

ISP CORPORATE SYSTEMS ROLLOUT AND TRAINING PLAN

Final Report: March 15, 1995



Office of Information Resources Management
U.S. Agency for International Development

PREFACE

This documentation was for the planning purposes of ISP system rollout and training. It was developed as a working document to collect all the requirements, objectives and implementation activities. During the planning process, all options, alternatives and analyses were recorded. As we progress in the planning, we have refined the proposal and made collective decisions on many of the ISP system issues. The initial discussions included all options. Some have been eliminated through the subsequent ISP planning process. Therefore, some of the options discussed in the first few sections of this document may not match exactly a final solution recommended in the last section.

The details of the rollout planning process are currently being developed. Meanwhile, this document stands as a completed document. Further implementation information will not be updated in it.

The information regarding training in this plan was preliminary since it was gathered before the training resources were allocated. In November 1994, the HR Training Division was assigned the responsibility to develop a detailed ISP/Reengineering training plan, and coordinate the necessary training efforts. This plan was submitted to the Training Division as a framework. The Training Division has the discretion to use any or none of the recommendations to develop their training plan.

EXECUTIVE SUMMARY

In the last two years AID has restructured the organization to focus on sustainable development, and launched reinvention of the business operations to concentrate in effective management of development programs and projects emphasizing results and performance. In 1992, IRM conducted a comprehensive information management and technology study and developed the Information Systems Plan (ISP), to systematically modernize Agency information systems. Development of the systems identified in the ISP started in 1993. IRM has organized the business area analyses, culminated in the design of new systems to provide information for business management. IRM is building the telecommunications infrastructure, client/server platform, database architecture, network management planning, standard hardware and software configuration, and preparation for system implementation.

This rollout plan identifies the requirements and dependencies for system implementation. It evaluates the current preparation process for rollout. It seeks to address the critical success factors and the critical path that will lead to precise implementation. It presents options for a successful rollout to pave the way for long term support. The plan reviews the requirements for enduser and systems administrator training. It compiles the input from the business area project managers and IRM staff, presenting the results of a cost analysis, and a framework for a coherent training strategy.

Washington rollout is scheduled to begin by May 31, 1995. IRM recommends the full suite of thirteen applications be rolled out as one integrated system to the missions. The planned completion date for mission rollout is August 31, 1995. This schedule will allow the missions staff receive the necessary training to be familiar with the system. The integrated system will be officially operational by October 1, 1995.

This plan presents two options for rollout and systems administrators training. Option I suggests giving five installation conferences at selected regional centers. Missions will send systems administrators for training at the conferences. They will return to install the system at their own missions. IRM technical staffs will only provide assistance when the missions are unable to install the system successfully. Option II provides for IRM technical staff to travel to all sites and provide installation and on-site training for systems administrators. This option is recommended because it will enable all missions to have direct on-site support. This option is the low cost alternative.

This plan advocates an integrated training approach. It reviews the scope of training, covering both the new business processes resulting from business operations reinvention and utilization of the new system. Training options in this plan were presented at a project managers meeting in November 1994. An initial decision was reached at this meeting by the project managers, the Training Division and IRM to adopt a "Train the Trainers" option at selected regional training centers. The training center selection criteria are to be determined.

The current schedule provides for the Washington training in June and July, with the mission training in August and September 1995. Resources for instructors may be drawn from skilled personnel in the functional business areas. Contractor assistance will be required in the design of the training courses. A detailed training plan is being developed by the Training Division.

The rollout schedule, telecommunications architecture, development system configuration, a detailed cost analysis and resource requirements of the rollout options and preliminary training options are reviewed in the appendices.

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I. Background

The rapid changes in information technology and an increasingly competitive environment have motivated organizations to reengineer their operations to provide better services more effectively. The National Performance Review (NPR) has called for improved government at lower cost. To help shape the outcome of NPR, Administrator J. Brian Atwood has offered USAID as a NPR reengineering lab. Recognizing the needs to meet new challenges he has redefined the mission of the agency on sustainable development, using integrated approaches to promote development in democracy, environment, global economic growth and the provision of humanitarian assistance. These strategies led the agency to reengineer the business operations to focus on results, business process innovation, and the development of new management systems. USAID has been active and remains a leader in reengineering government.

IRM Director Barry Goldberg has advocated reengineering information technology and management at USAID using the Information Engineering model of the Information Systems Plan, Business Area Analysis and Rapid Application Development. A steering committee, consisting of senior managers of the major functional business areas in the Agency, conducted a comprehensive review of information management requirements. This led to a five-year strategic Information Systems Plan (ISP) to develop a suite of integrated systems and the infrastructure to support all USAID business functions.

The ISP outlined new strategies and methodologies for the Agency in information management, systems, technology, and organizational structures. These include moving to open systems client/server architecture; building a worldwide telecommunications infrastructure; creating a corporate database; and developing a suite of integrated application software standardized by a common user interface sharing the corporate database.

The Agency and Management Bureau have supported the ISP and initiated a business process reengineering in the major functional business areas: core accounting; procurement management; budgeting; operations management; property management; human resources management; guidance and communications management. A preliminary set of application software supporting four of the eight business areas, is being developed. Human Resources began their business area analysis in November 1994. Property Management business area analysis is scheduled to start in April 1995.

Currently, IRM is working in conjunction with AWACS, Acquisition and Assistance, Budget, and Operations Business Areas at the third stage of Information Engineering, the development of integrated corporate systems. Extensive involvement of the business areas

to define the organizational requirements and design the systems has ensured that the corporate systems are engineered around basic business functions. As a result, these systems cut across traditional organizational boundaries to increase the efficiency of the overall organization.

By October 1995, the Version I of the corporate systems, the initial thirteen applications, will be completed. These applications will be implemented in the Washington offices and many missions worldwide, with varying levels of configurations and capacities. The targeted date to complete rollout and training of Version I of the ISP is October 31, 1995.

The sheer magnitude of this rollout and training project; the extremely aggressive schedule; and the geographically dispersed locations with users of varying levels of occupational expertise will add to the complexities to this project. Coordination and communication among the Business Areas is absolutely critical for the success of this agency-wide initiative. Consistent with the development of ISP and Business Area Analysis, IRM has been designated the facilitator of the coordination and communication effort for corporate systems development, rollout and training. Representatives from the Business Areas, the Training Department and IRM coordinators have formed a team to develop a consolidated rollout and training strategy.

II. Purpose

The purpose of this plan is to develop a consolidated strategy for ISP Corporate Systems rollout. This plan covers two related functions: the rollout of the integrated systems and the training of users to effectively utilize these systems.

III. Objectives

1. The primary objectives for the systems rollout plan are:

- Identify the system dependencies for a smooth rollout
- Define what has been accomplished so far to meet these dependencies
- Identify the events that still need to happen before rollout
- Distinguish the options for installations
- Identify the personnel and budget requirements for each option
- Facilitate the consensus in the selection of a final option
- Develop a schedule for rollout to minimize dependency conflicts and maximize resource sharing

2. The major objectives for the training plan are:

- Specify the scope and scheduling for training
- Identify the trainees for each system
- Develop the approach and media for training
- Determine the resource requirements and budgets
- Develop a schedule to ensure key users are trained before the systems are placed into production.

IV. Assumptions

- The rollout and training plan will be based on the current delivery schedule presented to Larry Byrne on August 15, 1994. If the code delivery schedule is changed by the development teams, the rollout plan will be modified accordingly.

- The business areas should decide the functions necessary for Version I delivery, scheduled for October 1, 1995. Functions not achievable by October 1995 and enhancements from users' feedback from Version I may be incorporated into Version II along with Human Resources and Property Management systems. This version could be scheduled for installation approximately six months after the first version.

V. Dependencies

A smooth rollout and transition depend on timely code delivery of quality products, seamless integration of all the modules, hardware and software architecture and telecommunications infrastructure planning, a highly precise installation, and just-in-time training. Meticulous coordination and planning are intrinsic requirements to accomplish successful installation and training in six months.

- **Management Support.** The support of senior management in all functional areas made it possible for the development of the agency wide corporate systems that will streamline the processes and reduce the redundancies. It is crucial to have continuing management support from senior managers in USAID Washington and the mission directors across the agency.
- **Technical Architecture.** The AID Technical Architecture defines the technology infrastructure (hardware, software, telecommunications, standards, and procedures) needed to implement requisites identified in the first phase of the ISP development. The architecture must be global and scalable.
- **Non-Unix sites solution.** The non-Unix sites currently do not have an adequate infrastructure to support the planned new systems. A decision must be reached for implementation at these sites. One key element of this solution is to determine which missions each application system will be distributed to and how much data will reside at these missions. A capacity study should be done to ensure sites that have Unix machines will have the capacity in their configurations to meet systems requirements.
- **Telecommunications Infrastructure.** Telecommunications infrastructure and adequate network bandwidth to handle extra traffic generated by the new systems should be in place in time for the system rollout.

Increasing bandwidth capacity among USAID/Missions and USAID/W must be accomplished through arrangements with DTS-PO and use of other alternatives, if required. Effective routing of traffic between USAID/Missions and USAID/W must be accomplished by a redesign of the USAID/W's international hub through the use of routing technology.

■ **Hardware and Software Requirements** - The current Sun SPARC configuration at the missions were bought with the requirements for only the MACS application. Baseline hardware and software configurations for the ISP integrated systems must be determined. (See Appendix Q. PC Configuration for ISP Systems). A hardware and software upgrade plan should be prepared and implemented at all installation sites. IPA, SDM and TCO have the responsibility for this segment. Current network, client, and server configuration at ISP production as well as application development environment are depicted in the Appendices.

■ **Database Design.** The same application software should work at any location in USAID/W and the missions. This would reduce the number of programmers required to build and maintain the system, as well as allowing effective data sharing among locations and organizations. Code and databases will be tightly controlled through configuration management.

■ **Data migration.** Where the historical data is indispensable in the system operation, data migration should be completed before the cut over to the new systems.

■ **Documentation.** Detailed reference manuals need to be prepared for user reference after rollout and training are completed. The business area development teams are developing these reference manuals along with the software codes.

■ **Code Delivery.** The rollout schedule is based on the code delivery schedule and other inter-dependencies among the systems. (See Appendix M. Business System Dependency between Business Areas. This table is being updated at the time of submission of this final draft.) Potential delays of code delivery and codes that fails quality assurance will increase risks for timely rollout of the integrated systems.

■ **Systems Integration.** The solution to current data redundancy and information re-keying is the well-designed corporate data shared by many applications. A seamless integration depends on compatibility among the systems. System integration tests should be conducted in the interoperability lab with all the applications previously installed on standard configurations at missions and/or Washington to eliminate compatibility problems. The applications will have to meet the acceptance criteria set by the testing group before the systems can be promoted to Quality Assurance through Configuration Management. A measurement system is necessary to flag unacceptable products deviating from the acceptance criteria.

A smooth rollout relies on the quality of the systems. A Quality Assurance team should produce the quality measurement reports generated from system assurance tests. These tests should be conducted throughout the product cycle by the quality assurance team, independent of unit tests or the integration tests. The Quality Assurance clearance should be the last certification required in the product cycle before systems are signed off by the management.

■ **Security.** The architecture must fully support data confidentiality, comply with federal security regulations, and be upgradable to higher levels of classification if that becomes necessary. The database must contain security levels for access.

■ **Communication before rollout.** User communications should start before rollout and training. An overview of ISP corporate systems including prototype screens may be provided to USAID Washington and missions utilizing newsletters, video tapes, CD-ROMs, Listservs, or site visits by developers, functional specialists, and technical staffs.

These dependencies must be met before the rollout. Teams of IRM staff as well as the business area personnel are working on the solutions. (See Section VIII. Preparation for rollout.)

VI. Implementation Considerations

A. Rollout

■ Concurrent system vs. phased system rollout -- Concurrent rollout would roll out all the applications in an integrated system at the same time. It would require more preparation time and delay rollout for some of the systems, which are ahead of the schedule in development. Since the systems are tested longer for system integration in the interoperability lab, it allows thorough compatibility testing before rollout. Concurrent system rollout is more appropriate for the missions. Phased systems rollout would roll out the systems as the systems development and testing is completed in three or four phases. Phased system rollout does provide easier problem isolation and determination for programmers; if the system is only rolled out to a limited number of adjacent sites. The phased system rollout would be more feasible in Washington.

■ Schedule -- The initial 13 corporate systems are the budget, acquisition, core accounting and operations systems. Most of these systems run on a fiscal year cycle. The most logical time for use of the new system is at the beginning of the fiscal year. October 1, 1995 is a natural choice. The legacy systems will be closed out from September 1994 through 1997 (See Appendix A. Closing Legacy Systems). A period of parallel processing may be required for some of the applications. Selecting a slow time for system usage will minimize the disruptions of users' normal functions. Late afternoons and weekends are usually better for installation and maintenance. The time required for installation can be shortened by teaming up the installation personnel. Well-trained personnel in cooperation with site personnel can reduce preparation and system down-time for installation.

■ Local support -- The installations will be more efficient if the local controllers, systems administrators or other support persons do some preparation work for the installation team. Before the teams are sent out, the installation team should send a checklist of hardware/software requirements to the local support persons and verify compliance. The checklist will help to ensure the mission is well prepared for the installation and all required preparation procedures have been completed prior to the installation team arrival.

■ Installation -- The number of technical personnel available for installation is an important factor to consider. Installation staff should be identified and trained before rollout. To shorten trips and speed up the installations, pre-installed software

configurations could be stored on high capacity storage media, CD-ROMs, tapes, and/or diskettes for fast retrieval and installation at the sites.

- Cost -- Multiple installations per TDY at two or three adjacent sites within a one to two weeks period may be the most cost effective solution. The goal is to maximize the number of installations per trip and minimize travel cost.
- Coexistence of new and old systems -- The old systems may need to coexist with the new systems for a few months. For a smooth transition it is necessary to insure that Washington and the missions have adequate capacity to keep both systems on-line and provide acceptable performance.

B. Training

- **Scope**

The training includes providing necessary instruction to both Washington and mission personnel in functional business processes as well as providing the personnel with the skills to do their work on the new integrated corporate systems. Key elements are the new business processes, concepts of corporate systems and corporate database, including the procedures to use the new systems. This is not only computer training. It involves training the employees the full range of how the agency conducts its business.

- **Audience**

- **End users**

The majority of the trainees will be the end users, who conceptualize, strategize, plan actions, design and implement projects. They generate, access, and retrieve the data to produce the required financial transactions, budget allocations, clearances, reports, and other necessary outputs. By the most conservative estimation, 70% of the total USAID professional and office support personnel will be affected by some aspect of the thirteen applications. The number of people to be trained will be determined by the business areas decision in each of the locations the systems and databases will be distributed.

- **Systems administrator training**

Systems administrators should receive instructions before the end user training begins. The systems administrators will be trained in the standard systems configurations and maintenance procedures and database administration. Systems administrators may function as local support and assist in the preparation for training. The systems administrators can help shorten lead-time requirements by setting up training rooms, work stations, and configuration requirements for training.

