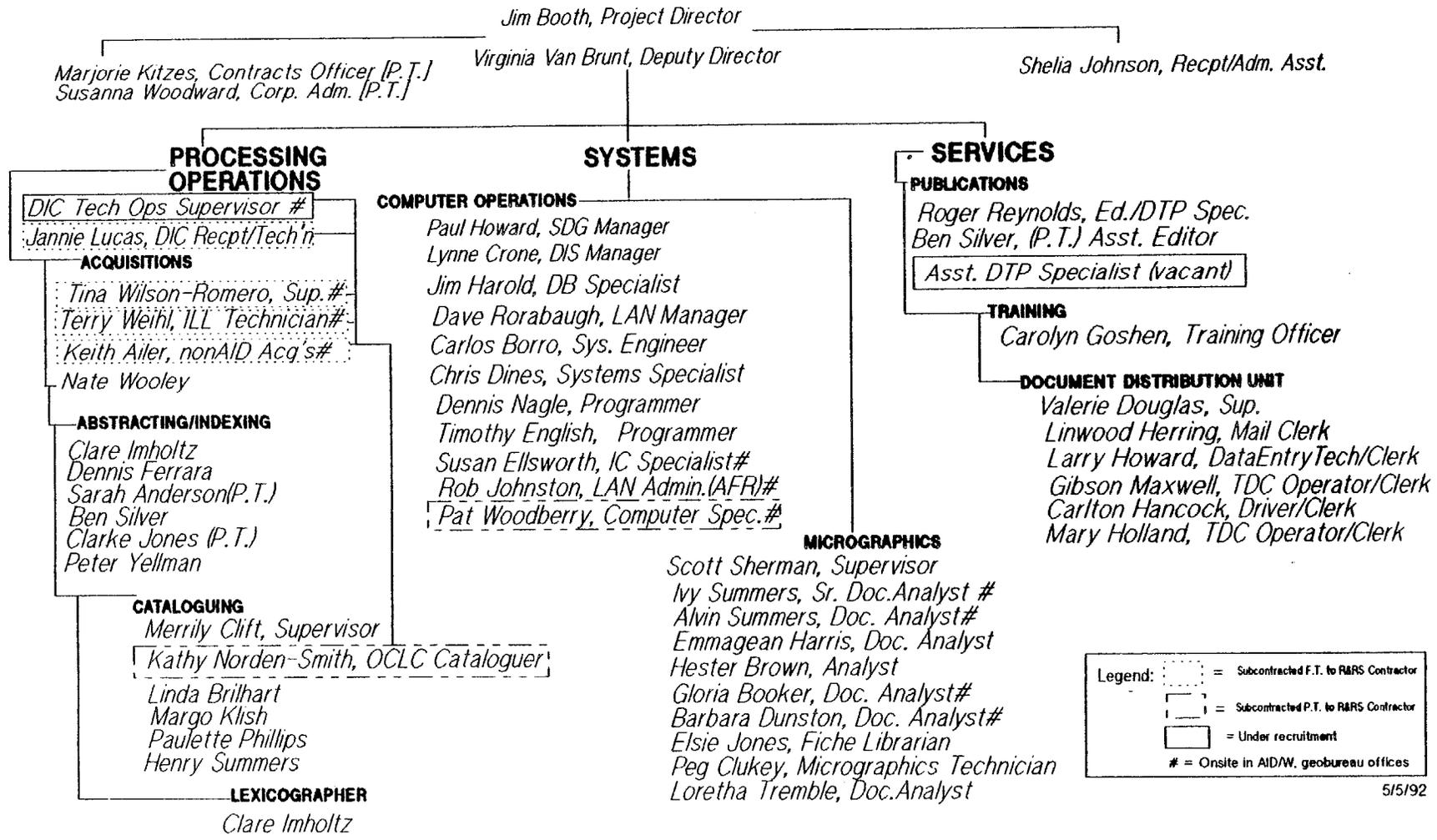


Figure 4-1. Organization of DISC Project Staff

4.3.1 Document Acquisitions and Selection

Under the DISC contract, LTS is responsible for purchasing approximately \$20,000 worth of non-A.I.D. reference materials, monographs, journal articles, optical disks, and audiovisuals and serials; subscribing to online database and electronic communication vendor systems; and receiving approximately 7,500 A.I.D. project documents and technical reports per year from the R&RS contractor and ensuring their suitability for inclusion in DIS databases. Under the subcontract to AED, LTS is responsible for acquisitioning the A.I.D. documents. Thus, all document acquisitioning is performed by LTS staff.

No substantive problems were identified related to acquisition of the non-A.I.D. materials. However, many difficulties have been encountered in attempting to obtain the quantities of A.I.D. documents specified in the SOW, and persons interviewed offered a wide range of suggestions for increasing the yield. Accordingly, all discussion of document acquisition is contained in Section 4.13.1.

4.3.2 Document Analysis and Descriptive Cataloguing

Section C.3.2 of the SOW requires that the DISC contractor prepare standardized bibliographic citations for all articles, documents (except books), and other materials received by the DISC.

Current cataloguing staff consists of three full-time and three part-time employees, including one part-time OCLC cataloguer under AED subcontract at the DISC.

The cataloguing supervisor checks whether documents meet the following requirements for system entry:

1. Is reproduction quality suitable for ARDA?
2. Is the version received final and approved?
3. Does the title page contain the seven essential data elements?
3. Is the document complete, with all graphics and appendices?
4. Is the document proprietary or "sensitive"?

Previous cataloguing backlogs were removed by having both cataloguers and abstractors perform partial processing (Initial Partial Cataloguing Records--IPCRs) of DOCRDs so that records would be searchable in DIS quickly. Except for older AIDHOC documents, the processing queue is low because fewer A.I.D. documents are being acquisitioned than in previous years and the IPCR process permits rapid input processing.

The cataloguing process is very complex compared to most other government document collections, for a number of reasons:

- Cataloguing requirements and conventions have evolved over many years to serve different requirements/perspectives/users.
- To supply missing title page information, cataloguers must search a variety of databases and other sources. Lack of direct access to CIMS, COORS, and INSTDS exacerbates this problem.
- Cataloguing codes and conventions, such as bibliographic document type, institution, and subject (ACSI) codes, vary according to which DIS database(s) the document records are to be entered into. (This not only adds cataloguing complexity, but complicates database searching by R&RS staff and other users.)
- The division of cataloguing responsibility across contractors and buildings complicates liaison and supervision. Losing direct contact with end users (who now deal primarily with AED staff) also occasionally creates problems.

As can best be determined from the February management report, the average time to catalogue a DISC document is about 24 minutes. Given the frequently encountered time-consuming difficulties, such as determining whether or not a project received A.I.D. funding, this average is very good when compared with efforts by staff of other clearing-houses and libraries with less complex requirements.

Cataloguing staff analyzed and documented techniques for simplifying fields and bibliographic types in an attempt to unify the DOCRD and APDMS databases and a "common bridge" set of fields was developed and proposed. These studies addressed only the technical feasibility of whether or not simplification was possible; benefits to system users, such as time saving, simplified searchings, etc. were not emphasized. Most important, cost expenditures and savings were not estimated so that the decision of whether to implement the consolidation could be based on a cost-benefit comparison.

The number of non-print and electronic materials associated with A.I.D. development documents has been steadily increasing, and can be expected to continue to increase. Given the relative cost of print and other media, it is reasonable to expect that the number of materials available *only* in non-print media will grow rapidly. These materials create a number of handling and processing problems, including lack of access to audiovisual and/or computer equipment to review materials for cataloguing/abstracting/indexing information; lack of consistent cataloguing conventions; lack of procedures for storing materials; and the need for policy guidelines and equipment to duplicate and disseminate materials.

Discussions have been underway by several A.I.D. components to explore the feasibility of submitting documents electronically. The idea is particularly appealing to some missions/Bureaus and their contractors, who create project and other documents in electronic form and would like to reduce or eliminate the amount of production, reproduction, and shipping effort and cost. However, from the perspective of the cataloguer and database

builder, electronic transmission raises a number of questions and concerns. Current guidelines for including documents in some DIS databases require that a "complete" copy be submitted, including text, graphic materials, and appendices. At present, the number of documents containing color plates is limited, but they create problems for microfilming or copying; how will color images be provided electronically? How will multimedia electronic documents be handled? Who will establish and promulgate standards for electronic format, telecommunication (if this option is to be made available)? How will graphics material be imported and integrated? How will a cataloguer know that the version of a document submitted is the final, approved version? Will a paper copy also be required? If so, where will it be stored and who will be able to access it?

Cataloguing Recommendations

- **Perform a cost-benefit analysis of the suggested consolidation of databases via a set of common fields.** In addition to estimating costs to implement changes and savings in technical processing time, it is important to solicit value judgments from users. Costs/savings should be projected over time, showing how long it would require to amortize any conversion effort. Savings estimates should be presented to users; for example, an average savings of 10 minutes of cataloguing time per document will save about \$21,000 per year for 5,000 documents. [Current costs associated with supplying missing title-page information also can be used by acquisitions staff—and, potentially, by R&RS on-site staff—to help convince document sources of the importance of providing all of the required information.]
- **Conduct a study of the requirements for cataloguing, storing, reproducing, and disseminating media other than printed documents.** Explore the feasibility of charging user fees to offset the cost of reviewing and duplicating equipment.
- **Develop a list of DISC cataloguing/database issues relating to electronic document delivery,** and ensure that the issues are addressed in any A.I.D.-level directives regarding electronic delivery.

4.3.3 Abstracting and Indexing

The contract SOW (sections C.3.3 and C.3.4) requires preparation of 200-word abstracts for 1,200 publications and 300 research, evaluation, and institutional activities per year; 500-word descriptive abstracts for about 300 new development-project publications per year; and editing of 250 author abstracts per year. In addition, assignment of 8 to 10 subject descriptors is required for 5,000 documents, 300 research, evaluation, and institutional activities, 500 audiovisuals, and 300 projects per year; and re-indexing of approximately 250 selected project and document records per year.

Findings

Abstracting/indexing staff consists of 2 1/2 abstractors, and one outside indexer. The supervisor also is responsible for maintaining and updating the *A.I.D. Thesaurus*. Current average monthly processing rates are about 350 documents indexed only and 150 documents abstracted. Although the Operations Manual contains written guidelines for determining which documents to abstract/index and which to index only, considerable qualitative judgment still is required. Abstractors and indexers follow the detailed guidelines in the Operations Manual; NTIS guidelines were used as the basis for specifying abstract content and style. The Operations Manual is updated informally via notes and other communications.

DIS records are created differently according to whether a document will be abstracted and indexed or indexed only. When documents are abstracted and indexed, records are created in WordPerfect 5.1 files (shared, with multiple simultaneous access); index terms are manually looked up in the *Thesaurus* and keyed in for each record. A draft is printed out and manually edited. For quality-control reasons, a different person proofreads ("finalizes") the record than the person who created it. Drafts are labeled according to processing stage: Draft 1 (first draft), Draft 2 (edited draft); after editing, records are printed out a second time and proofread, and assigned to the "F" (final) category. Final documents are periodically matched with the physical documents and then sent electronically to DIS, where they are joined with the bibliographic citation (which is created by cataloguers and entered in the database). Occasionally, users suggest changes or corrections and the database records are amended. Documents that are not abstracted are sent to a part-time outside worker for indexing; he completes about 60 documents per week in 20 hours, with a nominal turnaround time of 2 weeks.

Using this process, information is retained only for the last person to work on it; therefore, a cumulative history of dates and persons performing each function is not available (more was available from the previously used word-processing system on the HP-3000). The system does not generate exception reports for any documents that have not been transferred from the work-in-process system to the DIS database, or that have not cleared a given processing stage within a preset time limit. It also does not generate statistics on the average length of time to complete each processing stage, nor does it provide consolidated or individual productivity information. As a result, productivity measures are subjective. Author abstracts for *ARDA* documents are scanned into the database and edited; this has helped increase productivity.

The abstracting/indexing supervisor estimated that average abstract preparation times are about 1 hour for design documents and 30 to 60 minutes for the others. Although, as indicated above, accurate production statistics are not available, a preliminary analysis of labor charges in recent monthly management reports suggests that actual abstracting times may be substantially higher than the above estimates, even accounting for editing/quality control and keyboarding effort; or that other tasks are being included in the labor hours reported for abstracting and indexing.

Document flow is uneven. No formal mechanism exists for receiving advanced notice of an expected peak load from acquisitions or cataloguing, although verbal or in-person communications are frequent. When the volume is light, the supervisor advises acquisitions and cataloguing staff to try to increase the volume.

Most users were generally satisfied with the quality of abstracting and indexing. However, some R&RS staff felt that important information was sometimes omitted from abstracts, that quality control occasionally slipped, and that some documents may be over-indexed. DISC staff currently initiate most abstracting changes. The supervisor participates in weekly staff meetings, and provides input to the monthly reports. It was suggested that more feedback from A.I.D. was needed regarding abstract length and content.

Computer technology offers a variety of prepackaged and custom-developed hardware and software options for creating bibliographic information system records containing citations, abstracts, and index terms. The method currently used to develop DIS records has the advantage of simplicity and use of standard word processing software. However, it lacks the ability to provide management statistics, and is a highly inefficient method of indexing. An integrated online record-creation approach has been used successfully in several other systems—some dating back at least 10 years—including PC-, IBM mainframe-, and HP-3000- and DEC 20-based minicomputer systems. Such systems support online cataloguing, abstracting, indexing and editing/quality control/proofreading, often permitting a reduction in the number of times a record is printed out. If the *Thesaurus* were made accessible and easily searchable to indexers online, terms could be selected for each record by highlighting or use of a mouse, eliminating the need to key and proofread the terms. Given the number of documents indexed, the potential keystroke savings, and labor saved to identify and correct keying errors, could be substantial and well worth a small up-front investment. Even the off-site indexer could be accommodated, on either a standalone or networked basis; completed records could either be telecommunicated to the DISC or delivered on disk when the source documents are returned.

MINISIS can search and retrieve on the full text of abstracts. Although the current *Thesaurus* is a thorough, well-maintained vocabulary-control instrument, at some time in the future, it may be desirable to evaluate the option of substituting full-text retrieval for the controlled vocabulary as a cost-saving measure.

Abstracting and Indexing Recommendations

- Conduct a study of the feasibility of indexing documents online with automatic term assignment instead of manual entry onto forms and separate keying.
- Examine and evaluate alternatives to the current abstract data-entry system, including simply adding additional process tracking capability to the current system.

Findings

- Analyze abstracting/indexing productivity versus effort during the past 12 months (and perhaps a comparable month from a previous contract year or years). If production times are higher than expected, identify the cause(s) and take corrective action as appropriate.
- Develop regular formal mechanisms for obtaining qualitative feedback on abstracting/indexing quality from R&RS staff and other users.

4.3.4 Data Entry

Section C.3.5 of the contract SOW requires that the contractor provide data entry and verification services to CDIE and other Agency offices on the A.I.D. mainframe computer, Wang OIS and VS equipment, DISC minicomputer, and various other terminals.

The investigator did not review this task area and did not see any separate statistics in the monthly management reports.

4.3.5 A.I.D. Thesaurus Maintenance

Section C.3.6 of the SOW *A.I.D. Thesaurus* Maintenance requires that the contractor maintain the subject- and geographic-term authority list for indexing DIS materials; create main entries in periodic and cumulative indexes; analyze information requests and conduct subject searches of the A.I.D. databases; and perform selected dissemination of information search services.

The *Thesaurus* is thorough, has excellent cross referencing, and is well maintained. The number of changes has been steadily decreasing and is currently only 30 to 50 per year (less than a third of the SOW estimate of 150/year). Every 6 to 12 months the lexicographer distributes suggested changes to a committee which includes representatives from AED and direct hire staff. Each approved change requires 5-10 minutes to enter and document, or about 8-10 hours per month including proofreading. Changes are uploaded periodically to the authority file by the DIS Manager. Update sheets are circulated to advise indexers of changes.

No comments were made regarding the *Thesaurus*, and no changes to current staffing or procedures are recommended.

4.3.6 Information Systems

Section C.3.7 of the SOW specifies the following tasks pertaining to maintenance of the Development Information System (DIS), and creation and maintenance of the APDMS micrographics information system containing information about microfilmed project documents:

Development Information System

- Maintain DIS and other databases on the HP-3000 computer housed at the DISC, including maintenance and MINISIS and other software, update of the database with new records, system operation, design and production of products derived from the DIS database, and exchange of data with other development organizations such as IDRC, the Institute for Development Studies, the World Bank, and NTIS.
- Maintain, validate, and update a database of information about recipients of DISC information and services;
- Provide on-site support of CDIE Wang OIS systems, microcomputer systems, LANs, and other online telecommunications systems, including coordination of equipment maintenance.
- Install software and provide related technical assistance.
- Maintain and annually update an inventory of all CDIE on-site computer equipment.
- Report statistics regarding users, database status, and computer-system performance monthly.
- Perform an annual review and assessment of DISC contract hardware/software requirements and recommend improvements where appropriate.

Micrographics Information System (APDMS)

- Generate microfiche header information through the computer database.
- Assume management and inventory control over all FA/AS/ISS/RM databases and materials, including documents and microfiche masters and internegatives.
- Structure the APDMS database to provide Fast Access Fields for selected fields.
- In consultation with A.I.D./IRM, develop the capability for reproducing and transferring the "system index" on magnetic media.

DISC staff also developed alternative formats of the DIS database in support of technology transfer, including MicroDIS, a self-contained microcomputer-based DIS system; and CD-DIS, a CD-ROM optical-disk-based DIS system (Section 4.6). DISC staff also provide computer support for DIC operations under subcontract to AED; these services are discussed in Section 4.13.3.

Findings

General Observations

Computer operations and support are central to virtually every DISC operational task, either to facilitate technical processing or to produce related administrative reports. In addition, planning, developing, disseminating, and supporting new DISC products, services, and systems require input from and close coordination with computer-knowledgeable staff. Consolidating all computer-related tasks into one functional group, centered around operation of the HP-3000 computer and the DIS, therefore is highly desirable. All DISC staff involved in computer-related functions are under the direction and/or coordination of the Systems Development Group (SDG) Manager. Computer support related to operation of the DIC under subcontract to AED also is provided by the SDG. Most findings of this study related to computer operations, regardless of the specific task area, are therefore presented in this section.

Nearly all users were highly commendatory regarding LTS' speed in setting up the LAN and providing excellent training and highly responsive day-to-day support. They also recognize the requirement for LTS to coordinate computer operations with the Agency's IRM group, and the difficulties this requirement presents. One user suggested that A.I.D. should give LTS more LAN responsibility, a stronger voice in advance planning, and additional support staff. Following is a sample of favorable comments from a wide range of users, without attribution:

"Computer responsiveness has always been good, both locally and at the DISC."

"...very responsive and helpful."

"...very responsive getting me set up with a laptop."

"My general sense of the LTS contract is very positive. LTS got the LAN expansion up very quickly and it is well supported. They are very responsive and try to find solutions to problems. Mailing-list maintenance is smooth and responsive; the turnaround time to do an Evaluation synthesis was quick (2 days)."

"The LAN people are good and helpful."

"All LTS staff are generally responsive. The transition to the LAN was relatively well managed; I appreciated getting sufficient advance notice of a weekend system shutdown. I appreciate the good coverage they provide (one comes in early; one leaves later)."

"LTS has done a very good job of growing with this beast [the LAN]."

"The LAN system is very reliable; it crashed only once during the last several months."

"...extremely responsive...one of the best personalities in the service function: smooth, cool, always stable despite the state of the client; a good network interface."

"LTS staff have responded admirably; they take on new responsibility very well."

"LTS has advanced light-years in 2 to 3 years."

Despite these unsolicited compliments, several problems and concerns were identified, summarized later in this section.

Operation of the main DIS database is stable, updates proceed regularly, data are exchanged with other development organizations, and users have little problem with its contents or accessibility. However, several users observed that DIS database operations would much simpler if the bureaus used a common record format (this issue is discussed in Section 4.3.2). One user observed that the ability to search on keywords is important and that it works reasonably well. The DISC was perceived as being very responsive to requests from R&RS staff for changes in DIS print formats.

System maintenance includes reorganizing 50 to 60 databases for space, producing tapes, changing about 500 index files, maintaining COBOL programs, adding new databases, daily and weekly system backups, and troubleshooting and routine maintenance, including periodic checks on capacity and contaminated data. Header tapes also are produced for microfiche production. Current system storage capacity is adequate and easily increased by the addition of more disk drives. In its current location, occasional problems with power, temperature, or humidity have been experienced, but service has rarely been affected.

The current MINISIS system operates in emulation mode on the upgraded hardware, and some problems have been experienced. The new (Version H) software will be available in 1993. The system is always accessible, except during brief backup or maintenance operations. Remote dialup use of the system by the missions is light.

The CD-ROM system was developed by LTS under a separate contract with IDRC, with some in-kind support from A.I.D. Evaluation forms were sent to users with the CD-ROM system, revealing that the ROMWARE selected was not very user-friendly during the first trial. An improved home-grown version was developed and refined after Beta testing; the new version is due to be completed in September.

The SDG Manager is a member of the LAN Steering Committee, which drafted policy statements and developed a position paper. He has asked repeatedly to participate in IRM planning meetings but has never been invited. He also is a member of the HP 3000 steering committee.

Perceived Problems and Areas of Concern

- **Computer operations lack "process planning."** Computer-support requests outside of responding to nominal requests for user assistance are not well scheduled, tracked, and reported; and there appears to be a need for prioritizing them. Another expression of the same problem is the impression that "Jim does everything himself or everything needs to run through him". The SDG Manager stated that he could provide better support with two additional people, especially in view of the rapid expansion of the Evaluation side of CDIE following the reorganization. However, with limited quantitative productivity information, neither CDIE nor DISC management can judge accurately whether productivity of current staff (individual and/or composite) is acceptable or whether staff levels are adequate to complete requested assignments in a timely manner. To one observer, it appeared that too much time was being spent on CD-ROM projects. Examples of scheduling problems include the delay in completing the document-delivery needs analysis; the length of time to complete the evaluation of converting the CDIE LAN to Banyan; the long development time for the MINISIS online ordering system and OCLC ILL component; request for a program to perform analyses on DIC data captured through screen saves. Another interviewee inquired about the status of Research Desktop (a Windows-based CD-ROM system), which was thought to be potentially very useful.

The LAN support center in SA18 uses a "Work Ticket", which can be used to track jobs; however, this process appears to be used only sporadically. The "Network Remote Plus" package permits users to report problems; the message locks onto a support person's E-mail.

- A need also was expressed for **more independent action by SDG**, such as automatically updating of the address database rather than waiting until it was requested; and a "higher level of conception."
- **More communication with users.** LTS introduced a Windows-type program that required a new word processor and a need to move back and forth between DIS and other programs; this system did not meet the needs of researchers and got in way of others. The impression was that there was no R&RS input to systems design.
- **More advance LAN-related training is needed**, rather than after the fact.
- **No formal quality-control procedures are followed for day-to-day SDG activities.** In addition, there are no formal evaluation procedures for SDG operations except for specific areas such as training effectiveness and provision of feedback via a committee when the new system was installed. However, most users promptly advise staff of any immediate operational problems.

- **Lack of inter-LAN compatibility between the Novell-based CDIE LAN and other Agency LANs based on Banyan Vines.** It is very complicated—in some cases impossible—to perform certain messaging and document transfer functions across LAN types. One user described the difficulty of sending a message to multiple recipients across four quadrants of alphabet, in which the message doesn't always arrive at the same time; one case took 24 hours even though the "message sent" display was given (indicating only that the message arrived at the target server). This user also expressed frustration with the cumbersome process of attaching documents to E-mail, preferring instead to send records to the public directory as a WordPerfect document. One user noted frequent message-delivery error messages, such as "unknown host" and complained that IRM does not communicate with users. They suggested that LTS have more of a mandate to interface with IRM on new changes, on a more formal basis.

Although the inter-LAN problem stems from conditions beyond LTS' control, IRM's current standardization on Banyan requires that it be addressed quickly. Because of the number of CDIE LAN users affected, this problem has high visibility and is a continuing irritant, even though users understand LTS' position vis-a-vis IRM.

- **Perceived need for increased participation by R&RS in some computer-related decisions.** Some R&RS staff felt that changes were sometimes made to the network or equipment that affected their work, without their input. R&RS staff were not a part of the process of selecting databases the CD-ROM system. Other problems related to the CD-ROM system were also mentioned, including a software problem with some databases and failure to update the databases, resulting in decreased use of it by R&RS analysts.
- **Some DIS databases are incomplete as a result of merging some files.** For example, PROJDOC should contain all evaluations, but some are apparently missing; this has been known for more than a year, but the problem remains unresolved.
- **Computer support problems concerning the DIC** [apparently mostly solved now]. System availability, telephone access, breakdowns.
- **Need for more software packages on LAN, and more in-depth technical support, for Evaluation staff.** Some Evaluation staff would like to have available packages such as Windows, a calendar/meeting scheduler, and SAS. Based on their interpretation of item 4 of John Eriksson's memo of 8-29-91, they also expect to receive more in-depth technical assistance from the on-site support staff on packages such as Harvard Graphics/Project Manager, WordPerfect, and Lotus. When one of the on-site staff members did not know the answer to a question, they tended to say "I'll get back to you", but often failed to follow through (this has improved considerably in recent months).

Several users asked why it was such a problem to install Windows on the LAN. They know LTS is capable of installing and supporting it, but believe the LAN Committee has not solved the problem yet (one user asked why a question raised at a recent Committee meeting about the status of Windows was expunged from the minutes).

- **Security in Building SA-18.** Concern was expressed over system vulnerability to theft/damage, since the building is not physically secure.
- The CDIE/E Director receives about 30 messages per day, has trouble separating out the important ones. She asked if it would be possible to set up a "personal mailbox" which she could use to avoid the "junk mail" and to set up meetings.
- **DIS coverage.** One DIS user commented that the coverage is uneven, particularly for projects; and that evaluations are sometimes coded under the project that *funded* the evaluation instead of under the project being evaluated. Abstracts were viewed as limited, with uneven coverage. Although A.I.D. needs to retain records of historical documents, the cost of tracking the documents down may be excessive. It was felt that the cost of using the database as an electronic index of a paper file was high for the amount of use made of the system.
- Several LAN users commented on the lack of enough copies of documentation. They do *not* have after-market manuals.
- One Pragma LAN user in Building SA-18 was unaware of the division of responsibilities among the on-site support staff, which led to some communications problems. They said they never received a written procedure for requesting LTS LAN-related services and were initially told that they were only supposed to support AED staff.
- **DISC staff would like more training opportunities** directly related to their DISC responsibilities. Although some internal cross training has been provided, there is little depth in HP and MINISIS system familiarity, and it is very difficult to find qualified staff externally. More training, such as special courses in MINISIS Version H, were viewed as necessary to optimizing operation of the new hardware, even while it continues to run in the compatibility (emulation) mode. Specialized training and seminars in new technologies and software also were viewed as essential to improving the staff's ability to contribute to strategic planning and providing informed support and problem-solving capability.

Many of these perceived problems and concerns can be traced to a combination of inadequate communications and a lack of systematic task planning and management. Solving the communications aspect is straightforward: increase participation by representatives of all user groups in the planning process when a new service/product is to be introduced or when a significant system change is contemplated. A possible solution to the second aspect is for the SDG Manager to spend more of his time planning, documenting, budgeting, and tracking the progress of each task. However, given the extensive experience of the Manager with the current system, and the lack of ready availability internally or externally of comparable expertise, it would seem more advisable to assign most of the planning and monitoring to a capable administrator. The SDG Manager would thus be able to spend more time on planning and technical direction.

Computer Operations Recommendations

- **Improve planning, tracking, and accountability of special tasks and studies (outside of day-to-day support functions).** In conjunction with the PA, prepare a brief completion plan for each task and establish progress reporting mechanisms and frequency. This function should be assigned to the proposed Project Administrator described in Section 4.2.
- **Refine and re-assess assumptions relating to conversion to Banyan used in the Draft Issue Paper,** including recognition of upgrade costs, even if Novell is retained. Coordinate with all interested parties to try to bring this to a rapid resolution.
- **Install Windows** as soon as possible.
- **Clarify the nature of service to be provided to Evaluation** and policy on installing additional packages, such as Harvard Graphics, Harvard Project Manager, and Lotus 1.2.3. Provide additional training to current staff and/or use consultant services if necessary to provide expected level of service (funds permitting).
- **Engage services of an expert in library automation** to review ILS module incompatibilities, problems coordinating ILS, OCLC, and MINISIS acquisition and cataloguing, and evaluate cost savings. Current overlaps/inefficiencies are probably requiring excess labor.
- **Develop and implement communication channels for two-way communications with LAN users.** Channel could be a newsletter (which was discussed but not implemented for lack of time) or in-person forum, perhaps combined with tutorials; might even be a lunch-hour affair with food provided at nominal cost.

Findings

- **Invest in additional formal training of LAN users to help reduce the number of calls for assistance.** Ensure that guidance is provided in nontechnical terms understood by users who may not be very familiar with computers. [If implemented, the CDIE LAN Training Plan developed by the LAN Training Group should accomplish this goal.]
- **Study system use data to detect trends, etc.** (comparable to statistics maintained for document requests).
- **Investigate and remedy the reported limitation on port availability for DIC staff to access CDIE LAN.**
- **Together with R&RS staff and IRM, establish and document criteria and procedures for updating the address database and for reporting updates to R&RS.**
- **Investigate and document the cause(s) of missing PROJDOC records;** explore alternative solutions and their costs, and implement the most cost-effective solution.
- **Establish a LAN users group** with representation from all A.I.D. and contractor components served; ensure that their input is obtained before making any system changes/additions.
- **Include representatives of all user groups when planning changes/additions to DIS databases or services.**
- Pursuant to the first recommendation in this list, **communicate progress on tasks or studies in process regularly to all interested parties.** Perhaps an extract from monthly reports could be circulated.
- **Upgrade the XT workstations** as soon as possible to at least a 386 level; their continued use for technical processing carries ongoing excess cost resulting from staff inefficiency.
- **Provide additional training to DISC staff,** both for specific technologies and general management improvement, with advance planning and approval.
- **Have all requests for assistance from onsite staff flow through Pat Woodbury.** Concurrently, give her more flexibility and authority for independent on-the-spot action (but with appropriate upward reporting).
- **Explore the feasibility of setting up "private" E-mail mailboxes** for those who request them and advise staff of how to establish them.