- **ISP coordinators** -- Two or three functional area specialists per mission will need to be trained as local support. Additional training in Unix, Oracle, and functional aprocesses can be given to these ISP coordinators. These coordinators can be a local skill base in the functional application systems. They can be the first line of support to the missions.

- **Resources for training**

- **Instruction**

- Functional Business Area personnel
- It is assumed that training is going to be done by in-house and outside contracted staff.

- **Training materials**

- Training curriculum
- Computer based training modules
- Student texts and workbooks
- Simulated database for CBT
- Quick reference cards

- **Training Environment** -- A few training options are available to minimize disruptions to users' normal functions. One is to utilize a separate training environment from the production environment. A training configuration identical to the standard production configuration currently used in Washington and the missions would be built. Training software and a simulated database would be loaded on the training configuration for testing. After the training modules are tested they can be

used in Washington or deployed to the missions. The simulated training database would be loaded on Washington and missions hardware so that students could not accidentally erase important production data. The production database would still be available for normal business, if already installed. This training configuration should be transportable, allowing the instructors to move it to the training sites, as required.

- Costs for regional, missions or "train-the-trainers" approaches should be evaluated. See Section IX. Rollout Alternatives. Costs for contractors can be significantly higher, since contractors cannot use the agency-negotiated rates offered by Carlson Travel. Overtime costs for contractors may be significant.

- The decision has been made that the training is going to be integrated training across BAs.

VII. Input From The Business Areas

The business areas have viewed the ISP and the integrated system as an excellent opportunity to update their business processes; make their users jobs easier; and to support the business functions. IRM is committed to facilitating this shared vision to fruition. The business areas have individually provided IRM with valuable input for this rollout and training plan.

■ AWACS Business Area

Memo Dated August 31, 1994, suggested the following:

The key implementation dates planned are:

9/30/94 AR and LS will be implemented in USAID/W (GL2 must be implemented on or before this date).

12/31/94 AP and Funds Distribution will be implemented in USAID/W

3/31/95 Cost Accumulation will be implemented in USAID/W

9/30/95 Implementation of AWACS in overseas missions will begin. This will be completed by 10/31/95 (by 10 teams of four people each going to four missions during a four week period.)

The training schedule is predicted to be as follows:

9/94 AR and OS acceptance test training

10/94 AR and LS production training (for those not trained in September)

12/94 AP and Funds Distribution training for acceptance testing

1/95--3/95 AP and Funds Distribution training for those using these modules, but not trained in December

7/95--8/95 AWACS training of overseas personnel in USAID/W for HL, consultation, other training, etc.

10/95 AWACS training of mission personnel (FM and non-FM personnel)

Estimated number of users in Washington

USDH in FM	160
Contractors in FM	30

Non-FM staff -- similar to A&A's list

Estimated number of users Overseas

USDH - Controller Staff	120
Contractors/FSNs-Controller	450

Non-Controller staff -- similar to those identified by A&A

"It was further decided that MACS training would probably not continue after 1/1/95 while functional account training would remain ongoing.

Finally, while FM will work with others in this training venture, we cannot become so dependent on others that it slows us down. This probably will mean FM handles initial implementation training while HR/Training picks up more of the on-going, post-implementation training."

■ A questionnaire was sent by IRM to all the business areas to collect input. **Budget Business Area** provided the following responses to the IRM questionnaire:

- 1) There are no fluctuations in our schedule for the development and rollout of the budget application as presented to Larry Byrne. However, we do have a concern about missions that do not have ORACLE and a UNIX server on-site. The budget system will require both ORACLE and UNIX. We are not constructing two budget applications for two distinct technology architectures.
- 2) We will require parallel processing for any type of rollout. Mission Rollouts - we prefer the beginning of the fiscal year. This time period is when the operational year budget is being set and little activity takes

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place. A mid-year rollout to the field would occur: 1) when the Annual Budget Submission (ABS) cycle is beginning and 2) half-way through the operating year. This would be the worst time to rollout a new budget system.

AID/Washington Rollouts - we prefer a summer installation and testing of the new system. This would be followed by training in October. The summer is when AID/W budgeters are working on the ABS. They will not be available for training. We could install and test the budget application during the summer, and then follow-up with training in October.

3) Agency Occupation Code	Title	No. Of Employees

Washington		
030122	Program Operations Spc	26
030338	Pr Opns Asst (OA)	46
034003	Dir Ofc PRGM/PL/EVL	1
034012	Dir Office Of Budget	1
034016	DD/Office of Budget	1
034031	Administrator	1
-----	Asst Admins, OD's, etc.	50
034301	Program Analysts	149
034311	Sup Program Analysts	17
034501	Program Officer	69
034507	Sup Program Officer	35
034517	Program Analyst	1
056003	Budget Analyst	17
056005	Sup Budget Analyst	2
056101	Budget Assistant	<u>3</u>
Total Washington		419

Overseas

011007	Program ECS Officer	25
013006	AID Rep ASEAN	1
034001	Mission Director	46
034002	Deputy Mission Dir	34
034004	AID Representative	27
034007	AID Affairs Officer	3
034101	Executive Officer	16
034105	Administrative Officer	1
034109	Sup Executive Officer	37
034201	General Services Officer	1
034501	Program Officer	36
034507	Sup Program Officer	37
050502	Controller	53
050504	Sup Fin Mgt Officer	<u>16</u>

Total Overseas

333

These people will need to access AWACS and applications from: Operations, Procurement, and Human Resources.

- 4) The training must equally focus on both functional business processes and information systems. We need to have both contractors and functional personnel involved in providing training. One suggestion is that we conduct the training in USAID/W first then have functional personnel from each region lead a team of contractors to provide training to their region.
- 5) No, in prior discussions we have not discussed the length of time that would be required to provide training.
- 6) We can combine small missions into regional sessions. For large missions, however, training should be conducted in each mission.
- 7) We have the following questions about the dependency chart:
 - a. Page 2-1 in the Budgeting box: Formulation & Distribution

System is shown as being fed by Award Formulation. We do not understand.

b. Page 2-1 in the Budgeting box: Results Planning and Monitoring is shown under Core Accounting. We believe it should be under Operations.

c. Page 2-2 in the Procurement box: Award Administration is shown as feeding Budget Formulation & Distribution. We do not understand.

d. Page 2-2 in the Operations box: Results Planning and Monitoring should feed Budget.

8) We are not sure how videos could be used to educate/pre-train users on how to use the new systems. However, we believe that video might be useful in presenting overall concepts and prototypes of software.

■ **Acquisition and Assistance Business Area** provided the following responses to the IRM questionnaire:

1) There is no fluctuation in the A&A schedule at this juncture. A&A is still on schedule to be rolled out in the March 1995 time frame indicated in the original schedule.

2) The only bad time to rollout A&A is prior to March 1995 since the three key components of the total system that require concurrent roll-out would not be complete before then. The other bad time for A&A is the end of the fiscal year but this should not affect us since roll-out is anticipated substantially prior to this. Parallel processing will be required no matter when it is rolled out since we cannot risk system failure regarding our need for Federal Procurement Data Center reporting.

3) Part One: see assumptions. Part two: Technical Officers will need to access many BAA systems. Ones that are immediately obvious are Operations, Budget, and AWACS.

4) Training for procurement professionals (EXOs, COs, Negotiators) will be

predominantly on the functional business processes but the notion of information systems may be new to many of those needing training. Training for technical officers will be substantially less than for procurement professionals but will also involve both components.

5) See assumptions.

6) We propose Regional Training where possible to make the best use of training assets and individual Mission training in instances where Regional Training is not possible.

7) As each BAA is completed, a number of the dependencies have been clarified and assumptions have changed. The "Business System Dependency Between Business Areas" should be modified to reflect these changes.

8) We do not feel that "pre" or any other kind of training for the A&A system can be accomplished via video or other electronic format. However, we do support as much pre-rollout exposure for the systems (e.g., "PR" videos) as possible.

Other: In conjunction with the A&A software construction, the development team is compiling a detailed, comprehensive User's Manual. We have requested that it be detailed and very easy to understand so that we can also use it as the training manual. This will save time and money in terms of not having to pay or provide direction to a training contractor to construct a training manual. Also, the A&A BAA will have a transition document which will be complementary to the User's manual. The transition manual will basically be a translation guide from old processes and forms to the reference in the new system of the replacement processes and/or forms. We do not have the time to catch a training contractor up to speed in order for them to construct this materials under their contract. We also anticipate that A&A functional users will be training the trainers using these same manuals.

- Training

- 600 Project Officers
- 25 Contracting Officers
- 5 EXOs
- 10 Executive/ Mgrs
- 20 Support Staff

- 65 Negotiators
- Train 20 per class
- 60 Training days in facility holding 20 per class is required for Project Officers
- Approximately 40 days of training in facility holding 20 per class is required for procurement staff
- Missions
 - 1000 project Officers (DH, FSN, PSC)
 - 35 Contracting Officers
 - 60 EXOs
 - 75 Mission directors
 - 200 Negotiators
 - Each EXO, CO and Mission Procurement staff (est. 500 total) require training
 - Depending upon mission size, 2-10 training days are required per mission to train Project Officers
 - EXO, CO and procurement staff are trained at regional Missions
- A&A Training Assumptions
 - We assume that in order to meet the projected schedule of October 1995 that a training contract will be awarded to train as many people, in as many places as possible concurrently. Rather than training only a few people at a time. Which will be very time consuming.
 - Hardware and software must proceed training. To expedite this, additional IRM installation personnel may be required.
 - Funding required for travel and training staff.
 - Funding required for training contract.
 - Training facilities must be identified.

■ **Operations BAA provided these responses to the IRM Roll-out Questionnaire**

1. Is there any fluctuation in the schedule for the development and rollout of the corporate systems presented to Larry Byrne for your BA at this point?

ANSWER: We do not see any change at this time.

2. Is there a bad time to rollout your systems? Are there any particular problems related to either start of fiscal year or mid-year rollout? If mid-year rollout is chosen, should parallel processing be utilized?

ANSWER: The system we intend to field during FY 95, Results Tracking, is not a financial system, so it is not impacted directly by fiscal year considerations, except to the extent that program staff in the mission might be busier during the year-end rush. A more critical concern is that the people we need to reach are likely to be taking home leave during the summer, but then this problem applies to all roll-outs that might take place during the summer, not just ours.

3. In order to do your business, how many people need to be trained for each system by position category and site? Which other business area systems should these people access?

ANSWER: We have not had time yet to study the lists of total number of staff by location. In general, the two operations systems we envision will need to be accessed by virtually all non-administrative direct hire staff in the missions, and by many of the FSNs and PSCs. In Washington, we envision that nearly all of the folks in the geographic bureaus, PPC, and much of G bureau will access the system regularly. I've excluded BHR because we have viewed much of their systems as being a separate development effort, but there may be occasions for them to use the system as well, e.g., if the agency defines objectives and indicators for BHR programs, they should be tracked in the Results Tracking system.

We would expect that these same program staff will be using the procurement system (to initiate and track contract actions that implement the program objectives) and the budget system (to secure resources in support of the program). Re the latter, we are still a little unclear where the line is drawn between operations management and budgeting -- we see a lot of what is defined in the two operations systems (results in one and activities in the other) feeding directly into the creation of the budget request. Lastly, program people wherever they are need access to financial data. Even small missions have multi-million dollar budgets, and many of the non-MACS/AWACS sites are not that small. If we do not provide them with tools to track their resources, they will build their own cuff systems. This

is an issue for AWACS, one I believe they have not sorted out quite yet.

4. Is the training focus predominately based on the functional business processes or information systems? Do you envision the training sessions taught by contractors or functional personnel?

ANSWER: From our perspective, the bulk of the training is on the new business processes. For the results system, our vision of it right now is that it is a simple data base (although likely to grow to a large one) that many people would access throughout the agency, though data input might be limited to just a few people. What this seems to imply from a training perspective is the need for a very user-friendly, powerful query tool, standard to all ISP systems. If this path is followed, then whichever business area delivers a system including this capability will necessarily cover the training, and the additional training to search the Results database should be nil.

For the Implementation/Planning system, the real issues are learning the ways we do business. Training on the system to support it should be no more than a half-day or full-day (?), but it will need to reach a very broad audience, as noted above.

Ideally, direct hires ought to be doing the functional training about the new way in which USAID will manage its development activities, but we note that a lot of this sort of training has historically been contracted out, so this is an option for Operations.

5. In your early discussions, did you identify the length of time required for training?

ANSWER: We're not sure we understand this question, but generally, no, we haven't identified this.

6. Should training be conducted in regional sessions or in each mission ?

ANSWER: We believe regional sessions could work very well, although given the wide audience we need to reach, this will probably have to be a "train the trainer" approach.

7. In reference to the "Business System Dependency Between Business Areas" passed out in September 1, 1994 meeting, do you have any modifications?

ANSWER: Yes, we had promised to give you some input on this and have just not found time to focus on it yet. A general comment would be that there are more dependencies than are noted on that document, but we need to be careful how we view

these dependencies. As we understand it, this document was developed to help define a logical order of build for the various ISP systems, but even given the multiplicity of dependencies, there are really few if any cases where they are really critical. In other words, as we move from a set of totally non-integrated systems to replacing them one by one with what will eventually be a set of integrated systems, it should not be a problem to key in data (as we have always done) until the links are established.

There is a related issue, however, which needs to be explored -- many ISP systems, budget, operations, and procurement, need financial data that will be kept in AWACS. Since AWACS is currently slated to operate in only about half of the missions, we need to define how the remaining sites will maintain and use financial data for the other systems to work. This needs to be addressed ASAP.

8. Would pre-training videos designed to introduce these new systems be useful to educate your users? Do you have any suggestions how often the videos should be distributed? What materials should be covered?

ANSWER: We support this approach, and would like to see videos distributed to every USAID site. They should cover both the policy changes and the software -- perhaps in separate videos.

If you have any rollout or training assumptions already written up, please feel free to attach them to this questionnaire. Any additional comments or suggestions are welcome.

VIII. Preparation for rollout

In earlier discussions we addressed the objectives we need to accomplish to ensure a smooth rollout in the Dependencies section. In this section we are looking at the activities that are already underway in getting ready for rollout.

- **Telecommunications Infrastructure.** TCO has procured the initial equipment and planned the implementation of the Network Infrastructure in USAID/W recommended by an earlier Computer Science Corporation study. This will be accomplished through the combination of newly installed routers, installation of switched Ethernet hubs, minimizing dependence on Banyan routing for ISP traffic, and cost effective use of high speed inter-facility connectivity options (commercial FNS from Bell Atlantic and wireless connections).

SA2 is targeted as the first installation for the switched ethernet solution during the 1st Quarter FY95.

The greatest challenge in providing the Agency telecommunications infrastructure is in meeting the connectivity requirements for USAID/Missions. In pursuit of these objectives, IRM/TCO is aggressively initiating the following actions:

1. Coordinating with DTS-PO increased bandwidth availability and the associated costs for this incremental service for USAID/Missions that are currently connected to USAID/W via dedicated circuits.
2. Coordinating with DTS-PO increased coverage to USAID/Missions that are currently connected to USAID/W through dial-up facilities.
3. TCO is also reviewing connectivity alternatives to increase bandwidth to ensure ISP data transfer, electronic software distribution, remote installation, remote diagnostics administration, and network management requirements are met.
4. TCO is working with SDM to review alternate methods for transferring data between USAID/W and USAID/Missions, where perhaps alternatives are not available for a standard solution deployment.

The deployment to USAID/Missions will include the installation of CISCO routers to alleviate Banyan routing dependence from USAID/Missions to/from USAID/W. A test installation strategy is evolving. (See Appendix O. Network Services

Configurations and Appendix P. Metropolitan Area Network)

- **Washington and mission Infrastructure.** Baselineing the minimum requirements for hardware and software to support the new integrated systems with an acceptable performance has been done in different contexts. The network, client, and server configurations for ISP production as well as application development environment is depicted on the Appendices. (See Appendix I. USAID/W Local Area Network - October 1995 and Appendix J. USAID Wide Area Network.)

- **Hardware and software requirement.** Hardware equipment and software in Washington and in missions need to be upgraded to the baseline configuration to accommodate the new systems as well as to provide additional capacity for possible coexistence of old and new systems for a few months. (See Appendix K. Client PC Configurations - October 1995. and Appendix L. Planned Production Environment.)

In FY93, IRM began assessing the hardware needs of Washington and the missions. Since then, IRM has been procuring and converting to Unix platform in over forty missions. MACS has been migrated to the Unix platform. PCs have been gradually upgraded. Desk top operating systems are being upgraded from DOS to Windows. The installation of Windows will be completed in February in Washington and installations at missions are expected to be completed in March 1995.

Hardware and software configuration in USAID/W or missions will reflect requirements from application development and implementation. It is complicated by the reality of the federal funding process that the infrastructure has to be in place before the requirements of the applications are known.

The following table is our current list of Unix equipment at the missions.

Mission	Qty - Model
Abidjan	2 - 10/40
Accra	2 - 10/40
Bamako	1 - Sparc 2
Conakry	2 - 10/40
Dakar	2 - 10/40

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Harare	2 - 10/40
Kampala	1 - Sparc 2
Lilongwe	2 - 10/40
Maputo	2 - Sparc 2
Mbabane	2 - 10/40
Nairobi	??
N'djamena	2 - 10/40
Niamey	2 - 10/40
Pretoria	2 - 10/40
Bangkok	2 - 10/40
Colombo	1 - 10/40
Dhaka	1 - 10/40
Islamabad	2 - 10/40
Jakarta	2 - 10/40
Kathmandu	2 - 10/40
Manila	2 - 10/40 1- 20/51 1- 20/61
New Delhi	1 - Sparc 2 1 - 10/40
Budapest	2 - 10/40
Warsaw	1 - Sparc 2 1 - 10/40 1 - 20/50
Belize	1 IPX
Bridgetown	2 - 10/40
Guatemala	1 - 10/40

TCO has acquired the AWACS configurations. An evaluation still has to be made to decide if these configurations will meet the requirements for the integrated system. Missions need to be individually analyzed to determine what steps need to be taken to ensure that the particular mission meets the baseline hardware, software, network configuration.

The following SUN systems configuration is the MACS hardware/software configuration for AID/W and Missions. The RISC6000 is the configuration proposed for the AWACS systems. The data has been obtained from purchase orders for the SUN systems in the missions and the FM proposal for RISC6000 equipment for AID/W.

SUN SPARC10 OR SPARC20, Mod 51, w 50 MZ processor for Missions:

Hardware:

64 MB memory
One (1) 1.05 GB Internal Disk
One (1) 1.05 GB External Disk
One (1) 5 GB 8MM Tape Backup Drive
One CD-ROM

Software:

Solaris 1.1 Operating System
Oracle 7.0.16
Answerbook
MACS & Associated software: Acucobol & WISP

Possible Upgrades:

Solaris 1.1 to Solaris 2X
Oracle 7.0.16 to Oracle 7.1 or higher
WISP fix to allow processing with Solaris 2X
Possible addition of disk space to accommodate Oracle database files and information.

RISC/6000 R-24 and RISC/6000 R-24 Redundant machine for AID/W:

Hardware (Production):

1 GB Memory
Six (6) 2 GB External Disk Drives (Mirrored)

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Kingston	2 - 10/40
La Paz	1 - 10/40
Lima	2 - 10/40
Managua	2 - 10/40
Panama	2 - 10/40
Port au Prince	1 - Sparc 2 1 - 20/51
Quito	1 - Sparc 2 1 - 10/40 1 - 20/51
San Jose	1 - 10/40
San Salvador	2 - 10/40
Santo Domingo	2 - Sparc 2
Tegucigalpa	2 - Sparc 2 1 - 10/40
Amman	2 - 10/40
Cairo	3 - 10/40
Rabat	1 - Sparc 2
Almaty	1 - Sparc 2 1 - 10/40
Moscow	1 - 10/40 2 - 20/51 3 - 20-51
Kiev	2 - 10/40
Addis Ababa	1 - 10/40
Antananarivo	1 - Sparc 2 3 - 10/40

Tape backup system (not reflected on order)
One CD-ROM

Hardware (Backup):
528 MB Memory

Software:
AIX V Operating System 3.2.5
HACMP Backup and redundancy program
Netview monitoring software
Oracle

Possible upgrades:
AIX V Operating System
Oracle 7.0.16 to 7.1 or higher

● **Non Unix sites solutions** -- The Unix machines have been installed in only the missions that are running MACS. In FY 93 and FY 94 M/IRM upgraded many USAID missions with new technology. M/IRM installed new LANs, replaced old 286 PCs with 386 and 486 PCs, installed additional PC memory, installed Windows software, purchased Oracle RDBMS, replaced 386 Banyan servers with 486 servers, purchased UNIX backup servers, purchased high speed LAN printers, and provided training for mission system managers.

● **Data Migration Plan** -- A data migration team is putting together a plan to support historical data migration. Coexistence of new and old systems will be necessary until all the historical data is migrated to the new systems.

A subset of the team, the Data Implementation Group, has the responsibility for migrating data from the legacy system files and code tables on various platforms to an Oracle format on a UNIX platform. This process will require two steps. Step I will migrate data from existing legacy system files and code tables to Oracle on a UNIX platform. Step II will move/transform data created in step I to production

format entities. The Data Migration team discussed this concept with each of the BAAs with the exception of Accounting and each has agreed to it. The tasks involved in achieving each step are outlined below:

Step I Tasks:

<u>Task</u>	<u>Responsibility</u>
Convert existing legacy system files and code tables into ASCII format.	Data Implementation Group
Move data from legacy platform to the UNIX box.	Data Implementation Group
Create Entity Relationship diagram between the dictionary table that will be converted to Oracle system tables.	IPA, Data Implementation Group
Create attributes for entities that will be converted.	Data Implementation Group
Code PL/SQL script programs to load Oracle system tables.	Data Implementation Group
Code PL/SQL script program to create database tables.	Data Implementation Group
Code PL/SQL script program to load data into database tables.	Data Implementation Group
Code Visual Basic programs to verify all entities were successfully created and data has been loaded properly.	Data Implementation Group

Step I Assumptions:

1. Minimal validation will be performed when converting legacy system files to Oracle. No attempt will be made to "clean up" the data.

2. BAA teams will notify the Data Implementation Group, in a timely manner, when data should be migrated and how often.
3. BAA team will identify legacy system files and code tables to be migrated.
4. Data will be migrated for all BAAs except Accounting. Accounting BAA staff will provide access to Oracle tables or interfaces to legacy system files and/or code tables when and where needed by other BAAs.
5. Legacy system code tables should be migrated to each requesting BAA's database area. If another BAA requests the same legacy system code table to be migrated, it will be migrated to that BAA's database area too. No attempt will be made to eliminate duplication in step I.
6. BAA team will notify Data Implementation Group via E-mail of all migration requests.
7. Data Implementation Group will notify DBA staff of any space requirements for each BAA area.

Step II Tasks:

Task

Responsibility

For BAA-specific tables:

Map entities from existing attributes to new production attributes.

BAA Group

Create Entity Relationship diagram between the dictionary table that will be converted to Oracle system tables.

BAA Group

Create attributes for entities that will be converted.

BAA Group

Code PL/SQL script programs to load

BAA Group

Oracle system tables.

Code PL/SQL script programs to create database tables. BAA Group

Code PL/SQL script programs to load data into database tables. BAA Group

For Cross-BAA tables:

Map entities from existing attributes to new production attributes. IPA

Create Entity Relationship diagram between the dictionary table that will be converted to Oracle system tables. IPA

Create attributes for entities that will be converted. DBA Staff

Code PL/SQL script programs to load Oracle system tables. DBA Staff

Code PL/SQL script programs to create database tables. DBA Staff

Code PL/SQL script programs to load data into database tables. Data Implementation Group

Code Visual Basic programs to verify all entities were successfully created and data has been loaded properly. Data Implementation Group

Step II Assumptions:

1. IRM/IPA in conjunction with the BAA teams, Data Implementation Group, and DBA staff will determine which tables contain the corporate data and should be moved to production entities.

Conventions:

1. A separate database area will be created for each BAA in Oracle. It will be named according to the BAA it represents. The database name will not exceed 8 characters.
 2. Each legacy system/code table associated with that BAA will be migrated into the database area for that BAA. The table will be named according to the legacy system/code table it represents. The table name will not exceed 8 characters.
 3. Only the developers for that BAA will be given access to their database area. If it is found that other individuals must be given access to a particular table in that database area during the Step II process, the DBA staff will be notified.
 4. Attribute names will mirror field names of legacy systems as much as possible.
- **Database Architecture.** SDM has procured the Oracle database software necessary to support the needs of the ISP. The planned database architecture consist of replicated and distributed databases.

The current plan is to implement a distributed database architecture in AID/W and have some form of database replication at the Missions. The Database Architecture team plans to accomplish this with the following phases:

Phase I

Upgrade all Oracle database servers to version 7.1

Phase II

Implement distributed Oracle across the LAN on multiple database servers in SA-14.

Phase III

Implement distributed Oracle across the MAN on multiple database servers in SA-14 and one database server in SA-2.

Phase IV

Implement distributed Oracle in SA-14, SA-2, SA-1, NS.

Phase V

Implement distributed Oracle in SA-14, SA-2, SA-1, NS, and some form of data replication on one database server in one Mission (Beta test site). This will be the first implementation of some form of data replication.

Phase VI

Implement distributed Oracle in SA-14, SA-2, SA-1, NS, and some form of data replication in each Mission.

We have had meetings with Oracle Corporation and have several more planned to be advised on what type of replicated and distributed database architecture is best for USAID/W and the Missions.

● **Configuration Management** -- The CCC Harvest configuration management software has been purchased. A dedicated Configuration Management server is purchased and is delivered in mid-December 1994. The software is installed for interim planning and use.

The Configuration Management Team has the plan to meet with AWACS business area to convert the AWACS data to the CCC/Harvest system. The CM team is planning with the A&A business area to execute configuration management on the A&A software. Further, the CM team is analyzing software build, release and distribution procedures, implementation and maintenance processes.

IRM/SDM presented a proposed Configuration Management Model to the business areas. This model included two major components

- i. Problem tracking
- ii. Version Control through the development lifecycle

- There will be two Configuration Control Boards:

Project Configuration Control Board - Each business area (e.g., A&A, Budget, etc.) will have its own Configuration Management Control Board. This Board will address changes which only impact their project. This Board consists of the business area project managers, a CM member, the IRM business area coordinators, development lead, systems integration test lead, the LAN administrator and IRM rollout and training coordinator.

* Note: The Development lead would provide impact information for both software source code and the database.

Agency Configuration Control Board - An Agency CCB will be convened when a requested change impacts two or more business areas. The Agency Board will consist of participants from each project. This Board consists of the business area project managers, a CM member, the IRM business area coordinators, Interface Working Group member, systems integration test lead, a member from data administration, SDM technical architecture, and rollout and training.

* Note: Interface Working Group - This team is composed of development specialists who program the interfaces from each business area.

● **Interoperability Lab** -- The corporate system will be tested for integration, systems assurance, and compatibility. An incremental approach based on standard configurations in Washington and the missions, will be utilized as the corporate systems are completed. The Interoperability lab has been set up and is now ready to begin functional testing of the A&A modules. All of the software modules will be tested on simulated USAID/W and Missions environments.

IX. Rollout Alternatives

A. These are three alternatives for rollout. Cost analysis are presented in Appendix B, C, and R. **The estimated costs mentioned here do not include salaries.**

- Sending technical staff to each mission for installation -- This is the most conventional approach. With varying degree of knowledge among our system managers of Unix, Oracle, Windows, and TCP/IP, installation of the new systems will need to be done by an installation team from Washington at least for the first version in October 1995. While installation personnel are at the sites they can also train the local ISP coordinator, database administrator or systems administrator on maintenance and support. Installation staff may be selected from Unix and Oracle personnel. Estimated travel and per diem costs for this approach is listed in Appendix B. Installation Costs For Mission Rollout.
- Regional rollout -- Five installation workshops will be given at selected regional centers. Missions will send 1 or 2 staff to the workshops. Washington Installation training staff will bring pre-configured software loaded on high capacity storage media; such as tapes, disks or CD-ROMs; and will travel to the regional offices to install the systems and train regional staff. The regional staff will then go to all the other missions for installation. Estimated travel and per diem costs for this approach is listed in Appendix C. Installation Costs for Regional Rollout.
- Sending pre-installed configurations on high capacity tapes and/or CD ROMs to the missions -- This approach is least expensive. This alternative may be appropriate if the missions all have standard hardware and software configurations and minimum customization is needed. The estimated costs for this alternative is listed Appendix D. Installation Costs for CD ROM alternatives).

If this option is chosen it may have to be a combination of Option 1 and Option 3. First a CD-ROM will be sent. If problems occurs, we will try to offer help remotely. If this does not work, we will send technical staff to the mission. It will be hard to estimate the costs for this option until the installations are completed.

B. These are three alternatives for user training. There may be other alternatives which may be added to this list. **The estimated costs mentioned here on this page do not include salaries. Salaries are being considered under the training contract.**

■ Training at each installation site -- Trainers will train in Washington and at all the installation sites. With the number of people to be trained this approach will be expensive. The estimated travel and per diem costs is \$560,000. (See Appendix E. Training Costs for Mission Training.)