4.4 MICROGRAPHIC SERVICES

The SOW calls for the following types of micrographic services:

- **Create and maintain computerized micrographics information system** (APDMS), including management and inventory control of more than 400,000 microfiche masters and internegatives and associated documents (C.3.7.2)
- **Provide micrographic services** relating to the A.I.D. institutional memory (DIS) and records management (APDMS) systems (5,000 DIS documents per year of 86 pages average length; 25,000 APDMS documents per year of 23 pages average length) (C.4)

The Micrographic Services group currently films about 30,000 pages (1800-3000 documents) per month for RM/APDMS; and about 27,000 pages (340 documents) per month for the DIS. The group stores about 1/2 million fiche containing about 5 million pages.

Filming is subcontracted to REMAC in Gaithersburg; headers are produced from tapes generated on the DIS computer. REMAC prepares a master and two silver intermediates of each document filmed. The master and one silver intermediate are stored offsite at Iron Mountain vault; paper originals are stored at the offsite warehouse. ANSI standards are specified in the Handbook and followed. The second silver intermediate is stored at the DISC; diazo duplicates are made at the DISC either in response to requests or to replace missing or misfiled silver intermediates. The group performs quality-control checks on a random basis for resolution and density; no formal protocol is followed for ensuring that a representative sample of fiche are examined.

Although the User Services group normally makes paper blowback copies from the silver intermediates, sometimes diazo duplicates are used.

On-site LTS staff at SA16 and State were viewed as hard workers, prompting a commendatory letter from Melita Yearwood. Turnover has been low (one person during the entire contract period). LTS has been very supportive, always providing needed services. RM hopes to switch to an optical- disk or CD-ROM system during next fiscal year.

Scott Sherman's contribution to the APDMS working group was viewed as invaluable. His considerable records-management knowledge and insight are viewed as a valuable supplement to skills available in IRM. LTS' participation in records management is very important; RM was also appreciative of LTS' quick response to developing a conceptual document from a discussion at a meeting and providing advice to a mission regarding what materials should be retained/destroyed.

In RM, documents are archived by series. RM has developed a files plan which is based on a five-digit code which indicates the disposition by project within a naming

Findings

convention; the country identification is coded into the number. RM's correspondence tracking system uses this code. The code will be implemented Agency-wide and filing will be based on it, including cables. Each office in each mission has a plan with a destruction schedule. Therefore RM is not interested in using A.I.D. Thesaurus terms to index documents in their systems.

It was suggested that LTS proceed with the planned study of microfiche alternatives, but that it be retitled something like "Electronic Recordkeeping"; a decision is expected soon on whether to proceed. A gentlemen's agreement with DI exists to test the electronic delivery concept in a prototype. They have been working with the first prototype for about a year and are experimenting with search software techniques. Performance measures for the AFR Bureau test are being developed. They recognize the difficulties in dealing with compound documents (those with graphics materials or media other than print). They also must comply with OMB Circular A130, which requires that government provide paper copies of publications to GPO, but does not require that information be provided in electronic form. RM is trying not to lock themselves into a specific software package. They are documenting everything—how it works, user acceptance, lessons learned and assembling a new training package for System Administrators.

Problems and Concerns

The following problems and concerns were identified relevant to DISC micrographic services:

- During the period of this study, in response to an Agency-mandated cutback, **RM reduced the level of contract support from \$85-100,000/month to \$30,000 per month.** The DISC responded rapidly to this funding reduction by reducing the Micrographics staff.
- **Interest and support from the Bureaus for microfiche-based systems has been decreasing,** with CD-based systems of higher interest. Some offices are turning in equipment in favor of centralized microfiche systems in Bureau Program Offices; however, staff are not using the central system extensively. As an agency, they want to move away from microfiche; however, despite support from the RM Director, the study of alternatives to micrographic systems, an optional task under the DISC contract, has not yet been approved.
- **Budget cuts from RM required that they reduce the number of updates processed to one or two boxes per office per week;** as a result, there is now a processing backlog of about 50 boxes (up from 31 boxes in February). They cannot estimate the number of documents in a box because the documents are of different sizes and boxes are not always filled; some boxes are stored at the DISC facility.

- **Several respondents expressed concern about the number of user complaints about poor blowback quality** (discussed in Section 4.5.1). An ad hoc study and results of the service evaluation show low problem frequency. An estimated 99.9 percent of blowback problems were attributable to poor-quality original documents. In the Service Evaluation Report for March, 12 percent of 191 document recipients said material was not received in good condition, but only three or four specifically say the reason was poor blowback quality. User Services checks complaints to determine whether a document should be refilmed; only three or four required refilming during the last 6 months. Some silver intermediates were lost in earlier transitions; in some cases diazo copies were misfiled and the silver intermediate sent; some were flooded or damaged. There are some gaps. LTS tried to identify all of the gaps, but the cost is very high (and, in view of declining interest in microfiche-based systems and age of many of the documents, probably unwarranted). They discontinued the inventory after reviewing 600 to 700 numbers; generated several pages of printouts.
- **Confusion within A.I.D. regarding the relative roles of records and information.** IRM, DI, and RM complement and to a certain extent overlap one another. The DISC Micrographics Services has developed committee meeting agendas and conceptual papers, but receives little feedback or substantive input from other participants.
- **Difference of opinion between R&RS and DISC staff** regarding whether or not end users should be provided direct access to DIS databases via systems that would substantially reduce or eliminate the need for R&RS search services. This suggestion, made 2 or 3 years ago, has received little support at meetings.
- **It was suggested that RM and DI databases be integrated systemically** to make them complementary.

Micrographics Recommendations

- In conjunction with the PD/DPD and Project Officer, with input from RM, redefine the micrographics study option as it applies specifically to DI operations. Conduct the redefined (and perhaps renamed) study as soon as possible.
- Participate as much as possible in the RM planning process. Keep abreast of their progress regarding implementing the 5-digit Item Number code, since it will impact all DISC processing.
- Participate with RM in implementing and evaluating prototypes of electronic document delivery.

- Develop a systematic fiche QC sampling plan and document results over time; as acceptance rates reach mandated levels, reduce the sample size.

4.5 USER SERVICES

As defined in the SOW, User Services includes responding to requests for information, development/production/distribution of various Development publications, and training and user awareness activities related to Institutional Memory and Agency Records Management.

4.5.1 Respond to Requests for Information

The task consists of receiving, logging, analyzing, and fulfilling requests for A.I.D. development documents, microfiche, audiovisuals, electronic data, computer software, and other non-A.I.D. materials (SOW Section C.5.1). Response times must meet the following priorities:

<u>Priority</u>	<u>Requestor</u>	<u>Response Time</u>
I	USAID missions, A.I.D./W Bureaus and offices, A.I.D. contractors, special requests	1 workday
II	LDC Institutions, PVOs, Peace Corps, other host-country development organizations	3 workdays
III	Other public sources	7 workdays
	Return microfiched documents	5 workdays
	Deliver microfiche for distribution to overseas missions to DOS	15 workdays

The DISC Document Distribution Unit (DDU) is also responsible for storing and distributing Women in Development (WID) program documents, as described in Section 4.7.1.

The DDU operates two microfiche blowback machines, both of which were inoperable for awhile, although they have been relatively trouble-free in recent months. Scanning speed of the current equipment is fast, but printing speed is slow. The DDU supervisor would like faster, better-quality blowback equipment. The unit also operates a microfiche reader-printer, which is much slower and of poorer quality than the primary machines.

The DDU often uses diazo working copies to make hard-copy blowbacks of requested documents; if the result is illegible, the silver duplicate is examined and, if necessary, the master (stored offsite) is retrieved and a new silver (or, more often, diazo) intermediate is made. For awhile, the DDU Supervisor kept a log of the numbers she had to pull; in 9 of 10 cases, the silver intermediate provided better copies than the diazo. The DDU Supervisor

suggested using silver intermediates for blowbacks, but the suggestion was not implemented because of the replacement cost. Most of the blowback quality problem results from poor-quality source documents.

The DDU also logs in and deposits payments received from requestors who do not qualify for free copies of materials. Collection and accounting for these receipts has not been problematic; orders over \$30 must be prepaid and smaller orders are sent and billed. Some orders are priced and invoiced (but not sent) and they never hear from the requestor.

Because shelf space at the DISC is relatively limited, paper copies of some documents stocked in bulk are stored offsite at a commercial warehouse. Inventory statistics are maintained independently by the warehouse; their system is not connected to the DISC computer. The warehouse issues monthly inventory printouts. WID functions, including bulk mailings, are tracked separately. They also do bulk mailings of R&RD requests, *ARDA* quarterly mailings (400-500 addresses), and "New This Month". Although no specific turnaround times are required, bulk mailings usually are shipped within a month of the request. The DDU maintains and updates the mailing lists.

Documents contained in the Inventory database also are stored at the warehouse. The courier goes to warehouse on Friday to retrieve inventory requests for photocopying. Occasionally, to replace a missing or defective microfiche, original documents are retrieved from the warehouse and refilmed.

The DDU Supervisor spends about half of her time on quality-control functions. Each function in the DDU is performed according to written and verbal instructions, but a "checklist" approach is not followed. Staff are systematically cross-trained to back up each other, and the Supervisor encourages and assists staff in upgrading their computer and other skills. In the Supervisor's absence, DDU responsibility is assigned to a "deputy", but she is concerned about leaving the facility for long periods. As a result, she does not participate frequently in external group meetings, although she is encouraged by the PD to increase the level of interaction with DI so that she can anticipate workload or changing requirements.

Since February, the DDU Supervisor has been working with an SDG staff member to define requirements for a new computer support system for the DDU. The new system will provide statistics on the amount of time spent to process each order. It will also issue invoices immediately, overcoming some operational problems with the current system; the new system will issue 30-, 60-, and 90-day payment notices. Completion of the requirements analysis has been delayed by difficulty in scheduling meetings and the need for decisions regarding technical assumptions outside of DISC's responsibility.

The DDU Supervisor feels that an additional person, even if part-time, would provide better backup capability for all functions; at present, no backup is available for the courier.

Findings

Most users were very favorably impressed with the quality and timeliness of the DDU and particularly with the competence and patience of the Supervisor. The following comments are typical:

- "The response is generally good."
- "Generally good response and timely."
- "Valerie and her staff are wonderful. Always courteous. I am very impressed with everyone there. Timeliness of responses is usually very, very good (usually within 24 hours)."
- "Valerie does an excellent job. She is calm and service-oriented."
- "The document distribution service is very adequate when users know what they want."

One user asked whether contractors should be required to pay for DDU services, or whether discounts should be offered to universities. These are issues that are beyond the DISC's responsibility to resolve, but may require decisions by DI.

Problems and Concerns

- **Copy quality is a continuing concern to many users.** User comments include, "Copies not always legible"; "Occasionally see problem with copy quality"; "Biggest problem is document legibility;" "I sometimes get complaints from requestors regarding blowback quality;" and "Previous problems seem to have been primarily caused by the blowback machines, but I still experience occasional problems." People paying for copies complain when they are difficult to read.
- **Users occasionally receive an incomplete package or a blowback of the wrong document,** indicating occasional slippage of quality-control procedures.
- **The response rate for user evaluation forms is very low** (representing only about 7 percent of orders filled in FY 1991).
- **The user services evaluation form does not have the order number on it; it also makes no distinction between documents received in poor condition because of shipping problems and illegible blowbacks.** No formal feedback channel exists for R&RS staff to convey copy-quality information (or for any other DISC service) to the DISC, although R&RS staff members occasionally advise the DDU of problems with specific documents.
- **One user experienced delays of up to 1 week for internal delivery from the SA18 Mail Room.** This problem has apparently been corrected, but should be monitored.

- In requesting documents, one user would like to be able to eliminate the extra step of obtaining a PN number from the DIC when it is unknown.
- **LTS is not well situated to develop/cull publication mailing lists.**
- **Some mailings sat too long before they were sent.**
- **Current reporting statistics make it difficult to determine whether or not SOW-specified shipping times are being met.** Some contract-specified document-delivery times appear to be consistently exceeded—occasionally reaching 3 months or more for some countries. The reports show only the total elapsed time between receipt of a request by the DDU and the recipient's recollection of the date it was delivered; as a result the in-process time between receipt of request and *shipment* of response is unknown (or at least unreported), and delays cannot be attributed to the DDU or to transmittal. The statistics may also be slightly skewed when completed orders are picked up in person because no receipt is signed; thus, the "Sent" date logged for pickups may be later than the date the request was completed.

Document Distribution Unit Recommendations

- **The DDU Supervisor should meet with the Systems Analyst assigned to design a new computer support module, the SDG Manager, and the DPD to assess progress, identify problems, and establish a schedule with milestones and staffing plan for completing the study;** the results of this meeting should be documented in a report to serve as a reference against which to measure progress toward completion. Include in the needs analysis an evaluation of the feasibility of electronically linking the DDU with the warehouse computer so that inventory could be determined remotely at any time.
- **DDU staff should begin tracking and reporting not only the time from receipt of request to delivery of materials to the requestor (or their recollection of the date it was received), but time from receipt of request to transmittal (i.e., processing time at the DISC).** This additional information will help determine whether processing changes are required, or whether the longer times are due primarily to the transmittal mode. In the latter case, faster channels may be indicated (funds permitting), at least for certain types of requests or requestors.
- **Monitor and tally sources of problem blowbacks** to determine whether source of problem is original document, intermediate, or blowback equipment/operator. Follow up periodically (e.g., one 1-week period each quarter). Take corrective action as needed, including replacement of diazos with silver intermediates as appropriate.

- **Develop a set of simple checklists for each DDU function** to be rigorously followed at each processing stage. This will reduce the frequency of incomplete or erroneous shipments and will facilitate cross-responsibility staff assignments.
- **Conduct the planned cost-benefit study of upgrading fiche blowback equipment** as soon as possible. It is recognized that the decreased support for this activity, and the generally declining interest of A.I.D. missions in microfiche-based information may make such a study moot.
- **Investigate reasons for the low response rate of user evaluations** by contacting a representative sample of the nonrespondents (by telephone, mail, or other means). The results of this survey will serve to gauge whether those who do return the forms are not representative of the total population, but positively or negatively biased. The process may also identify changes that should be made to the evaluation form that will increase the response rate.
- **If feasible, equip the DDU with the capability to determine PN numbers** when they are unknown to document requestors.
- **Implement procedures to accept payment by credit card** of charges for orders over \$30.
- **Educate users to the limitations on the reproduction quality of materials sent**, through careful explanations accompanying the materials, notice in DIC; reinforce through occasional communications to Bureaus/Missions.
- **Follow up a sample of requests that have been priced but not ordered** to determine the reasons for not following through; as part of the follow-up, questions can probe for acceptable cost thresholds.
- **To the extent possible, work with DI and R&RS staff to develop document-legibility standards** in the field.
- **In the new system design, add a "Ready" date field** to eliminate any statistical reporting inaccuracies caused by in-person pickups.

4.5.2 Publications

Section C.5.2 of the SOW specifies that the DISC desktop publish and print *A.I.D. Research and Development Abstracts (ARDA)*, and approximately 40 other products per year, including special bibliographies, acquisition lists, briefing portfolios, presentation graphics, annual reports, training materials, and other special publications; and reproduce and/or print approximately 35 publication products produced by the R&RS contractor.

Publications functions are fulfilled by two part-time staff members. In addition to monthly acquisition reports, Africa Information Center documents, and other special projects, the publications unit prepares system documentation, including the AID/DIC Manual, the MiniDIS Manual, and the CD-ROM Manual. WordPerfect input documents are processed using the Aldus Pagemaker desktop publisher and Macintosh computer. Some text and artwork are received in hard-copy form and converted to machine-readable form using an OCR scanner. Because this function uses the Macintosh computer, they are not connected to the LAN E-mail system.

The following concerns and problems relating to publications functions were identified:

- **Scheduling and planning functions are lacking.** Work is often received on a "feast or famine" basis, particularly materials from the Africa Information Center. When they are received, they seem to undergo numerous revisions caused by multiple inputs (instead of consolidating all inputs in one pass), causing unnecessary composition/production iterations; they do not appear to be concerned about operating in this fashion and apparently are unfamiliar with the amount of additional effort repeated revisions cause. Communications with external sources of material are few and far between, in part because direct-hire staff are frequently on TDY. The "Democracy Newsletter" is an 8-page glossy color publication, presumably quarterly; the publications unit has not received any materials yet.
- **Progress reporting is sometimes lacking.** AED commented that they were not always advised of processing status for publications developed by them; a delay was apparently caused by the absence of the DPD and lack of procedures to distribute the work to the publications group.

Publications Recommendations

- **The DPD should take a stronger role** in attempting to even out work flow, including liaison with input sources such as Africa Information Center.
- Either log in all incoming material/communications at the receptionist and track disposition (which might cause other types of delays), or use a conventional computerized correspondence/phone-log/tracking system, either through the receptionist or proposed Project Administrator; these systems issue alerts to items that do not "clear" within preset times (this system could serve as the basis for overall task-progress tracking by the PA).

4.5.3 Training and User Awareness

Sections C.5.3 and C.6 of the SOW call for the following training and user-awareness tasks:

- **Provide professional training services regarding the DIS, MicroDIS, and CD-DIS CD-ROM** for decision-makers and program managers; project designers, implementers, and evaluators; and information specialists, librarians, and research analysts. Present an average of one DISC-related briefing per month. Prepare bimonthly user awareness announcements. Provide liaison and technical assistance services on-site at A.I.D facilities to assist with use of any DISC services. Develop and produce CDIE outreach products. Develop program to gather and analyze users' feedback and evaluations of CDIE's services. (C.5.3.1)
- **Provide professional services to train A.I.D. staff regarding the APDMS system** and produce and distribute related brochures and manuals. (C.5.3.2)
- **Develop, maintain, document, and provide training and technical assistance for the manual and automated support systems** to provide increased accessibility and decentralization of the DIS database and A.I.D. institutional memory systems. (C.6)

The DISC Training Officer works closely with the AED Project Services Manager to develop training program and briefings. They try to make the system as self-training as possible. She currently provides about three training sessions per person for about 25 people (excluding turnovers). She also developed a brief video and participated in planning and prototyping of the CD-ROM version of DIS, including evaluation of 20 to 30 system interface packages. The design concept, which was based on the CD-ROM version of ERIC-Dialog, started with available core DIS information. This system offered end-users the option of accessing DIS information directly, rather than going through R&RS; the committee is currently discussing software changes to accommodate other text/databases within the current menu structure. Recently, less training effort has been expended on MicroDIS. The Training Officer also works part time at the Africa Information Center in the main State Department building under the AED subcontract.

The Training Officer recognizes the importance not only of providing development information to contractors—especially for interns—but of acquiring documents for system input. In her contacts at Africa Bureau, she solicits copies of reports on Democracy in Government before the activity has been completed; she has been assisted by the Bureau's roving Democracy in Government contractor, who picks up input documents and informs her via E-mail on very current basis.

The Training Officer uses a three-page checklist with new people to evaluate the effectiveness of current training sessions; she has not tried to measure the basic competencies

of staff who have participated in the program longer, although she receives a considerable amount of informal feedback from all users. She also participates in monthly system design meetings.

Users praised the performance of the DISC Training Officer highly; the following comment is representative:

- "Carolyn Goshen is great! She is very responsive and works well with individuals and to help design programs. She sympathizes and zeros in on problems, finding creative approaches. She is wonderful to work with in training-group setting. She is articulate—a diplomat."

Concerns and Problems

- **Communications regarding training could be improved.** The requirement for the Training Officer to divide her time between AED and LTS activities creates something of a problem, but she has complete flexibility in scheduling her time. She could allocate her time more in accord with DI's priorities if she received more guidance from the DI Director. To address this point, she established a contractor coordination committee, but it lasted only about 3 months. She also tried to set up weekly internal review meetings to discuss the potential need for training resulting from system changes. She feels that E-mail messages could be used more often—but commented that systems recipients often fail to read the messages they receive or to review training materials disseminated. She tries to identify and communicate needs proactively rather than wait until someone approaches her.
- From the Training Officer's perspective, the most serious problems are defining the audience and selecting appropriate training media; and motivating people to use the system.
- **Some R&RS DIS users seem to feel that they cannot devote enough to learn how to use MenuDIS or MicroDIS,** preferring to use whatever they have in their personal files because it's more convenient (but probably less complete).
- **Criticism from a few AED staff tends to wear thin with SDG staff.** Although they stated to the author that they are often left out of system-related decisions that affect R&RS research staff, they do not always respond when given the opportunity. One example provided was a lack of response when asked to review screens for the CD-ROM system before the CDs were created.
- One user commented that initially the instructional booklet provided with E-mail was too brief and lacked a tutorial with basic exercises, although it provided exercises for more advanced features.

Training/User Awareness Recommendations

- **Add one staff person to focus on information-system and computer-technology training in missions** (complements R&RS research training). Person should have both librarian and development information background.
- The CD-ROM committee apparently has no R&RS representation; **include them in future sessions regarding selection of databases.**
- **Review the E-Mail training materials** to determine whether relatively basic instruction and exercises should be added.
- **Resume periodic meetings of the training coordination committee** to provide guidance to the Training Director; if time is not available for weekly internal review meetings, explore alternative communication modes, such as E-mail.
- A suggestion was made that, during their interactions with A.I.D., **R&RS staff could help identify new CD-ROM or other requirements and promote them**; this possibility should be discussed at appropriate CDIE or inter-contractor meetings.

4.6 DATABASE AND TECHNOLOGY TRANSFER

Section C.6 of the SOW specifies the following requirements for developing, maintaining, documenting, and providing training and technical assistance related to the DIS database and A.I.D. Institutional Memory systems:

- Development and maintenance of MicroDIS;
- A.I.D. Facility-based training and technical assistance to USAID and LDC institution staff;
- A.I.D. Facility briefings;
- Bimonthly user-awareness announcements;
- Representation at the annual MINISIS Users Meeting.
- On-site user help and technical assistance;
- Develop and produce CDIE outreach products;
- Develop a program designed to gather and analyze users' feedback and evaluations of CDIE's services. Such a program may include evaluation feedback forms and user interviews.

- Establish in the DISC a laboratory of minicomputer and microcomputer prototype systems that will interface with planned computer installations in the USAID missions and LDC institutions.

Most of the functions in this task area have been addressed in previous sections of this report; separate reviews were not conducted. The following comments apply to the last two items in the preceding list:

- **User feedback program.** The SOW specifically outlines methods to be used in evaluating CDIE/DISC products and services. This task is essentially the same as that described in Section C.8.4 of the SOW and addressed in Section 4.8.4 of this report.
- **Prototype laboratory.** Although LTS does not maintain a separate "laboratory" facility, all hardware and software related to the DISC and to the CDIE LAN is fully tested at the DISC before it is operationally installed.

Although not a specific SOW special project, the DI Director and Deputy Director expressed a desire to investigate the feasibility of delivering DIS products electronically. Such a study is within the general mandate for the DISC contractor to remain current with new technologies and propose applications appropriate to CDIE's mission.

4.7 SPECIAL PROJECTS

Section C.7 of the SOW describes the following special-project support requirements:

- **Women in Development Office (WID).** Publication storage and distribution, online database services, newsletter printing and dissemination, mailing-list maintenance, and response to document requests (C.7.1)
- **Office of Planning and Budgeting (PB).** Data entry services related to the Office of Planning and Budgeting information system (C.7.2)
- **Office of Population.** Select, purchase, acquire, and distribute journals and other development materials; and maintain a mailing list of population specialists (C.7.3)
- **Option for additional special-project technical assistance tasks on request (C.7.4)**
- **Option for microfilming program records of four Agency bureaus/offices to be included in APDMS (C.7.5)**

4.7.1 Office of Women in Development (WID)

Most observations and recommendations regarding DISC support for the WID program were discussed in Sections 4.5.2 and 4.5.2. The following comments and problems regarding DISC support for this program were made by the WID representative interviewed:

- In addition to DISC support, WID also funds a full-time AED staff person who acts as a conduit for transmitting change of address notices to LTS.
- No systematic problems have been experienced with LTS performance. Responses are reasonably timely. However communications with LTS should be more formal and in writing; they should not respond to verbal requests from WID staff. A publications distribution request form was developed for DISC use.
- **The person interviewed is unable to communicate via E-Mail because of a problem getting to the CDIE LAN.**
- When requests are for more than one document, LTS batches them before forwarding, which creates some delays; requestors sometimes call to determine the status.
- **The person interviewed is not confident they will be notified of depleted inventory in time.** Has impression that systems are awkward, such as reporting "230 copies plus 4 boxes." This forces setup of an internal system. Requests are made by fax or messenger.

WID Recommendations

- When requests are for multiple documents, **send incomplete shipments to avoid delaying the whole order**, with a note explaining that the other items will follow.
- **Discuss reasons for having to develop an internal inventory-control system** and explore ways for the DISC to provide this information.
- **Determine whether it is possible to provide access to the CDIE LAN.**

4.7.2 Office of Planning and Budget

Section C.7.2 of the SOW requires that the DISC provide data-entry services to the Office of Planning and Budgeting. No information regarding this task was obtained during the evaluation.

4.7.3 Office of Population

This special project, described in Section C.7.3 of the SOW, requires the DISC to acquire and distribute Office of Population development information as follows:

- Select, purchase, and acquire development materials;
- Distribute materials to A.I.D. population specialists and officers overseas;
- Maintain a mailing list of approximately 200 population specialists and their counterparts.

Discussion of these activities is included in previous sections describing DISC acquisitions and document distribution functions.

4.7.4 Technical Assistance Option

No information was obtained during the study regarding this option.

4.7.5 Microfiching of Bureau of Program Records Option

This effort was discussed in Section 4.4.

4.8 PROGRAM PLANNING AND MANAGEMENT

The SOW specifies eight planning and management requirements for the DISC contractor:

- Transition Plans to Relocate the DISC (C.8.1)
- Implementation Plan and Schedule (C.8.2)
- Service Evaluation and Quality Assurance (C.8.3)
- Contract Evaluation (C.8.4)
- Operations Management (C.8.5)
- Operation Manuals (C.8.6)
- Systems Studies and Plans (C.8.7)
- Participation in A.I.D. Committee (C.8.8)

In addition, in Section C.9.2), the SOW requires that the DISC contractor provide cross training of professional personnel to prepare for changing workload conditions, shifting job priorities and program emphasis, and changing information service demands.

4.8.1 DISC Relocation

The original intent of this contract provision was to cover relocation of the DISC to a successor contractor if the contract had changed hands as a result of the last recompetition. Since the contract was retained by LTS, it does not apply. However, during the course of the current contract, to facilitate liaison between DISC staff and A.I.D. and other contract staff, the DISC was relocated from Bethesda, Maryland to the current facility in Rosslyn, Virginia. This relocation was planned and executed by LTS smoothly and effectively.

4.8.2 Implementation Plan Development and Maintenance

The author did not review the Implementation Plan during this study. The SOW provides a considerable amount of detail concerning how the specified tasks will be accomplished and the schedule for their completion.

4.8.3 Service Evaluation and Quality Assurance

Service Evaluation

The SOW specifies that the contractor should design and implement a system to capture and evaluate user feedback information *in all task areas of the contract*; perform user studies and case studies to evaluate service program effectiveness; and submit user evaluation reports quarterly after the first 6 months.

No plan currently exists for ongoing evaluation of *all* DISC contract tasks, although the semiannual Service Evaluation Reports contain period and cumulative quantitative information about each area. Formal evaluation is currently performed only for document delivery and training; one-time evaluations have been conducted for special projects, such as the CD-ROM Beta test. The micrographics supervisor assembles and prepares the Service Evaluation Reports.

The document-delivery service evaluation form is generally adequate but, as discussed in Section 4.5.1, reasons for low response rate should be investigated and periodically followed up to allay fears that a large number of dissatisfied users may exist. The question pertaining to whether the requested document(s) were received in good condition does not permit determination of whether a negative response was the result of poor copy quality or mishandling in shipment unless the respondent specifically comment on one or the other in the "Comments" field. In addition, the *degree* of satisfaction is not systematically monitored since no numeric or other scales are used.

A review of the comments on forms returned during the last quarter revealed that they were accurately listed in the corresponding Service Evaluation Report. However, the Reports contain little textual summary information commenting on possible reasons for any anomalies, trends, or other aspects of the quantitative information.

Quality Assurance

The SOW states that through the quality assurance program, the contractor will provide an *independent* quality control service, *separate from the daily operation of the A.I.D. Facility*. The contractor will establish quality standards for all outputs, products and services of each task area of the contract.

The LTS proposal anticipated the use of questionnaires, surveys, and other analyses to supplement results of the Quality Assurance function in evaluation the effectiveness of the DISC service. These have not been administered systematically.

No one on or outside of the DISC project staff is designated for QC and processing improvements.

Service Evaluation/Quality Assurance Recommendations

- **An Evaluation Plan, together with any associated forms, should be developed, documented, and implemented for each contract task area, including a generic plan for functions that may not be spelled out in detail in the SOW.**
- **The document-delivery Service Evaluation Form should be revised to include multipoint scales, where appropriate, to gauge degree of user satisfaction/ dissatisfaction, and to remove the ambiguity concerning "good condition."**
- **The Service Evaluation Report format should be expanded to include evaluation information collected as a result of following the Evaluation Plan. Brief textual summary information should be included commenting on the quantitative figures; as a minimum, the gist of all open-ended comments should be tallied by topic and/or whether they are positive or negative. As part of the report redesign, the value of the large amount of statistical data reported should be reassessed and the number of items reported should be reduced as appropriate. To ensure impartiality in the evaluation design, the assistance of an external consultant is recommended for this task.**
- **Develop a formal project-level QA plan and regularly monitor its compliance.** As specified in the SOW, the QA function should be performed by someone *outside* of the day-to-day operations staff, either within LTS or externally; should draw up a formal QA plan. Assistance from an external consultant who is an expert in developing QA plans also is recommended for this task. (Please refer to Appendix H for a discussion of the QA function.)

4.8.4 DISC Contract Evaluation

Section C.8.4 of the SOW requires that an evaluation of the DISC contract be conducted beginning 36 months after contract award and as otherwise deemed appropriate by A.I.D. The operational analysis documented in this report fulfills the requirement for the initial contract evaluation. At least one followup additional review of a comparable level is recommended before the end of the 5-year contract term.