■ Washington and Regional Training -- Training will be conducted in Washington and regional sites. The regional site staffs will then conduct the training for the other missions. Course materials, lecture texts, computer based training modules and other training materials will be provided by Washington. Estimated travel and per diem cost for this approach is \$100,000 for the Washington personnel travel to the regions. The estimate for sending two or three people from each mission to the regional missions for training is \$500,000. (See Appendix F. Training Costs for Regional Training.)

■ Train the trainers -- Two or three representatives from the regional offices and selected missions will be sent to Washington or other selected sites for training to be trainers. The trainers will be given intensive training. Course transparencies, texts, computer based training modules and other materials will be provided by Washington. The trainers will then conduct training at the field sites. This alternative will increase the knowledge of local staff and the level of local support. This will reduce the number of requests for Washington support, once the systems are in production. It may be possible to schedule other training sessions in Cairo and some other large sites. The estimated travel and per diem costs for this approach is \$436,000 if Washington is chosen as the only training site. (See Appendix G. Training Costs for Training the Trainer alternative.)

X. From here (See Appendix T for updated information)

After evaluation of preparation for rollout, we need to look at the events that still need to happen before rollout.

- Washington and mission hardware/software requirements -- IPA Technical Architecture team performed benchmarks to test and validate recommended system configurations able to support existing and future Agency's applications. IPA performed the benchmark on Sparc 2 and Sparc 10 computers simulating 10 to 100 concurrent users accessing a database application with MACS running reconciliation in the background at the same time. This would represent a worst case scenario with heaviest CPU load. The benchmarks showed that Sparc 10 with 64MB of memory can support this scenario without significant degradation in performance or response time. A standard configuration has been determined based on the benchmarks. See Appendix Q. PC Configuration for ISP Systems and Appendix S. Recommended ISP Unix Server Configuration For Missions. A hardware and software upgrade plan still has to be completed to upgrade the Washington and mission equipment and software according to the standard configuration.

A combined Oracle, Unix, Banyan technical group is in the process of developing detailed installation plans for ISP rollout. The group is working on an installation plan that is (1) as fully automated as possible, (2) standardizes the client and server environments for easier long-term support and (3) provides for an expedient and successful restoration of an individual's working environment when a problem occurs.

- Non-Unix sites solution -- The ISP Executive Sponsors met on January 13 and 24, 1995. The group agreed to the following system delivery requirements: Systems will be installed in every USAID site that does "real live project work." This requirement excludes representational sites, such as Geneva, Paris and Tokyo. For very small sites where implementation of the corporate systems may be overkill, a design must be put into place that will translate information from the site into and out of the system. AWACS, Budget and OPS Results Tracking modules will be operational in the 45 key MACS sites by October 1, 1995.

- Telecommunication Infrastructure - USAID currently has DTS-PO circuits in 63 sites operating at low speed(2.4 baud) for E-Mail processing. Of the 40 sites for which USAID requested upgrades to 19.2 Kb, DTS-PO has been able to provide plans for upgrading 27 of them during FY95. USAID is reviewing those plans and is negotiating with DTS-PO on the upgrade schedules for the other 13 missions in the original request.

TCO is simultaneously working with NASA Sciencenet and Goddard Flight Center to investigate backup configuration options that will meet the expected increase in bandwidth requirements. MOUs between USAID and NASA are being developed.

- Network Management planning. A network management system should be implemented. The network management package should include the following capabilities:

- Problem Management
- Performance Management
- Configuration Management
- Security Management
- Reports on problems, performance, configurations, security

A network management study led by IPA is underway .

- Database Architecture - The Database Administration Team is continuing to test Oracle and distributed database processing. The team will finalize the recommendation of a database environment - either centralized, distributed, or a combination of the two. The team is working with the Data Administration team on the logical/physical corporate database model.

- Data Migration -- The Data Implementation Group has the responsibility for migrating data from the legacy system files and code tables on various platforms to an Oracle format on a Unix platform. A data migration plan is presented in the Preparation section.

- Log-on and main menu - A single log-on and a main menu should be developed. The shared data screens should be integrated so that the screens would look the same if a user access a shared data from any application system.

- Configuration Management - **There might be features requested for incorporation into the ISP systems that might need to await a Version II release in FY 96. For example, any request of Agency reinvention that will not have been defined early enough to be included in the FY 95 suite will be accommodated after the October 1, 1995 production deadline.**

The Agency Configuration Management Control Board will approve all changes and enhancement requests and determine when they can be accommodated.

The criteria for promotion to each release should be defined. The criteria should be used as the standards for sign offs. Promotion from each release should be signed off by the QAs

and the CM control board.

- **Security** - Security should be built in an integrated manner to implement security at the network, systems, application and data file levels. Standardized access control, for systems, applications, and data files should be considered. A computer security utility may be developed to be shared among the systems to reduce the individual system security development effort. Development of a prototype has been recommended by the IRM Security Architecture Group. The Security Architecture group is developing a dynamic rolebased access control system (DRBACS). This access control module will be made available to all BAs in March 1995. The Security Architecture group is documenting all the security requirements. This will cover firewalls, gateways, routers, UNIX security guidelines, and Oracle security guidelines.
- **Interoperability lab** - The Interoperability Lab has been set up and is now ready to begin functional testing of the A&A modules. All of the software modules will be tested on PCs that simulate the diversity of the USAID/W and USAID/missions environments. The rollback and recovery procedures need to be tested and documented prior to systems rollout. The database administrators should analyze the frequency of the data table usage and develop a database rollback and recovery procedure. This procedure should be tested in the interoperability lab before rollout. This procedure should be included in the systems administrators training.
- **Communications before rollout.** Washington and missions ISP briefings should be planned. Standardized briefing packages or video tapes may be produced. A team of people should start giving the ISP briefings in Washington and the missions. Electronic bulletin boards or newsletters could be used to introduce the ISP systems to our users. Prototype screens of the new management systems can be sent to users to obtain input for usability and implementation.

A worldwide cable is currently being drafted. This cable will be sent from the Administrator. It reviews the ISP process and provides related guidance on mission responsibilities, particularly in terms of Windows installation and proficiency. The cable will give a general overview of what the ISP will accomplish and summarizes which systems will be rolled out to the field and when.

IRM will sponsor a worldwide EXO/Systems Administrator Conference in Leesburg, VA, from April 3-13. The purpose of the conference is to prepare missions for ISP implementation. Presentations and demonstrations will be given in the ISP technical and security architectures, support requirements, training plans for users and additional training

requirements for systems staff. There will also be ISP presentations in the worldwide OMS-sponsored conference for EXOs the week before the IRM conference.

- Local support - As our systems become distributed, autonomy is needed at the missions to reduce the time required to deliver assistance to the endusers. There should be one or two in-house experts established in each mission as the first line of support for answering system and functional process questions. An ISP coordinator should also be assigned at each mission as the point of contact for scheduling rollout and training, identifying users, and keeping up-to-date on the ISP status.
- Beta test sites - The early version of the integrated systems should be tested at the Beta test sites to obtain representative mission feedbacks. This will be a good time for systems administrators, ISP coordinators training at the selected beta test sites. There will be two levels of Beta testing: (1) the testing of each module, and (2) testing the rollout of the full suite as one integrated system. The BAs should try to use as many of the same missions for Beta testing. IRM will coordinate the identification of test sites to achieve as much consistency as possible. A&A has chosen Guatemala, Dakar, Cairo, and Manila.
- Taking all the input from the BAs, the costs, and the implementation factors into consideration, the following alternatives are recommended for rollout :

A. Rollout

It is recommended that the corporate systems be rolled out in several phases in Washington if schedule allows and be rolled out as an integrated suite in the missions. The beta test version may not work completely without the mission data input. Manual data input may be necessary for testing purposes. Version I will include the integrated AWACS, Acquisition and Assistance, Budget, and Operations Results Tracking systems and is scheduled to be completed by October 1995. Version II will include all the previous integrated systems and enhancements, Operations Implementation/Planning, Payroll, Human Resources Planning, Human Resource Administration, and Career Development systems. Version II will be rolled out in early 1996. Version III will have Property Management, Communications and Guidance and future enhancements. The current schedule shows Version III rollout in May 1996. (See Appendix H. Corporate Systems Rollout and Training Schedule.)

- Washington - Considering the code delivery dates and inter-dependencies among the systems, the systems will be installed in Washington before May 31, 1995. The old systems and database will coexist for a few months for reconciliation of year end

procurement and expenses. After migration of historic data from the legacy systems to the new systems, the legacy systems will be closed out. (See Appendix A for closing dates for the legacy systems.)

■ Missions installations -- Sending technical staff to each mission for installation is recommended. The full suite of these applications will be rolled out as one system in each mission. This option ensures each site successful installation and on-site training of the systems administrators. This is the low cost alternative.

The target date for completion of system installation in the missions is August 31, 1995. This will allow the missions staff to get familiar with the system and receive training. The total system will be officially in use by October 1, 1995, even though it may have been installed several weeks prior to production use. After the installation at each site, the technical staffs will conduct the systems administrator training.

■ Resources -- Twenty people need to be trained for systems installations (See Appendix R.). The two installation personnel may consist of one systems administrator and one Oracle software developer. Mission systems administrators need to be trained as well as local support personnel.

B. End-user Training

■ The scope of the training preparation includes conducting the training sessions, facilitating the workshops, the development of course curriculum, designing the course contents, deciding the media mix, preparation of texts, workbooks, computer based training modules, training documents, reference guides and other training materials.

■ Deliverables:

- Lecture texts, workshop materials
- Computer based training modules and the simulated Oracle database
- Training materials for these modules
 - Training Curriculum
 - Course outlines

- Student texts and workbooks
- Quick reference guides
- Cross reference guide from users' manual to translation guide
- Translation Guide between the old and the new systems

■ Approaches

An initial decision made in a meeting in November, 1994 by the BAs, the Training Department and IRM is to use a combination of the "Regional Training" and "Train-the-Trainers" alternatives. The regional missions and a number of selected strategic sites which we have important development operations will be chosen as training sites. An integrated approach with modules of the 13 systems should be designed. The number of courses required and the general contents of each course need to be determined. Appropriate presentation methods and media for each course, e.g. video tapes, lecture, workshop, or computer based training, will be determined after course content of both functional processes and system skills are defined. Each course may be tailored to fit the needs of staffs from major professional categories, such as project officers, and contracting officers. Based on their responsibilities, the staffs will be trained with a mix of all modules in their business area plus cross-functional training in related business areas in the basic modules. Functional business area specialists and contractors, if required, should be trained to teach the modules. Classroom lecture, workshops, materials, and computer based training modules will need to be developed. A simulated training database needs to be built by the contractor with assistance from the developers.

The contractor needs to work closely with the business areas which designed the applications, built the data models and developed the systems. The contractor needs to use materials already available from the development teams in addition to preparing the new materials necessary to build the computer based training modules and accompanying materials. The contractor may need to be trained in the business processes by the business area instructors and functional area specialists as required.

■ Training Course Content

The content of the training modules must encompass the major business processes and usage of the application systems. The training sessions need to be modular in business focus in accounting, procurement, budget and operations, so the sessions can be tailored for professional categories, such as project officers, development officers

and contracting officers. The training courses have to be integrated so the users will be trained for the integrated systems all at one time. The training modules and materials should be completed by May 31, 1995.

- Training Schedule

With the October 1995 end date and the May 1995 system completion date, the only time for training is summer 1995. A schedule is being developed. Current thinking has training courses in Washington during June and July, with the regional and selected mission training in August and September, 1995.

- The intent is to train the users as close to the implementation date of the corporate systems as possible. (See Appendix H. Corporate Systems Rollout and Training Schedule.)

- Washington -- In the months of June and July, Washington personnel will be trained. This will allow the Washington users to be trained before the end of year rush. This training will permit users to give the rollout team feedback on the systems and training modules. Inputs will be incorporated into training for the missions. Training courses will need to be conducted in house by the business areas for modules rolled out in advance of this schedule. AWACS and A&A business areas will need to conduct the beta test training in Washington.

- Missions -- The current thinking is to use a combination of video, CBT and "train-the trainer" approach. Extensive training sessions can be set up for regional and selected mission staff who will conduct the training for the missions in their regions. The time frame will be August and September 1995.

If this approach is adopted, at the beginning of August, ten teams of three or four instructors will begin training in the missions. Assuming the integrated training class requires one week, total time required for mission training will be 5 weeks. This is based on training the 46 missions which currently have Unix machines. The time for training can be shortened by combining some of the smaller missions into the regions or having the regions conduct the training at some of these missions.

- System administrator training -- The system administrators will be trained with the standard systems configuration and maintenance procedures. Some of these knowledge could be taught in the System Administrator's conference in Spring 1995.

They should have additional consultation sessions with the Washington technical staff. This early training gives the system administrators time to learn the system requirements and be ready to assist in the actual mission installations. The system administrators can shorten lead-time requirements by setting up training facilities, work stations and wiring requirements. Additional systems administrator training can be given after the IRM technical staff finished the installation at each site.

- **Resources** -- Resources will be needed to cover both conducting the training sessions and preparing the training materials. A contractor will be required to augment AID resources. Instructors can be drawn from skilled personnel in the Accounting, Procurement, Budget and Operations functional business areas, and training contractors, if necessary. Recommended instructors, including number of instructors available during the months from June to October 1995 from business area project managers should be provided to the rollout team.

- **Funding.** Funding will need to be allocated to support the ISP systems rollout and training.

- At the time this plan is printed the Training Division is developing a detail training plan. A task force is working on finalizing the strategy. The Training Division and CDIE contractors are currently designing and preparing the training sessions and instructional manuals.

XI. Long Term Support

■ On-going training -- The Training Division will oversee the on-going training. The lecture texts, workshops, videos, computer based training modules developed for the initial ISP systems training can be used later on for on-going or new hire training.

■ Local support -- A couple of functional specialists at each site will be trained to be the ISP systems coordinators. These staff can be controllers, procurement or budgeting officers, or database administrators. Giving these people additional training in functional processes, Oracle, and Unix can increase the level of local support. These individuals will be the first line of support for questions or systems problems. They can be the interface with Washington for ISP systems support. If the problems cannot be resolved at the missions, then the ISP coordinators will submit the problems to the ISP systems help desk.

■ Problem Management -- Problem management function could be tracked by the network management systems. The Help Desk requirements can be met by a good problem management system. Ideally the problem management systems should include the following functions:

- Voice response unit (VRU) front end
- Automatic dispatch to the support persons from the VRU
- Automatic logging from the time the call comes in till closure of the problem
- Automatic tracking of the referrals, support persons' records, and history data
- Integrated with hardware/software configuration management systems
- built in problem report generator
- problems by category, severity level, and duration

If it is not possible to set up the network management system before the rollout then a temporary monitored electronic bulletin board such as a monitored ListServ can be set up as a problem tracking system for the help desk. One example of a monitored bulletin board is Notebook. The missions can send questions to the Notebook. A person will be assigned to monitor the requests. Logging and dispatching mechanism will be built into the electronic bulletin board. As questions come into the Notebook they will be automatically logged and dispatched to the appropriate functional area for the second line of support. When the resolution is posted and forwarded to the originator it will be logged as closed. Reports can be generated from the problem log. Analysis can be done to track problem areas.