4.8.5 Operations Management

Section C.8.5 of the SOW specifies the following operations management measures:

- Establish effective internal project management direction and controls necessary to:
 - a. Guarantee that all contract requirements are satisfied in an acceptable time frame.
 - b. Adequately train contract staff to perform assigned projects within acceptable time limits and quality control standards.
 - c. Plan and monitor staff performance of all tasks.
 - d. Anticipate, identify, and resolve problems.
 - e. Improve DISC program efficiency.
- *Utilize input from an independent quality assurance program* to improve the effectiveness and efficiency of each task area in the contract.
- Conduct annual reviews with A.I.D. utilizing input from the quarterly quality assurance reports, monthly management reports, and semi-annual service evaluation reports.
- Develop and maintain a system for closely monitoring the progress of work under the contract and for generating monthly management reports that help predict possible problems or slippage.
- Report monthly staff hours and expenditures of contract funds by task.

Perspectives

In general, users believe that LTS is managing and performing DISC contract tasks very well. The PD " has an excellent approach to providing service, and pays attention to management issues. He and his people are a pleasure to work with."

DI management believes that although LTS managers and supervisors are excellent at performing their technical responsibilities they do not do as well at—or do not spend enough time on—"strategic planning." The perception that the PD's involvement in the project at a detailed level leaves less time for planning, identifying and defining new requirements, and gauging user satisfaction and needs. It is unclear whether this perceived shortcoming is the result of a lack of clearer definition of responsibilities or the need for additional staff or staff with different skills.

LTS could become more involved in liaison and file import/export with worldwide development organizations to explore DISC interfaces. For example, a Sao Paulo firm is developing special ISIS-related programs under joint IDRC and PAHO funding; A.I.D. held preliminary discussions about the potential for DISC participation in joint projects with this firm, such as a controlled vocabulary or corporate authority file, which were not followed up.

R&RS staff feel they do not always get some of the technical support they should. There is a general feeling that LTS does not understand what AED does, which sometimes leads to a research analyst's request for 1-hour document turnaround. LTS does not always deal well with policy issues beyond the technical.

Strong disagreement was voiced with LTS' position description for the on-site supervisor opening; they believe this person should function as a general subcontract liaison person with AED, sit in on AED staff meetings and "interpret" AED's position to LTS. Better communication between LTS and AED is needed, particularly at the PD level. Most inter-contractor problems stem from the lack of understanding and communication rather than from competition.

Both R&RS staff and others interviewed expressed some uncertainty regarding the respective roles and responsibilities of DISC staff, leading to confusion over whom to approach for various needs or problems. They were also uncertain who backs up each function in the absence of the primary designee.

The LTS perspective is that although they are being asked to be more "proactive," staff are not provided access to the training opportunities that could help improve their planning and technical skills. Senior LTS staff would like to be more involved in information systems design and work at the Bureaus, but LTS is perceived as having processing capability only—resulting in a "catch 22" situation. The perception also is that when LTS staff are invited to planning meetings, they usually come much better prepared than the other participants. Frustration was expressed in promoting innovative ideas with IRM—an area where LTS staff have excellent skills.

LTS also expressed the belief that there was less communication now with R&RS than before. Concern also was expressed for the reduction in operating budget (\$500K under plans), which was not accompanied by a contract modification to reflect transfer of funds to other tasks. Although LTS often tightens up operations there never seems to be enough money for outreach activities.

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The author believes that LTS staff are generally organized logically by function, which facilitates cross training and optimizes staff utilization. Staffing-level adjustments/reassignments in response to fluctuating work flow and funding reductions such as the recent RM cut are generally good and timely. Additional on-call backup staff for units such as the DDU would help maintain turnaround times during peak workloads (although the current reduction in force resulting from RM cutbacks may provide a temporary "solution").

The position descriptions for the PD and DPD clearly delineate the PD's focus on interaction/coordination/planning/strategy development with CDIE, other A.I.D. components, and other contractors; and the DPD's focus on managing the day-to-day technical operations of the DISC.

DISC staff currently submit timesheet data to LTS' Bethesda office manually; the data are then transmitted to LTS' administrative headquarters in New Jersey. This procedure complicates the processing of project information and unnecessarily delays availability of project financial reports. Given the level of computer sophistication available at the DISC, it is reasonable to assume that such information could be sent electronically directly from the DISC facility without compromising sensitive salary information; a similar approach might be feasible for purchasing information as well. Although this matter is internal to LTS, streamlined financial processing could improve the currentness and accuracy of information available to the PD, DPD, and PA.

Operations Management Recommendations

To address the operations-management concerns and problems identified in the preceding paragraphs and others discussed or implied in previous sections, the author recommends that a number of actions be taken; the suggestions are grouped into actions regarding staffing, general operations, and communications and reporting.

Staffing

- **Hire a full-time Project Administrator (PA)** reporting to the PD/DPD; a suggested Position Description is presented in Appendix G. The primary focus of this position is to assist the PD and DPD in planning and tracking assigned tasks and in developing the cost components of cost-benefit analyses. Financial management tasks, such as ensuring that expenses conform with contract restrictions, following up vendor payments, or other detailed financial matters should continue to be performed by a knowledgeable person at LTS' Bethesda or other office.
- **Redefine the Position Description for the R&RS subcontract supervisor/liaison** and fill this position as soon as possible. This position should report directly to the PD rather than the DPD.

- **Focus duties of the PD and DPD more in conformance with the Position Descriptions and previous discussions with the Project Officer:**
 - The PD should emphasize maintaining current knowledge of A.I.D. and other development assistance programs, Federal and A.I.D. policies and regulations relating to the contract, and new technologies (at a general level); coordination/liaison with other CDIE information program managers; and long-range planning, especially in relation to the DI Strategic Plan and the A.I.D. Management Action Plan. The PD should direct, guide, and monitor contract-related research and development programs, but should delegate implementation to the DPD and other staff as appropriate. Much of the budgeting and administrative/financial tracking should be delegated to the Administrative Assistant.

In conjunction with the Project Officer, the PD should set a goal of visiting key representatives of every Bureau regularly (such as once per quarter). Funds permitting, the PD (with the PO) should also visit selected Missions to identify new requirements, provide technical assistance/advice, determine the need for on-site training, identify service problems, and *market* existing/new/planned services/products. The visits also will have "good-will" value and will provide an opportunity to *observe* operations in the field that can be translated into DISC improvements or new services. Complete delegation of day-to-day project management to the DPD as described below will free time for the PD to accomplish this goal.

The PD should monitor and record how his time is spent for a period of one month, then periodically (perhaps once per quarter) to gauge progress toward the re-emphasis on external relations.
 - The DPD should be the primary day-to-day operations manager, responsible for maintaining staff levels and proficiency adequate to meet contract requirements, solving any technical operations problems, and implementing any new services or requirements.
- **Formally communicate to CDIE, other A.I.D. staff, and managers of other CDIE contracts who regularly interact with DISC staff the names of appropriate DISC persons to contact for various functions, questions, or problems—and their backups.** (The R&RS PD should issue a parallel communication.)
- **Delegate responsibility for contract-wide quality assurance to a senior person *outside* of the project's day-to-day operations staff** (an LTS officer, senior member of another contract, or a knowledgeable independent organization or individual) as discussed in Section 4.8.3. This is a part-time responsibility, requiring formal QA reviews at intervals specified in the QA plan.

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- **Make more use of external consultants** who have in-depth technical expertise beyond the in-house level (e.g. LAN, communications, library automation, CD-ROM, market research, evaluation).
- Since the training function pertains to several task areas, consider having this position report directly to the PD/DPD (in effect, it does now). This can become a key position if the training function is expanded.

General Operations

- **Develop procedures to enable better tracking of productivity** and to support cost-benefit studies, including
 - Development and implementation (or re-implementation) of simple productivity reporting forms to be completed daily and submitted to supervisors weekly by all DISC technical processing staff (with flexibility to report miscellaneous assignments to avoid skewing numbers);
 - Development of more detailed process flow charts and calculation of the level of effort, elapsed time, and cost of each step; distinguish manual from computer-supported steps.
- **Provide more contract-funded training.** In addition to formal courses, especially in new hardware/software technology, professional staff should be given opportunity to attend selected professional meetings (perhaps cost could be shared by LTS and A.I.D.).
- **Hold quarterly project review meetings between Project Officer, DISC PD, DPD, and key supervisors** to summarize progress, discuss any planned changes or new responsibilities that impact on contract performance, identify and discuss solutions to potential problems, and discuss progress toward resolving any ongoing problems. Document minutes for reference at subsequent review meetings.
- **Investigate feasibility of transmitting timesheet data directly to LTS' administrative headquarters.**

Communications and Reporting

- **Re-establish regular weekly meetings between the R&RS and DISC PDs** to discuss technical approaches and resolutions to any continuing problems involving both contracts. Should have agenda (with inputs from staff on both contracts, including the proposed DISC Project Administrator, and from CDIE senior staff), and brief report should be prepared. Occasional attendance as appropriate by other contract staff during discussion of areas for which they are responsible. Status of pending tasks should be included on agenda. These meetings are a more appropriate forum for trying to resolve R&RS-DISC

operating or administrative problems than the DI Director's meetings. They also provide an opportunity for cross education so that staff of each contractor develops a better understanding of the needs and sensitivities of the other.

- **Reconstitute the Acquisitions Task Force** and meet regularly to review results of various initiatives and reach concurrence on additional steps to take (start with monthly meetings, perhaps shifting to quarterly and eventually to twice a year).
- **Ensure that copies of memoranda, telephone conversations, and meeting reports that impact the R&RS contract are sent to appropriate R&RS staff.**
- **Participate (to the extent possible) in IRM planning meetings on topics affecting the DISC.** DI management can help facilitate LTS participation in this process.

4.8.6 Operations Manual

Section C.8.6 of the SOW requires that the DISC contractor maintain an Operations Manual covering procedures for performing all DISC services and functions, including computer-systems documentation; maintain authority files for institutional names, projects, contracts, document types, countries, sectors, and report-number series for cataloguing; develop and maintain user training manuals relevant to the APDMS.

The current Operations Manual is maintained in electronic form on the LAN, where it is can be accessed by DISC processing staff as necessary. A paper copy exists for manual reference, consisting of two loose-leaf volumes, one covering micrographics operations and the other covering all other technical processing functions. The paper copy is not as current as the electronic version.

More detailed flow charts should be developed, showing every step and document or other transaction, including filing, transmittal to another location, etc.; in addition to serving as a reference for day-to-day operations and staff training, these charts will facilitate procedural and cost-benefit analyses. The author also suggests investigating the feasibility of maintaining the most recent version of the manual (without graphics, if necessary) on the LAN, both for easy reference and to minimize the paperwork involved in updating it. DPD should have maintenance responsibility; supervisors can suggest revisions to DPD via E-mail or memo.

4.8.7 Systems Studies and Plans

Three optionally funded systems studies were specified in the SOW: a study of the alternatives to the current micrographics systems; computer-system upgrades; and micro-graphics-system upgrade.

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4.8.7.1 Alternatives to Micrographics Systems

Section C.8.7.1 describes conduct of a technical feasibility/applicability and cost/benefit study of commercially available alternatives for acquiring, storing, accessing, and disseminating A.I.D. project documents and reports. The study was to have been completed 4 months after approval of a study plan. The originally proposed micrographics-system option was rewritten for the best and final proposal offer, but to date the option has not been exercised.

Microfiche are currently used for life-expectancy/archival reasons but, as described in previous sections, local microfiche-based systems are losing favor with A.I.D. offices. It is therefore important to study and evaluate alternative media. The DISC Micrographics Supervisor has actively participated in and contributed to the Electronic Recordkeeping Working Group, which meets once or twice per month. This group seems to be ignoring end-users in developing specifications.

The DI Director and Deputy Director believe that the proposed study, modified to emphasize DI's immediate needs, should be implemented, without APDMS support if necessary. A PC-based prototype system could be established to capture input electronically or via scanning, using off-the-shelf software. CD-ROM output for institutional memory use would be easy to replicate for overseas use. Aspects of the study need to be clearly DI, but with IRM's input. This system is viewed as an eventual replacement system for MicroDIS. A standard for the Agency is needed.

4.8.7.2 Computer System Upgrades

Section C.8.7.2 of the SOW requires acquisition of a HP-3000 series 900 minicomputer and associated software that supports MINISIS; assistance in the disposition of the original system; procurement of three new desktop computers and a new laser printer; upgrading the Netware software to support 386-generation computers; and upgrading modems to 9600 baud.

LTS successfully upgraded the DISC Hewlett-Packard computer from 3000/48 to 3000/937. However, the new configuration is operating in emulation mode until IDRC upgrades MINISIS to Version H, which will permit native-mode operation.

4.8.7.3 Micrographics System Upgrade

Section C.4.8.7 of the SOW provides for an upgrade to the microfiche-to-microfiche duplicator equipment in the DDU of the DISC. However, funds for this upgrade have not been released, and the existing equipment continues to be used.

4.8.8 Participation in A.I.D. Committee

Section C.8.8 of the SOW requires that the DISC contractor be represented at meetings of the CDIE/DI Advisory Committee. The DISC PD has attended these meetings.

4.9 PERSONNEL REQUIREMENTS

Section C.9.1 of the SOW delineates the experience, knowledge, and skills requirements required for DISC management, supervisory, and technical-processing staff. Based on a review of staff resumes, the author believes that these requirements are being met.

Section C.9.2 requires that staff be cross trained for mutual backup and to respond to peak workloads and changing demands efficiently. LTS has partially achieved this goal within several technical processing units. However, a specific DISC-wide plan for cross training does not exist.

The author recommends that a general staff training plan be developed to include plans for internal cross training and suggested external training to enhance staff skills, as recommended elsewhere in this report.

4.10 FACILITY REQUIREMENT

Section C.10 of the SOW requires that the DISC facility be maintained within a 50-mile radius of CDIE/DI offices in Rosslyn, VA. As described in Section 4.8.1, LTS successfully relocated the DISC to its current location within two block of CDIE.

4.11 REPORTING

Based on the author's review of representative Monthly Management Reports and Annual Reports, LTS has complied with the reporting requirements specified in Sections C.11.3 and C.11.4.5 of the SOW. Although sample Financial Reports and Vouchers were not examined, it is assumed that they also have been submitted in compliance with contract specifications since none of the persons interviewed identified any problems. Other reports specified in Section C.11.4 of the SOW (Quality Assurance, Service Evaluation, Implementation Plan, and Systems and Operations Manuals) have been discussed in previous sections.

4.12 DELIVERABLES SCHEDULE

The Deliverables Schedule specified in Section C.11.6 of the SOW was reviewed. Although specific delivery dates for each item were not examined, none of the persons interviewed indicated the existence of problems related to their content or timeliness.

4.13 AED SUBCONTRACT

Although the stated objectives of the present study were limited to LTS' performance of tasks under the DISC contract, as discussed in Section 1, the tasks performed by LTS full- or part-time staff under subcontract to the R&RS prime contractor, AED, are integrally related to DISC functions. Therefore, considerable information was collected regarding the subcontract tasks and their staff and functional interrelationships with the DISC. The results and recommendations of this effort are presented in this section.

LTS performs subcontract tasks in four major functional areas: acquisitions, cataloguing and other DIC support, computer operations, and publications support. Study results are discussed in this sequence.

Basic communications and other issues relating to the AED-LTS interface, both with respect to AED's role as a major DISC client and to LTS' role as a subcontractor to AED, were discussed in Section 4.8.5.

DIC staff interviewed were impressed that, despite the blurred administrative reporting lines between AED and LTS as both a user of DISC services and a subcontractor to AED, the group *feels* like one organization.

4.13.1 Acquisitions

Sections C.3.1 of the DISC contract SOW and C.6.3 of the R&RS contract require acquisition of the following documents annually:

- 2,500 A.I.D. project and program documents (PD) published in the last 5 years
- 2,500 A.I.D.-funded or -supported technical reports and research studies (PN) published in the last 5 years
- 2,500 retrospective PDs and PNs published over 5 years ago
- 250 A.I.D. classified documents
- 500 audiovisual report forms of A.I.D. multimedia materials

The R&RS SOW specifically charges AED with responsibility for developing and using pro-active mechanisms for identifying and obtaining materials and for developing methods for statistically analyzing the acquisitions from different sources. They also have the responsibility to develop outreach products to increase acquisitions and to attempt to obtain better copies of documents that are illegible or cannot be microfiched.

Perspectives

CDIE management expressed concern regarding the cost of acquisitions and suggested that more selectivity may need to be exercised regarding which types of documents to archive; changes to the screening criteria may be necessary to achieve greater selectivity. However, to guide such changes, cost/benefit analyses are needed. It was also hypothesized that costs could be reduced by preparing a *digest* of approaches rather than process every document individually. It also may not be necessary to fully process all interim project documents. Another cost-reduction possibility is to distribute the cost of indexing to project supervisors. A need was perceived to return to "lessons-learned" reports ("project completion reports") and process these into DIS. Interest also was expressed in reports on management studies, task-force reports, and internal studies by A.I.D. about A.I.D.; such documents are not currently collected systematically, although they are obtainable and CDIE should collect and process them into the DI database. To help acquisition materials from each mission, tailored cables listing missing documentation may be more effective than the generic cable currently contemplated; such cables would list current projects under each mission's responsibility.

Although LTS acquisitioned considerably more documents than were obtained by AED after acquisitions responsibility was transferred to them, the number of approaches used by LTS to improve acquisitions was limited. AED delayed giving adequate direction to the acquisitions function. AED should be more sensitive to the downstream impact of low acquisition rates. . Since acquisitions are now AED's contractual responsibility, regardless of the fact that they subcontract the functional effort they should assign more management attention to this issue rather than assign all responsibility to LTS staff.

Given the current attention to project accountability, many persons interviewed believe that now is an excellent time to mount an aggressive acquisitions campaign.

AED management believes that although part of their bureau liaison mandate is to advise bureau staff of the importance of submitting documents to the DISC, they do not want to alienate them by becoming policemen; they prefer a soft sell. The perception is that LTS could be involved with missions to increase document flow. The perception also is that LTS focuses unduly on obtaining project descriptions and project documentation rather than a family of documents of use to researchers. A change in methodology is needed, such as the cable recommended in the task force report. Databases should be analyzed periodically and regularly to identify gaps and request documents. LTS should assume a leadership role rather wait for AED direction. A variety of pilot programs should be implemented and the results carefully monitored to determine which techniques are the most effective. The concept of "shared ownership" is viewed as more effective than other approaches in obtaining documents.

LTS staff believe that much of the required material is not being generated and is therefore unavailable. AED's focus is on outreach, and they seem to view acquisitions as an outreach function. Results of direct contacts with Project Officers (identified from project database information) have been good in the past; when the I.G. office provided lists of

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missing documents to several missions, many of them appeared. CIMS data elements will again be provided in machine-readable form to help identify missing project documents.

Physical separation of the acquisition function has created a major space problem [this function will be returned to the DIC]. Lack of clear administrative reporting is a major problem. A study of database use is needed to try to determine the value of both current and historical information.

Concern was expressed that if the cable generates too many documents at the same time, acquisitions and DISC technical processing staff may not be able to process them into the system rapidly; people who send documents expect them to be available on DIS quickly. Partially processed records are usually searchable within 3-5 days. Lack of coordination between DI and RM sometimes leads to duplication of effort.

Better management and communication are required to improve the acquisitions function. The original acquisitions Task Force group should continue to meet periodically.

Acquisitions Recommendations

- Rewrite the position description for the LTS on-site liaison/supervisor in conjunction with R&RS and fill the position person as soon as possible.
- Reconstitute the acquisitions working group and resume regular meetings as soon as possible to review progress/problems.
- Monitor response to the cable and follow up as necessary. If some Missions balk because they do not have staff, consider assigning some acquisitions staff on TDY to identify and obtain documents missing from DIS.
- Develop and conduct a feasibility study of implementing suggested cost-reducing acquisitions alternatives.
- A multifaceted approach is needed to maximize acquisitions. Receipts should be closely and continuously correlated with each approach to provide the basis for a cost-benefit analysis. Results of the analysis should guide future allocation of acquisitions effort.
- Increase the sensitivity of R&RS staff to the downstream effects of acquisitions on the DISC contract (and ultimately on system users). Encourage on-site R&RS staff at the Bureaus to provide occasional gentle reminders regarding transmittal of documents to the DISC, emphasizing the positive benefits to themselves and to others.
- To encourage continued cooperation from Bureau/Mission staff, ensure that documents are processed into the system as quickly as possible.

4.13.2 Cataloguing/Other DIC Support

Several of the DIC functions specified in Section C.4 of the R&RS contract SOW are performed under subcontract by LTS staff, including supervision of technical operations, OCLC cataloguing, interlibrary loans, and a receptionist/technician.

Users of DIC services generally felt that staff were very helpful. And DIC staff commended DISC staff for their excellent response to document requests and delivery of offline printouts, usually within 2 days.

Several administrative and technical problems and concerns related to DIC operations were identified:

- DIC positions need to be defined better; without the LTS on-site supervisor, employees feel a lack of direction.
- The ILL function does not appear to be as efficient as it was before.
- Documents cannot be ordered online except from DOCRD; when attempting to order from Bureau databases, the system displays a message that the ID is unknown. This requires copying and faxing requests or going to the CDIE E-mail LAN and leaving a message. Responses of the DISC to requests for a few documents is usually faster than requests for many documents.
- To obtain copies of documents in the Inventory Database, LTS has to retrieve them from the warehouse and photocopy them; in many cases, they don't need a photocopy, just need to look at a part of it. Most of these documents went from the library to the warehouse; LTS may not have known how frequently they are used.
- The problem of how to deal with multimedia materials, such as software that accompanies a final report, has not been solved. LTS does not have funds or equipment that is readily available elsewhere in the Agency, even in a remote Mission such as Ecuador. LTS should be able to handle all media. In many cases, contract products are available only through the contractor, who does not have funds to reproduce them.
- Some DIC patrons were "scolded" for ordering documents as walk-ins to the DISC facility.
- Many telephone patrons whose document orders will exceed the \$30 limit want to use a credit card for payment.
- Poor quality microfiche are a frequent problem. Many requestors are unaware that they will receive a photocopy [blowback]. DIC staff often advise people

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what to expect for their money so they are not disappointed. Reproduction-quality requirements should be specified in grant/contract documents. They have a particular problem with things like satellite photos (the microfilm camera drops out color altogether).

- Another CD-ROM machine is needed; the current one is used heavily by DIC staff, State, and the public to search CD databases. They also need to upgrade the dot-matrix printer attached to this computer, since many users download data to floppies and print out. Computer with Trade Investment (TIMS) data also used by public; users sometimes mess up the printer. The DIC has to decide what to put on this computer and what printer(s) to drive with it.
- Users are permitted to make photocopies on the DIC copier if they bring their own paper (up to 10 pages are free). They would like to see a coin-operated photocopy machine (with a keyed bypass for A.I.D. staff).
- The acquisitions working group has not met for awhile; it was a useful forum.

DIC Support Recommendations

- **Evaluate the cost/benefit of microfiching Inventory database documents.**
- **For documents with color plates, add a flag in the database record indicating, for example, "plates only reproducible by..."**
- **Evaluate the cost/benefit of operating a color copier or acting as an intermediary to buy copies from a local service, with and without direct charges to requestors. back, even to AID/W or missions.**
- **Advise AED of the request to convert the DIC photocopier to coin operation.**

4.13.3 Computer Operations

Computer support requirements for operation of the DIC are specified in the R&RS contract SOW, Sections C.2.3, C.4, and C.6. (Since this support is closely interrelated with support provided under the DISC contract, also refer to the discussion in Section 4.3.6.)

DIC staff were highly satisfied with the quality and timeliness of computer support services provided by the DISC SDG:

"LTS computer support has been excellent." DIC staff requested training in troubleshooting so that they could help patrons without calling LTS for help. They like the helpline now established via E-mail.

"LTS is trying very hard. Carolyn Goshen is very helpful."

A number of computer-related problems and concerns were expressed:

- **The ILS problem needs an independent study of alternatives.** The current system was selected by AED on the basis that it would cost less to use for cataloguing; however, it is unknown whether it is really saving money.
- **The ILS serials module is very complicated and convoluted.** The circulation module does not interface correctly with the cataloguing module. Modules are not really integrated; it cannot export data to MINISIS. Apparently only the circulation module is operating correctly. Changing from the Dewey Decimal system to the LOG numbering was a real headache. It is necessary to leave one system to move to ILS; many intermediate steps are required.
- **The CD-ROM system is menu-driven, but directions are incomplete;** it's frustrating the way it scrolls sometimes. Some users mess up the system. Assistance is needed getting the computer to print correctly on the LaserJet II.
- **They have to dial in to access the CDIE LAN from remote sites** (such as USDA and main State Department). They are limited to four ports and sometimes can't log on because a port is not available. They thought the solution would be easy, but apparently funds are a problem. They have to use the MIS to get their E-mail.
- They also access Dialog and other external online databases via ProComm; the small dot-matrix printer attached to the computer used for searching has no font-selection capability. **The MIS will not allow printing unless they go through a complex set of conversions**, taking about 15 minutes; everyone at State has the same problem.
- **Pat Woodberry has had problems getting the system set up the way they need it.** Part of problem has been a lack of timely communications. It took one person a month before they could get on the LAN; in the meantime, they had to come to the Library to work. Part of the problem is organization; the new position being set up by AED should be able to represent their needs better.
- **LTS could provide more formal training, which would reduce the need to call support people so often.** The system was designed as a management tool, not from a research-users viewpoint. No channel was provided for formal feedback on quality of computer support. The most frequently encountered problem is inability to get into the system because of modem problems; upgrading appears to be a funding problem. They can log in at 1,200 baud easily, but not at 9,600; this results in long scrolling and database change times. They encountered a problem trying to write a cable via a macro on the Rosslyn LAN; the computer hung and they had to reboot (unsuccessfully).

Findings

- **Some LTS staff do not always provide guidance in terms other people understand.** Lynne Crone is polite and helpful in explaining how a particular problem occurred, and suggests how to remedy it (for example, to access the system on a Sunday when the it was being updated she suggested logging in on MENUDISC, and it worked). They advise the DISC if they find a cataloguing error on the system.
- **Because one of the DIC staff members interviewed has the only computer with a CD-ROM reader, other users frequently want to use it, disrupting her work.** She would like to **have another system equipped with CD-ROM for use by walk-ins and other DIC staff.**

Computer Operations Recommendations

- **Conduct a cost/benefit study of the current ILS system and potential alternatives;** engage the services of an expert consultant for this task, both for their technical knowledge and lack of bias.
- **Investigate the connection and other computer-related problems** reported on a priority basis and provide solutions wherever feasible.
- **Obtain and install another CD-ROM equipped computer, funds permitting.**
- **Provide additional training in troubleshooting.**

4.13.4 Publications Support

Under the subcontract, LTS provides publication production support for three publications specified in Section C.5 of the R&RS contract:

- *Requests & Responses*
- *New This Month Bulletin*
- *Women in Development Newsletter*

This LTS effort, and some of the problems experienced in providing the support, are discussed in Section 4.5.2.

5. PLAN FOR IMPLEMENTING RESULTS OF ANALYSIS/EVALUATION

This section presents a phased plan (Table 5-1) for implementing the recommendations presented in Section 4. This plan provides a general framework, based on probable available manpower; it is intended to be used as a guide for task assignment and completion monitoring.

The following notes pertain to the table:

- Recommendations are grouped into four priority levels: 1 for tasks to be completed within 1 month, 2 for tasks to be completed within 3 months, 3 for tasks to be completed within 6 months, and 4 for a task to be completed within 15 months.
- Within priorities, tasks are listed in approximate level of perceived importance, grouped where possible by functional DISC area (such as management, SDG, etc.).
- Professional effort includes managers, supervisors, and technical staff; support effort is primarily secretarial/clerical.
- Although in some cases, the group manager/supervisor has been listed as the Task Leader (especially for SDG tasks), it is assumed that some tasks will be delegated to other staff in the group.
- Where a name is listed for a person who leaves during the period covered by the implementation plan (such as Tina Wilson-Romero, who is on maternity leave), responsibility should be assigned to the replacement person.

Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Supp't.	Other		
<i>Priority 1: Complete Within 1 Month</i>						
1.1 Hire Project Administrator (PA).	4.8.5	12	8		Booth	
1.2 Redefine Position Description for R&RS subcontract liaison/supervisor; fill position as soon as possible.	4.8.5 4.13.1	16			Van Brunt/ Booth	
1.3 Re-focus PD and DPD duties in conformance with Position Descriptions: establish schedule for visits to key Bureau representatives and begin visits; delegate day-to-day project management to DPD; monitor PD time expenditure.	4.8.5	0.5/wk			Booth/ Van Brunt	
1.5 Have the Training Officer report directly to the PD/DPD.	4.8.5	0.5			Booth	
1.6 Prepare and disseminate memo to CDIE and managers of other CDIE contracts specifying the names of primary and backup DISC persons to contact for various functions; request reciprocal memo from R&RS PD.	4.8.5	1	2		Booth	
1.7 Re-establish regular weekly meetings between the R&RS and DISC PDs, including preparation of advance agendas and reports of results.	4.8.5	1.5/wk		1.5/wk ^a	Booth	^a R&RS PD
1.8 Hold quarterly project review meetings with Project Officer	4.8.5	4/quar		2/quar ^b	Booth	^b Project Officer
1.9 Issue policy memo to ensure that copies of memoranda, telephone conversations, and meeting reports that impact the R&RS contract are sent to appropriate R&RS staff.	4.8.5	0.5			Booth	

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Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Supp't.	Other		
<i>Priority 1: Complete Within 1 Month (cont.)</i>						
1.10	Establish, document, and disseminate a plan for logging/tracking all incoming materials and communications.	4.5.2	1.5	0.5	Van Brunt	
1.11	Develop and implement productivity reporting forms to be completed daily and submitted weekly.	4.8.5	12	2	Van Brunt/ Unit Sups.	
1.12	Begin documenting SDG special tasks and studies with completion plans and establish progress reporting mechanisms and frequency, and communicate progress on SDG tasks or studies in process regularly to all interested parties.	4.3.6	4/wk	1/wk	Howard/PA	
1.13	Refine and re-assess assumptions relating to conversion to Banyan used in the Draft Issue Paper; coordinate with all interested parties to resolve issues quickly.	4.3.6	16	2	Howard/ Rorabaugh	
1.14	Complete DDU system specifications study; include in the needs analysis an evaluation of the feasibility of electronically linking the DDU with the warehouse computer.	4.3.6 4.5.1	?		Howard/PA	Initial draft has been completed since study completion.
1.15	Clarify nature of service to be provided to CDIE/E.	4.3.6	2	0.5	Howard	
1.16	Install Windows on LAN.	4.3.6	16		Rorabaugh	
1.17	Investigate and remedy reported limitation on port availability for DIC staff to access CDIE LAN.	4.13.3	8		Rorabaugh	
1.18	Channel all requests from onsite LAN users through P. Woodbury.	4.3.6	0.5		Howard	

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Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Supp't.	Other		
<i>Priority 1: Complete Within 1 Month (cont.)</i>						
1.19	Determine feasibility of providing WID access to CDIE LAN.	4.7.1	2		Rorabaugh	
1.20	Investigate connection and other computer-related problems reported by DIC staff; provide response/solutions on a priority basis.	4.13.3	4		Rorabaugh/ Howard	
1.21	Provide additional training in LAN-related troubleshooting.	4.13.3	16	4	Goshen	
1.22	Invite R&RS to send a representative to meetings of the CD-ROM committee.	4.5.3	0.25		Booth	
1.23	Participate in IRM planning meetings on topics affecting DISC.	4.4	As required.		Sherman	
1.24	Develop explanation of limitations on reproduction quality due to fiche blowback and include with materials sent.	4.5.1	2		Douglas	
1.25	Monitor and tally sources of problem blowbacks; take corrective action as needed.	4.5.1	1/wk		Douglas	
1.26	Develop a set of checklists for each DDU function.	4.5.1	1	3	Douglas	
1.27	Revise document-delivery Service Evaluation Form to include multipoint satisfaction scales; remove ambiguity concerning meaning of "good condition."	4.5.1	1	4	Douglas	May require consultant review.
1.28	Develop method of tracking inventory that is acceptable to WID so that they do not need to maintain their own system.	4.7.1	?		Douglas/ Howard	Requires cost/benefit analysis.

Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Supp't.	Other		
<i>Priority 1: Complete Within 1 Month (cont.)</i>						
1.29	Begin tracking and reporting time from receipt of DDU request to time of transmittal.	4.5.1	8		Douglas/ Howard	
1.30	When users request multiple documents from the DDU, if all documents are not available immediately, send incomplete shipments, with a note explaining that other items will follow.	4.7.1	0.5		Douglas	
1.31	The DPD should take a proactive role in leveling publications work flow.	4.5.2	2/mo		Van Brunt	
1.32	Resume periodic meetings of training coordination committee or explore alternative communication modes, such as E-mail.	4.5.3	?		Goshen	
1.33	Review E-Mail training materials to determine whether basic instruction and exercises should be added.	4.5.3	2		Goshen	
1.34	Develop a systematic microfiche Q.C. sampling plan and document results.	4.4	4		Sherman	
1.35	Redefine the micrographics study option as it applies specifically to DI operations; conduct the redefined study as soon as possible.	4.4	16	2	Sherman/PA	
1.36	Participate with RM in implementing and evaluating prototypes of electronic document delivery.	4.4	As required.		Sherman	

Implementation Plan

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Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Supp't.	Other		
<i>Priority 1: Complete Within 1 Month (cont.)</i>						
1.37	Develop and conduct a feasibility study of implementing suggested cost-reducing acquisitions alternatives; correlate document receipts with implemented approaches; monitor response to cable and follow up as necessary.	4.13.1	80	4	8 ^c	Onsite sup./ Wilson/Romero/ PA R&RS representative
1.38	Reconstitute acquisitions working group and resume regular meetings.	4.13.1	As required.			Onsite sup./ Wilson-Romero
1.39	Increase the sensitivity of R&RS staff to the downstream effects of acquisitions on the DISC contract.	4.13.1	0.5/mo			Onsite sup./ Van Brunt
1.40	Develop list of DISC cataloguing/database issues relating to electronic document delivery.	4.3.2	8			Clift/ Van Brunt
1.41	Analyze abstracting/indexing productivity versus effort during the past 12 months and take corrective action as appropriate	4.3.3	8			Imholz/ Van Brunt
1.42	Advise AED of request to convert DIC photocopier to coin operation.	4.13.2	0.25			Booth

Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations (cont.)

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Sup't.	Other		
<i>Priority 2: Complete Within 3 Months</i>						
2.1	Develop formal project-level QA plan and regularly monitor its compliance.	4.8.3	30/yr		40 ^d	Booth/ Consultant ^d Consultant
2.2	Develop, document, and implement Evaluation Plan for each contract task area.	4.8.3	16	8	48 ^e	Booth/ Consultant ^e Consultant
2.3	Expand the Service Evaluation Report format to include evaluation information collected as a result of following the Evaluation Plan; add brief textual summary information.	4.8.3	16			Booth/ Sherman
2.4	Develop a suggested training agenda for DISC staff over a 1-year period, including a description of the training, persons to whom it would be provided, cost, and expected benefits to the DISC contract.	4.8.5	24	2		Booth/ Van Brunt
2.5	Add one staff person to focus on information-system and computer-technology training in missions.	4.8.3	FT			Booth
2.6	Review ILS module incompatibilities, problems coordinating ILS, OCLC, and MINISIS acquisition and cataloging, and evaluate cost savings.	4.3.6 4.13.2	24		24 ^f	Consultant/ Onsite sup./ Howard ^f Consultant (current ILS vendor)
2.7	Upgrade the XT workstations to at least a 386 level.	4.3.6	4			Howard
2.8	Perform cost-benefit analysis of consolidating DIS databases via a set of common fields.	4.3.2	40	1		Clift/Howard/ PA

Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations (cont.)

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Supp't.	Other		
<i>Priority 2: Complete Within 3 Months (cont.)</i>						
2.9	Develop/implement communication channels for two-way communications with LAN users.	4.3.6	4		Rorabaugh	
2.10	Establish a LAN users group.	4.3.6	8		Rorabaugh	
2.11	Investigate and document cause(s) of missing PROJDOC records; implement the most cost-effective solution.	4.3.6	40		Crone	
2.12	Establish and document criteria and procedures for updating address database and for reporting updates to R&RS.	4.3.6 4.8.5	16	1 ^a	Van Brunt/ Crone	^a R&RS representative
2.13	Explore feasibility of setting up "private" E-mail mailboxes; advise staff how to establish them.	4.3.6	8		Rorabaugh Howard	
2.14	Study feasibility of indexing documents online with automatic term assignment.	4.3.3	24		Howard/Crone/ Imholz	
2.15	Evaluate alternatives to the current abstract data-entry system to include additional process tracking capability.	4.3.3	24	2	Howard/Crone/ Imholz	
2.16	Provide additional formal training of LAN users to help reduce the number of calls for assistance.	4.13.3	40		Goshen	^b 2 hrs/trainee
2.17	Purchase/install another CD-ROM equipped computer in DIC.	4.13.3	8		Howard	

Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations (cont.)

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Supp't.	Other		
<i>Priority 2: Complete Within 3 Months (cont.)</i>						
2.18	Conduct the planned cost-benefit study of upgrading fiche blowback equipment.	4.5.1	24	1	Douglas/ Sherman/PA	
2.19	Investigate reasons for low response rate of user evaluations.	4.5.1	24		Douglas	
2.20	Provide DDU with capability to determine PN numbers.	4.5.1	8		Crone	
2.21	Implement procedures to accept payment by credit card.	4.5.1	12		Douglas/Booth	
2.22	In the new DDU system design, add a "Ready" date field.	4.5.1	8		Howard	
2.23	Work with DI and R&RS staff to develop document-legibility standards in the field.	4.5.1	4	2 ⁱ	Sherman/Clift/ Van Brunt	ⁱ R&RS representative
2.24	Evaluate cost/benefit of microfiching Inventory database documents.	4.5.1	4		Sherman	
2.25	For documents with color plates, add a flag in the database record indicating, for example, "plates only reproducible by..."	4.13.2	8		Clift/ Crone	
2.26	Evaluate cost/benefit of operating a color copier or acting as an intermediary to buy copies from a local service, with and without direct charges to requestors.	4.13.2	4		Onsite sup./ PA	
2.27	Investigate feasibility of transmitting time-sheet data directly to LTS administrative headquarters.	4.8.5	8	4*	Van Brunt	*LTS financial administrator

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Table 5-1. Estimated Level of Effort (LOE) and Completion Time for Implementing DISC Recommendations (cont.)

Recommended Task	Section(s) of Report where Discussed	Estimated LOE (person-hours)			Task Leader(s)	Notes
		Prof.	Supp't.	Other		
<i>Priority 3: Complete Within 6 Months</i>						
3.1 Conduct a cost/benefit study of the current ILS system and potential alternatives; engage the services of an expert consultant for this task, both for technical knowledge and lack of bias.	4.3.6 4.13.2	40		40 ^j	Consultant/ Howard/ Onsite sup./ PA	ⁱ Independent consultant
3.2 Follow up a sample of requests that have been priced but not ordered to determine the reasons for not following through; as part of the follow-up, questions can probe for acceptable cost thresholds.	4.5.1	24			Douglas	
3.3 Conduct study of the requirements for cataloguing, storing, reproducing, and disseminating media other than printed documents. Explore feasibility of charging user fees for copies.	4.3.2	40	2		Cliff/ Van Brunt	
<i>Priority 4: Complete Within 12-15 Months</i>						
4.1 Conduct followup service evaluation.	4.8.4	16		40 ^k	Consultant/ Booth	^k Consultant

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APPENDIX A
DOCUMENTS REVIEWED

1. FY 1989 Final Report for the A.I.D. Document and Information Handling Facility
2. FY 1990 Final Report for the A.I.D. Document and Information Handling Facility
3. Development Information Services Clearinghouse FY91 Annual Report
4. LTS Corporation Employee Handbook
5. Electronic mail memo to Booth from CDIE/John E. dated March 12, 1992 re: "Agenda for the 1990s" with attachments
6. A.I.D. Initiatives Progress Update, December 1991
7. A.I.D. Development Information Center Manual, July 1988
8. Development Information Program: Strategic Plan (an internal working document), 1991-1995
9. A.I.D. Research and Development Abstracts, Volume 16, No.4 1991 TN-AAA-056
10. Memo to Larry Saiers from Len Rogers dated October 10, 1991 re: background on programming system reform
11. Center for Development Information and Evaluation description (folder)
12. Section C, Description/Specs./Work Statement: Statement of Work, Document and Information Handling Facility (DIHF), Contract No. PDC-0232-C-00-0094-00
13. Section C, Description/Specs./Work Statement: Statement of Work, Research and Reference Services (R&RS), Contract No . PDC-0232-C-00-0068-00
14. Overview of DIHF Operations (flow chart)
15. DISC Floorplan
16. Reasons for DISC Personnel Turnover (memorandum)

17. Research and Reference Services Special Report submitted to the Development Information Division Center for Development Information & Evaluation, Agency for International Development by the Academy for Educational Development (AED), Sarah T. Kadec, February 1986
18. Management Action Plan, Agency for International Development, May 1991
19. Agency for International Development Strategic Information Resources Management Plan: Volume I, Fiscal Years 1992-1997
20. Memorandum and report to Lee White, POL/CDIE/DI from Scott Sherman, Interim Quality Assurance Supervisor, AID/DISC dated April 23, 1992 re: Quality Assurance Report, Second Quarter FY92
21. Memorandum and report to Lee White from Scott Sherman dated April 15, 1992 re: service evaluation results, first half FY92
22. A.I.D. Development Information Services Clearinghouse Monthly Progress Reports, October 1991 through February 1992
23. A.I.D. Project Document Micrographics System Monthly Progress Reports, October 1991 through March 1992
24. GAO Report to the Administrator, Agency for International Development Foreign Assistance, A Profile of the Agency for International Development, April 1992
25. LTS Technical Proposal 90-003-I, Operation of the A.I.D. Document & Information Handling Facility, August 13, 1990
26. A.I.D. Thesaurus, CDIE, November 1991
27. A.I.D. Organizational Directory, March 1992
28. CDIE's Information Services: Four Years of Progress, USAID/PPC/CDIE, December 1988
29. LTS FY91 Annual Subcontract Report to AED, November 1991
30. A.I.D. Document Acquisition for the A.I.D. Institutional Memory: Requirements and Action Recommendations for PPC/CDIE/DI Direct Hire and Contract Staffs, PPC/CDIE/DI Acquisitions Task Force, Jeanne Tifft, Chair, May 1991
31. A Review Of AID's Information Practices, Victoria and Elliott Morss, Center for Asia Development Studies, Boston University, 1988

32. APDMS/Records Management Training Briefing, Draft 2, Scott Sherman, December 30, 1991
33. Draft of Electronic Recordkeeping framework, Scott Sherman, April 10, 1992
34. Memorandum and attachment to R. Poehls from S. Sherman re the Electronic Recordkeeping Working Group
35. Draft Agenda for 5-May-92 Meeting with FA/AS/ISS/RM, S. Sherman

**APPENDIX B
LIST OF PERSONS INTERVIEWED**

A.I.D./CDIE

Wendy Stickel, Deputy Director
Maury Brown, Director, DI
Lee White, Deputy Director, CDIE/DI
Margarent Pope, CDIE/DI
Annette Bennendjik, Director, CDIE/E
Jock Conly, CDIE/E/POA
Gerry Britan, CDIE/E/SDS

MS/AS/ISS/RM

Melita Yearwood, APDMS Manager
Renee Poehls, Acting Director, RM Office

USDA RSSA (CDIE/DI/TIS)

Patricia Wetmore, Manager

A.I.D./WID

Tim Seims, Information Program Coordinator

AED (CDIE/DI/R&RS)

Linda Leonard, Project Director
Jean Tifft, Senior Advisor
Mark Bidus, Head Research Staff
Kaaren Christopherson, Head, Development Information Center
Joanne Tetrault, Reference Librarian
Anne Langhaug, LAC Research Analyst

Pragma (CDIE/DI/ESDS)

David Moore, Project Manager
Cheryl Crow, Economist

LTS (CDIE/DI/DISC)

Jim Bloomberg, Executive Vice President
Marjorie Kitzes, Contracting Officer
Jim Booth, Project Director
Virginia Van Brunt, Deputy Project Director
Tina Wilson-Romero, Supervisor, Acquisitions*
Clare Imholtz, Supervisor, Abstracting/Indexing
Merrily Clift, Supervisor Cataloguing
Paul Howard, SDG Manager
Lynne Crone, DIS Manager
Scott Sherman, Supervisor Micrographics
Roger Reynolds, Editor/DTP Specialist
Carolyn Goshen, Training Officer*
Valerie Douglas, Supervisor, Document Distribution Unit

*Subcontract to AED (Goshen part-time)

APPENDIX C
DATA COLLECTION FORMS USED

C1. LTS/DISC Staff

C2. DISC Users

Appendix C1

**DISC OPERATIONS ANALYSIS INTERVIEW GUIDE
LTS/DISC Staff**

Program area:

Date:

Person interviewed:

Time:

Room no.:

Telephone no.:

Service function:

Quantitative information:

Receive information/materials from (A.I.D. or other DISC):

Provide information/materials to (A.I.D. or other DISC):

Problems encountered:

Suggestions for service/function improvement:

Comments:

Appendix C2

**DISC OPERATIONS ANALYSIS INTERVIEW GUIDE
DISC Users**

Program area:

Date:

Person interviewed:

Time:

Room no.:

Telephone no.:

Service used:

Frequency:

LTS person(s) interacted with:

Service timeliness (responsiveness):

Service quality (accuracy/completeness):

Relationship(s) to other CDIE and other A.I.D. components:

Problems encountered:

Suggestions for improvement:

Comments:

APPENDIX D

LTS CONTRACT STATEMENT OF WORK

SECTION C

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Document and Information Handling Facility (DIHF)

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- C.3.7 Information Systems

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1. Estimated Workload Measures and Volumes of Activity for the A.I.D Facility
2. Functional Requirements of the A.I.D. Facility

C. STATEMENT OF WORK

Document and Information Handling Facility (DIHF)

C.1 OBJECTIVE

The contractor shall operate and maintain a comprehensive facility for the Agency for International Development (A.I.D.) for handling development documents and information. The A.I.D. Document and Information Handling Facility (hereafter called the "A.I.D. Facility" or DIHF) will primarily provide access to A.I.D.-generated development experience; A.I.D. program, project, technical and research materials including, but not limited to, documents, reports and publications (in paper, microfiche, magnetic and optical media), audio-visuals, and databases (in magnetic and optical media); related development materials including commercial publications and serials; and other development information for program planners, project designers, managers and evaluators, technicians, researchers and decision-makers in USAID Missions, A.I.D./Washington (A.I.D./W) Bureaus and Offices, and A.I.D. contract organizations.

The A.I.D. Facility will also strengthen A.I.D.'s program for transferring technological information from industrialized nations to developing countries in Asia, Africa, Latin America, the Near East, and other areas of the world. In this secondary role, the DIHF will provide access to development and technical information to LDC institutions (institutions relating to A.I.D.'s bilateral programs), officials and A.I.D. counterparts of these institutions, PVOS, Peace Corps and other indigenous development organizations.

The DIHF will also provide access to A.I.D.-sponsored technical and research information for the U.S. public, international development organizations, U.S. Government agencies, commercial firms and other individuals and organizations having an interest in A.I.D.-sponsored reports and studies, on a cost-reimbursement basis. (A.I.D. contractors will also be required to pay for all document services provided by the A.I.D. Facility.)

Besides providing access to a large and rapidly growing body of A.I.D.-generated or A.I.D.-sponsored program information, project experience, research-in-progress and research results, evaluation studies and technical reports, the A.I.D. Facility will provide access to development information generated by other U.S. institutions, international development organizations, other donor nation institutions, LDC institutions and commercial publishers.

C.2 SCOPE OF WORK

A.I.D. requires the services of a contractor to plan, operate and maintain a centralized A.I.D. Facility in the Washington, D.C. area and to link it with USAID Missions, A.I.D./W Bureaus and Offices, A.I.D. Contractor organizations, LDC institutions, PVOS, Peace Corps and other development organizations.

The contractor shall provide the professional services, materials, computer hardware and software, facilities, warehouse and other information-related processing and handling equipment to fulfill all requirements of this Statement of Work, including the following:

- a. Provide the capability to design, implement, operate and maintain large-scale computer-based information systems to manage program, project, evaluation, bibliographic, institution, technical, research, records management and development reference information in paper, microfiche, audio-visual, magnetic and optical format.
- b. Provide the capability to design, implement, operate and maintain automated support systems for all facility service and support functions under the contract scope of work, integrating them with the information systems in item 2.a.
- c. Maintain an Operations Manual containing methods and procedures used in performing all tasks of this contract. Maintain a Systems Manual containing documentation of all information systems operated and maintained by the A.I.D. Facility.
- d. Provide the capability to acquire publications, audio-visuals, databases and other development materials relating to development programs and projects.
- e. Provide indexing, abstracting, descriptive cataloging, and other analyses of documents, audiovisuals, databases and other development information resources and maintain computerized databases for development programs, projects, evaluations, documents, audio-visuals, reference guides, requests, research activities and institutions.
- f. Provide a capability to continue development and maintenance of the A.I.D. Thesaurus of subject and geographic descriptors, USAID Classification System and non-subject authority files needed to operate the A.I.D. Facility.

- g. Provide the capability to microfilm documents; produce duplicate microfiche; reproduce documents (paper-to-paper and fiche-to-paper); store hardcopy and microfiche; and distribute these materials. Also, receive and fulfill requests for information and for copies of development documents and materials; provide document and microfiche collection inventory control (including warehouse control); test and evaluate document and microfiche scanning technologies to recommend alternative document conversion options for the retrospective and current A.I.D. document collection.
- h. Provide the capability for on-line database management, searching, retrieval, reporting and off-line database reporting and production of computer-output-microfiche (COM) database indexes, electronic database subsets and optical database products (CD-ROM).
- i. Maintain a database of users of the A.I.D. Facility, including USAID Mission, A.I.D./W, A.I.D. contractor, PVO, Peace Corps, LDC and other institutions and individuals.
- j. Provide the capability to generate, desktop publish, print, and distribute A.I.D. secondary journals and other special publications.
- k. Perform regular service evaluation and special assessments of user needs and user acceptance of the information products and services of the A.I.D. Facility; perform continuous quality control and quality assurance testing of all A.I.D. Facility systems and services.
- l. Provide the capability and technical support to transfer the A.I.D. databases to other information centers in electronic or optical format for use on minicomputer, microcomputer and other emerging technologies, such as CD-ROM; also, provide the capability to receive and process machine-readable data files in electronic or optical format from other external organizations and to establish new development resource databases for use by A.I.D..
- m. Provide project management, facility management, operational planning and reporting, and the capability to apply technological improvements in the operation of the A.I.D. Facility and its technical support outreach operations.
- n. Provide the capability to acquire and procure non-A.I.D. uncopyrighted materials, and commercial and copyrighted development materials in multi-media formats for use by other A.I.D. Bureaus/Offices, as required through special projects and technical assistance.

o. Provide the capability to conduct briefings, user meetings, training seminars and demonstrations and provide user help and A.I.D. liaison support for all microfiche equipment systems, minicomputer- and microcomputer-based information systems and their by-products, CD-ROM products, and service support functions of the A.I.D. Facility.

p. Provide research and development support for continued development and maintenance of specialized information technologies and methodologies to support improved development information and records management, including the MicroDIS integrated library management system, the USAID Development Information-Center Manual, DIS COM indexes, and optical technologies to transfer the development information databases and phase out or replace existing microfiche technologies.

q. Provide technical assistance in library and records management organization and development for USAID and A.I.D./W libraries, development information centers and records management units, specifically related to the, information processing and management technologies and methodologies developed for organizing, accessing and handling development information under the A.I.D./DIHF contract in support of these units.

r. Data entry, data verification and related services to support PPC/CDIE and other Agency office management information systems.

s. Operate and maintain all A.I.D. Facility service support systems for services a. through q. on a central minicomputer system.

t. All systems described above must be supported through the use of the MINISIS (Minicomputer Integrated Set of Information Systems) database management software package developed by the International Development Research Center, Ottawa, Canada and Hewlett Packard software operating on a dedicated Hewlett-Packard 3000 minicomputer. Exceptions to this requirement include:

(1) A.I.D./W and USAID library catalog databases that are maintained by A.I.D.'s MicroDIS software,

(2) Microcomputer-based textual information applications that are maintained using the UNESCO Mini-Micro CDS/ISIS software package,

(3) Microcomputer-specific applications including, but not limited to, desktop publishing for secondary publications, manuals, handbooks and management reports; presentation graphics for training, demonstrations, management reports and analytical reports; optical scanning, publishing and database access for testing, evaluating and producing alternative storage and access media for A.I.D. database and document information; Novell local area networks for supporting DIHF and other PPC/CDIE/DI contractor communications and data processing requirements.

(4) PPC/CDIE Wang office information and microcomputer hardware and software including Wang DIS 140, Wang DIS 60 and Wang PC equipment and applications.

All of these microcomputer requirements will use A.I.D.-approved or A.I.D.-compatible microcomputer hardware and software.

C.3 SYSTEMS DEVELOPMENT, OPERATIONS, AND MAINTENANCE

The contractor shall perform several tasks that provide updating of A.I.D. databases. These processes are described below and in more detail in the A.I.D. Facility Operations Manual. Estimated quantities for these tasks are provided in Attachment 1.

C.3.1 DOCUMENT ACQUISITIONS AND SELECTION

The contractor will be responsible for receiving approximately 2,500 current A.I.D. project documents (PD) per year, 2,500 current A.I.D. technical reports (PN) per year and 2,500 retrospective (older than 5 years) A.I.D. project documents and technical reports per year from PPC/CDIE/DI's Research and Reference Service (R&RS) contractor and for cataloging these items into the PPC/CDIE-sponsored database systems managed by the contractor. These items and classes of materials will include, but not be limited to:

- a. A.I.D. project design reports and project proposals.
- b. A.I.D. program/project evaluation and audit reports.
- c. A.I.D. policy and program documents.
- d. Selective AID project implementation documents, e.g. progress reports, annual reports, etc.
- e. Major technical and research reports prepared by or for A.I.D.

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f. Descriptions of implementing institutional project and research activities for A.I.D.-funded development activities.

g. Well-defined classes of A.I.D. audiovisual, CD-ROM, and electronic-media development materials.

For the purpose of document tracking and duplicate checking, the contractor shall use a document numbering scheme for documents received, processed, microfilmed, and entered into the database.

When A.I.D. reports or development materials received from PPC/CDIE/DI's R&RS contractor are illegible or defective and cannot be adequately microfiched, the contractor shall request the R&RS contractor to acquire a more legible or better quality copy of the development material from the generating source.

The contractor will be required to purchase non-A.I.D. reference materials, monographs, journal articles, optical disks, audiovisuals and serials required by PPC/CDIE/DI and other Agency offices for bulk purchase, distribution, and information dissemination projects. The contractor will also subscribe to on-line database and electronic communication vendor systems to support PPC/CDIE/DI and other Agency office special projects. The contractor should budget approximately \$20,000 per year for these acquisition and subscription services. For years two through five the contractor should add a 5% inflation factor. A system for automated purchase order production, tracking and dissemination of individually purchased monographs, reference materials, audiovisuals, optical disks and journal articles will be maintained and operated by the contractor.

C.3.2 DOCUMENT ANALYSIS AND DESCRIPTIVE CATALOGING

The contractor will analyze documents and data source materials and prepare standardized bibliographic citations for all articles, documents (except books), and other materials received by the A.I.D. Facility. A process that is comparable to descriptive cataloging also will be required for research activities, audio-visual materials, program information and development project information processed into the required database. The authority files and Operations Manual will be used to standardize the document analysis and descriptive cataloging function.

The contractor will provide descriptive cataloging of A.I.D.-sponsored research, evaluation, and institutional activities. Approximately 300 research activities will be processed each year into the database.

The PPC/CDIE/DI R&RS contractor will furnish various development materials that will enable the contractor to identify about 200 new development projects each year. The contractor will extract project-level data (project titles, project numbers, logical frameworks, performing organizations, principal program areas, special concerns, geographic areas, etc.) and reformat these data as required for project records in the database.

The PPC/CDIE/DI R&RS contractor will provide various project documents enabling the contractor to identify an estimated additional 100 retrospective (i.e., not new) development projects each year. The contractor will be required to acquire additional project-level documents for all new and retrospective projects.

The contractor will be required to fully catalog approximately 2,500 A.I.D. technical documents (PN) and 2,500 A.I.D. project documents (PD) per year.

During descriptive cataloging, the contractor will include document numbers on the project file and project numbers on the bibliographic file, where possible, to establish cross-references between these types of records.

The contractor will provide brief descriptive citations for approximately 2,500 low-priority, retrospective and new, project and technical documents, which do not meet priority processing requirements, in the A.I.D. Facility Inventory database each year.

The PPC/CDIE/DI R&RS contractor will furnish approximately 500 retrospective and new A.I.D. audio-visual material forms for descriptive cataloging in the A.I.D. Audiovisual database each year.

C.3.3 ABSTRACTING

The contractor shall prepare informative abstracts of about 200 words for research and development reports, evaluation studies, research activities, and other publications. Abstracts will be required for a total of about 1,200 publications and 300 research, evaluation, and institutional activities each year.

In addition, descriptive abstracts of about 500 words will be prepared for development projects when such information has been located in a project-related document or publication. About 300 new project abstracts will be required each year.

Also, the contractor will be required to edit 250 A.I.D.-supplied, author-prepared abstracts each year. These abstracts will be submitted for project design, evaluation and technical documents, and research activities.

C.3.4 INDEXING

The contractor shall assign, on average, about 8 to 10 subject descriptors to each project, research, evaluation, and institutional activity, audiovisual, or document record received by the A.I.D. Facility and entered into the A.I.D. database. The Thesaurus of A.I.D. Descriptors, which the contractor is required to maintain, will be used as the source of all indexing terms assigned to project, document, audiovisual, and research activity records. The contractor will index a total of 5,000 documents, 300 research, evaluation, and institutional activities, 500 audiovisuals and 300 projects each year of the contract.

The contractor will be required to re-index approximately 250 selected project and document records each year.

C.3.5 DATA ENTRY

The contractor shall provide data entry services to assist PPC/CDIE and other Agency offices with data input and verification tasks related to the development, management, display and analysis of economic, social, budget, program, project, research, and other development information. Data entry and data verification services will be performed on the A.I.D. mainframe computer, Wang OIS and VS equipment, DIHF minicomputer, IBM PC or compatible microcomputer, and various computer terminals and printers including Hewlett Packard, and C&P.

C.3.6 THESAURUS OF A.I.D. DESCRIPTORS

The contractor shall maintain a Thesaurus of A.I.D. Descriptors, which will be the subject- and geographic-term authority list for (a) indexing of development projects, documents, research activities, audiovisuals and user-interest profiles; (b) creating main entries in periodic and cumulative indexes on A.I.D. database publications; (c) analyzing requests for information and conducting subject searches of the A.I.D. databases and (d) performing selected dissemination of information search services.

Entries in the Thesaurus of A.I.D. Descriptors will be structured to reflect appropriate relationships and cross-references among terms including Related terms (RT), Broader terms (BT), and Narrower terms (NT). In addition, scope notes and definitions will be used, as will cross-references to non-preferred terms and to discontinued terms previously used in indexing. The contractor shall also develop descriptor groups (ANY files) that are convenient to indexers and searchers and compatible with the subject categories used in database publications.

The contractor will make the Thesaurus accessible on-line. The on-line version of the Thesaurus shall include a concordance or other technique enabling a searcher to use new descriptors to retrieve records that have been indexed previously, with old terms.

The contractor also will be required to prepare printed copies of the Thesaurus for distribution to users. For the printed versions, the contractor shall provide a (a) user-oriented introduction with indexing and retrieval guidelines, (b) a hierarchical descriptor group display, (c) an alphabetical display of main terms, (d) a permuted term listing, and (e) a postings list.

The contractor shall prepare and submit for review to A.I.D. a revised printed version of the A.I.D. Thesaurus at the twelfth, twenty-fourth, thirty-sixth, forty-eighth, and sixtieth months of the contract.

The contractor shall maintain the on-line Thesaurus throughout the contract, recommending to A.I.D. the addition and deletion of terms, appropriate term relationships and additional or revised scope notes. The contractor shall design and implement a system and procedure for proposed thesaurus term review and approval

and thesaurus maintenance. This system will be documented and maintained in the Operations Manual. It is estimated that approximately 150 A.I.D. Thesaurus concept term additions or modifications will be presented for review and approval to A.I.D. each year.