■ Electronic Swat Team -- If an in depth analysis is required for problem determination,

a team of people will look into the bulletin board. These people will be drawn from the functional areas and IRM technical staff. The team will resolve problems which impact across the business areas.

- **Change Management** -- When changes need to be made in the software, a request should be submitted to the Configuration Management Software Review Board. Software changes should be made through the configuration management process.

Glossary

Replicated database. A replicated database configuration is composed of duplicate database objects (I.E. tables, indexes etc.) on physically separate servers. For instance there could be a server in Nairobi and a server in Washington D.C. both with identical database objects. In a replicated data base configuration, the two databases are functionally tied together by Oracle through the use of "Two Phase Commit" logic. The two phases are the Prepare Phase and the Commit Phase.

In the Prepare phase Oracle connects to all of the remote servers and verifies that each remote server is capable of performing the requested data base change. If one of the servers can not implement the database change then Oracle will roll back the database change on all of the servers and the Commit phase will not be initiated.

Distributed database. A distributed database appears to the user as a single logical database, but is in fact a set of unique databases stored on multiple computers. The data on several computers can be simultaneously accessed and modified using a network. Each database is controlled by its local Oracle database management system. Each database server in the distributed database configuration cooperates to maintain the consistency of the global database. The use of two phase commit logic is not implemented unless the database change involves changes to more than one data base in the same SQL statement.

APPENDICES

- A. CLOSING LEGACY SYSTEMS
- B. INSTALLATION COST FOR MISSION ROLLOUT
- C. INSTALLATION COST FOR REGIONAL ROLLOUT
- E. COSTS FOR MISSION TRAINING
- F. COSTS FOR REGIONAL TRAINING
- G. COSTS FOR TRAIN THE TRAINERS
- H. SYSTEMS ROLLOUT AND TRAINING SCHEDULE
- I. LOCAL AREA NETWORK - OCT 1995
- J. WIDE AREA NETWORK - OCT 1995
- K. CLIENT PC CONFIGURATIONS - OCT 1995
- L. PLANNED PRODUCTION ENVIRONMENT
- M. SYSTEM DEPENDENCY BETWEEN BUSINESS AREAS
- O. NETWORK SERVICES CONFIGURATION - OCT 1995
- P. METROPOLITAN AREA NETWORK - OCT 1995
- Q. PC CONFIGURATION FOR ISP SYSTEMS
- R. COST/BENEFIT TABLE FOR ROLLOUT OPTIONS
- S. RECOMMENDED ISP UNIX SERVER CONFIGURATION FOR MISSIONS

APPENDIX A. CLOSING LEGACY SYSTEMS

Each legacy system will be shutdown upon full implementation of the replacement ISP system. Exact timing is dependent upon the schedule decided by senior M-Bureau management at the meeting on 7/28/94 and by the successful completion of the BAAs and development efforts.

The current proposed schedule for shutdown of approximately 60 legacy systems is:

Legacy System	ISP Area	Date (o/a)
Accounts Receivable	AWACS	9/94
PAIS	AWACS	6/94
Loans Systems	AWACS	12/94
FACS (AID/W)	AWACS	6/95
MACS (Overseas)	AWACS	3/96
Other Financial Systems	AWACS	6/95
Budget Systems	Budget	5/96
CIMS	A&A	6/95
Other Procurement Systems	A&A	9/95
Project Management Systems	OPS	9/96
Participant Training Systems	*	
BHR Systems	*	
Human Resource Systems	HR	1996
Property Systems	Property	1996
Communication Systems	Communic.	1997

The FY94-97 budget includes a reduction in the number of maintenance programmers assigned to each legacy system during the development of the replacement ISP system, gradually reducing the number of programmers until the full shutdown occurs. To support this reduction in maintenance programmers prior to shutdown, a moratorium is proposed effective 10/94 to restrict programming modifications to changes required by legislation or significant processing problems.

*Systems are being replaced by the client offices, in coordination with IRM, and are funded with program money.

ISP CORPORATE SYSTEMS ROLLOUT AND TRAINING - APPENDIX B

INSTALLATION COSTS - MACS SITES

BUREAU	CITY	COUNTRY	# of Staff	# of TDYers	# of Days	Per Diem	Total Per Diem	Air Fair Est.	TOTAL		MACS SITE
									Air Fair Est.	CIMS SITE	
AFR	CONAKRY	GUINEA	72	3	7	129	2709		0		2- 10/40
AFR	NIAMEY	NIGER	48	3	7	175	3675				2-10/40
AFR	DAKAR	SENEGAL	55	3	7	186	3906	4000	12000		2- 10/40
AFR	ACCRA	GHANA	53	3	7	162	3402		0		2- 10/40
AFR	BAMAKO	MALI	50	3	7	110	2310		0		1 - Sparc
AFR	ABIDJAN (C/O 1994)	IVORY COAST	106	3	7	166	3486	2500	7500	WANG	2- 10/40
AFR	NAIROBI	KENYA	285	3	7	164	3444		0	WANG	UNIX
AFR	ADDIS ABABA	ETHIOPIA	49	3	7	172	3612	4000	12000		1 -10/40
AFR	KAMPALA	UGANDA	90	3	7	191	4011				1 SPARC
AFR	HARARE	ZIMBABWE	72	3	7	145	3045				2-/10/40
AFR	ANTANANARIVO	MADAGASCAR	81	3	7	182	3822		0		3 - 10/40
AFR	PRETORIA	SOUTH AFRICA	126	3	7	133	2793	6000	18000		2- 10/40
AFR	LILONGWE	MALAWI	70	3	7	120	2520		0		2- 10/40
AFR	MBABANE	SWAZILAND	60	3	7	104	2184				2-10/40
AFR	MAPUTO	MOZAMBIQUE	96	3	7	230	4830	4000	12000		2 -Sparc
AFR	N'DJAMENA (C/O 1995)	CHAD	53	3	7	143	3003		0		2- 10/40
NE	RABAT	MOROCCO	80	3	7	191	4011	4000	12000		1 -Sparc2
ASIA	JAKARTA	INDONESIA	150	3	7	175	3675		0		2- 10/40
ASIA	MANILA	PHILIPPINES	260	3	7	140	2940	4000	12000	WANG	2- 10/40
ASIA	ISLAMABAD (C/O 1995)	PAKISTAN	250	3	7	140	2940		0	WANG	2- 10/40
ASIA	BANGKOK	THAILAND	87	3	7	163	3423				2-10/40
ASIA	COLOMBO	SRI LANKA	100	3	7	126	2646		0		2- 10/40
ASIA	NEW DELHI	INDIA	150	3	7	140	2940	4000	12000	WANG	1 -10/40
ASIA	DHAKA	BANGLADESH	145	3	7	149	3129		0	WANG	1 -10/40
ASIA	KATHMANDU	NEPAL	98	3	7	156	3276	4000	12000		2- 10/40
EUR	BUDAPEST	HUNGARY	58	3	7	169	3549		0		2- 10/40
EUR	WARSAW	POLAND	44	3	7	185	3885	1500	4500		2- 10/40
LAC	PANAMA CITY	PANAMA	50	3	7	138	2898		0		2- 10/40
LAC	BRIDGETOWN	BARBADOS	50	3	7	174	3654		0		2- 10/40
LAC	SAN JOSE (C/O 1996)	COSTA RICA	120	3	7	153	3213	1500	4500		1 -10/40
LAC	SAN SALVADOR	EL SALVADOR	250	3	7	131	2751		0	WANG	2- 10/40
LAC	MANAGUA	NICARAGUA	120	3	7	182	3822		0		2- 10/40
LAC	TEGUCIGALPA	HONDURAS	160	3	7	91	1911	1000	3000		1 -10/40
LAC	KINGSTON	JAMAICA	110	3	7	166	3486		0		2- 10/40
LAC	SANTO DOMINGO	DOMINICAN REPUBLIC	80	3	7	133	2793		0		2 - Sparc
LAC	PORT-AU-PRINCE	HAITI	100	3	7	98	2058	1500	4500		1 -20/51
LAC	BELIZE CITY (C/O 1996)	BELIZE	20	3	7	109	2289		0		1 -IPX
LAC	GUATEMALA CITY	GUATEMALA	210	3	7	156	3276	1000	3000	WANG	1 -10/40
LAC	LIMA	PERU	125	3	7	211	4431		0		2- 10/40
LAC	LA PAZ	BOLIVIA	90	3	7	102	2142		0		1 -10/40
LAC	QUITO	ECUADOR	120	3	7	108	2268	2000	6000		1 -20/51
NE	CAIRO	EGYPT	325	3	7	150	3150		0	WANG	3 - 10/40
NE	AMMAN	JORDAN	60	3	7	150	3150	2000	6000		2- 10/40
NIS	MOSCOW	RUSSIA	92	3	7	286	6006		0		2 -20/51
NIS	ALMATY	KAZAKHSTAN	48	3	7	229	4809		0		1 -10/40
NIS	KIEV	UKRAINE	37	3	7	217	4557	4500	13500		2- 10/40
TOTALS			4955				151830		154500		

TOTAL

306330

ISP CORPORATE SYSTEMS ROLLOUT AND TRAINING - APPENDIX C

INSTALLATION COSTS - REGIONAL MACS SITES
TRAVEL FROM WASHINGTON TO THE REGIONS

BUREAU	CITY	REGION	# of Staff	# of TDYers	# of Days	Per Diem	Total Per Diem	Air Fair Est.	Total Air Fair Est.	CIMS SITE	MACS SITE
Wash	Miami			3	7	150	3150	3000	9000		
Wash	Budapest			3	7	162	3402	1430	4290		
Wash	Pretoria			3	7	133	2793	2370	7110		
Wash	Paris			3	7	262	5502	3000	9000		
Wash	Manila			3	7	140	2940	1525	4575		
							17787		33975		

TRAVEL FROM THE MISSIONS TO THE REGIONS

AFR	ABIDJAN	PARIS	138	2	7	140	1960	2800	5600	WANG	2 - 10/40
AFR	ACCRA	PARIS	69	2	7	140	1960	2800	5600		2- 10/40
AFR	ADDIS ABABA	PRETORIA	64	2	7	133	1862	1000	2000		1 -10/40
AFR	ANTANANARIVO	PRETORIA	83	2	7	133	1862	1000	5600		3 - 10/40
AFR	ASMARA	PRETORIA	8	1	7	133	931	2500	2500		
AFR	BAMAKO	PARIS	123	2	7	140	1960	2800	5600		1 - Sparc
AFR	BANJUL	PARIS	29	2	7	140	1960	2800	5600		
AFR	BISSAU	PARIS	16	1	7	140	980	2800	2800		
AFR	BUJUMBURA	PRETORIA	52	2	7	133	1862	2000	4000		
AFR	CONAKRY	PARIS	124	2	7	140	1960	2800	5600		2- 10/40
AFR	COTONOU	PARIS	39	2	7	140	1960	2800	5600		
AFR	DAKAR	PARIS	125	2	7	140	1960	2800	5600		2- 10/40
AFR	DAR ES SALAAM	PRETORIA	64	2	7	133	1862	1000	2000		
AFR	GABORONE	PRETORIA	35	2	7	133	1862	1000	2000		
AFR	HARARE	PRETORIA	72	2	7	133	1862	1000	2000		2-10/40
AFR	KAMPALA	PRETORIA	90	2	7	133	1862	1000	2000		1-sparc2
AFR	KHARTOUM	PRETORIA	15	1	7	133	931	1000	1000		
AFR	KIGALI	PRETORIA	2	1	7	133	931	1000	1000		
AFR	LAGOS	PARIS	27	2	7	140	1960	2800	5600		
AFR	LILONGWE	PRETORIA	70	2	7	133	1862	1000	2000		2- 10/40
AFR	LUANDA	PRETORIA	2	1	7	133	931	1000	1000		
AFR	LUSAKA	PRETORIA	45	2	7	133	1862	1000	2000		
AFR	MAPUTO	PRETORIA	96	2	7	133	1862	1000	2000		2-sparc2
AFR	MASERU	PRETORIA	2	1	7	133	931	1000	1000		

AFR	MBABANE	PRETORIA	60	2	7	133	1862	1000	2000	2-10/40
AFR	MOGADISHU	PRETORIA	3	1	7	133	931	1000	1000	
AFR	MONROVIA	PRETORIA	1	1	7	133	931	1000	1000	
AFR	NAIROBI	PRETORIA	285	2	7	133	1862	1000	2000	WANG . UNIX
AFR	N'DJAMENA	PRETORIA	53	2	7	133	1862	1000	2000	2- 10/40
AFR	NIAMEY	PARIS	48	2	7	140	1960	2800	5600	2-10/40
AFR	OUAGADOUGOU	PARIS	2	1	7	140	980	2800	2800	
AFR	PRAIA	PRETORIA	18	1	7	133	931	1000	1000	
AFR	PRETORIA	PRETORIA	135	2	7	133	1862	1000	2000	2- 10/40
AFR	WINDHOEK	PRETORIA	28	2	7	133	1862	2000	4000	
AFR	YAOUNDE	CLOSED MANILA	65	2	7	140	0		0	
ASIA	BANGKOK	MANILA	87	2	7	140	1960	1000	2000	2-10/40
ASIA	COLOMBO	MANILA	111	2	7	140	1960	1000	2000	2- 10/40
ASIA	DHAKA	MANILA	145	2	7	140	1960	1000	2000	WANG 1 -10/40
ASIA	ISLAMABAD	MANILA	120	2	7	140	1960	1000	2000	WANG 2- 10/40
ASIA	JAKARTA	MANILA	153	2	7	140	1960	1000	2000	2- 10/40
ASIA	KATHMANDU	MANILA	100	2	7	140	1960	1000	2000	2- 10/40
ASIA	MANILA	MANILA	260	2	7	140	1960	1000	2000	WANG 2- 10/40
ASIA	NEW DELHI	MANILA	140	2	7	140	1960	1000	2000	WANG 1 -10/40
ASIA	PHNOM PENH	MANILA	34	2	7	140	1960	1000	2000	
ASIA	SINGAPORE	MANILA	4	1	7	140	980	1000	1000	
ASIA	SUVA	CLOSED FIJI	50	2	7		0		0	
ASIA	TOKYO	MANILA	2	1	7	140	980	2000	2000	
ASIA	ULAANBATAAR	MAINLA	1	1	7	140	980	2000	2000	
EUR	BONN	BUDAPEST	16	2	7	162	2268	1000	2000	
EUR	BRATISLAVA	BUDAPEST	20	1	7	162	1134	1000	1000	
EUR	BUCHAREST	BUDAPEST	20	2	7	162	2268	1000	2000	
EUR	BUDAPEST	BUDAPEST	39	2	7	162	2268	1000	2000	2- 10/40
EUR	GENEVA	BUDAPEST	2	1	7	162	1134	1000	1000	
EUR	HELSINKI	BUDAPEST	0	0	7	162	0	1000	0	
EUR	LISBON	BUDAPEST	0	0	7	162	0	1000	0	
EUR	LJUBLJANA	BUDAPEST	0	0	7	162	0	1000	0	
EUR	PARIS	BUDAPEST	2	1	7	162	1134	1000	1000	
EUR	PRAGUE	BUDAPEST	30	2	7	162	2268	1000	2000	
EUR	RIGA	BUDAPEST	7	1	7	162	1134	1000	1000	
EUR	ROME	BUDAPEST	10	2	7	162	2268	1000	2000	
EUR	SARAJEVO	BUDAPEST	1	1	7	162	1134	1000	1000	
EUR	SKOPJE	BUDAPEST	5	1	7	162	1134	1000	1000	
EUR	SOFIA	BUDAPEST	15	2	7	162	2268	1000	2000	
EUR	TALLINN	BUDAPEST	7	1	7	162	1134	1000	1000	