The contractor shall also maintain the USAID Classification Scheme as described in the USAID Development Information Center Manual.

C.3.7 INFORMATION SYSTEMS

C.3.7.1 DEVELOPMENT INFORMATION SYSTEM (DIS)

The contractor shall provide the personnel and purchase the necessary hardware, software and other resources to create and maintain computerized databases of development programs, projects, documents, official records, A.I.D./DIHF users, audiovisuals, research activities and other development information resources. The contractor shall also provide system manager, database manager, programmer/analyst and system operator services required to operate and maintain the A.I.D. Facility minicomputer system and to develop, modify and maintain information systems, and service support system applications specified in the Systems Manual and Operations Manual.

The contractor shall provide data entry and database maintenance on a current basis for the information resulting from descriptive cataloging, abstracting, indexing, microfilming, user services and other document analysis and processing steps.

The contractor shall use the information systems to create database products as required, including database exchange tapes, special bibliographies, publications, selected dissemination of information (current awareness) reports, computer-output-microfiche (COM) indexes, optical disk products (CD-ROM), on-line searches, document tracking, and quality control, service evaluation and monthly management reports.

At the beginning of this contract, A.I.D. will make available to the contractor magnetic tape copies of existing DIS, APDMS, and DIHF facility databases and specially-developed applications support software, which are to be maintained by the contractor.

Periodically, but no less than once each year, the contractor will be required to deliver computer-readable magnetic tapes of the master databases from both the DIS and APDMS systems and specially-developed applications support software, along with tape specifications and Systems Manual documentation to A.I.D.

The contractor will be required to periodically receive and load database exchange tapes from other development information organizations such as IDRC, Institute for Development Studies, the World Bank, JICA, etc.

The contractor will also be required to periodically prepare computer-readable transmittal tapes required by (a) the National Technical Information Service (NTIS) Research in Progress database for current, on-going A.I.D. research projects and (b) the National Technical Information Service (NTIS) database for technical reports prepared under A.I.D.-sponsored research and development projects.

In addition, for the bibliographic technical report records submitted to NTIS on magnetic tape, the contractor will deliver copies of 400 technical reports per year to NTIS. The contractor will incorporate the NTIS-assigned accession numbers into the respective records of the A.I.D. database.

The contractor will also maintain and enter records for the Recipients database. This database presently contains approximately 10,160 records for distribution of PPC/CDIE, PPC/WID, S&T/POP and other A.I.D. Office documents and publications, with approximately 250 transactions each year. Records contain organizational names, addresses, interest profiles, and other recipient characteristics. Profiles and characteristics are used in making dissemination decisions on an individual basis regarding degree of interest and eligibility. Recipients will be cleared by A.I.D. personnel. The contractor will implement procedures for obtaining profile information.

The contractor will be responsible for validating and updating all user-related data on the Recipients database, including changes that users desire in their field of interest profiles.

The contractor will perform this validation and update the Recipients database annually.

The contractor will provide an office systems administrator to manage all PPC/CDIE on-site office information systems (Wang), microcomputer systems (Wang PC, IBM PC or compatible), local area networks (Novell), and other online telecommunications systems. The administrator will coordinate all maintenance, testing, and service calls to M/SER/IRM, C&P, Wang, Hewlett Packard or other A.I.D.-provided or DIHF-provided equipment service and repair vendors for microcomputer, word processing, computer terminal, printer, data modem and connected-telephone, and other office and computer-related equipment which is located in PPC/CDIE office space.

The administrator will also be familiar with all PPC/CDIE standardized computer equipment software and will provide technical assistance services to PPC/CDIE staff.

The administrator will maintain an equipment inventory of all PPC/CDIE on-site computer equipment. The list will be updated on an annual basis.

User statistics, database status, and computer system performance statistics will be reported each month in the A.I.D. Facility management reports. The contractor will perform an annual review and assessment of the DIHF contract minicomputer, microcomputer, and related hardware/software configuration and requirements, and recommend computer system improvements in deficient areas. The review will include a hardware/software inventory of all computer, micrographics, and other information technology equipment, and software that has been purchased under the contract or received from A.I.D. to support DIHF operations at the beginning of the contract.

The contractor will furnish copies of the annual review and system improvement recommendations to PPC/CDIE/DI. Any computer system (hardware/software) upgrades proposed by the contractor will be reviewed and approved by PPC/CDIE/DI prior to procurement.

C.3.7.2 MICROGRAPHICS INFORMATION SYSTEM (APDMS)

The Contractor shall create and maintain a computerized database containing information on all microfilmed project documents. To operate this system, the contractor shall:

a. Utilize the document numbering scheme that is already in place for the purpose of document tracking and duplication cross checking as documents are processed, microfilmed and entered into the data base.

b. Follow procedures already in place to generate automated fiche header information through the computer data base. The header information shall be in a specified format that is already developed and shall contain as a minimum the:

1. Project number
2. Document type name
3. Document identification code
4. Country name
5. Project title
6. Contractor name (if any)
7. Contract number (if any)
8. Year/Date
9. Fiche number (when more than one fiche is required for filming individual document) and
10. Project Implementation Order (PIO/C, PIO/P, PIO/T) number.

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c. Assume management and inventory control over all MS/MO/PA/RM databases and materials cited below at the beginning of the contract. These include the records, associated documents, and microfiche materials listed in the table below.

1. Africa Bureau	52,462
2. Asia/Near East/Europe Bureau	42,029
3. Latin America/Caribbean Bureau	18,280
4. Science & Technology Bureau	23,193
5. Procurement Support Division	45,162
6. Loan Management Division	14,484
7. Hard copy documents (in warehouse)	12,500
8. Microfilm copies of documents	406,438

+ Silver masters 203,219

+ Silver inter-negatives 203,219

d. Structure the database to provide Fast Access Fields at a minimum for the categories listed below. Other access fields and/or report generation capabilities shall be developed in consultation with the Records Management Branch as required.

1. Project number
2. Country name
3. Project title
4. Bibtype
5. Bibtype name
6. Contract number
7. Contractor name
8. Document identification code
9. Batch and box number
10. Create date
11. Ending date

e. In consultation with the A.I.D. Office of Information Resources Management, develop the capability for reproducing and transferring the "system index" on magnetic media that is compatible with A.I.D. automated equipment installed in USAID Missions. At the beginning of this contract activity, A.I.D. will make available to the contractor magnetic tape copies of existing system databases.

C.4 MICROGRAPHIC SERVICES

The contractor shall provide comprehensive micrographic services relating to the A.I.D. (a) institutional memory (DIS) and (b) records management (APDMS) systems.

The table below specifies the number of new documents and records to be filmed and processed each year under this contract. (Documents average 23 pages in length for the APDMS system, and 86 pages in length for the DIS system.)

	Year 1	Year 2	Year 3	Year 4	Year 5
DIS Basic Requirement	5,000	5,000	5,000	5,000	5,000
APDMS Basic Requirement	26,500	25,000	25,000	25,000	25,000

(Proposals must include separate pricing for each basic requirement. APDMS costs shall depict line item costs by Bureau/Agency unit, i.e. Africa Bureau, Asia/Near East/Europe Bureau, Latin America/Caribbean Bureau Bureau, Science and Technology Bureau, Procurement Support Division and Loan Management Division.)

C.4.1 INSTITUTIONAL MEMORY

The contractor shall provide the necessary professional staff, services, facilities and equipment to microfilm A.I.D.-generated and uncopyrighted A.I.D.-sponsored and non-A.I.D. documents and reports, and to establish a micropublishing component of the A.I.D. Facility. This task requires the contractor:

- a. To microfilm about 5,000 uncopyrighted A.I.D. and non-A.I.D. acquired documents for the A.I.D. Facility each year.
- b. To prepare two sets of master negative microfiche for each document.
- c. To prepare a minimum of 22 complete sets of diazo copies (8 sets of project document (PD) microfiche and 14 sets of technical reports (PN) microfiche) of all microfiche (retrospective and new) for distribution in response to standing orders and selected sets based on established user-interest profiles to respond to exchange agreements and deposit account arrangements for other institutions.
- d. To distribute all diazo sets to A.I.D.-specified recipients. Two of the PD fiche diazo sets should be arranged and delivered to PPC/CDIE in project number order. All remaining sets will be delivered in document accession number order only, unless otherwise specified.

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- e. To prepare about 5,000 single diazo copies of microfiche annually to fulfill on-demand requests for single documents in microfiche.

The contractor shall provide the capability to prepare diazo copies of the entire microfiche collection upon request from A.I.D. The contractor also will be responsible for creating paper copies of documents from negative fiche in order to fulfill requests.

The contractor's computer-based information system shall have the capability to generate photocomposed microfiche headers for subsequent filming for each document processed.

A.I.D. will furnish the contractor its existing collection of microfiche masters and diazo copies, which the contractor shall use, with his currently prepared microfiche, to fulfill requests.

The contractor will provide storage for hardcopy documents and microfiche. Such storage is to be for the period between the filming and the retirement or destruction of documents, as determined by PPC/CDIE/DI.

In consultation with, and on approval from, PPC/CDIE/DI and MS/MO/PA/RM, the contractor shall procure microform equipment which is required to replace or upgrade existing equipment to respond to the service requirements under this contract.

The contractor should observe the guidelines, standards and control procedures cited below for the institutional memory microfilming:

- a. Document preparation - Prepare all specified documents for filming. Such preparation will include, but not be limited to:
 1. Removing staples, paper clips or other devices used to hold documents together;
 2. Unfold, smoothing out edges, taping tears or otherwise repairing, to the extent possible, damaged documents;
 3. Assessing documents for print quality and contrast taking all possible measures to obtain the most filmable copy;
 4. Placing documents in filming order;
 5. Gridding and batching documents;
 6. Using an on-site computer terminal to input information to be used to generate fiche headers;
 7. Boxing and dispatching documents to the filming site.

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All document preparation work for the A.I.D. Institutional Memory materials will be done at the A.I.D. Facility.

b. Microfilming standard - Film all documents on archival quality microform, as defined in Chapter 101-11.502 (a), Title 41, Code of Federal Regulations (CFR). The finished product microform will comply with the Federal standards as set forth in Chapter 101-11:506 et al, Title 41, CFR.

Filming will be at 24X reduction. Delivered product will be cut fiche measuring 105mm x 148mm with appropriate headings arranged in a specified order.

c. Master Negative Microfiche Storage - Prepare two sets of silver halide archival quality master negative microfiche for all documents filmed. The silver master or original archival copy will be housed by the contractor in a secure, fire-proof vault, with a temperature- and humidity- controlled environment which must meet ANSI 143-1976 standards. The silver duplicate or internegative copy shall be securely housed at the contractor's facility and will be used as the master for producing diazo duplicates. The storage facilities will meet the requirements of the A.I.D. Office of Security and PPC/CDIE/DI for secure and safe storage of silver master original and silver internegative microfiche.

d. Diazo Microfiche Duplication Standards - The diazo duplicates will be produced on 5 mil film, and will have a resolution of 90 lines per millimeter (mm) which will drop no more than one test pattern from that resolved in the original film on the NBS Microcopy Resolution Test Chart. The density standard shall be 0.9 to 1.3 inclusive.

While these levels are ranges under which acceptable film should fall, film will not be accepted if the contrast between information and background is not such that clear, legible copies can be made and the condition is not due to the quality of the material filmed. If the original camera film does not fall within the acceptable density range, the duplicates will not be "printed up" or "printed down" in order to achieve a print quality which technically falls within the acceptable range.

e. Refilming - Refilm, at no cost to A.I.D., all work that does not meet stated standards when product quality is a result of poor workmanship and filming techniques, inferior or malfunctioning equipment and/or supplies or any other factor not directly related to the quality or condition of the original document.

Recommended microfiche equipment and supplies - Prepare and maintain a listing of recommended equipment and supplies. The list will be specific and cite brand names as well as technical specifications. In cooperation with CDIE and MS/MO/PA/RM develop and procure as needed any new, replacement or upgrade of equipment. Maintain an inventory list of all equipment procured for A.I.D.

Other general guidance for this task area can be found in the A.I.D. Facility Operations Manual.

C.4.2 AGENCY RECORDS MANAGEMENT

The objective of this task is to provide system maintenance and file updates for the various micrographics programs already initiated and implemented in the Agency's bureaus and offices as may be required to manage the Agency's official project documentation.

The contractor shall provide services for microfilming and microfiche duplication necessary for system maintenance and file updates of project records. The system maintenance and file updates will be for those bureaus and offices of the Agency where the A.I.D. Project Document Micrographics System (APDMS) has been implemented. Separate monthly management reports will be submitted for this portion (MS/MO/PA/RM portion) of operating expense funded activities.

The microfilming and microfiche production of agency project records shall be performed in accordance with established formats and procedures and entails the following tasks.

a. Prepare all specified documents for filming. All document preparation work is to be performed on-site in work space provided by A.I.D. Documents specified for preparation will be reformatted for filming prior to contractor staff access. Movement of documents from A.I.D. offices to the filming site shall be the responsibility of the contractor. Such preparation shall include but not be limited to:

1. Removing staples, paper clips or other devices used to hold documents together;
2. Unfolding, smoothing out edges, taping tears or otherwise repairing, to the extent possible, damaged documents;
3. Assessing documents for print quality and contrast taking all possible measures to obtain the most filmable copy;

4. Placing documents in filming order;
 5. Gridding and batching documents;
 6. Using an on-site computer terminal to input information used to generate fiche headers; and
 7. Boxing and dispatching documents to the filming site.
- b. Film all documents on archival quality microform. Delivered product shall be cut fiche measuring 105mm x 148mm with appropriate heading and color codings and arranged in a specified order.
- c. Locate and retrieve documents that are out-of-office for filming and which may be urgently required in order for A.I.D. to orderly conduct business. Small documents (2-5 pages) may be transmitted by facsimile transmission equipment which will be provided by A.I.D. Large documents shall be returned to the requesting office by messenger service.
- d. Adhere to a two-hour priority special delivery of A.I.D. documents to A.I.D. offices located in Washington, DC and Rosslyn, VA.
- e. Provide storage for hardcopy documents and microfiche. Such storage is to be for the period between the update filming and scheduled retirement or destruction of records.
- f. Prepare two sets of silver halide archival quality master negative microfiche for all documents filmed. The silver master or original copy shall be housed by the contractor in a secure fire-proof vault with a controlled environment. The silver duplicate or internegative copy shall be securely housed at the contractor's facility and used for producing diazo duplicates.
- g. Produce diazo duplicate microfiche. The minimum requirement for copies of diazo duplicates is three (3) each. The maximum requirement is a variable that fluctuates from one fiche to another and will be established by A.I.D. Records Management Branch in consultation with the contractor.
- h. Produce diazo copies of the entire and/or selected portions of the microfiche collection in a given database or for a given overseas mission, office or individual as required.
- i. Reproduce copies of documents from paper-to-paper and fiche-to-paper to fulfill client requests.

j. Refilm, at no cost to A.I.D., all work that does not meet stated standards when product quality is a result of poor workmanship and filming techniques, inferior or malfunctioning equipment and/or supplies or any other factor not directly related to the quality or condition of the original document.

The projected work areas and estimated workload for system maintenance/file updates for the term of this contract are listed below. The volume is expressed in number of documents per year. The average number of pages per document is twenty-three (23).

Africa Bureau	5,200
Asia/Near East/Europe Bureau	4,900
Latin America/Caribbean Bureau	3,200
Science & Technology Bureau, FY 91	6,500
" " FY 92-95	5,000
Procurement Support Division	5,500
Loan Management Division	1,200
Total Documents all Work Areas, FY 91	26,500
Total Documents all Areas, FY 92-95	25,000

A.I.D. will provide the necessary on-site office space, equipment, computer support and information systems access to the contractor which is required to collect documents for this task. All personnel working on-site at A.I.D. will require a secret-level security clearance.

C.4.2.1 DISTRIBUTION OF MICROFORMS AND EQUIPMENT

The contractor shall distribute microforms in accordance with the following requirements:

a. Maintain the established system for the systematic distribution of microfiche records already in existence and for those produced under this contract. The system provides for:

1. Initial distribution of microfiche to the office of file origin.
2. Distribution of microfiche of all or selected parts of a file to offices other than the office of origin. The distribution shall key on such identifiers as individual project number/title, and number of users requiring specific documents for a particular project. For example, how many offices required a copy of the project paper for a given project title.

d. Obtain approval for equipment and supplies from the Records Management Branch and procure such as necessary. Receive equipment and supplies at the contractor facility, inspect for damage and otherwise assure acceptability.

e. Deliver equipment and initial expendable supplies (if any) to user office location. Assure that equipment is installed and operating properly.

f. In cooperation with PPC/CDIE and MS/MO/PA/RM, develop and procure as needed any replacement or upgrade of equipment.

C.5 USER SERVICES

In addition to the distribution of microforms as described above, the contractor shall perform the following tasks in providing development information to users.

C.5.1 RESPOND TO REQUESTS FOR INFORMATION

The contractor shall receive, log, analyze, and fulfill requests for A.I.D. development documents, microfiche, audiovisuals, electronic data, computer software, and other non-A.I.D. materials. The contractor shall fulfill requests that can be satisfied by sending copies of development materials that have been published and stocked; negative diazo copies of individual microfiche; electronic disks and tapes of data subsets and software; optical disks; audiovisual tapes; and 8.5" x 11" paper copies of documents created from negative fiche. Requests that entail reference work or research will be identified by the contractor and referred to PPC/CDIE/DI's Research and Reference Service Contractor for handling.

The contractor shall establish procedures to ensure that he provides appropriate and complete responses to requests according to the following priorities:

Priority I	Requests from USAID missions, A.I.D./W Bureaus and offices, A.I.D. contractors and other special requests, e.g. Congressional requests	Fulfill within 1 workday
Priority II	Requests from LDC Institutions, PVOS, Peace Corps and other host country development organizations	Fulfill within 3 workdays
Priority III	Requests from other sources, e.g. the U.S. public, commercial firms, universities, etc.	Fulfill within 7 workdays

b. Distribute microfiche to the office of file origin within five (5) workdays of removing the documents to any off-site location for further file preparation, filming, inspection, and so forth. The 5-day turnaround time is counted on U.S. Government workdays.

c. Distribute microfiche records to overseas missions on a direct mission-to-contractor cost reimbursable basis using the already-established procedures. These include:

1. Retrieving the complete collection of a mission's microfiche project records.
2. Duplicating single or multiple diazo copies of the records.
3. Refiling the original microfiche project records.
4. Sorting the diazo microfiche files by project number and by bibtypes within the project.
5. Providing a printout which lists the country's name, the project number and title, and the type of documents filmed for each project.
6. Arranging the duplicated microfiche project records in the appropriate file container in accordance with a format to be provided by MS/MO/PA/RM. Partially filled containers shall be stuffed to ensure that microfiche remain in place during shipping. A copy of the format mentioned above shall be included in each shipment.
7. Procuring "Luxor" microfiche trays or two-drawer metal fiche cabinets as appropriate and other materials necessary for packaging and shipping an order.
8. Packaging and labeling each order properly and delivering it to Room B461 N.S., Department of State, 320 21st Street; Washington, DC 20523-0001, to be pouched to the appropriate mission. All mission addresses shall include the nine digit ZIP code. Packages shall measure no more than 12x14x18 inches. Orders shall be delivered to Room B461 N.S. for mailing within 15 working days of their receipt.
9. Distributing automatically to participating missions all updates of their microfiche project records.

The contractor shall be responsible for receiving bulk quantities of publications and for distributing these to addressees in the Recipients Database and to other addressees designated by A.I.D. The contractor will bulk distribute approximately 80,000 documents, publications, and development materials per year.

The contractor shall confer with A.I.D. and obtain approval before fulfilling requests for bulk quantities of documents or requests for new standing orders. The contractor will also confer with A.I.D. to identify institutions and recipients that are authorized free distribution, and those which are not authorized to receive documents free of charge. In all cases the contractor shall follow the latest document distribution and charging policies and other procedures found in the Operations Manual.

The contractor shall establish and manage a direct cost reimbursement system for direct post-to-contractor and public-to-contractor purchase of A.I.D. hardcopy and microfiche, audiovisual, electronic media, computer software, and optical disk materials, where the billing and invoice processes are direct transactions between the purchaser (overseas post, public, institution) and the vendor (A.I.D. Facility contractor). The system will be flexible enough to accommodate individual, complete set and standing orders of A.I.D. development materials.

No classified document materials shall be provided to the A.I.D. Facility.

The contractor shall keep detailed and useful records and data about requesters and order fulfillment for later use in management reporting, follow-up and evaluation of the A.I.D. Facility user services operations.

This task requires that the contractor provide warehouse and inventory space to store documents and development materials in paper copy, microfiche, and other media formats, and to provide appropriate facilities, supplies, and equipment for the reproduction, fiche-to-paper blowback, packing, addressing, and shipping of these materials.

In general, A.I.D. will pay postage, reproduction and handling costs for all USAID mission, A.I.D./W Bureau/Office and LDC institution (microfiche only) shipments. The contractor shall charge and collect fees for reproduction, handling and postage costs associated with DIHF services provided to all other user groups. The contractor will incur approximately \$42,000 per year for postage costs to handle all on-demand, standing-order, and document/development material distribution under this contract, to support mail costs to A.I.D. staff and LDC institutions. Due to possible postage increases the contractor should add a yearly 5% inflation factor after the first year.

The contractor shall also provide the capability for daily hand-delivery (and pick up) of documents and development materials for users and requesters in the Washington, D.C. area.

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C.5.2 PUBLICATIONS

The contractor will be required to desktop publish and print one major, recurring publication that is to be derived from the A.I.D. database: The A.I.D. Research and Development Abstracts.

The contractor will also be responsible for preparing database-generated and independently-produced, desktop-published materials including, special bibliographies, acquisition lists, briefing portfolios, brochures, presentation graphics, annual reports, training materials (users manuals, thesauri, systems manuals, operations manuals, quick-help guides, reference manuals), and other special publications that can be produced as current awareness materials of PPC/CDIE products and services. About 40 such products will be required each year; A.I.D. will define the topics and scope of these products.

The contractor will be responsible for all aspects of these publications and database-generated products, including the preparation of covers and front matter, composition, layout, graphics, editing, proofreading, in addition to desktop publishing, printing, reproduction, and distribution.

In addition, the contractor will be required to reproduce and/or print approximately 35 publication products produced by PPC/CDIE/DI's R&RS contractor.

C.5.3 TRAINING AND USER AWARENESS

C.5.3.1 INSTITUTIONAL MEMORY

The contractor will provide professional training services to:

- a. Design and implement a multi-level Development Information System, MicroDIS and CD-DIS CD-ROM user training programs for three different DIS user groups: (1) decision-makers and program managers, (2) project designers, implementers and evaluators, and (3) information specialists, librarians and research analysts.

USAID mission and A.I.D./W personnel will be trained on-site in A.I.D. office space and at the A.I.D./DIHF.

The program will include, but not be limited to, classroom instruction, hands-on training and workshops on the DIS, MicroDIS, and CD-DIS systems and products, development of user manuals and aids, instructional materials, visual aids and course outlines, evaluation of the training programs and follow-up training where necessary. It is estimated that an average of one training course and one follow-up training session per month will be required.

C.5.3.2 AGENCY RECORDS MANAGEMENT

The contractor will provide professional training services to:

a. Train A.I.D. staff, in the form of briefings, system orientations, and special instructions, to assure that Agency management, office managers and staff, micrographics coordinators, individual project officers, and other system users have a thorough knowledge of:

(1) The APDMS system design, management, and operation.

(2) How to derive the greatest value from the APDMS system. Among areas of emphasis are computer terminal use, database access and searching, and report generation and printout.

(3) The proper use of computer and microfiche equipment at the time of installation.

b. Produce APDMS training material in the form of a brochure and manual to be sent to all APDMS users in the A.I.D./W Offices and USAID Missions. The training material will provide clearly written instructions on understanding and accessing the database and microfiche in order to simplify the use of the APDMS system.

C.6 DATABASE AND TECHNOLOGY TRANSFER

The A.I.D. Facility will provide the required technical support for developing, maintaining, documenting, and providing training and technical assistance for the manual and automated information-technology support systems required to provide increased accessibility and decentralization of the DIS database and A.I.D. institutional memory systems to USAID Mission and A.I.D./W Bureau and Office users. The A.I.D. Facility technical support will include:

a. Development and maintenance of MicroDIS, a microcomputer-based DIS system capable of supporting (1) two-way transfer of development information (in MINISIS compatible format) between the A.I.D. Facility, USAID Missions, LDC institutions and A.I.D./W Offices, (2) cataloging and indexing of locally-held development information materials, (3) production of current awareness products, (4) dissemination of development information, and (5) operating on a local area network system, serving multiple catalog databases and multiple end users.

b. A.I.D. Facility-based training and technical assistance to USAID Mission and LDC institution staff.

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b. Present A.I.D. Facility briefings to A.I.D. staff, A.I.D. Contractors, developing country counterparts, and individuals from development organizations, e.g. World Bank, IDRC, CIDA, or other information service organizations which A.I.D. or the A.I.D. Facility must interface with to carry out its mission and scope of work, respectively. It is estimated that an average of one briefing each month will be required.

c. Prepare bi-monthly user awareness announcements of new or improved A.I.D./DIHF and DIS services and distribute them to all principle DIS and A.I.D./DIHF users.

d. The contractor will send a representative to attend the annual MINISIS Users Meeting once a year. (Foreign travel, one person, seven days. Estimated cost is \$4,500 per year.)

e. Provide an A.I.D. Liaison service on-site at A.I.D.'s offices to perform user help and technical assistance duties for any services offered through the A.I.D. Facility. This will include, but not be limited to, explanation of A.I.D./DIHF services; technical assistance in the use of the Development Information System, the MenuDIS menu interface system, the A.I.D. Thesaurus, MicroDIS, the CD-DIS CD-ROM, the USAID DIC Manual, and the USAID Classification Scheme; receipt of general complaints, problems or questions concerning A.I.D. Facility services or capabilities; and suggestions for improvements in products or services.

f. Develop and produce CDIE outreach products. Such products will include, but will not be limited to, brochures, portfolios, audiovisual presentations, flyers, briefing books, services and database descriptions, samples of search capabilities, request forms, serials lists, and information packages.

g. The contractor will develop a program designed to gather and analyze users' feedback and evaluations of CDIE's services. Such a program may include, but will not be limited to, the development of evaluation feedback forms and user interviews.

- c. On-site USAID consultation, training, and technical assistance (Foreign travel required: three trips per year, seven days per trip. Estimated cost is \$9,500 per year.)
- d. Preparation of briefing materials.
- e. Duplication of entire and selected partial sets of the A.I.D. Institutional Memory microfiche collection.
- f. Downloading of entire and selected portions of the DIS and other development information database systems from the A.I.D./DIHF minicomputer to the A.I.D./DIHF laboratory microcomputer systems for database transfer or selected dissemination of information.
- g. Creation of hardcopy and computer-output-microform (COM) subject, author, institution, project number, and accession number indexes to the A.I.D. Institutional Memory microfiche collection.
- h. Production of quarterly CD-DIS CD-ROM optical disk products containing the DIS databases, MicroDIS catalog databases, selected fulltext documents and other relevant development information for local access by USAID Missions and developing country institutions. (200 copies of each CD-DIS CD-ROM disk will be prepared with each pressing.)
- i. Uploading of USAID Mission Development Information Center, LDC institution, and A.I.D. contractor catalog databases to the A.I.D./DIHF minicomputer system for A.I.D./W access and inclusion in CD-DIS CD-ROM product. The majority of the catalog databases will be imported from external MicroDIS installations. Assume 10 uploads in the first year, 15 in the second year, 20 in the third year and 25 in the fourth and fifth years of the contract. Uploads will be done on an annual basis.
- j. Acquisition, testing, and evaluating document and microfiche scanning technologies to support full-text applications for on-line and CD-DIS CD-ROM products and to recommend alternative document conversion options for the retrospective and current A.I.D. document collection currently in paper and microfiche form.
- k. Continued development and maintenance of MenuDIS front-end menu interface system to support A.I.D./W and public access to the DIS system.
- l. Preparation of special Operations Manuals, Systems Manuals, User Manuals, and Training Manuals for all technology and information products cited above.

The contractor's technical support for this phase will also include establishing and maintaining, in the A.I.D. Facility, a laboratory of minicomputer and microcomputer prototype systems that will interface with existing and planned computer installations in the USAID missions and the LDC institutions. At a minimum, the prototypes will include the HP 3000/900 series minicomputer, IBM PC 8088, 8086, 80286, 80386, 80486, and Wang or other IBM-compatible microcomputers, Novell local area network, paper and microfiche optical scanner equipment, and Meridian CD Publisher hardware/software optical disk production and disk drive equipment.

The contractor will provide the necessary analysis and programming to adapt commercial software to support the information and technology transfer program. The contractor will be required to use the laboratory for development, testing, evaluation, demonstration, and training purposes.

The contractor shall purchase, for use by the laboratory, one 80486 microcomputer system, with DOS 5.0, OS/2, Presentation Manager, Windows, and other required relational DBMS software to support laboratory requirements. The contractor shall also procure upgraded Meridian CD-ROM Professional publisher hardware/software equipment or equivalent to renew and update optical publishing technology. All computer hardware and software acquisitions must be approved by PPC/CDIE/DI.

C.7 SPECIAL PROJECTS

The contractor shall be required to perform the regular DIHF tasks in accomplishing special projects for A.I.D. bureaus and offices. Three required and two optional special projects are specified below.

C.7.1 OFFICE OF WOMEN IN DEVELOPMENT

The contractor shall perform the following facility tasks for the Women in Development Office (PPC/WID)

- a. Provide office space and warehouse space, as appropriate, for storage of WID-related publications and materials.
- b. Procure on-line database services and development materials for access and bulk distribution in response to WID information requests and requirements (approximately \$2,000 per year). All purchases of WID materials will be approved by PPC/WID prior to purchase.
- c. Print three issues per year and disseminate about 2,000 copies per issue of the WID newsletter (about 6 pages per issue). Dissemination includes distribution to A.I.D./W, USAID Missions, LDC institution and development counterpart staff. The CDIE/DI R&RS contractor will provide WID-approved master copy of the newsletter to be printed.

d. Provide clerical staff to maintain the WID mailing list of about 750 addressees for use in the distribution of the newsletter. The contractor will receive all WID-approved changes for mailing list updates. The contractor will produce about 10 complete sets of the mailing labels per year.

e. Respond to on-demand requests from USAID Missions, LDC institutions and development counterparts (in the U.S. and overseas) for approximately 1,500 WID-related documents per year referenced in the A.I.D. Development Information System. Contractor will provide clerical staff, reproduction services, supplies, and postage to fulfill these requests.

f. Respond to about 4,500 on-demand requests per year from USAID Missions, LDC institutions and development counterparts for copies of 25 pre-selected, non-copyrighted WID publications and materials. The contractor will provide clerical staff, reproduction services, supplies and postage to fulfill these requests. Requests will be provided and forwarded by PPC/WID to the contractor for appropriate action.

C.7.2 OFFICE OF PLANNING AND BUDGETING

The contractor shall provide data entry services to support the PPC/PB Budget System. The contractor shall provide the equivalent of a half-time person (.5 FTE) per year to provide data entry services for several program and budget systems run by the A.I.D./W geographic Bureaus to support the Bureau for Program and Policy Coordination, Office of Planning and Budgeting information system.

C.7.3 OFFICE OF POPULATION

For the Office of Population, the contractor will be required to acquire and distribute development information, as follows:

a. Select, purchase, and acquire journals and other development materials, subject to the approval of A.I.D. Office of Population.

b. Distribute the materials to A.I.D. population specialists and officers overseas (and their counterparts in the population sector).

c. Maintain a mailing list of approximately 200 population specialists and their counterparts.

For this special project, the contractor will be responsible for purchasing the journals and other development materials and packaging materials used in the mailing. (These purchase costs are estimated to be about \$15,000 per year.) The government will pay for the postage.

C.7.4 TECHNICAL ASSISTANCE OPTION

AID anticipates a significant expansion of the special project requirements during the contract. The expanded special project tasks will require the contractor to increase the project staffing, assigning additional personnel in each of the labor categories proposed for the contract.

Offerors should assume that this expansion will increase the basic cost of the contract by an additional 10% per year. Thus, offerors are instructed to include a 10% allowance for "New Special Projects" as a line item in their price proposals. However, this percentage should not be applied against cost estimates for optional contract task C.7.5, below.

The contractor will perform these new project tasks at cost rates negotiated in the basic contract. The priced contract option will be exercised as technical assistance tasks are defined and executed by CDIE/DI and other Agency offices. Each task will be documented with a detailed scope of work and estimated budget, which defines specific activities to be performed for the task which are defined within the general scope of work and optional budget of the contract. Each task will be implemented as an incrementally-funded activity through the issuance of a modification to the contract. Only the actual direct costs, indirect costs, and fixed fee associated with each technical assistance task (exercised through this option) shall be due the contractor by A.I.D.

Proposals from offerors are required to describe their capabilities to expand the technical assistance support to AID, to perform work overseas, and to manage special projects within the contract.

C.7.5 MICROFICHING OF BUREAU PROGRAM RECORDS OPTION

The contractor shall perform, under a separately priced contract option to be exercised at the discretion of A.I.D., the microfilming of program records of four Agency bureaus/offices to be included in the APDMS — the Bureau for Program and Policy Coordination (PPC), Bureau for Food for Peace and Voluntary Assistance (FVA), the Bureau for Private Enterprise (PRE), and the Office of Foreign Disaster Assistance (OFDA).

The table below specifies the total estimated number of documents to be microfiched each year over a five-year period under this contract option. (Documents average 23 pages in length.)

	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
FVA	36,000	7,600	8,600	5,000	5,000
PPC	15,000	3,500	3,500	3,500	3,500
PRE	10,000	2,500	2,500	2,500	2,500
DFDA	6,000	1,500	1,500	1,500	1,500
Total	<u>67,000</u>	<u>15,100</u>	<u>16,100</u>	<u>12,500</u>	<u>12,500</u>

APDMS
Optional
Requirement

The standards and requirements that are described in Task C.4.2 are to be equally applied by the contractor in performing this optional microfilming task. Offerors should describe their capabilities in expanding APDMS support to meet the added SOW requirements of this task. This task should be priced as a separate, optional line item in the price proposal. Costs should be detailed by each Bureau/Office shown above.

The contractor will perform each new task under this option at the cost rates negotiated in the basic contract. The priced contract option will be exercised on a bureau-by-bureau basis, each bureau/office cited above being a specific micrographics task to be performed for MS/MO/PA/RM. Each task will be documented with a detailed scope of work and estimated budget, which defines specific activities to be performed for the task which are defined within the general scope of work and optional budget of the contract. Each task will be implemented as an incrementally-funded activity through the issuance of a modification to the contract. The actual costs and level of effort associated with implementing a Bureau/Office task will be determined by the date of inception for each task. Only the actual direct costs, indirect costs, and fixed fee associated with each bureau/office task, exercised through this option, shall be due the contractor by A.I.D.

C.8 PROGRAM PLANNING AND MANAGEMENT

C.8.1 TRANSITION PLANS TO RELOCATE THE DIHF

The contractor will work closely with the former A.I.D. Facility contractor during a transition period (of up to two months) to ensure a smooth start-up in the contractor's facility. A.I.D. will reimburse the contractor for the cost of relocating all equipment and development materials during the transition period, and will pay the former A.I.D. Facility contractor to train the new A.I.D. Facility contractor on A.I.D./DIHF

operations and procedures. The new facility contractor will absorb any site preparation costs required to establish the A.I.D. Facility according to the contract specifications.

In their proposals, offerors are to provide detailed, time-phased transition plans for establishing the new A.I.D. Facility at the contractor's site without undue burden to CDIE/DI and without disruption in services. (After the facility start-up, the transition plan will be superceded by the implementation plan and schedule described below.)

C.8.2 IMPLEMENTATION PLAN AND SCHEDULE

The contractor shall study the requirements of the A.I.D. Facility by appraising present DIHF operations, information products and user services, current computer system applications, relevant A.I.D. program plans, evaluations and studies and by interviewing appropriate A.I.D. officials and A.I.D. contractor organizations.

The contractor shall use these requirements to define a one-year implementation plan for the A.I.D. Facility presenting a schedule for providing all services, products and functions described in this Statement of Work.

The one-year implementation plan and schedule will be submitted to PPC/CDIE/DI in draft form for review and approval at the end of the first month of the contract. It will be revised during the next two weeks, with a final version due at the end of the second month. The contractor will also be required to maintain an updated version of an annual implementation plan throughout the period of the contract.

The plan will provide the milestones that the contractor proposes for such activities as the following:

- a. Continuing to identify more efficient and cost-effective operations in each task area of the contract.
- b. Continuing a comprehensive service evaluation and quality assurance program to review and improve contractor performance.
- c. Continuing a multi-level Development Information System (DIS), MicroDIS and CD-DIS CD-ROM development and training program for A.I.D. decision-makers, program managers, project designers, evaluators, technical specialists, information specialists, librarians and development information center managers.

d. Maintaining and improving an integrated, menu-oriented interface to the A.I.D./DIHF database and service support system to simplify information system access and operation.

e. Continuing an annual A.I.D./DIHF management review program for evaluation of contractor performance and budget review.

f. Providing technical assistance to the PPC/CDIE/DI overseas development support operations for USAID Development Information Centers.

g. Continuing the implementation of an A.I.D. system of author-supplied abstracts for A.I.D.-generated or A.I.D.-supported project design and evaluation documents, technical reports and research studies.

h. Continuing a program to capture A.I.D.-funded research activity information.

i. Upgrading minicomputer equipment and other information-related technology equipment to accommodate anticipated growth in user demand and adopt more efficient and powerful information technologies.

j. Continuing to support information networking with the NTIS Research in Progress system and the NTIS document database system.

k. Developing a plan to transfer A.I.D.'s holdings from the OCLC system to the DIS system.

l. Developing outreach, user awareness, and user feedback programs which describe the services and products of the A.I.D./DIHF.

m. Designing and implementing an automated production system to maintain and provide easy access to selected full-text PPC/CDIE and Agency publications and bibliographic and statistical databases on microcomputer systems with optical disk readers for USAID and A.I.D./W staff use.

The plan should be supplemented by more detailed plans for a (1) technology study, (2) computer system upgrades, and (3) micrographics equipment upgrades, which are described later in this work statement.

C.8.3 SERVICE EVALUATION AND QUALITY ASSURANCE

The contractor will implement a service evaluation and quality control program in the beginning of the second month of the contract.

This program will continuously evaluate and report on the effectiveness of the Development Information System, A.I.D./DIHF publications and other database-generated products, on-demand document and microfiche service, standing-order microfiche service, bulk document distribution service, training, quality control, project management, A.I.D./DIHF support systems, A.I.D./DIHF processing procedures, A.I.D./DIHF documentation manuals, A.I.D./DIHF microcomputer laboratory and microfilming operations.

The contractor will design and implement a system to capture and evaluate user feedback information in all task areas of the contract. The contractor will also rely on input from the quality assurance program as another measure of relative effectiveness and efficiency of the A.I.D./DIHF operation.

The evaluation will perform user studies and case studies to evaluate service program effectiveness. Reports with evaluation findings, proposed solutions, and recommended actions will be presented semi-annually. A.I.D. and A.I.D./DIHF management will review and implement solutions to improve A.I.D./DIHF service within the month following completion of each service evaluation. Service evaluation reports will be due every six months beginning with the first day of month six of the contract.

Through the quality assurance program, the contractor will provide an independent quality control service, separate from the daily operation of the A.I.D. Facility. The contractor will establish quality standards for all outputs, products and services of each task area of the contract. The performance against these standards will be monitored using a contractor-designed system to provide continuous statistical and qualitative feedback. This information will be analyzed and deficiencies, corrective actions, improvements and acceptable performance will be reported on a quarterly basis, on the fifteenth day after each quarter. A.I.D./DIHF project management will report resulting management actions in their next monthly management report. These quality assurance reports will also be used as input to the service evaluation program.

Service evaluation and quality assurance work will be performed, as required, on-site at A.I.D. office space since A.I.D. is the primary user of most A.I.D./DIHF services.

C.8.4 EVALUATION

There will be an evaluation of the Document and Information Handling Facility contract beginning at the end of the thirty-sixth month after the contract award and as otherwise deemed appropriate by A.I.D. throughout the performance of the contract.

C.8.5 OPERATIONS MANAGEMENT

The contractor will be responsible for establishing effective internal project management direction and controls necessary to:

- a. Guarantee all requirements of the contract are satisfied in a acceptable time frame.
- b. Adequately train contract staff in sufficient numbers to perform assigned projects within acceptable time limits and quality control standards for each phase and task of the contract.
- c. Plan and monitor staff performance of all tasks.
- d. Anticipate, identify, and resolve problems.
- e. Improve the program efficiency of the A.I.D. Facility.

The contractor will utilize input from an independent quality assurance program to improve the effectiveness and efficiency of each task area in the contract. The contractor's independent quality control function will (1) maintain the quality standards for finished products produced in the DIHF and (2) inspect the finished products against the applicable quality standard.

The contractor will also conduct annual joint A.I.D.-A.I.D. Facility reviews utilizing the input from the quarterly quality assurance reports, monthly management reports and semi-annual service evaluation reports. The annual review will analyze the performance of the contractor against the contract scope of work requirements in all phases and task areas of the contract. Performance will be evaluated for both quantitative and qualitative results.

The annual review will be conducted in months eleven, twenty-three, thirty-five, forty-seven, and fifty-nine of the contract. The annual review results will be used to update the annual implementation plan and will be reported in the A.I.D. Facility final report.

The contractor will develop and maintain a system for closely monitoring the progress of work under the contract and for generation of monthly management reports that help predict possible problems or slippage. The contractor shall prepare and submit a monthly report to A.I.D. describing the progress made in each phase and task area during the month just completed, the number of items completed in each task area, the overall status of the project vis-a-vis scheduled activities, a discussion of problems encountered and anticipated, and recommendations for resolving the problems.

The contractor will also report his staff hours and expenditures of contract funds by task for the monthly period and cumulative to date. This report is due no later than twenty working days after the end of each month.

C.8.6 OPERATIONS MANUALS

The contractor shall maintain an Operations Manual covering all services and functions to be performed by the A.I.D. Facility. All tasks of the contract scope of work will be performed by following the appropriate guidelines specified in the A.I.D. Facility Operations Manual. The manual will include, but not be limited to, the following:

- a. Procedures and methods for providing information services and performing document and other development material handling, storage, distribution, reproduction, and filming functions.
- b. Procedures, guidelines, forms and standards for thesaurus maintenance, descriptive cataloging, indexing, abstracting, document preparation, microfilming, publications (printed, electronic, and optical), data entry and system operations.
- c. Standards, procedures, guidelines, and check points for quality control, quality assurance, and service evaluation.
- d. Procedures and materials developed for training and user awareness functions.
- e. Guidelines and procedures for management review and reporting.

The contractor shall revise, as required, and maintain the Operations Manual throughout the contract. All revised sections will be submitted to PPC/CDIE/DI for review and approval. The contractor shall use the A.I.D.-approved sections of the Operations Manual as a basis for his staff training prior to actual performance of functions in the A.I.D. Facility. Copies of the final, up-to-date version of the entire Operations Manual are due at the end of the contract.

In conjunction with the maintenance of the Operations Manual, the contractor shall maintain non-subject authority files for institutional names, projects, contracts, document types, countries, sectors, report number series, etc. as required for descriptive cataloging and project-level data.

The contractor shall also maintain systems documentation to be incorporated in a Systems Manual. As they are completed, drafted sections of the manual will be submitted to PPC/CDIE/DI for review and approval. The contractor will maintain the Systems Manual throughout the contract, and will deliver copies of the current updated version of the Systems Manual at the completion of the contract.

A.I.D. also requires training manual(s) to improve the proficiency of users to use the A.I.D. Project Documentation Micrographics System (APDMS). The contractor will produce appropriate training materials in the form of a brochure and manual that will be sent to all APDMS users in A.I.D./W Offices and USAID Missions. The training material will provide clearly written instruction on understanding and accessing the databases in order to simplify the use of the APDMS system.

C.8.7 SYSTEMS STUDIES AND PLANS

The contractor shall conduct specialized studies and upgrade DIHF technologies to improve the efficiency of operations in the DIHF.

C.8.7.1 ALTERNATIVES TO MICROGRAPHICS SYSTEMS

The DIHF uses a wide variety of computer and micrographics equipment, mostly based on technologies that were available when the facility was established almost 10 years ago. To accommodate growing demands on the PPC/CDIE/DI program, and to plan appropriate utilization of additional or alternative commercially available information technology, the contractor shall conduct a study of the alternatives currently available for acquiring, storing, accessing, and disseminating A.I.D. project documents and technical reports. The objectives of the study include:

- a. to assess the adequacy of the currently installed, government-furnished information technology for performing program objectives in a least-cost, highest quality manner;
- b. to identify areas where additional or alternative government-furnished information technology will improve the performance of program objectives;

c. to examine options for additional or alternative government-furnished information technology, and to make and substantiate recommendations regarding the options, addressing such matters as cost-effectiveness, organizational factors and human resources considerations; and,

d. to formulate a strategy, consistent with A.I.D.'s strategic technology direction, for maintaining a low-cost, high quality, government-furnished, information technology base, including implementation and transition plans as required.

The contractor will address (1) cost effective alternatives to the micrographics technology currently used in the DIHF, (2) new information dissemination technologies to support the needs of development information professionals, worldwide, and (3) feasible approaches for migration to mainframe support for the DIHF operation.

In conducting the study, the contractor will, at a minimum, review official program and related documents to be furnished by the government; interview A.I.D. personnel and other development information professionals; appraise the effectiveness of currently installed government-furnished information technology; conduct technically-oriented market research on commercially available information technology that may be considered for augmenting or replacing currently installed information technology; and formulate a high-level development information/technology architecture which supports the Development Information and Records Management Programs.

PPC/CDIE/DI will organize and direct a Steering Group of affected A.I.D. offices to oversee the study. The Steering Group will be chaired by the PPC/CDIE/DI project officer and co-chaired by the MS/MO/PA/RM project officer.

Within two months of contract award, the contractor will present a detailed study plan to the Steering Group for review and approval. The plan should provide for completion of the study within 4 months from approval of the plan; periodic briefings, issue analyses, and status reports to the Steering Group; and a draft report for Steering Group review and approval.

The contractor will produce 10 copies of a final report and provide a briefing to the Steering Committee within two weeks of receiving comments on the draft report from the Steering Group.

The government estimates that the contractor will expend a total of 6 person-months of effort (including consultants, if any) to conduct the study.

Within 30 days after the start of each new year under the contract, the contractor will update the initial technology report to reflect the current status of the currently installed base of government-furnished information technology, active implementation activities, new commercially-available technologies that may contribute to the least-cost, highest quality accomplishment of program objectives, and revisions or refinements to the high-level information technology architecture.

C.8.7.2 COMPUTER SYSTEM UPGRADES

Automation in the DIHF is based on a government-furnished Hewlett Packard HP-3000 system (which uniquely supports the operations of Minisis). The HP-3000 system is near the end of its useful life, and the government requires that it be replaced in FY 91, within one year after contract award.

The contractor will acquire a HP-3000 series 900 minicomputer (or equivalent) that supports Minisis and otherwise also meets the operational requirements of the development information and records management programs. The contractor will acquire the necessary peripheral equipment and software to support the following minimum hardware/software computer configuration for DIHF operations:

Hardware

- HP-3000 series 900 Minicomputer
- 80 megabytes of computer memory
- 2280 Megabytes of on-line disk storage (already acquired)
- Laserjet 2000 printer (already acquired)
- 6250 bpi magnetic tape drive (already acquired)
- X.25 communications hardware for IBM mainframe link

- Computer operator console
- Communications hardware with 2400 baud modems to support 20 simultaneous dial-up computer users: (2 - 9600 baud and 11 - 2400 baud modems: already acquired)
- Communications hardware to support 20 directly-wired HP terminals
- 400 lpm HP line printer (already acquired)
- 1000 lpm HP line printer (already acquired)
- 20 HP terminals (already acquired)

Software

- MPE XL Operating System
- Cobol Compiler XL
- HP Edit XL
- Glance
- X.25 communications software for IBM mainframe link
- Minisis software license

The contractor also shall acquire:

Training services for DIHF computer operator, programmer and systems manager staff on new minicomputer system.

Hardware/software maintenance support for the new minicomputer configuration.

The contractor will also assist in the disposition of the current HP-3000 system once the replacement system is operational.

During FY94, the contractor shall provide another upgrade to the HP-3000 series 900 minicomputer system by procuring a new laser printer and new disk drive (2280 megabytes) equipment to upgrade and/or replace existing printer and disk drive equipment.

The contractor shall also procure two 80386 and one 80486 IBM-compatible microcomputers (or equivalent) each year to replace the aging 8088, 8086 and 80286 equipment base and 80386 network servers and desktop publishing stations. The 80386 microcomputers will be supplied with a minimum of a 1 megabyte of memory, VGA monitor, 40 megabyte hard disk, three expansion slots, mouse, two serial and one parallel ports, two 9600 baud modems (one for microcomputer, one to upgrade 2400 baud modem on HP 3000 minicomputer) and Arcnet network card to support workstation access to Novell network. The 80486 microcomputers will be supplied with a minimum of 4 megabytes of memory, super VGA PLUS monitor, 150 megabyte hard disk, three expansion slots, mouse, two serial and one parallel ports, two 9600 baud modems and one Arcnet network card for LAN access.

The contractor shall also procure one HP laserjet III printer (or equivalent) and one CD-ROM drive per year to upgrade/replace aging equipment base.

In FY92, the contractor shall also procure Netware 386 software to upgrade/replace existing Netware 286 local area network (LAN) software. The Netware 386 software will support a minimum of 50 users on the LAN. The Netware 386 software will be upgraded once in FY94 .

The contractor will purchase twelve (12) 9600 baud modems to upgrade existing 2400 baud modems on 80386 microcomputers.

The contractor will upgrade the following software packages during the five-year term of the contract:

- Wordperfect LAN software (estimated 30 users)
- Harvard Graphics (3 copies)
- Ventura (3 copies)
- Pagemaker (1 copy)
- Lotus 1-2-3 (10 copies)
- Procomm Plus (20 copies)
- Optinet software (1 copy)

The contractor will be responsible for all planning, installation, testing, parallel operation, etc. associated with the new minicomputer system and other computer technology procurements under task. The contractor shall incorporate system management tasks and milestones in the master Implementation Plan.

All proposed computer hardware/software purchases will be approved by the PPC/CDIE project manager and the MS/OP contracting officer prior to actual procurement by the contractor. The government will arrange for the contractor to utilize appropriate GSA-KESA supply schedules for purchasing the hardware, software and communications systems required in these upgrades.

Price proposals are to include the offeror's estimated costs for all upgrades.

C.8.7.3 MICROGRAPHICS EQUIPMENT UPGRADE

The contractor will procure a replacement microfiche-to-microfiche duplicator machine in FY 92 to replace the Consolidated Micrographics OP-2124 (Bruning OP-59) fiche-to-fiche duplicator. The contractor should procure a machine whose functionality, product quality, and throughput equals or exceeds the existing equipment. The contractor shall also procure maintenance, service and any required operator training.

C.8.8 PARTICIPATION IN A.I.D. COMMITTEE

The contractor shall provide a representative to serve as a participating member of the CDIE/DI advisory committee which meets as required to discuss technical, organizational, informational, program, and service issues and problems on a periodic basis with CDIE/DI and the A.I.D./W Bureau representatives.

C.9 PERSONNEL REQUIREMENTS

C.9.1 SKILLS REQUIRED

This work statement describes tasks that require a wide variety of personnel, including the following:

- Project management
- Computer systems analysts and programmers
- Computer systems operators and management
- Training officer
- Micrographics specialists
- Editors and abstractors
- Lexicographer
- Indexers
- Catalogers
- Librarians
- Data entry specialists
- Documents preparation clerks
- Order processing clerks
- Contract management
- Clerical and administrative assistants

The contractor will provide technical processing staff with the following experience, knowledge and skills:

- a. Experience in creative technical writing of development experience information to produce informative abstracts which summarize development assistance programs in a broad range of subject areas.
- b. Experience in cataloging and indexing development materials, including the application of AACR2 or IDRC Development Information System cataloging guidelines, Dewey Decimal classification, and development thesauri vocabulary terms, particularly the A.I.D. Thesaurus, for processing development materials.
- c. Experience in using on-line database management programs for all aspects of technical processing (acquisitions, cataloging, indexing, abstracting, searching), particularly experience with Minisis software.
- d. Experience in technical processing of development information materials produced by A.I.D. or other development organizations.
- e. Experience in using desktop publishing hardware/software including Ventura, Aldus Pagemaker, OCR and digital scanners, and laser printers to produce a broad range of secondary development publications.

- f. Experience in using micrographics equipment including Consolidated Micrographics OP-2124 (Bruning OP-59), TDC Imager and Minolta microfiche equipment.

The contractor will provide systems development and systems support staff with the following experience, knowledge and skills:

- a. Experience in planning and developing computer-based information management systems to support the following applications: information clearinghouse, records management, library management, project management, optical publishing and local area network systems.
- b. Experience in systems analysis, design, computer programming, training and operations of relational database management and information systems for applications cited above, with particular emphasis on specific experience with (1) HP 3000 minicomputer, IBM-compatible microcomputer hardware and IBM mainframe computer hardware and (2) Minisis, Cobol, dBase III, Clipper, Inquire and SAS software.
- c. Experience in designing and producing CD-ROM optical disk products, particularly using Meridian CD Publisher hardware and CD-ROM multi-platter access applications on local area networks.
- d. Experience in designing and managing Novell local area network systems and applications using Novell Netware software.

Offerors are advised to carefully analyze the task and workload requirements of this solicitation in order to propose an effective combination of professional and support personnel. Proposals must include charts and/or similar presentations explaining the offeror's plans for direct labor under the contract. Proposals must include:

Person-loading charts tabulating the number of hours that are to be expended each year on the major tasks of the contract, with appropriate breakdowns of hours by direct labor category.

Personnel commitment charts showing the number of hours and percentage of time that the proposed individuals (by name) will expend on the contract.

Resumes summarizing the background, experience, and qualifications of the offeror's proposed professional staff (including consultants, if any).

C.9.2 CROSS-TRAINING

Offeror's proposals are to describe the offeror's plans for cross-training so that members of the offeror's professional staff are capable of performing and supporting each other's work functions to respond to changing work load conditions, shifting job priorities and program emphasis, and to changing information service demands.

C.9.3 KEY PERSONNEL

The following positions are designated key personnel for this contract:

- Project Director
- Deputy Project Director
- Systems Manager
- Training Officer
- APDMS Manager

The Project Director must have the following experience, knowledge and skills:

- a. Experience in planning, budgeting, managing and evaluating all aspects of a multi-faceted information clearinghouse operation, including records management and institutional memory systems, as described in the RFP.
- b. Experience with A.I.D. or other development assistance programs, particularly technical assistance experience in supporting USAID Mission and LDC institution information center, library and clearinghouse operations.
- c. Working knowledge of Federal information policies, programs and acquisitions regulations, including A.I.D. regulations, as they apply to a U.S. Government-funded information clearinghouse operation.
- d. Working knowledge of information technologies and methodologies required to support information clearinghouse operations.
- e. Experience in directing research and development programs in information science technologies for use by developing countries.
- f. Familiarity with A.I.D. policies and programs on development, and specifically those directly affecting foreign assistance activities in development information.
- g. Familiarity with development information produced by A.I.D. and other donor organizations.

The Deputy Project Director must have the following experience, knowledge and skills:

- a. Experience in managing all aspects of daily information clearinghouse operations.
- b. Experience in performing requirements analysis, design and evaluation of development information programs, libraries and development information centers.
- c. Working knowledge of information technologies and methodologies required to support information clearinghouse operations, particularly database management systems for textual and library applications (i.e. Minisis), micrographics, desktop publishing and optical technologies.
- d. Working knowledge of Federal information policies, programs and acquisitions regulations, including A.I.D. regulations, as they apply to a U.S. Government-funded information clearinghouse operation.
- e. Familiarity with development information produced by A.I.D. and other donor organizations.
- f. Formal training in library or information management, M.L.S. or equivalent.

The Systems Manager must have the following experience, knowledge and skills:

- a. Experience in managing a staff of systems analysts and programmers.
- b. Experience as described in C.9.1 for systems development and systems support staff.
- c. Experience in providing technical assistance in the information sciences to developing countries, particularly USAID Mission or LDC institution library and information center operations.
- d. Experience in systems management of computer systems, with particular emphasis on Hewlett Packard 3000 minicomputer systems; Minisis, dBase III and Clipper database management software; Meridian CD Publisher; and Novell Local Area Networks.
- e. Formal training in computer sciences, B.S. or equivalent degree.

The APDMS Manager must have the following experience, knowledge and skills:

- a. Experience in planning, developing, managing and evaluating all aspects of an automated records management system for a highly decentralized organization.
- b. Experience in managing a decentralized staff of document preparation clerks and micrographics technicians.
- c. Experience in providing technical assistance in the information sciences to developing countries, particularly USAID Mission or LDC institution library and information center operations.
- d. Working knowledge of all technical and managerial aspects of microfilming and micrographics technologies, including industry (ANSI) and government (CFR, NIST, National Archives, A.I.D.) policies and standards requirements associated with this technology.
- e. Working knowledge of Federal policies and programs associated with the processing, storage, dissemination and destruction of paper, microfiche and electronic records maintained in U.S. Government records management and institutional memory systems.
- f. Working knowledge of Minisis database management software.
- g. Familiarity with all aspects of A.I.D. official project records, the A.I.D. organization and its records management program.

The Training Officer must have the following experience, knowledge and skills:

- a. Experience in planning, developing, managing and evaluating a training program for information systems, software, services and products.
 - b. Experience in developing a broad range of training aids for computer software, information systems and optical publications including workshops, seminars, brochures, users manuals, on-line and in-line software aids and tutorials, and audiovisuals, including presentation graphics and videotapes.
 - c. Experience in providing technical assistance in the information sciences to developing countries, particularly USAID Mission or LDC institution library and information center operations.
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- d. Experience with Minisis database management software.
- e. Formal training in library or information management, M.L.S. or equivalent degree.

Key personnel are considered to be essential to the work being performed under the contract. Prior to making any change or re-assignment in the key personnel, the contractor shall notify the contracting officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. The listing of key personnel may, with the consent of the contracting parties, be amended from time to time during the course of the contract to either add or delete personnel, as appropriate.

The contractor shall obtain A.I.D.'s approval to change the key personnel, or to continue the work hereunder during a continuous period in excess of three months without the participation of the approved key personnel. The contractor shall consult with A.I.D. if the key personnel plan to, or became aware that he/she will, devote substantially less effort to the work than anticipated in the Statement of Work. If A.I.D. determines that the reduction of effort would be so substantial as to impair the successful execution of the project, A.I.D. may request a change of key personnel, terminate the project or make any other appropriate modification to the contract.

C.9.4 SECURITY CLEARANCES

Security clearances (Secret level) will be required for those DIHF personnel who must have frequent contact with A.I.D. staff and/or frequent on-site work at A.I.D. and State Department offices.

Clearances will be obtained from A.I.D.'s Office of Security (IG/SEC) in accordance with procedures set forth in Handbook 6 and other agency regulations. Information can be obtained by calling (703) 875-4050.

C.10 FACILITY REQUIREMENT

The contractor will provide facilities, within a 50-mile radius of CDIE/DI offices in Rosslyn, VA, for the performance of A.I.D. Facility tasks described in this work statement.

The facility must be capable of providing two-hour priority special delivery of A.I.D. document or information materials to A.I.D. offices located in Washington, D.C. and Rosslyn, Virginia.

Technical proposals shall include information describing the offeror's proposed facilities including, at a minimum, the facility location and a floor plan (to scale) showing areas to be allotted to major DIHF functions, including:

- Project management
- Document processing
- Warehouse and inventory control
- User Services
- Training (DIS, MINISIS, CDS/ISIS, CD-DIS, and MicroDIS)
- Service evaluation and quality assurance
- Systems Support (Computer Operations, Wang Systems Administration, Local Area Network Administration, Minisis, CDS/ISIS and MicroDIS Support)
- Computer laboratory
- Micrographics
- Publications Support and Optical Publishing

The government reserves the right to inspect the offeror's facilities during a pre-award survey.