EUR	TIRANA	BUDAPEST	11	1	7	162	1134	1000	1000	
EUR	VILNIUS	BUDAPEST	12	1	7	162	1134	1000	1000	
EUR	WARSAW	BUDAPEST	131	2	7	162	2268	1000	2000	2- 10/40
EUR	ZAGREB	BUDAPEST	7	1	7	162	1134	1000	1000	
LAC	ASUNCION	MIAMI	1	1	7	108	756	1000	1000	
LAC	BELIZE CITY	MIAMI	22	2	7	108	1512	1000	2000	1 -IPX
LAC	BOGOTA	MIAMI	20	2	7	108	1512	1000	2000	
LAC	BRASILIA	MIAMI	11	1	7	108	756	1000	1000	
LAC	BRIDGETOWN	MIAMI	50	2	7	108	1512	1000	2000	2- 10/40
LAC	BUENOS ARIES	MIAMI	1	1	7	108	756	1000	1000	
LAC	GEORGETOWN	MIAMI	4	1	7	108	756	1000	1000	
LAC	GUATEMALA CITY	MIAMI	210	2	7	108	1512	1000	2000	WANG 1 -10/40
LAC	KINGSTON	MIAMI	110	2	7	108	1512	1000	2000	2- 10/40
LAC	LA PAZ	MIAMI	214	2	7	108	1512	1000	2000	1 -10/40
LAC	LIMA	MIAMI	161	2	7	108	1512	1000	2000	2- 10/40
LAC	MANAGUA	MIAMI	133	2	7	108	1512	1000	2000	2- 10/40
LAC	MEXICO CITY	MIAMI	14	1	7	108	756	1000	1000	
LAC	MONTEVIDEO	MIAMI	10	1	7	108	756	1000	1000	
LAC	PANAMA CITY	MIAMI	52	2	7	108	1512	1000	2000	2- 10/40
LAC	PORT-AU-PRINCE	MIAMI	106	2	7	108	1512	1000	2000	1 -20/51
LAC	QUITO	MIAMI	120	2	7	108	1512	1000	2000	1 -20/51
LAC	SAN JOSE	MIAMI	120	2	7	108	1512	1000	2000	1 -10/40
LAC	SAN SALVADOR	MIAMI	250	2	7	108	1512	1000	2000	WANG 2- 10/40
LAC	SANTIAGO	MIAMI	7	1	7	108	756	1000	1000	
LAC	SANTO DOMINGO	MIAMI	85	2	7	108	1512	1000	2000	2 - Sparc
LAC	TEGUCIGALPA	MIAMI	170	2	7	108	1512	1000	2000	1 -10/40
NE	AMMAN	MIAMI	62	2	7	150	2100	2000	4000	2- 10/40
NE	BEIRUT	PARIS	1	1	7	140	980	1786	1786	
NE	CAIRO	PARIS	412	2	7	140	1960	1786	3572	WANG 3 - 10/40
NE	JERUSALEM	PARIS	1	1	7	140	980	1786	1786	
NE	MUSCAT	PARIS	17	1	7	140	980	1786	1786	
NE	RABAT	PARIS	90	2	7	140	1960	1786	3572	1 -Sparc2
NE	SANAA	PARIS	21	1	7	140	980	1786	1786	
NE	TUNIS	PARIS	33	2	7	140	1960	1786	3572	
NE	TEL AVIV	PARIS	1	1	7	140	980	1786	1786	
NIS	ALMATY	BUDAPEST	71	2	7	162	2268	900	1800	1 -10/40
NIS	ASHGABAT	PARIS	2	1	7	140	980	1786	1786	
NIS	BAKU	BUDAPEST	1	1	7	286	2002	900	900	
NIS	BISHKEK	BUDAPEST	4	1	7	286	2002	900	900	
NIS	CHISINAU	BUDAPEST	1	1	7	286	2002	900	900	

NIS	DUSHANBE	BUDAPEST	4	1	7	286	2002	900	900	
NIS	KIEV	BUDAPEST	56	2	7	162	2268	900	1800	2- 10/40
NIS	MOSCOW	BUDAPEST	168	2	7	286	4004	900	1800	2 -20/51
NIS	TBILISI	BUDAPEST	1	1	7	286	2002	900	900	
NIS	YEREVAN	BUDAPEST	3	1	7	286	2002	900	900	
TOTAL			6450	170	763		165158		223332	

TOTAL PERDIEM AND TRAVEL

440252

CONFERENCE COSTS

100000

TROUBLE SHOOTING 20 SITES

80000

GRAND TOTAL

620252

Appendix D. Installation Costs for CD ROMS

Here is one price for making CD-ROMS :

Mastering	\$1400
Duplication (100 disks @\$ 1.45 ea.) (includes 2-color art on disk)	145
Cases (100 @\$.35 ea.)	35

	\$1580

For small-medium runs the cost per disk is:

$$100: 1400/100 + 1.80 = \$15.80$$

$$500: 1400/500 + 1.75 = \$4.55$$

$$1000: 1400/1000 + 1.75 = \$3.15$$

A \$250 remounting fee is charged for additional runs instead of the \$1400. Postage for a CD-ROM is \$1.80, plus the cardboard box. A cardboard mailer may be used in lieu of the \$0.35 plastic case. A \$1.00 handling fee could be added to make the cost of printing and shipping a CD-ROM at \$6.00. Sony and 3M offer mastering from \$1500 to \$2000. For 100 CDs for \$2.00 per disk.

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ISP CORPORATE SYSTEMS ROLLOUT AND TRAINING - APPENDIX E

TRAINING COSTS - MACS SITES

BUREAU	CITY	COUNTRY	# of Staff	# of TDYers	# of Days	Per Diem	Total Per Diem	Air Fair Est.	Air Fair Est. *4	CIMS SITE	MACS SITE
AFR	CONAKRY	GUINEA	72	4	7	129	3612		0		2- 10/40
AFR	DAKAR	SENEGAL	55	4	7	186	5208	3500	14000		2- 10/40
AFR	ACCRA	GHANA	53	4	7	162	4536		0		2- 10/40
AFR	BAMAKO	MALI	50	4	7	110	3080		0		1 - Sparc2
AFR	ABIDJAN (C/O 1994)	IVORY COAST	106	4	7	166	4648	2500	10000	WANG	2 - 10/40
AFR	NAIROBI	KENYA	285	4	14	164	9184		0	WANG	UNIX
AFR	ADDIS ABABA	ETHIOPIA	49	4	7	172	4816	4000	16000		1 - 10/40
AFR	ANTANANARIVO	MADAGASCAR	81	4	7	182	5096		0		3 - 10/40
AFR	PRETORIA	SOUTH AFRICA	126	4	7	133	3724	5500	22000		2- 10/40
AFR	LILONGWE	MALAWI	70	4	7	120	3360		0		2- 10/40
AFR	MAPUTO	MOZAMBIQUE	96	4	7	230	6440	3000	12000		2 -Sparc 2
AFR	N'DJAMENA (C/O 1995)	CHAD	53	4	7	143	4004		0		2- 10/40
NE	RABAT	MOROCCO	80	4	7	191	5348	4000	16000		1 -Sparc2
ASIA	JAKARTA	INDONESIA	150	4	7	175	4900		0		2- 10/40
ASIA	MANILA	PHILIPPINES	260	4	14	140	7840	4000	16000	WANG	2- 10/40
ASIA	ISLAMABAD (C/O 1995)	PAKISTAN	250	4	14	124	6944		0	WANG	2- 10/40
ASIA	COLOMBO	SRI LANKA	100	4	7	126	3528		0		2- 10/40
ASIA	NEW DELHI	INDIA	150	4	7	140	3920	3000	12000	WANG	1 - 10/40
ASIA	DHAKA	BANGLADESH	145	4	7	149	4172		0	WANG	1 - 10/40
ASIA	KATHMANDU	NEPAL	98	4	7	156	4368	4000	16000		2- 10/40
EUR	BUDAPEST	HUNGARY	58	4	7	169	4732		0		2- 10/40
EUR	WARSAW	POLAND	44	4	7	185	5180	1500	6000		2- 10/40
LAC	PANAMA CITY	PANAMA	50	4	7	138	3864		0		2- 10/40
LAC	BRIDGETOWN	BARBADOS	50	4	7	174	4872		0		2- 10/40
LAC	SAN JOSE (C/O 1996)	COSTA RICA	120	4	7	153	4284	1500	6000		1 - 10/40
LAC	SAN SALVADOR	EL SALVADOR	250	4	14	131	7336		0	WANG	2- 10/40
LAC	MANAGUA	NICARAGUA	120	4	7	182	5096		0		2- 10/40
LAC	TEGUCIGALPA	HONDURAS	160	4	7	91	2548	1000	4000		1 - 10/40
LAC	KINGSTON	JAMAICA	110	4	7	166	4648		0		2- 10/40
LAC	SANTO DOMINGO	DOMINICAN REPUBLIC	80	4	7	133	3724		0		2 - Sparc2
LAC	PORT-AU-PRINCE	HAITI	100	4	7	98	2744	1500	6000		1 - 20/51
LAC	BELIZE CITY (C/O 1996)	BELIZE	20	4	7	109	3052		0		1 - IPX
LAC	GUATEMALA CITY	GUATEMALA	210	4	14	156	8736	1000	4000	WANG	1 - 10/40
LAC	LIMA	PERU	125	4	7	211	5908		0		2- 10/40
LAC	LA PAZ	BOLIVIA	90	4	7	102	2856		0		1 - 10/40
LAC	QUITO	ECUADOR	120	4	7	108	3024	2000	8000		1 - 20/51
NE	CAIRO	EGYPT	325	4	14	150	8400		0	WANG	3 - 10/40
NE	AMMAN	JORDAN	60	4	7	150	4200	2000	8000		2- 10/40
NIS	MOSCOW	RUSSIA	92	4	7	286	8008		0		2 - 20/51
NIS	ALMATY	KAZAKHSTAN	48	4	7	229	6412		0		1 - 10/40
NIS	KIEV	UKRAINE	37	4	7	217	6076	4500	18000		2- 10/40
TOTALS			4598				204428		194000		

ISP CORPORATE SYSTEMS ROLLOUT AND TRAINING - APPENDIX F

TRAINING COSTS - REGIONAL MACS SITES
TRAVEL FROM WASHINGTON TO THE REGIONS

BUREAU	CITY	REGION	# of Staff	# of TDYers	# of Days	Per Diem	Total Per Diem	Air Fair Est.	Air Fair Est. *2	CIMS SITE	MACS SITE
AFR	ABIDJAN (C/O 1994)	IVORY COAST	106	4	7	166	4648	3000	12000	WANG	2- 10/40
AFR	NAIROBI	KENYA	285	4	14	164	9184	4500	18000	WANG	UNIX
AFR	PRETORIA	SOUTH AFRICA	126	4	7	133	3724	3000	12000		2- 10/40
ASIA	ISLAMABAD (C/O 1995)	PAKISTAN	250	4	14	124	6944	3000	12000	WANG	2- 10/40
ASIA	NEW DELHI	INDIA	150	4	7	140	3920	3000	12000	WANG	1 -10/40
EUR	BUDAPEST	HUNGARY	58	4	7	169	4732	2500	10000		2- 10/40
EUR	WARSAW	POLAND	44	4	7	185	5180	2500	10000		2- 10/40
LAC	QUITO	ECUADOR	120	4	7	108	3024	1500	6000		1 -20/51
NE	CAIRO	EGYPT	325	4	14	150	8400	2500	10000	WANG	3 - 10/40
NIS	MOSCOW	RUSSIA	92	4	7	286	8008	2500	10000		2 -20/51
			1556				57764		112000		

TRAVEL FROM THE MISSIONS TO THE REGIONS

AFR	ABIDJAN	ABIDJAN	106	0	7	166	0	0	0	WANG	2 - 10/40
AFR	ACCRA	ABIDJAN	53	3	7	166	3486	1000	3000		2- 10/40
AFR	ADDIS ABABA	NAIROBI	49	3	7	164	3444	1000	3000		1 -10/40
AFR	ANTANANARIVO	PRETORIA	81	3	7	133	2793	1000	0		3 - 10/40
AFR	ASMARA	NAIROBI	2	3	7	164	3444	2500	7500		
AFR	BAMAKO	ABIDJAN	50	3	7	166	3486	500	1500		1 - Sparc
AFR	BANJUL	ABIDJAN	30	3	7	166	3486	500	1500		
AFR	BISSAU	ABIDJAN	3	3	7	166	3486	500	1500		
AFR	BUJUMBURA	NAIROBI	4	3	7	164	3444	500	1500		
AFR	CONAKRY	ABIDJAN	72	3	7	166	3486	500	1500		2- 10/40
AFR	COTONOU	ABIDJAN	40	3	7	166	3486	500	1500		
AFR	DAKAR	ABIDJAN	55	3	7	164	3444	500	1500		2- 10/40
AFR	DAR ES SALAAM	NAIROBI	59	3	7	164	3444	500	1500		
AFR	GABORONE	PRETORIA	35	3	7	133	2793	500	1500		
AFR	HARARE	PRETORIA	64	3	7	164	3444	1000	3000		
AFR	KAMPALA	NAIROBI	90	3	7	164	3444	1000	3000		
AFR	KHARTOUM	NAIROBI	3	2	7	164	2296	1000	2000		
AFR	KIGALI	NAIROBI	49	3	7	164	3444	500	1500		
AFR	LAGOS	ABIDJAN	0				0	500	0		
AFR	LILONGWE	NAIROBI	70	3	7	164	3444	500	1500		2- 10/40
AFR	LUANDA	PRETORIA	2	2	7	164	2296	500	1000		

AFR	LUSAKA	PRETORIA	35	3	7	133	2793	500	1500	
AFR	MAPUTO	PRETORIA	96	3	7	133	2793	500	1500	2 -Sparc
AFR	MASERU	NAIROBI	2	2	7	164	2296	500	1000	
AFR	MBABANE	PRETORIA	60	3	7	104	2184	500	1500	
AFR	MOGADISHU	NAIROBI	3	2	7		0		0	
AFR	MONROVIA	NAIROBI	1				0		0	
AFR	NAIROBI	NAIROBI	285	0	7	164	0	0	0	WANG UNIX
AFR	N'DJAMENA	ABIDJAN	53	3	7	166	3486	500	1500	2- 10/40
AFR	NIAMEY	ABIDJAN	48	3	7	166	3486	500	1500	
AFR	OUAGADOUGOU	ABIDJAN	2	3	7	133	2793	500	1500	
AFR	PRAIA	PRETORIA	14	3	7	133	2793	500	1500	
AFR	PRETORIA	PRETORIA	126	0	7	133	0	0	0	2- 10/40
AFR	WINDHOEK	PRETORIA	28	3	7	166	3486	500	1500	
AFR	YAOUNDE	ABIDJAN	65	3	7	166	3486	2500	7500	
ASIA	BANGKOK	NEW DELHI	79	3	7	140	2940	1000	3000	
ASIA	COLOMBO	NEW DELHI	100	3	7	140	2940	1000	3000	2- 10/40
ASIA	DHAKA	NEW DELHI	145	3	7	140	2940	1000	3000	WANG 1 -10/40
ASIA	ISLAMABAD	NEW DELHI	250	3	7	140	2940	1000	3000	WANG 2- 10/40
ASIA	JAKARTA	NEW DELHI	150	3	7	140	2940	1000	3000	2- 10/40
ASIA	KATHMANDU	NEW DELHI	98	3	7	140	2940	1000	3000	2- 10/40
ASIA	MANILA	NEW DELHI	260	3	7	140	2940	1000	3000	WANG 2- 10/40
ASIA	NEW DELHI	NEW DELHI	150	3	7	140	2940	1000	3000	WANG 1 -10/40
ASIA	PHNOM PENH	NEW DELHI	25	3	7	140	2940	500	1500	
ASIA	SINGAPORE	NEW DELHI	4	3	7	140	2940	1000	3000	
ASIA	SUVA	CLOSED FUJI	50				0		0	
ASIA	TOKYO	NEW DELHI	1	1	7	140	980	1000	1000	
ASIA	ULAANBATAAR	BUDAPEST	1	1	7	169	1183	1000	1000	
EUR	BONN	BUDAPEST	16	3	7	169	3549	1000	3000	
EUR	BRATISLAVA	BUDAPEST	3	2	7	169	2366	1000	2000	
EUR	BUCHAREST	BUDAPEST	20	3	7	169	3549	1000	3000	
EUR	BUDAPEST	BUDAPEST	58	3	7	169	3549	1000	3000	2- 10/40
EUR	GENEVA	BUDAPEST	2	2	7	169	2366	1000	2000	
EUR	HELSINKI	WARSAW	0				0	1000	0	
EUR	LISBON	BUDAPEST	0				0	1000	0	
EUR	LJUBLJANA	BUDAPEST	0				0	1000	0	
EUR	PARIS	BUDAPEST	3	2	7	169	2366	1000	2000	
EUR	PRAGUE	BUDAPEST	30	3	7	169	3549	1000	3000	
EUR	RIGA	BUDAPEST	2	2	7	169	2366	1000	2000	
EUR	ROME	BUDAPEST	4	3	7	169	3549	1000	3000	
EUR	SARAJEVO	BUDAPEST	1	1	7	169	1183	1000	1000	

EUR	SKOPJE	BUDAPEST	2	2	7	169	2366	1000	2000	
EUR	SOFIA	BUDAPEST	12	3	7	169	3549	1000	3000	
EUR	TALLINN	BUDAPEST	2	1	7	169	1183	1000	1000	
EUR	TIRANA	BUDAPEST	2	1	7	185	1295	1000	1000	
EUR	VILNIUS	WARSAW	2	1	7	185	1295	1000	1000	
EUR	WARSAW	WARSAW	44	0	7	185	0	0	0	2- 10/40
EUR	ZAGREB	BUDAPEST	4	3	7	185	3885	1000	3000	
LAC	ASUNCION	QUITO	1	1	7	108	756	1000	1000	
LAC	BELIZE CITY	QUITO	20	3	7	108	2268	1000	3000	1 -IPX
LAC	BOGOTA	QUITO	20	3	7	108	2268	1000	3000	
LAC	BRASILIA	QUITO	10	3	7	108	2268	1000	3000	
LAC	BRIDGETOWN	QUITO	50	3	7	108	2268	1000	3000	2- 10/40
LAC	BUENOS ARIES	QUITO	1	1	7	108	756	1000	1000	
LAC	GEORGETOWN	QUITO	4	3	7	108	2268	1000	3000	
LAC	GUATEMALA CITY	QUITO	210	3	7	108	2268	1000	3000	WANG 1 -10/40
LAC	KINGSTON	QUITO	110	3	7	108	2268	1000	3000	2- 10/40
LAC	LA PAZ	QUITO	90	3	7	108	2268	1000	3000	1 -10/40
LAC	LIMA	QUITO	125	3	7	108	2268	1000	3000	2- 10/40
LAC	MANAGUA	QUITO	120	3	7	108	2268	1000	3000	
LAC	MEXICO CITY	QUITO	14	3	7	108	2268	1000	3000	
LAC	MONTEVIDEO	QUITO	10	3	7	108	2268	1000	3000	
LAC	PANAMA CITY	QUITO	50	3	7	108	2268	1000	3000	2- 10/40
LAC	PORT-AU-PRINCE	QUITO	100	3	7	108	2268	1000	3000	1 -20/51
LAC	QUITO	QUITO	120	3	7	108	2268	1000	3000	1 -20/51
LAC	SAN JOSE	QUITO	120	3	7	108	2268	1000	3000	1 -10/40
LAC	SAN SALVADOR	QUITO	250	3	7	108	2268	1000	3000	WANG 2- 10/40
LAC	SANTIAGO	QUITO	7	2	7	108	1512	1000	2000	
LAC	SANTO DOMINGO	QUITO	80	3	7	108	2268	1000	3000	2 - Spare
LAC	TEGUCIGALPA	QUITO	160	3	7	108	2268	1000	3000	1 -10/40
NE	AMMAN	CAIRO	60	3	7	150	3150	2000	6000	2- 10/40
NE	BEIRUT	CAIRO	1	1	7	150	1050	2000	2000	
NE	CAIRO	EGYPT	325	0	7	150	0	0	0	WANG 3 - 10/40
NE	JERUSALEM	CAIRO	1	1	7	150	1050	2000	2000	
NE	MUSCAT	CAIRO	16	3	7	150	3150	2000	6000	
NE	RABAT	CAIRO	80	3	7	150	3150	2000	6000	1 -Spare2
NE	SANAA	CAIRO	21	3	7	150	3150	2000	6000	
NE	TEL AVIV	CAIRO	1	1	7	150	1050	2000	2000	
NIS	ALMATY	BUDAPEST	48	3	7	169	3549	1500	4500	1 -10/40
NIS	ASHGABAD	NEW DELHI	1	1	7	286	2002	1500	1500	
NIS	BAKU	MOSCOW	1	1	7	286	2002	1500	1500	

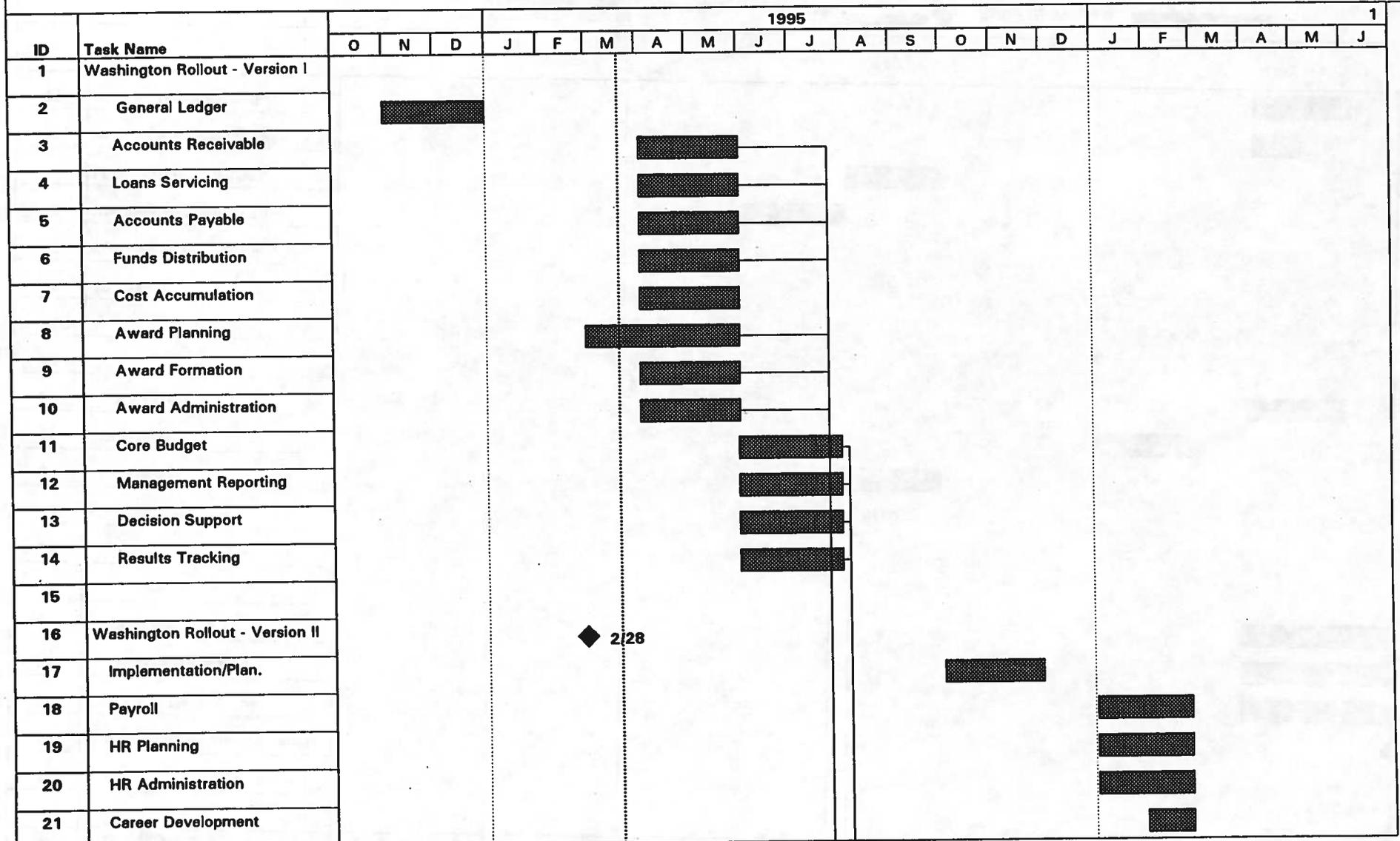
NIS	BISHKEK	NEW DELHI	1	1	7	286	2002	1500	1500	
NIS	CHISINAU	MOSCOW	1	1	7	286	2002	1500	1500	
NIS	DUSHANBE	MOSCOW	1	1	7	286	2002	1500	1500	
NIS	KIEV	WARSAW	37	3	7	286	6006	1500	4500	2- 10/40
NIS	MOSCOW	MOSCOW	92	3	7	286	6006	1500	4500	2 -20/51
NIS	TBILISI	MOSCOW	1	1	7	286	2002	1500	1500	
NIS	TUNIS	C AIRO	33	3	7	286	6006	2000	6000	
NIS	YEREVAN	MOSCOW	3	2	7	286	4004	1500	3000	
TOTAL			5651	249	721		264663		247500	
						GRAND TOTAL			681927	

ISP CORPORATE SYSTEMS ROLLOUT AND TRAINING - APPENDIX G

TRAINING COSTS - TRAIN THE TRAINER IN AID/W

BUREAU	CITY	COUNTRY	# of Staff	# of TDYers	# of Days	Per Diem	Total Per Diem	Air Fair Est.	Air Fair Est. Total	CIMS SITE	MACS SITE
AFR	CONAKRY	GUINEA	72	2	14	151	4228	4000	8000		2- 10/40
AFR	DAKAR	SENEGAL	55	2	14	151	4228	4000	8000		2- 10/40
AFR	ACCRA	GHANA	53	2	14	151	4228	4000	8000		2- 10/40
AFR	BAMAKO	MALI	50	2	14	151	4228	4000	8000		1 - Sparc2
AFR	ABIDJAN (C/O 1994)	IVORY COAST	106	2	14	151	4228	4000	8000	WANG	2- 10/40
AFR	NAIROBI	KENYA	285	4	14	151	8456	4000	16000	WANG	UNIX
AFR	ADDIS ABABA	ETHIOPIA	49	2	14	151	4228	4000	8000		1 - 10/40
AFR	ANTANANARIVO	MADAGASCAR	81	2	14	151	4228	4000	8000		3 - 10/40
AFR	PRETORIA	SOUTH AFRICA	126	2	14	151	4228	4000	8000		2- 10/40
AFR	LILONGWE	MALAWI	70	2	14	151	4228	4000	8000		2- 10/40
AFR	MAPUTO	MOZAMBIQUE	96	2	14	151	4228	4000	8000		2 - Sparc 2
AFR	N'DJAMENA (C/O 1995)	CHAD	53	2	14	151	4228	4000	8000		2- 10/40
NE	RABAT	MOROCCO	80	2	14	151	4228	4000	8000		1 - Sparc2
ASIA	JAKARTA	INDONESIA	150	2	14	151	4228	3000	6000		2- 10/40
ASIA	MANILA	PHILIPPINES	260	4	14	151	8456	3000	12000	WANG	2- 10/40
ASIA	ISLAMABAD (C/O 1995)	PAKISTAN	250	4	14	151	8456	3000	12000	WANG	2- 10/40
ASIA	COLOMBO	SRI LANKA	100	2	14	151	4228	3000	6000		2- 10/40
ASIA	NEW DELHI	INDIA	150	2	14	151	4228	3000	6000	WANG	1 - 10/40
ASIA	DHAKA	BANGLADESH	145	2	14	151	4228	3000	6000	WANG	1 - 10/40
ASIA	KATHMANDU	NEPAL	98	2	14	151	4228	3000	6000		2- 10/40
EUR	BUDAPEST	HUNGARY	58	2	14	151	4228	2000	4000		2- 10/40
EUR	WARSAW	POLAND	44	2	14	151	4228	2000	4000		2- 10/40
LAC	PANAMA CITY	PANAMA	50	2	14	151	4228	1000	2000		2- 10/40
LAC	BRIDGETOWN	BARBADOS	50	2	14	151	4228	1000	2000		2- 10/40
LAC	SAN JOSE (C/O 1996)	COSTA RICA	120	2	14	151	4228	1000	2000		1 - 10/40
LAC	SAN SALVADOR	EL SALVADOR	250	4	14	151	8456	1000	4000	WANG	2- 10/40
LAC	MANAGUA	NICARAGUA	120	2	14	151	4228	1000	2000		2- 10/40
LAC	TEGUCIGALPA	HONDURAS	160	2	14	151	4228	1000	2000		1 - 10/40
LAC	KINGSTON	JAMAICA	110	2	14	151	4228	1000	2000		2- 10/40
LAC	SANTO DOMINGO	DOMINICAN REPUBLIC	80	2	14	151	4228	1000	2000		2 - Sparc2
LAC	PORT-AU-PRINCE	HAITI	100	2	14	151	4228	1000	2000		1 - 20/51
LAC	BELIZE CITY (C/O 1996)	BELIZE	20	2	14	151	4228	1000	2000		1 - IPX
LAC	GUATEMALA CITY	GUATEMALA	210	4	14	151	8456	1000	4000	WANG	1 - 10/40
LAC	LIMA	PERU	125	2	14	151	4228	1000	2000		2- 10/40
LAC	LA PAZ	BOLIVIA	90	2	14	151	4228	1000	2000		1 - 10/40
LAC	QUITO	ECUADOR	120	2	14	151	4228	1000	2000		1 - 20/51
NE	CAIRO	EGYPT	325	4	14	151	8456	2000	8000	WANG	3 - 10/40
NE	AMMAN	JORDAN	60	2	14	151	4228	2000	4000		2- 10/40
NIS	MOSCOW	RUSSIA	92	2	14	151	4228	3000	6000		2 - 20/51
NIS	ALMATY	KAZAKHSTAN	48	2	14	151	4228	3000	6000		1 - 10/40
NIS	KIEV	UKRAINE	37	2	14	151	4228	3000	6000		2- 10/40
TOTALS			4598				198716		236000		