In selecting and planning an effective facility, offerors should locate all professional and support personnel and equipment at one central location with the exception of the filming activity for microfilming and warehouse operation, which can be located at a second site (within 50 miles of Rosslyn, VA).

The facility should accommodate the installation of all government-furnished equipment, which includes the hardware (and software, where applicable) listed below. A complete list of government-furnished equipment is available for inspection by all offerors in the exhibit described in attachment 2.

HP 3000 minicomputer system (HP 900 series minicomputer system after the HP 3000 system is upgraded); IBM PC or compatible 8088, 8086, 80286, 80386 microcomputers, and Wang-equivalent microcomputers; Meridian CD Publisher; optical scanners; CD-ROM disk drives; Novell local area network; terminals; line, daisy wheel, and laser printers, disk drives, tape drives, modems, other related minicomputer and microcomputer equipment and system support software.

TDC Imagescanner fiche-to-paper reproduction equipment; Minolta 5024 fiche-to-paper reproduction equipment; paper-to-paper reproduction equipment; and Consolidated Micrographics OP-2124 (Bruning OP-59) diazo microfiche duplicator.

The Facility contract should also provide a fire-safe vault, which is humidity- and temperature-controlled for the storage of master microfiche and publication negatives.

C.11 REPORTING

The contractor will develop and maintain a system for closely monitoring the progress of work under the contract and for generating periodic status reports. In satisfaction of this requirement, the contractor will submit the following reports which will provide data and statistics on all task activities:

C.11.1 FINANCIAL REPORTS

The contractor will document the expenditure of contract funds for all tasks in a monthly financial report which will be due no later than twenty (20) work days after the end of the calendar month. Each report will show expenditure of funds for the reporting period and the amount accumulative to date including the current reporting period. Separate reports will be submitted for operating expense-funded (MS/MO/PA/RM) and program-funded (PPC/CDIE/DI) activities.

Itemization of expenditure will be defined to the point that:

- a. Work performed by the contractor and subcontractors on each task along with amount of reimbursement for such work is identified;
- b. Subcontractors and consultants are identified when used; and,
- c. Work performed on each task bears a direct accountability relationship to reimbursement claimed and cumulative funds expended.

C.11.2 VOUCHERS

Two (2) reimbursement vouchers, one for operating expense-funded activities and one for program-funded activities, for all tasks performed under the contract will be submitted monthly. The operating expense voucher will reflect a separation of claims against MS/MO/PA/RM operating expense and other operating expense-funded activities. The program expense voucher will reflect a separation of claims against PPC/CDIE/DI program-funded activities and other program-funded activities.

C.11.3 MANAGEMENT REPORTS

The contractor will document the continuing progress and problems of the program and will provide that documentation in separate reports to MS/MO/PA/RM and PPC/CDIE/DI, for their respective portions of the contract, in the form of a monthly management report (5 copies each report). The report will be due twenty (20) work days after the end of the calendar month. As a minimum, the report will include:

- a. A narrative discussion of the progress and problems with implementation of each task.
- b. A separate accounting for work performed against operating expense funding (MS/MO/PA/RM and other activities) and a separate accounting for work performed against program funding (PPC/CDIE/DI and other activities) for each task.
- c. For MS/MO/PA/RM Only: A separate discussion of the work performed in each task and each work area within each task. For the purpose of this requirement, work area is defined as the office of work origin. For example, Africa Bureau is the work designation for the work associated with the filming of documents originated in the office AFR/PD.
- d. For MS/MO/PA/RM Only: Statistical data, both for the current reporting period and accumulative, for each work area, under each task. As a minimum, the statistical data will show:
 - (1) Documents processed for filming
 - (2) Documents sent for filming
 - (3) Documents filmed
 - (4) Frame count
 - (5) Fiche count
 - (6) Rejected fiche
 - (7) Box count
 - (8) Fiche duplication production count
 - (9) Duplicate fiche distribution - A.I.D./W
 - (10) Duplicate fiche distribution - overseas.
- e. For MS/MO/PA/RM Only: Data on overseas microfiche distribution. A cumulative and monthly total for data on this activity shall be provided. The report shall specify at a minimum for each order:
 - (1) Purchase order number
 - (2) Date received
 - (3) Date order mailed
 - (4) Cost of order
 - (5) Number of sets and fiche ordered.

f. For PPC/CDIE/DI Only: For all phases and task areas of the contract, the monthly report will include, but not be limited to, all accomplishments for the month just completed, problems encountered in the last month with solutions found or proposed, significant events initiated or continued during the month and statistical tables for monthly processing totals in each task area of the contract. (A sample report is included in the list of exhibits.)

C.11.4 ADDITIONAL REQUIRED REPORTS

C.11.4.1 QUALITY ASSURANCE REPORTS

The contractor will submit 5 copies of the monthly quality assurance report on the 15th day after each quarter to PPC/CDIE/DI beginning with the fourth month of the contract.

C.11.4.2 SERVICE EVALUATION REPORTS

The contractor will submit 5 copies of the semi-annual service evaluation report to PPC/CDIE/DI beginning with the sixth month of the contract.

C.11.4.3 IMPLEMENTATION PLAN

Two weeks after the award the contractor will provide an oral presentation and subsequently submit 10 copies of a detailed written Implementation Plan and Schedule to PPC/CDIE/DI for A.I.D. review and approval. The plan and schedule will cover all tasks in the contract and will include detailed plans for (a) conducting the study of alternatives to micrographic systems and (b) upgrading the DIHF minicomputer system.

A final revised plan will be presented by the end of month 2 of the contract.

C.11.4.4 SYSTEMS MANUAL AND OPERATIONS MANUAL

In month sixty the contractor shall provide A.I.D. with 10 copies of the revised Systems Manual and Operations Manual for use by A.I.D. personnel and contractor staff in operating the A.I.D. Facility information system and functional task areas. Draft sections of the manuals will be submitted to PPC/CDIE/DI as they are completed for review and approval before incorporating in this manual.

C.11.4.5 ANNUAL REPORTS AND FINAL REPORT

The contractor will submit 10 copies of an annual report in months thirteen, twenty-five, thirty-seven, and forty-nine and a final report to PPC/CDIE/DI at the end of month sixty of the contract. The reports will include a summary of the achievements, problems and solutions found, strengths and weaknesses of the A.I.D. Facility program. The reports will include statistical summaries of the contractor's output in the various activities of the DIHF.

C.11.5 TRANSMITTAL AND DELIVERY OF REPORTS

The contractor shall submit all MS/MO/PA/RM reports required under the contract to:

Mailing Address: Melita Yearwood
MS/MO/PA/RM
Rm. 1200B, SA-14
Agency for International Development
Washington, D.C. 20523-1413

Building Address: Melita Yearwood
1100 Wilson Blvd.
Rm. 1200B
Agency for International Development
Arlington, Va 22209

The contractor shall submit all PPC/CDIE/DI and general A.I.D./DIHF contract reports and other contract deliverables (unless otherwise specified) to:

Mailing Address: Lee White
PPC/CDIE/DI
Room 209, SA-18
Agency for International Development
Washington, D.C. 20523-1802

Building Address: Lee White
1601 N. Kent Street
Room 209E
Agency for International Development
Arlington, Va 22209

C.11.6 DELIVERABLES SCHEDULE

Deliverable ItemsDeliverables Due

C.11.6.1.	Proposed Plan & Schedule	
C.11.6.1.1.	Implementation Plan Report (5 copies)	Draft due one month after contract award. Final due end of month 2.
C.11.6.1.2.	Study of Alternatives to Micrographic Systems (5 copies written and oral reports)	
	Study Plan	Due end of month 2.
	Draft Report	Due 4 months from acceptance of study plan.
	Final Report	Due two weeks after receipt of A.I.D. comments. Updated annually.
C.11.6.2	Systems Manual	
C.11.6.2.1.	Draft sections (5 copies)	Due as revised.
C.11.6.2.2.	Final Systems Manual (10 copies)	Due month 60.
C.11.6.3.	Operations Manual	
C.11.6.3.1	Draft Sections (5 copies)	Due as revised.
C.11.6.3.2	Final Operations Manual (10 copies)	Due month 60.
C.11.6.4	Non-Subject Authority Files	
C.11.6.4.1	Draft version (5 copies)	Due as completed or revised.
C.11.6.4.2	Final Listing (5 copies)	"
C.11.6.4.3	On-Line Authority Files	"
C.11.6.5	Thesaurus of A.I.D. Descriptors	
C.11.6.5.1	Final version of Thesaurus (100 copies).	Due months 12, 24, 36, 48, and 60.
C.11.6.5.2.	Final version of USAID Classification Scheme (100 copies)	Due months 12, 24, 36, 48, and 60.

C.11.6.6 Publications

C.11.6.6.1.	Draft Copy for ARDA (3 copies)	Due quarterly, beginning month 1.
C.11.6.6.2	Printed editions of ARDA (4,500 copies)	Due quarterly beginning month 1.
C.11.6.6.3	Desktop published and printed Current Awareness Products or Special Bibliographies, and Listings (1,000 copies).	Two each year.
C.11.6.6.4	Desktop published and printed Acquisitions Lists (1000 copies) Technical Acquisitions (monthly) Project Acquisitions (bimonthly) Evaluation Acquisitions (quarterly)	22 each year.
C.11.6.6.5	USAID Development Information Center Manual (100 copies)	One per year.
C.11.6.6.6	MicroDIS Users Manuals (100 copies English, 50 copies Spanish, 50 copies French)	One per year.
C.11.6.6.7	A.I.D. Thesaurus (100 copies)	One per year.
C.11.6.6.8	PPC/CDIE Briefing Portfolio (1000 copies)	One per year.
C.11.6.6.9	PPC/CDIE Annual Report (500 Copies)	Due months 3, 15, 27, 39, and 51.
C.11.6.6.10	PPC/CDIE Publications Catalog (1000 copies)	Due months 4, 16, 28, 40, and 52.
C.11.6.6.11	WID Newsletter (2000 copies)	Three times per year to be specified.
C.11.6.6.12	R&RS New This Month	Due each month.
C.11.6.6.13	R&RS Current Contents (average 330 copies per topical issue)	Due quarterly.
C.11.6.6.14	R&RS Monthly Requests and Responses (2625 copies)	Due monthly.
C.11.6.6.15	DIS System Update (50 copies)	Due as required.
C.11.6.7	Computer-Readable Magnetic Tape copies of all master files, with documentation (1 copy)	One per year.

- C.11.6.8 Program Management & Operations
- C.11.6.8.1 Monthly Management Report (5 copies) Due within 20 days after the end of each month.
 - C.11.6.8.2 Annual Report (10 Copies) Due months 13, 25, 37, and 49 of contract.
- C.11.6.9 Computer-Readable Magnetic Tapes and Documents for Input to NTIS. (1 copy) Due quarterly beginning with month 3 of the contract.
- C.11.6.10 Service Evaluation Reports (5 copies) Due every six months beginning with first day of month 6.
- C.11.6.11 Quality Assurance Reports (5 copies) Due every three months beginning with 15th day of month 4.
- C.11.6.12 Final Report (10 copies) Due in month 60 of the contract.
- C.11.6.13 COM Indexes (25 copies) Due in months 4, 16, 28, 40, and 52 of the contract.
- C.11.6.14 CD-RDM Products (200 copies) Due quarterly beginning month 3 of the contract
- C.11.6.15 MicroDIS Software (100 copies) Due annually or as software is modified, whichever is sooner.
- C.11.6.16 Mailing Labels (125 sets, 400 labels per set) Due as required.
- C.11.6.17 Computer applications software developed to support Facility operations and information systems applications under the scope of work. Due annually or as software is modified, whichever is sooner.

C.12 DATA AND SOFTWARE RIGHTS

A.I.D. retains all data and software rights for the following materials provided by A.I.D. to the contractor or produced/created by the contractor with A.I.D. funding during the course of the contract:

- a. All A.I.D. project files, program/project documents, publications, technical reports, research studies, microfiche, video tapes, electronic/optical databases, computer software and other development information materials, including resources and technologies from external non-A.I.D. sources, which have either been (1) produced by A.I.D., (2) generated through A.I.D. - funding, or (3) provided to A.I.D. by external organizations for the sole use of A.I.D. and its development assistance programs.
- b. All micrographics products (including master, silver inter-negative and diazo microfiche and COM), electronic databases, optical disks, publication products (including bibliographies, acquisitions lists, newsletters, brochures, catalogs, journals and bulletins), reports, studies, training aids, manuals, computer software programs, mailing lists abstracts, development thesauri and classification systems which have been developed or produced by the contractor with A.I.D. funds.

A.I.D. will provide the contractor with specific guidance and direction regarding the receipt, handling, access, copying, reproduction, storage, dissemination, and/or destruction of the above materials during the course of the contract.

Attachment 1

ESTIMATED WORKLOAD MEASURES
AND VOLUMES OF ACTIVITY FOR THE A.I.D. FACILITY

	Estimated Number
1. Existing A.I.D. Files (As of 3/31/90)	
1.1 Documents on file in DIS	65,400
1.2 Projects on file in DIS	9,200
1.3 Serials on file in DIS	1,330
1.4 Documents on file in Inventory database	26,550
1.5 Addresses on file in Recipient database	10,160
1.6 Documents to be processed in warehouse (includes Inventory database documents)	28,570
1.7 Hard copies of archival and bulk quantity documents in warehouse	
PPC/CDIE	161,000
MS/MO/PA/RM	28,000
1.8 Back issues of ARDA in warehouse	2,600
1.9 Microfiche copies of documents	
Masters (PPC/CDIE)	105,000
Silver inter-negatives (PPC/CDIE)	105,000
Diazo duplicates (PPC/CDIE) at DIHF	105,000
Masters (MS/MO/PA/RM)	203,219
Silver inter-negatives (MS/MO/PA/RM)	203,219
Diazo Duplicates (MS/MO/PA/RM) at DIHF	203,219
Diazo Duplicates in A.I.D. offices (MS/MO/PA/RM)	566,631
1.10 Documents on file in Catalog database	4,530
1.11 Corporate authors on Institutional file	6,420
1.12 Documents on file in Bank database	2,260
1.13 Documents on file in WID database. (Approximately 250 titles will be added in FY 90) by CDIE/DI's R&RS contractor)	0

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Attachment 1
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1.14	Audiovisuals on file in Audiovisual database	200
1.15	Documents on file in Classified Index Database	2,800
1.16	Documents on file in APDMS databases	
	Africa Bureau	52,462
	Asia/Near East/Europe Bureau	42,029
	Latin America/Caribbean Bureau	18,280
	Science/Technology Bureau	23,193
	Procurement Support Division	45,162
	Loan Management Division	14,184
2.	Materials for Processing	
2.1	New development projects identified per year	200
2.2	Retrospective development projects identified per year	100
2.3	Research, evaluation and institutional activities per year	300
2.4	New or modified institution addresses for Recipients database each year	250
2.5	High priority A.I.D. technical reports (PN) acquired and fully cataloged per year	2,500
2.6	High priority A.I.D. project-level documents (PD) acquired and fully cataloged per year	2,500
2.7	Number of projects, research, evaluation, and institutional activities, and documents abstracted.	1,800
2.8	Number of edited author-prepared abstracts per year	250
2.9	Low priority A.I.D. documents (PDs and PNs) processed on Inventory database per year	2,500
2.10	Number of documents indexed per year	5,000
2.11	Number of projects indexed per year	300
2.12	Number of research, evaluation and institutional activities indexed per year	300

Attachment 1
(Continued)

2.13	Number of audiovisuals indexed per year	500
2.14	Numbers of document and project records reindexed per year	250
2.15	Number of proposed A.I.D. Thesaurus changes per year	150
2.16	Number of audiovisuals cataloged per year	500
2.17	Number of new corporate authority entries per year	150
3.	Microfilming	
3.1	Uncopyrighted documents to be micro-filmed per year (DIS - 86 pages per average document)	5,000
3.2	Sets of master negative microfiche per document (DIS and APDMS)	2
3.3	Sets of diazo copies on microfiche (DIS) per year - (8 sets of project documents [PD], and 14 sets of technical reports [PN])	22
3.4	Sets of diazo copies on microfiche (APDMS) per year	3
3.5	Single diazo copies of microfiche per year (A.I.D./DIHF User Services)	5,000
3.6	APDMS documents to be microfilmed and indexed per year (23 pages per average document).	
	Fiscal Year 91	26,500
	Fiscal Year 92, 93, 94, 95	25,000
	Africa Bureau	5,200
	Asia/Near East/Europe Bureau	4,900
	Latin America/Caribbean Bureau	3,200
	Science & Tech Bureau (FY 91)	6,500
	Science & Tech Bureau (FY 92, 93, 94, 95)	5,000
	Procurement Support Division	5,500
	Loan Management Division	1,200

Attachment 1
(Continued)

3.7 Optional Task: APDMS documents to be
microfilmed and indexed, FY 91 - FY 95 totals
(23 pages per average document)

OFFICE/ BUREAU	<u>FY91</u>	<u>FY92</u>	<u>FY93</u>	<u>FY94</u>	<u>FY95</u>	<u>TOTAL</u>
FVA	36,000	7,600	8,600	5,000	5,000	62,200
PPC	15,000	3,500	3,500	3,500	3,500	29,000
PRE	10,000	2,500	2,500	2,500	2,500	20,000
DFDA	6,000	1,500	1,500	1,500	1,500	12,000

4. Publications

4.1	Printed copies of ARDA, per quarterly issue	4,500
4.2	Abstracts appearing in ARDA per year	400
4.3	Special bibliographies per year	2
4.4	Copies of special bibliographies, per issue	1,000
4.5	Acquisition lists per year.	22
4.6	Copies of acquisitions lists, per issue	1,000
4.7	Copies of USAID Development Information Center Manual per year	100
4.8	Copies of MicroDIS Users Manuals per year	
	English	100
	French	50
	Spanish	50
4.9	Copies of A.I.D. Thesaurus per year	100
4.10	Copies of PPC/CDIE Briefing Portfolio per year	1,000
4.11	Copies of PPC/CDIE Annual Report per year	500
4.12	Copies of PPC/CDIE Publications Catalog per year (23 pages) (new product)	1,000
4.13	Copies of WID Newsletter (printing only) per year (6 pages) (new product)	6,000
4.14	R&RS New This Month (printing only) per year	5,000

4.15	R&RS Current Contents Economics and General Development, (printing only) per year	5,250
4.16	R&RS Monthly Requests and Responses per year (printing only)	31,500
4.17	DIS System Update per year (as required)	100
4.18	CD-DIS CD-ROM user materials per year (25 pages) (new product)	200
5.	Document Distribution	
5.1	Single diazo copies of microfiche per year (see 3.5 above).	5,000
5.2	Reproduction of paper copy documents, number of documents @ 50 pages/document (Number of pages/year: 1,250,000)	25,000
5.3	Pull, pack and ship shelf-copy documents and publications, per year	15,000
5.4	Number of on-demand documents requested per year (microfiche, shelf stock, paper reproductions)	
	Priority I requests	33,000
	Priority II requests	3,500
	Priority III requests	11,500
5.5	Sets of diazo copies of microfiche distributed (DIS) (see 3.3 above).	22
5.6	Copies of ARDA, bulk distribution per quarterly issue.	4,500
5.7	Copies of bibliographies, bulk distribution per year (see 4.3 and 4.4 above).	2,000
5.8	Copies of acquisition lists, bulk distribution, per year	22,000
5.9	Copies of other document titles requiring bulk distribution per year (e.g. CDIE Publications, R&RS Monthly Requests and Responses, Population Publications and Journals, CDIE Publications Catalog, WID Newsletter, R&RS Newsletter, R&RS New This Month, R&RS Current Contents (Economics and General Development) and Miscellaneous Documents).	80,000

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(Continued)

5.10	Mailing label sets per year (400 labels per set)	125
5.11	One copy of each A.I.D. report cited in ARDA sent to NTIS	400
6.	Operate the Information System	
6.1	A.I.D. staff usage of the A.I.D./DIHF on-line searching system (connect hours per year)	16,000
6.2	A.I.D. staff requirements for dial-in ports on DIHF minicomputer system	20
6.3	Disk Space Requirements (Megabytes)	2,280
6.4	Off-line printing requirement, lines	15 million
6.5	Copies of annual computer-output-microfiche (COM) indexes	25
6.6	Copies of quarterly CD-DIS CD-ROM optical disks per year. (new product)	200
6.7	MicroDIS Software	100
7.	Training and User Awareness	
7.1	DIS user training courses per year	12
7.2	A.I.D. Facility briefings per year	12
7.3	User awareness announcements per year	6
7.4	Minisis User Meeting attendance per year	1
7.5	Training and Outreach Materials (copies per year)	
	DIS Training Manual	100
	MicroDIS/MenuDIS/CD-DIS Training Aids	100
	DIS/MicroDIS/MenuDIS Brochures/Flyers	100
	Evaluation/Feedback Forms	2,000
	A.I.D./DIHF Briefing Packets	100
	APDMS Brochure and Manual	50

ATTACHMENT 2

FUNCTIONAL REQUIREMENTS OF THE A.I.D. FACILITY

1. Computer-Based Information Processing System

In order to support the information management and dissemination functions of the A.I.D. Facility, the computer-based systems must be capable of:

- 1.1 Defining, creating, manipulating, and maintaining (data entry, text editing, etc.) large project, bibliographic, records management, requester and research activity data files which include textual field lengths of up to 64,000 characters.
- 1.2 Supporting various database applications -- documents, projects, institutions, individuals, mailing lists, evaluations, audio-visuals, research activities, authority files, thesaurus/index terms -- through a single access mechanism.
- 1.3 Accepting on-line input and data entry to create new records or to modify existing records, including appropriate prompting, formatting, and editing features.
- 1.4 Providing on-line validation of selected data elements against subject and non-subject authority files.
- 1.5 Providing on-line access to all files by the contractor's staff and by remote users to A.I.D. office facilities in the Washington, DC area; providing a high-level, user-friendly retrieval language and a menu-oriented interface that is easily learned.
- 1.6 Providing searching and retrieval capabilities for subjects, institutions, individuals, types of materials, geographic areas, and combinations of these; satisfying retrieval strategies based on Boolean logic for searchable fields and free text.

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(Continued)

- 1.7 Providing on-line support for the maintenance of the A.I.D. Thesaurus, USAID classification scheme, and non-subject authority files; providing on-line update and query of these files.
- 1.8 Linking the A.I.D. Thesaurus to formerly used index terms and subject codes that are in the A.I.D. database.
- 1.9 Generating periodic and cumulative indexes required for A.I.D. secondary publications.
- 1.10 Producing printed database products, manuals, users guides and secondary, current awareness publications using desktop publishing.
- 1.11 Producing reports and database products (printouts, COM and CD-ROM) in various formats as needed for bibliographies, acquisition lists, project listings, current awareness outputs, dissemination of electronic databases, and other database products distributed to users.
- 1.12 Providing checking functions to prevent duplicate ordering of development materials and duplicate processing of records.
- 1.13 Tracking and on-line status checking of individual documents through all steps from ordering, acquisition, cataloging, abstracting, indexing, database entry, and microfilming.
- 1.14 Creating headers and labels for master microfiche negatives.
- 1.15 Producing transmitted tapes in various formats for use as input to other information storage and retrieval systems.
- 1.16 Providing regular and special management reports on workload status, quality control, and production activities.
- 1.17 Receiving and loading database exchange tapes from other information storage and retrieval systems.

ATTACHMENT 2
(Continued)

2. Document Storage and Distribution

In order to provide development information to LDC institutions and other users, the document storage and distribution functions of the A.I.D. Facility must be capable of:

- 2.1 Creating microfiche master negatives in accordance with CFR, ANSI, and GSA standards.
- 2.2 Producing single diazo copies of microfiche; duplicating the entire microfiche collection -- or large portions of the collection -- as needed.
- 2.3 Locating, retrieving, and refiling for individual documents used to fulfill requests.
- 2.4 Fulfilling individual requests for single and multiple copies of documents (hard-copy and microfiche).
- 2.5 Fulfilling standing orders for microfiche.
- 2.6 Receiving publications in large quantities and providing for bulk mailing and distribution.
- 2.7 Ascertaining a requester's qualification to receive development materials free or without charge.
- 2.8 Providing environmental controls and physical protection for the storage and distribution of microfiche and documents in accordance with ANSI standards.
- 2.9 Inventory and warehouse control for the document collection and any prestocked items.
- 2.10 Shelving for documents of varying dimensions and ranging in length from a few unbound pages to multi-volume books with perfect binding.

APPENDIX E

AED CONTRACT STATEMENT OF WORK

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SECTION C

DESCRIPTION/SPECS./WORK STATEMENT

Research and Reference Services (R&RS)

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- C.3.1 Type and Format of Packages
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Attachment 2 Research & Reference Service Exhibits List

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SECTION C

STATEMENT OF WORK

C.1. BACKGROUND

C.1.1 INTRODUCTION AND PURPOSE

The Development Information Division (CDIE/DI), within A.I.D.'s Center for Development Information and Evaluation (CDIE), is responsible for capturing, organizing, processing, and disseminating A.I.D.-generated technical and experiential development information. CDIE/DI's activities enhance A.I.D.'s capabilities to utilize and transfer information to further economic and social progress in the developing countries (LDCs) of the world.

The purpose of this contract is to provide a Research and Reference Services mechanism for transferring A.I.D.-generated, A.I.D.-funded and selective non-A.I.D. information to the development community. This community consists of A.I.D.'s field missions (USAID) and their LDC counterparts; A.I.D./Washington (A.I.D./W) technical specialists, researchers, project designers, evaluators, and implementers; A.I.D. Contractors and grantees; A.I.D.-funded private and voluntary organizations (PVOs); institutions and individuals in developing countries; international and national organizations and institutions active in development and development research; and the general public with interests in development.

C.1.2 SCOPE OF WORK - An Overview

The Contractor will provide a service capability responsible for a) providing information services to USAID missions and staff, and other members of the development community; b) retrieving information and data from A.I.D. and external sources; c) preparing information responses, analyses, and syntheses for requestors; d) compiling bibliographies on topics of current interest; e) providing selective dissemination of information; f) assisting in A.I.D.-supported research efforts; g) acquiring, organizing, developing, and maintaining A.I.D. and non-A.I.D. document resources relevant to the needs of CDIE's user community and housed in the A.I.D. Development Information Center; h) operating, maintaining, and fulfilling user service requests at the A.I.D. Development Information Center; i) developing an outreach program to promote the CDIE/DI development information program; j) evaluating the R&RS

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program to maintain a quality service and identify new service initiatives; k) providing technical assistance to A.I.D./Washington Bureaus and Offices, USAID Missions, and LDC institutions on the development of library systems and research, reference and acquisitions services programs.

The government estimates that about 24 persons (full-time equivalent) per year are required to perform the tasks described in this work statement. This estimate is for advisory purposes only and is not to be considered a requirement.

C.2 RESPONDING TO REQUESTS FOR INFORMATION

The contractor will perform all tasks necessary in fulfilling requests for information, including receipt and analysis of requests; analysis of information resources; database, library and institutional research; consultation with technical and program experts; filtering, interpreting and synthesizing response information; documentation identification; referral; and communications with users, follow-up and evaluation feedback. The objectives of these tasks are to furnish requesters the information or services required, refer requestors to a more appropriate source, or confer with CDIE/DI on reasons why a request cannot be filled.

C.2.1 RECEIPT OF REQUESTS

The contractor will provide personnel to receive and log-in all incoming requests utilizing standard CDIE/DI-approved request processing forms and procedures. CDIE/DI will provide automated system support (excluding data entry services, as necessary) to process and provide statistics on completed request forms. The contractor will examine incoming requests to determine response times for each category of requestor, and shall also determine requestors' eligibility to receive free services and products. (CDIE/DI will provide response time and eligibility policies and guidelines.)

C.2.2 ANALYSIS OF REQUESTS

The contractor will fully analyze requests to determine (1) the completeness of information provided by the requester, (2) the actual needs of the requestor, (3) the amount of research required to fulfill the request, (4) the most appropriate sources of information needed to fulfill the request, (5) the relevancy of information retrieved through searching efforts, and (6) the selection of relevant information for transmittal to the requestor.

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C.2.3 DATABASE SEARCHING

The contractor shall search computerized bibliographic and non-bibliographic databases, in order to retrieve information relevant to the needs of requestors.

The contractor's personnel shall use CDIE/DI's Development Information System (DIS), utilizing the MINISIS database management software language, which provides access to information on A.I.D.-sponsored projects, R&D reports and other A.I.D. development literature. They shall also be required to search other A.I.D. institutional memory database resources to access additional A.I.D. project management, contract management, economic and statistical data information systems. CDIE/DI will provide the necessary access, including computer equipment and training for these systems.

The contractor shall search other non-A.I.D. database systems, as needed, including:

- On-line commercial vendor systems, such as DIALOG, BRS, ORBIT, OCLC, Nexis/Lexis, and Dun & Bradstreet Credit Service;

- Commercial CD-ROM products, such as POPLINE, ERIC, Agricola, CAB Abstracts and TROPAG;

- International development organization information systems, such as the International Development Research Centre (IDRC), International Labour Organization (ILO), and the World Bank; and,

- Other U.S. government agency on-line systems, including NLM's MEDLARS system.

User accounts, purchases and/or exchange agreements for accessing these resources will be established and/or paid for by CDIE/DI.

The contractor shall provide the necessary training to keep the proposed staff current in the latest search techniques, costs, user accounting techniques, strategies and database services and resources available from these non-A.I.D. sources.

C.2.4 MANUAL SEARCHES

In preparing responses to inquiries, the contractor shall use, as necessary, non-computerized retrieval and information sources -- bibliographies, abstract journals, reference works, indexes, etc. The contractor shall also perform manual searches of the A.I.D. Development Information Center materials utilizing the card catalog.

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C.2.5 RELATIONSHIPS WITH OTHER ORGANIZATIONS

The contractor will be required to develop effective relationships with other organizations having information resources relevant to development and to call upon these organizations for assistance, as necessary. The contractor will also consult A.I.D. and A.I.D. contractor technical and program experts, as required, to request support in responding to information requests of a highly technical nature or requiring extensive overseas development experience.

C.3 INFORMATION PACKAGES

The contractor shall prepare information packages that are responsive to a particular request.

C.3.1 TYPE AND FORMAT OF PACKAGES

A wide variety of custom-made information products will be required in responding to requests. Information packages will consist of appropriate analyzed and synthesized development experience and/or technical information; reviewed and selected relevant computer print-outs, electronic files and database subsets, bibliographies, custom-made directories and listings, documents, audiovisuals; and other similar materials for transmittal to requestors. The contractor shall prepare suitable transmittal letters and memos, cables, etc. following format guidelines provided by CDIE/DI. Offerors are invited to review file copy exhibits of typical information products, which indicate the substantive knowledge and the level of analysis required in the research and reference function.

C.3.2 ANALYSIS OF REQUEST PATTERNS

The contractor shall make recommendations to CDIE/DI regarding information packages, products, and services that, based on patterns of persistent or strong requestor interest, should be created to fulfill anticipated future needs. Upon approval by CDIE/DI, the contractor shall perform the information services necessary to develop these materials.

C.3.3 DOCUMENT DISTRIBUTION

The contractor shall perform all tasks necessary to identify documents that fulfill requestor requirements and shall make arrangements for document copies to be provided to users. For this task, the contractor shall:

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1. Generate orders and forward these to the A.I.D. Document and Information Handling Facility (DIHF), which has capabilities for providing hard copy reproduction and microfiche-duplication. As appropriate, documents will be forwarded to the requestor by the contractor or by the DIHF.
2. When necessary, reproduce documents held by other information facilities and forward these directly to the requestor.
3. Perform approximately 3,800 Inter-Library Loan (ILL) tasks per year in order to obtain documents required by requestors, but not available in CDIE/DI. This will entail identifying appropriate sources for needed documents via searches of OCLC files, and from knowledge of organizations having specialized development-related resources. CDIE/DI will provide support for all costs associated with OCLC ILL services. Of the 3,800 ILL requests, process and reimburse libraries for about 2,300 inter-library loan purchases from the R&RS contract acquisitions budget.
4. Draw upon other sources used by CDIE/DI including, but not limited to, NTIS, The World Bank, IDRC, A.I.D. contractors, and other federal agencies and development organizations, etc.

C.4 OPERATION OF THE A.I.D. DEVELOPMENT INFORMATION CENTER

The Contractor shall operate and maintain the A.I.D. Development Information Center (DIC). The DIC will be a development resource center which will serve as an Agency forum to stimulate the exchange of views on development concepts and issues, and to provide a central site for conducting and sharing intellectual research on current development themes. Contractor's approach to designing the center's program and operating the facility, must keep in mind the following tasks:

1. Maintaining, weeding and developing the hardcopy and microfiche document resources collection.
2. Maintaining DI's retrieval card catalogues.
3. Maintaining DI's A.I.D. and non-A.I.D. serials collection resources.
4. Maintaining and developing the reference collection resources.

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5. Circulating about 2,000 development materials per year to A.I.D. staff and maintaining library loan circulation and serials control cardex systems.

6. Making recommendations to the CDIE/DI Research and Reference Services Coordinator regarding acquisitions of specific reference tools, reports, serials, databases, audiovisuals, information technologies and other services and items that will enhance the quality of CDIE/DI's resources and services.

7. Acquiring approximately 1,250 non-A.I.D. development materials per year (including reference materials, monographs, optical disks, audiovisuals, electronic media, journals, gifts, WID publications, and other donor and development organization documents) for addition to the library collection. In addition, acquiring and maintaining approximately 250 A.I.D. and non-A.I.D. serial publications per year. This responsibility includes all tasks including, but not limited to, identifying relevant material, duplicate checking, document ordering and purchase, document tracking and claiming, invoice payment, accounting and management reporting.

The Contractor should assume total expenditures for acquisitions to be \$81,000 annually which includes \$6,000 for WID publications purchased. All purchases must be approved by the CDIE/DI Research and Reference Coordinator. WID publication purchases must also be approved by PPC/WID.

8. Fully cataloging about 700 non-A.I.D. commercial publications, 200 gift development materials 250 other donor organizations reports and 100 WID publications each year via the OCLC system or on the A.I.D. Facility databases. Also, fully cataloging approximately 250 A.I.D. classified reports and 100 new A.I.D. and non-A.I.D. serial publications on the A.I.D. Facility databases each year.

9. Providing library service and reference functions in response to walk-in and telephone information requests. Responding to approximately 6000 reference requests per year.

10. Generating, maintaining and reporting library walk-in, reference, inter-library loan and other service statistics not maintained through the CDIE/DI service request system.

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11. Coordinating and obtaining approval for all library operational and procedural changes with the CDIE/DI Research and Reference Services Coordinator.

Recommending refinements in existing research, reference and library operating procedures whenever such refinements are justified by operational experience. Any changes in existing procedures for which the contractor is directly responsible shall be documented on a continuing basis.

A new integrated library system will automate certain clerical activities of the Document Information Center. Therefore, the Contractor should assume total expenditures for equipment maintenance of this system to be \$3,000 annually.

12. Developing, maintaining, and updating CDIE/DI's services procedures manual following guidelines and procedures established by CDIE/DI.

13. Developing and coordinating CDIE/DI workshops, seminars, and training sessions sponsored by the development resource center, including participation in the A.I.D. orientation, project design, project implementation, and Development Studies Program training courses.

C.5 OUTREACH AND DISSEMINATION SERVICES

The contractor shall provide the services of an outreach/dissemination analyst to organize and evaluate the development and implementation of the CDIE/DI outreach and training program, to promote CDIE products, services, resources, and technical assistance support capabilities. The contractor shall periodically appraise the need to increase the potential requestors' awareness of services. In performing this task, the contractor shall propose (for approval by CDIE/DI), develop, and implement feasible methods of outreach, user education, and promotion to enhance and expand CDIE/DI's development information program.

In conducting this task, the contractor will, at a minimum, perform the following outreach/dissemination activities:

Prepare a monthly Requests and Responses bulletin, which highlights a sample of information services provided by the R&RS contract during the month to A.I.D. Bureaus, Offices, and Missions.

Prepare a monthly New This Month bulletin, which announces newly acquired development publications and resources which are relevant to A.I.D.'s current development programs and which are available on loan from the A.I.D. DIC.

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Prepare three issues per year of a WID (Women in Development) newsletter as a current awareness bulletin which identifies and informs A.I.D/Washington, USAID Mission, LDC institution, and development counterpart staff of new WID information resources which are available to the development community.

Prepare approximately four topical, quarterly current contents bulletins as a current awareness service to A.I.D. Bureau, Office, and Mission staff for keeping abreast of the latest publications in their development field.

Prepare, correlate, and disseminate monthly selected dissemination of information (SDI) bulletins in approximately 25 different topical areas. The contractor will compose the bulletins from commercial database searches. Each topical bulletin will be disseminated to approximately 25 SDI subscribers.

The first three information dissemination products will be composed by the R&RS contractor using desktop publishing equipment and software (Ventura). The first four products will be printed and distributed by the A.I.D. Facility (DIHF) contractor; the last product (SDI) will be printed by A.I.D. and distributed by the R&RS contractor.

C.6 TECHNICAL ASSISTANCE

The Contractor shall be prepared to perform special technical assistance projects for A.I.D..

C.6.1 Library Systems

The contractor shall provide technical assistance in analyzing, designing, and developing information centers/libraries and information programs for A.I.D. projects, USAID missions, A.I.D.-generated or -supported information networks, and LDC institution programs and networks.

The Contractor should assume that this task will require 3 trips per year (2 persons, 7 days per trip) to USAID Mission overseas sites. For budgetting purposes, travel to San Jose, Costa Rica, Nairobi, Kenya, and Bangkok, Thailand have been selected. The Contractor should use the amount of \$19,000 annually as total expenditures for overseas travel, transportation and per diem.

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C.6.2 Research and Reference

The contractor shall provide about 700 customized research and reference services per year for A.I.D. bureaus and their respective overseas Missions. These services will be performed by teams serving each of three regional bureaus. The teams will work at A.I.D. facilities in Rosslyn, VA, and at the State Department, Washington, DC.

C.6.3 Acquisitions

The contractor will be responsible for acquiring approximately 2,500 A.I.D. project and program documents (PD) and 2,500 A.I.D.-funded or -supported technical reports and research studies (PN) per year. These documents and reports will have been published in the last five years. In addition, 2500 retrospective A.I.D. project documents (PD) and technical reports (PN) which have been published over five years ago will be acquired each year. The contractor will also acquire 250 A.I.D. classified documents per year and 500 completed audiovisual report forms of A.I.D. multi-media materials. With the exception of the A.I.D. classified documents, materials which are acquired will be forwarded to the CDIE/DI Facility (DIHF) contractor for cataloging and technical processing into the PPC/CDIE-sponsored database systems. These items and classes of materials will include, but not be limited to:

- a. A.I.D. project design reports and project proposals.
- b. A.I.D. program/project evaluations and audit reports.
- c. A.I.D. policy and program documents.
- d. Selected A.I.D. project implementation documents, e.g. progress reports, annual reports, etc.
- e. Major technical and research reports prepared by or for A.I.D.
- f. Descriptions of project, evaluation, and research activities for A.I.D.-funded development activities.
- g. Well-defined classes of A.I.D. audiovisual, CD-ROM, and electronic-media development materials.

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The contractor will develop and use pro-active mechanisms for the identification of and acquisition of materials meeting the selection criteria provided by PPC/CDIE/DI. The sources to be used by the contractor include, but are not limited, to the following:

- a. A.I.D. Project Documentation Management System (APDMS) databases.
- b. A.I.D./W offices responsible for the production and/or distribution of program, project, and technical documentation.
- c. USAID Overseas missions. Missions are to be contacted only with PPC/CDIE/DI concurrence. Missions are to be contacted only after A.I.D./W sources have been contacted and have proved to be unable to supply the needed materials.
- d. A.I.D. contractors and organizations receiving funding by A.I.D.
- e. Agency contract mechanisms and procedures established to require PPC/CDIE/DI receipt of contractor-produced publications.
- f. PPC/CDIE-database systems managed by CDIE/DI's DIHF contractor. These systems will include, but not be limited to, the DIS system.
- g. Project tracking systems managed by A.I.D. offices and project tracking reports generated by such offices.
- h. Central A.I.D. project reporting and tracking database systems.
- i. Central A.I.D. contract reporting database systems, e.g. COORS, CIMS and listings of A.I.D. contractors or contracts.
- j. Publications lists and bibliographies produced by A.I.D. contractors and organizations receiving funding from A.I.D.
- k. A.I.D.-funded newsletters.
- l. A.I.D. periodicals, such as Frontlines.

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- m. Lists of A.I.D. development projects for which all relevant documents are to be acquired - project papers, proposals, design reports, progress reports, evaluation reports, audit reports, etc. (It is estimated that an average of five project-related documents will be acquired for each development project).
- n. Non-A.I.D. bibliographic databases covering areas in which A.I.D. is active. Such databases may include, but not be limited to, ERIC, NTIS, and POPLINE.
- o. A.I.D. printing shop.
- p. FM/FM Flash Reports.
- q. A.I.D./W Bureau project/program assistance implementation reports, annual budget submissions, country development strategy statements, action plans and congressional presentations.
- r. A.I.D. project portfolio reviews.
- s. A.I.D.-funded clearinghouses.

PPC/CDIE/DI will provide selection and prioritization guidelines for the contractor. The contractor's employees may be required to exercise professional judgement in determining which specific items meet these guidelines.

Under the direction of PPC/CDIE/DI, the contractor shall develop and produce outreach products designed to describe PPC/CDIE/DI acquisitions needs to sources of A.I.D.-sponsored materials.

When A.I.D. reports on development materials are illegible or defective and cannot be adequately microfiched, maintained or duplicated, the contractor shall attempt to acquire a more legible or better quality copy of the development material from the generating source.

The contractor shall develop methods for statistically analyzing acquisitions from the A.I.D. print shop, A.I.D./W Bureaus, and other sources, e.g. percentages of total receipts, timeliness of receipts, numbers of documents by document type, country and/or region and major subject, etc. Appropriate analysis will be performed on a periodic basis.

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C.6.4 Technical Assistance Options

A.I.D. anticipates a significant expansion of its technical assistance requirements during the contract. The expanded technical assistance tasks may require the contractor to increase the project staffing, assigning additional personnel in each of the labor categories proposed for the contract.

The Contractor should assume that this expansion could increase the basic cost of the contract by an additional 20% per year. The contractor will perform these new technical assistance tasks at cost rates negotiated in the basic contract. The priced-contract option will be exercised as technical assistance tasks are defined and executed by CDIE/DI and other Agency offices in Washington and overseas. Only the actual direct costs, indirect costs and fixed fee costs associated with each new technical assistance task (exercised through this option) shall be due the contractor by A.I.D. The Contractor should use the amount of \$9,500 annually as total expenditures for overseas travel, transportation and per diem.

C.7 PARTICIPATION IN A.I.D. COMMITTEE

The contractor shall provide a representative to serve as a participating member of the CDIE/DI advisory committee which meets as required to discuss technical, organizational, informational, program, and service issues and problems on a periodic basis with CDIE/DI and the A.I.D./Washington Bureau representatives.

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C.8 PERSONNEL REQUIREMENTS

C.8.1 SKILLS REQUIRED

The following categories of personnel are required to perform the tasks described in the work statement:

- Project director, manager
- Research and dissemination analysts
- Research Assistants
- Program Assistant/Dissemination
- Librarians (reference and acquisitions)
- Library technicians
- Computer specialist
- Clerical and administrative assistants
- Cataloger

The contractor's personnel must be knowledgeable about the information needs of the development community and about the identification, assessment, selection, and organization of information for development purposes.

The contractor shall provide personnel having skills in database searching as well as knowledge of the relevant fields and disciplines encountered in development.

Research analysts must have advanced degrees or equivalent work experience in International Relations or a related field in international development, with emphasis on development assistance. They should be familiar with the organization and operation of A.I.D. Previous development assistance experience is desirable. Foreign language capability, especially in French and Spanish, is desirable. Research analysts proposed under this contract should have experience in one of three major sectoral areas and as a group should have experience in all three sectoral areas:

- Economic and private sector development;
- Food and agriculture, rural development, natural resources and environment; or
- Human resource development including health, nutrition, population, and education.

Researchers should also be skilled in the following areas:

- Ability to perform research in a quick-response mode and synthesize research findings.
- Ability to evaluate and select development information materials.
- Ability to interview requestors to better interpret their requirements.

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Researchers should have the following technical knowledge:

- Experience in working with information systems, including: on-line database searching, CD-ROM applications searching, knowledge of MINISIS software, and working knowledge of such databases as MEDLINE, POPLINE, AGRICOLA, ERIC, NTIS, AND TROPAG.
- Experience with personal computing: specifically Word Perfect and Lotus 1-2-3.

The Contractor should be prepared to submit samples of the research and writing skills of the proposed researchers, if requested.

Research Assistants and the Program Assistant/Dissemination must have at a minimum a B.A./B.S. degree.

Librarians and catalogers must have a minimum of an M.L.S. degree or equivalent work experience. Knowledge of the operation of A.I.D. and other development assistance programs is desirable. Previous development work experience is desirable. Knowledge of national/international development materials and sources is mandatory. Cataloger experience with AACR2 cataloging guidelines is mandatory.

Librarians and catalogers should also be skilled in the following areas:

- Ability to evaluate and select development information materials.
- Experience in interviewing requestors to determine their information requirements.
- Experience on a reference desk. (Reference Staff)
- Experience in training patrons in the use of library resources.
- Database searching (DIALOG, BRS, Dun & Bradstreet, etc.).
- OCLC. (Cataloger and ILL technician.)
- CD-ROM technology.
- Microcomputer applications.
- MINISIS software.

The Computer Specialist must be skilled in the following areas:

- Microcomputer and local area network skills.
- Programming experience, including DBase III and Lotus 1-2-3, particularly experience with computerized library management systems.
- Experience in staff training.

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C.8.2 CROSS-TRAINING

The Contractor's research, library, reference and information specialist professional staff should be capable of performing and supporting each other's work functions to respond to changing work load conditions, shifting job priorities and program emphasis, and to backstop short-staffed research and reference services areas, as required. It is extremely important that the proposed professional staff be "interchangeable" to allow A.I.D. maximum management flexibility to respond to changing information service demands.

C.8.3 KEY PERSONNEL

The individuals filling the following positions are designated key personnel:

<u>Key Position</u>	<u>Name of Individual</u>
Project Director	<u>Linda J. Leonard</u>
Senior Research Analyst	<u>Mark H. Bidus</u>
Supervisory Librarian	<u>Jeanne D. Tifft</u>
Dissemination Analyst	<u>John Stiver</u>

The Project Director shall have demonstrated:

- Experience in managing a multi-disciplinary team of information specialists.
- Previous development experience with A.I.D. or other development assistance programs.
- Experience in the field of information management.
- Experience in developing and managing project budgets.
- Skills in group presentations and marketing.
- Knowledge of computerized systems, including such technologies as CD-ROM, electronic networking, and local area networking.

The Senior Research Analyst shall have demonstrated:

- All of the skills and experience required for research analysts set forth in Section C.8.1. above.
- Ability to provide oral briefings to prospective users and to promote the services of the unit.
- Experience in managing/supervising a multi-disciplinary team of research analysts.

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The Supervisory Librarian shall have demonstrated:

- Experience in providing oral briefings to small groups.
- All of the skills and experience required for librarians set forth in Section C.8.1. above.
- Experience in managing/supervising a team of librarians and catalogers.

The Dissemination Analyst shall have demonstrated:

- Experience in editing.
- Skills in desktop publishing.
- Ability to write clearly and effectively in order to prepare information packages and other correspondence.
- Experience with microcomputer systems.

Key personnel are considered to be essential to the work being performed under the contract. Prior to making any change or re-assignment in the key personnel, the contractor shall notify the contracting officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. The listing of key personnel may, with the consent of the contracting parties, be amended from time to time during the course of the contract to either add or delete personnel, as appropriate.

The contractor shall obtain A.I.D.'s approval to change the key personnel, or to continue the work hereunder during a continuous period in excess of three months without the participation of the approved key personnel. The contractor shall consult with A.I.D. if the key personnel plan to, or became aware that he/she will, devote substantially less effort to the work than anticipated in the Statement of Work. If A.I.D. determines that the reduction of effort would be so substantial as to impair the successful execution of the project, A.I.D. may request a change of key personnel, terminate the project or make any other appropriate modification to the contract.

C.8.4 SECURITY CLEARANCES

A security clearance (Secret level) is required for all research and reference personnel who answer inquiries or who maintain the document and development materials resources. Clearances will be obtained from A.I.D.'s Office of Security (IG/SEC) in accordance with procedures set forth in Handbook 6 and other agency regulations. Information can be obtained by calling (703) 875-4050.

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C.9 REPORTING

The Contractor shall submit a weekly narrative report (5 copies) which summarizes and highlights significant information response packages completed during the week. This report will be used to prepare the weekly CDIE/DI report to CDIE.

The contractor shall submit a monthly management report (5 copies) which summarizes all accomplishments for the month just completed, problems encountered in the last month with solutions found or proposed, significant events initiated or continued during the month and statistical tables for monthly processing totals in each service category of the contract. The report will also include significant trends in the number and types of requestors, services provided, response times, service request backlogs, and sources used with examples of the most significant and unusual requests. The contractor will be responsible for generating and maintaining all service statistics associated with the R&RS service. Computer support for maintaining statistics will be provided by CDIE/DI's DIHF contractor, as required.

The contractor shall submit a monthly financial report (5 copies) covering the expenditures of contract funds for the reporting period and the amount cumulative-to-date including the current reporting period. Itemization of the expenditures will be defined to the point that work shown as performed in the monthly management reports will bear a direct accountability relationship to reimbursement claimed and cumulative funds expended.

The contractor will retain one copy each of all written correspondence transmitted to requestors. If a request is received as written correspondence, a copy of the original request shall be attached to copy of the Contractor's response.

The contractor shall submit an annual report (10 copies) which will summarize the achievements, shortfalls, problems and recommended solutions, evaluation of the contract work to date and proposed plans for the remainder of the contract. The annual report will contain appropriate statistical summaries of each service area of the contract.

All reports shall be submitted to the Project Officer, Research and Reference Services Contract, Agency for International Development, PPC/CDIE/DI, Room 209, SA-18, Washington, D.C. 20523-1802.

C.10 QUALITY CONTROL

The contractor shall continually perform quality control functions by reviewing the selection of materials, information, or data for their relevance and sufficiency to the respective request.

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A.I.D. will monitor the contractor's performance in selecting relevant material and in meeting the specified response times for requestors by reviewing the monthly management reports, and holding quarterly and annual management review meetings. The Contractor will be responsible for preparing appropriate briefing materials for the management review meetings which demonstrate the quality level of information response packages and the response time and backlog level by user category.

C.11 EVALUATION

There will be an evaluation of the Research and Reference Services contract beginning at the end of the thirty-sixth month after the contract award and as otherwise deemed appropriate by A.I.D. throughout the performance of the contract.

C.12. GOVERNMENT-FURNISHED EQUIPMENT, ASSISTANCE, AND TRAINING

C.12.1 EQUIPMENT

CDIE/DI plans to furnish facilities and equipment, which the contractor will use in providing research and reference services, including the following:

1. Office space and furniture
2. CRT-type computer terminals
3. Word processing stations
4. Microfiche reader/printers
5. Accounts with outside database vendors, electronic communications vendors, and document/development material providers, and service organizations.
6. Photocopying equipment
7. Microcomputer equipment and software
8. Desktop publishing equipment and software

The contractor shall establish and maintain a maintenance schedule for all government-furnished equipment used in providing research and reference services. The initial list will be developed in conjunction with the COTR. The contractor shall, as necessary, arrange service calls for said equipment which will be funded under existing A.I.D.-arranged service agreements.

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C.12.2 ASSISTANCE AND TRAINING

CDIE/DI will provide training in the use of A.I.D.'s Development Information System (DIS) and any other training pertaining to A.I.D. resources and operations as deemed relevant by CDIE/DI. CDIE/DI will not provide training in the searching of other online databases.

The A.I.D. Document and Information Handling Facility (DIHF) will provide the contractor with all required document and information handling support services, including user services for A.I.D. publications and reports (in print, hardcopy blowback and microfiche), computer support services (on-line database access, computer listings, etc.), training, thesaurus support, microfilming, document processing, and systems development and maintenance (DIS and related-databases).

After the initial A.I.D.-provided training, the contractor's staff will be required to maintain a high level of proficiency in operating these systems and to provide its own systems analysis support or diagnostics in maintaining its operation of these systems.

C.12.3 FACILITIES

A.I.D. will provide furnished offices for the contractor's use in performing the research and reference functions required by CDIE/DI. These government-furnished facilities are located in Rosslyn, VA, and the State Department, Washington, DC.

Activities are to be performed on an on-site and off-site basis during A.I.D.'s normal working hours, Monday through Friday (excluding holidays), between 8:45 am and 5:30 pm.

CDIE/DI will not provide parking for contractor personnel.

C.13 TECHNICAL DIRECTION

Performance of the work hereunder shall be subject to the technical directions provided by the CDIE/DI project officer. As used herein, "Technical Directions" are directions to the contractor which fill in details, suggest possible lines of inquiry, or, otherwise complete the general scope of the work. "Technical Directions" must be within the terms of this contract and shall not change or modify the terms in any way.

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Attachment 1

RESEARCH & REFERENCE SERVICE WORKLOAD MEASURES

ACTIVITY TOTAL PER YEAR

RESEARCH & REFERENCE SERVICE EVENTS

Circulation	2,000
Interlibrary Loans	3,800
Reference	6,000
Current Awareness Updates (Total SDI's distributed)	2,200
Tailored Information Packages (TIP's)	700
Technical Assistance TDYs	6

OUTREACH/DISSEMINATION

Monthly Request and Responses Bulletin	12
"New This Month" Bulletin	12
Women in Development Newsletter	3
Quarterly Topical Current Contents Bulletin	4
Selected Dissemination of Information (SDI) Bulletin (25 topical SDI Bulletins per month)	300
Development Resource Center Workshops	6
Development Information Training Sessions (as part of various A.I.D. training courses)	6
A.I.D. Development Information Center Briefings	6
Research and Reference Service Briefings	6
Evaluation/Feedback Forms (sent with TIP's)	700

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Attachment 1
(Continued)

ACTIVITY TOTAL PER YEAR

ACQUISITIONS

Current A.I.D. documents published during
last five years.

* A.I.D. -funded and -supported technical reports	2,500
* A.I.D. program and project documents	2,500

Retrospective A.I.D. documents published over five years ago	2,500
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A.I.D. classified documents	250
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Audiovisual reports forms for new and retrospective A.I.D. -produced or -sponsored audiovisual materials	500
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Commercial publications and serials (purchased)	700
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Gift development materials received and retained	200
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Other donor organization reports	250
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WID publications and reports purchased/received	100
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A.I.D. and non-A.I.D. serial publications (free and purchased)	250
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Inter-library loan purchases	2,300
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CATALOGING

A.I.D. classified documents	250
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Non-A.I.D. documents including commercial publications, gifts, other donor organization materials, WID materials, reference materials, etc.	1,250
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New serial publications (A.I.D. and non-A.I.D.)	100
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APPENDIX F

CONCORDANCE BETWEEN SECTIONS OF DISC CONTRACT
AND OPERATIONS ANALYSIS FINAL REPORT

<u>SOW Section</u>	<u>Report Section(s)</u>
<i>DISC Contract</i>	
C.3	4.3
C.3.1	4.3.1
C.3.2	4.3.2
C.3.3	4.3.3
C.3.4	4.3.3
C.3.5	4.3.4
C.3.6	4.3.5
C.3.7	4.3.6
C.3.7.1	4.3.6.1
C.3.7.2	4.3.6.2
C.4	4.4
C.4.1	4.4.1
C.4.2	4.4.2
C.5	4.5
C.5.1	4.5.1
C.5.2	4.5.2
C.5.3	4.5.3
C.5.3.1	4.5.3.1
C.5.3.2	4.5.3.2
C.6	4.6
C.7	4.7
C.7.1	4.7.1
C.7.2	4.7.2
C.7.3	4.7.3
C.7.4	4.7.4
C.7.5	4.7.5
C.8	4.8
C.8.1	4.8.1
C.8.2	4.8.2
C.8.3	4.8.3
C.8.4	4.8.4
C.8.5	4.2, 4.8.5

APPENDIX G

POSITION DESCRIPTION FOR PROJECT ADMINISTRATOR

Position: Project Administrator (full-time salaried position)

Supervisor: Project Director

Responsibilities:

1. Assists the Project Director (PD), Deputy Project Director (DPD), and DISC supervisors in scheduling and tracking progress of ongoing and special-assignment tasks. Provides current and cumulative information to LTS and A.I.D. management regarding actual or projected costs of performing each contract task, both through regular reports and on an ad hoc basis. Works closely with the SDG Manager in defining and documenting new task assignments and establishing the framework for tracking task progress.
2. At the PD's direction, formulates, plans, and helps prepare cost/benefit analyses of alternative procedures or technologies to those currently being used.
3. Applies information obtained from the CDIE MIS where appropriate
4. Coordinates with the LTS Contracts Officer in planning and monitoring contract financial matters, primarily to obtain information required for items 1 and 2 or to provide information required by the LTS Contracts Officer for financial accounting purposes.
5. Participates in LTS supervisory staff meetings.
6. As appropriate, participates in project or task planning meetings with A.I.D and other contractor staff.

Qualifications:

1. BS/BA and MBA.
2. Two or more years of experience, preferably in an administrative capacity with a contract research or services organization.

Qualifications (cont.):

3. Experience using computer spreadsheets and word-processing packages; general knowledge and experience with computer applications software, including project planning, budgeting, scheduling, and management; graphics presentation; and statistical analysis tools.
4. Familiarity with clearinghouse, library, database development and operation, and related automation technologies highly desirable.
5. Excellent written and oral communication skills.

APPENDIX H

REQUIREMENTS OF A QUALITY ASSURANCE PLAN

"'Quality,' like 'value,' is an elusive concept. Being an abstraction, it defines quantification under an absolute set of conditions, yet everyone seems to understand the word when it's used."¹

The terms "quality control," "quality assurance," and "quality engineering" have become nearly synonymous in everyday use. Although the ultimate goal of quality assurance is *control*, in classical industrial engineering parlance, quality assurance is performed *independent* of quality control. "Quality control" consists of the built-in, day-to-day checks on quality in a process in accordance with established procedures and against established standards. "Quality assurance" is performed on a periodic (rather than ongoing) basis by someone removed from the day-to-day operations of the process. The person responsible for QA attempts to impersonate the customer and define a set of criteria that emulate the customer's use of a product or service. These criteria become the system test parameters, which the product/service must demonstrate.

In an ideal environment, the QA person would establish the performance criteria in conjunction with program managers and supervisors before a process is initiated. As a practical matter in the case of the DISC, the criteria would have to be established *ex post facto*. The criteria can be adjusted as necessary in response to actual user feedback.

Although the QA concept was originally applied to manufacturing processes, it has been applied successfully to information processing and clearinghouse activities as well, including abstracting, indexing, and a variety of related services. It has also been applied extensively to the design and development of computer programs. Following are three examples of the distinction between QC and QA in terms of DISC operations:

- Specifications for microfiche might include inter-frame spacing tolerance, resolution, and density; these would be checked as part of the day-to-day *QC* function. The *QA* specialist, emulating the user, would examine blowbacks from a sample of fiche and judge whether or not it was legible.
- In indexing a document, day-to-day *QC* functions might include a check on whether the number of terms assigned was within the range required, whether the terms were appropriate, and whether any important terms were omitted. The *QA* function would attempt to judge whether documents known to be in the system could be retrieved using the search terms a user would select without knowledge of which terms had been assigned.

¹Ridge, W.J. and Johnson, L.E., How to control costs and improve profits through the effective management of computer software, Dow Jones-Irwin, Inc., Homewood, IL, 1973, p. 141.

- In developing a computer program, *QC* functions might include checks on conformance with initial specifications, coding efficiency, absence of bugs, etc. The *QA* function would examine the original objectives of the program and, emulating the intended user, determine whether it performed the desired functions in a reasonable amount of time with a user-friendly interface.

The QA function has become a highly specialized skill; for this reason, and to ensure that the criteria are unbiased, use of an external consultant to design the QA program is strongly recommended. Once established, periodic QA reviews can be performed in accordance with the plan either by the consultant or by a suitably informed internal LTS person *not* assigned to the DISC project.