**APPENDIX H. ISP CORPORATE SYSTEMS
ROLLOUT AND TRAINING SCHEDULE**



◆ 2/28

Project: ISP SYSTEMS ROLLOUT
Date: 3/21/95

Task	█	Summary	▾	Rolled Up Progress	█
Progress	█	Rolled Up Task	█		
Milestone	◆	Rolled Up Milestone	◇		

**APPENDIX H. ISP CORPORATE SYSTEMS
ROLLOUT AND TRAINING SCHEDULE**

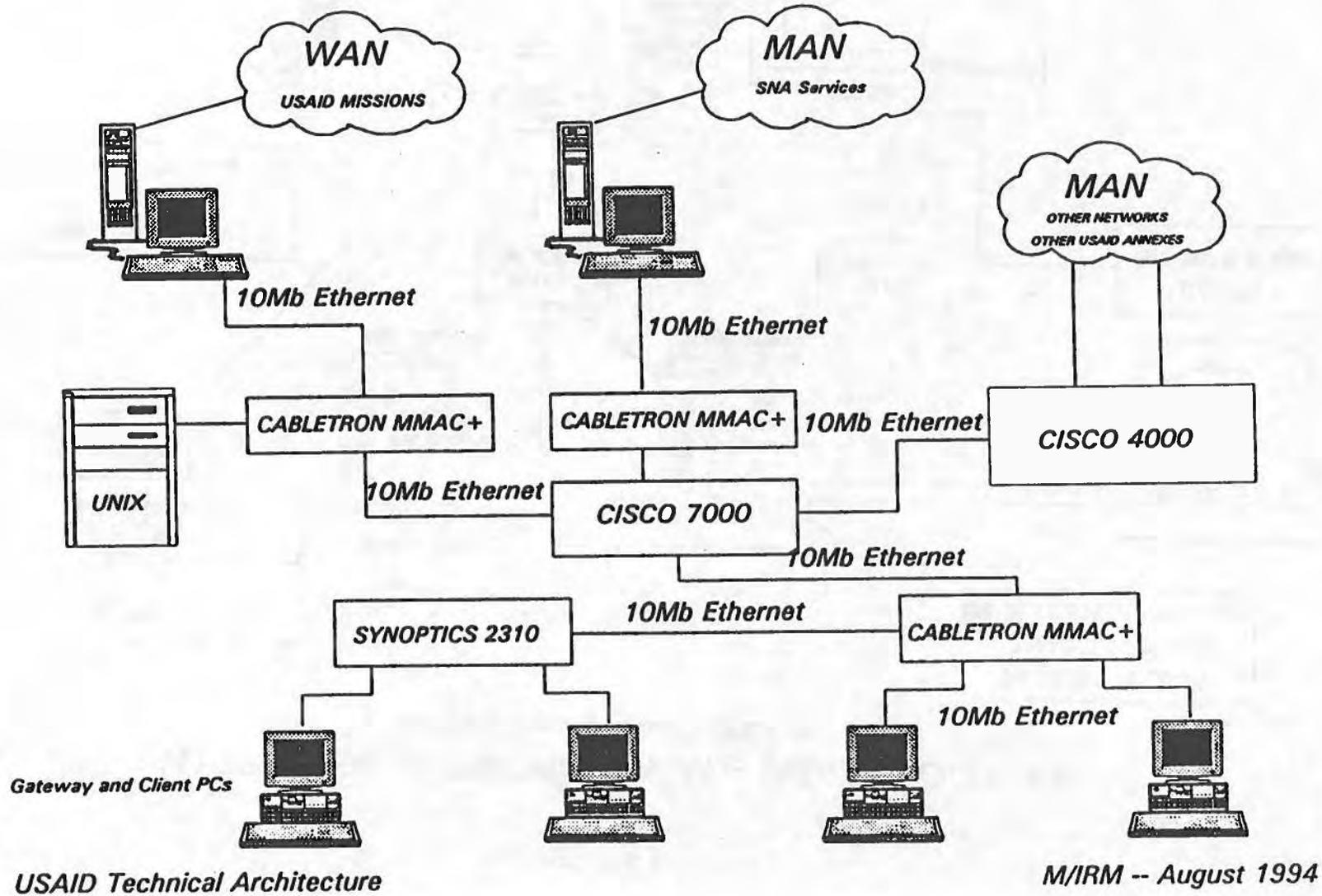
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		O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
22																						
23																						
24	Washington Rollout - Version III																					
25	Property Plann & Eval.																					
26	Usage Mgmt & Inv.																					
27	Motor Pool Mgmt.																					
28																						
29																						
30	Missions Rollout																					
31	Version I																					
32	Version II																					
33	Version III																					
34																						
35																						
36	TRAINING																					
37	Systems Admin. Training																					
38	Washington Training 1995																					
39	Missions Training 1995																					
40	Washington Training 1996																					
41	Mission Training 1996																					

Project: ISP SYSTEMS ROLLOUT
Date: 3/21/95

Task		Summary		Rolled Up Progress	
Progress		Rolled Up Task			
Milestone		Rolled Up Milestone			

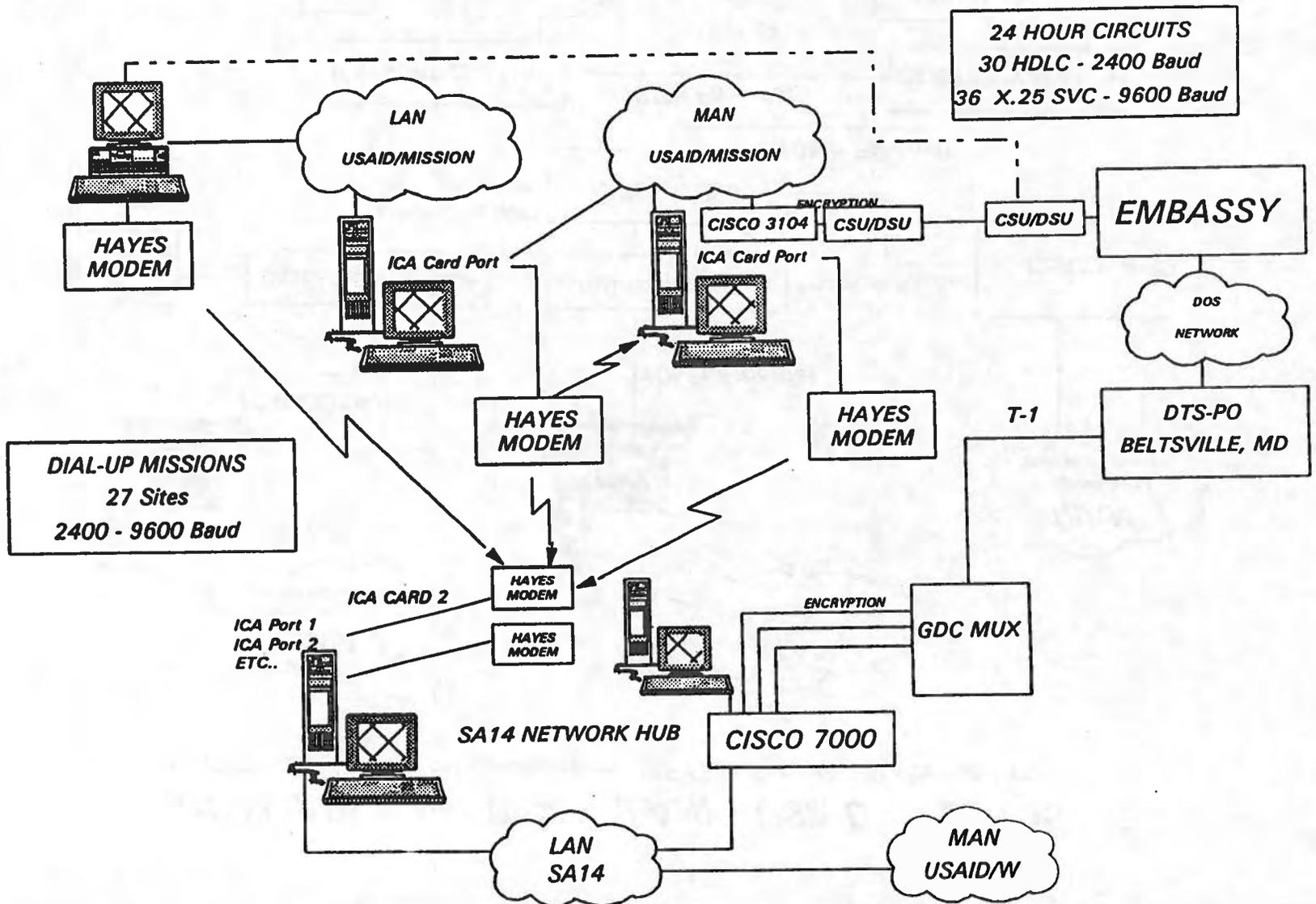
APPENDIX I.

LOCAL AREA NETWORK (LAN) - USAID - OCT '95
(USAID/W - SA14) Typical Configuration (35 Files Servers, 12 Unix servers)



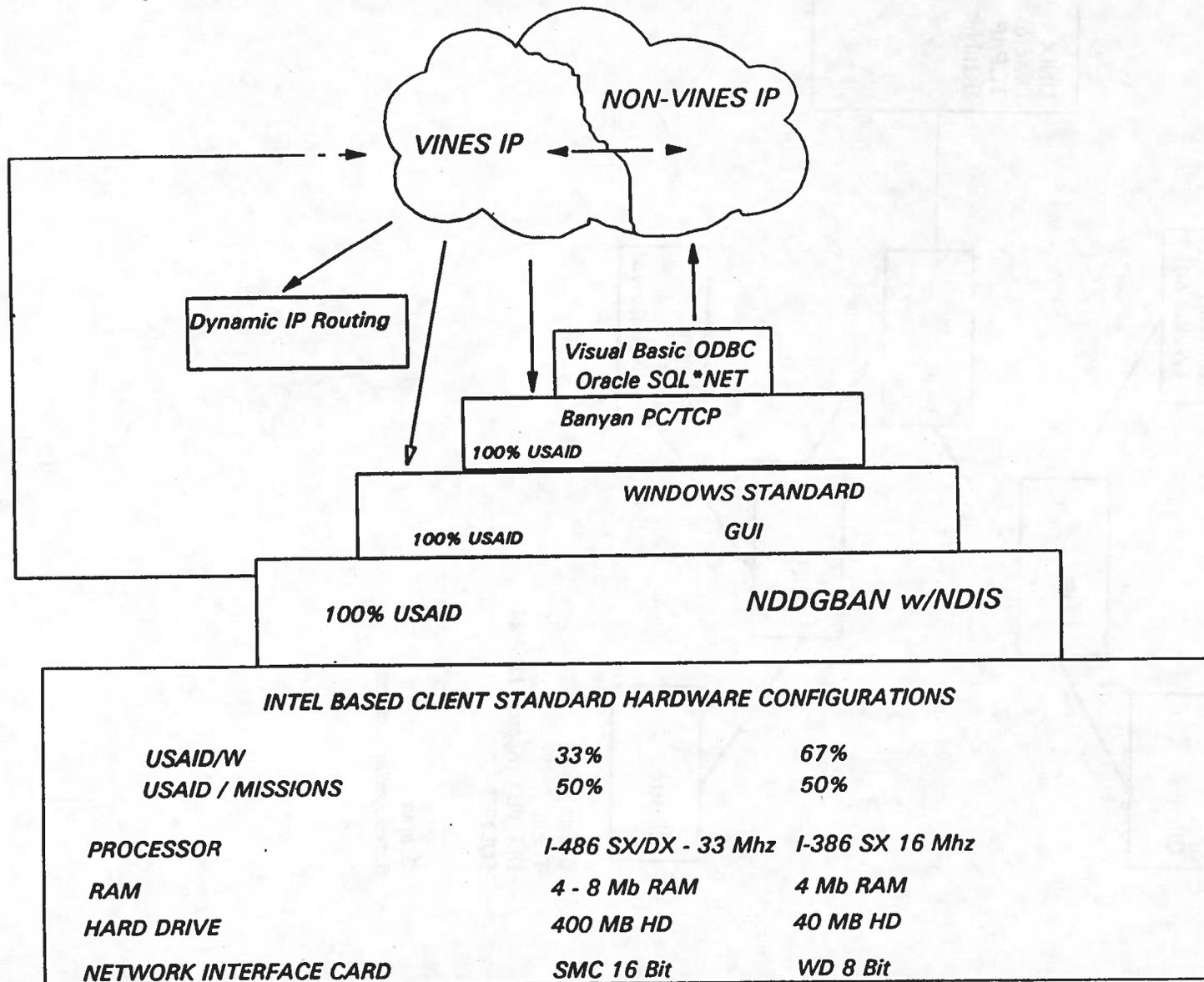
APPENDIX J.

WIDE AREA NETWORK (WAN) - USAID - OCT '95
 Connectivity with USAID/Missions



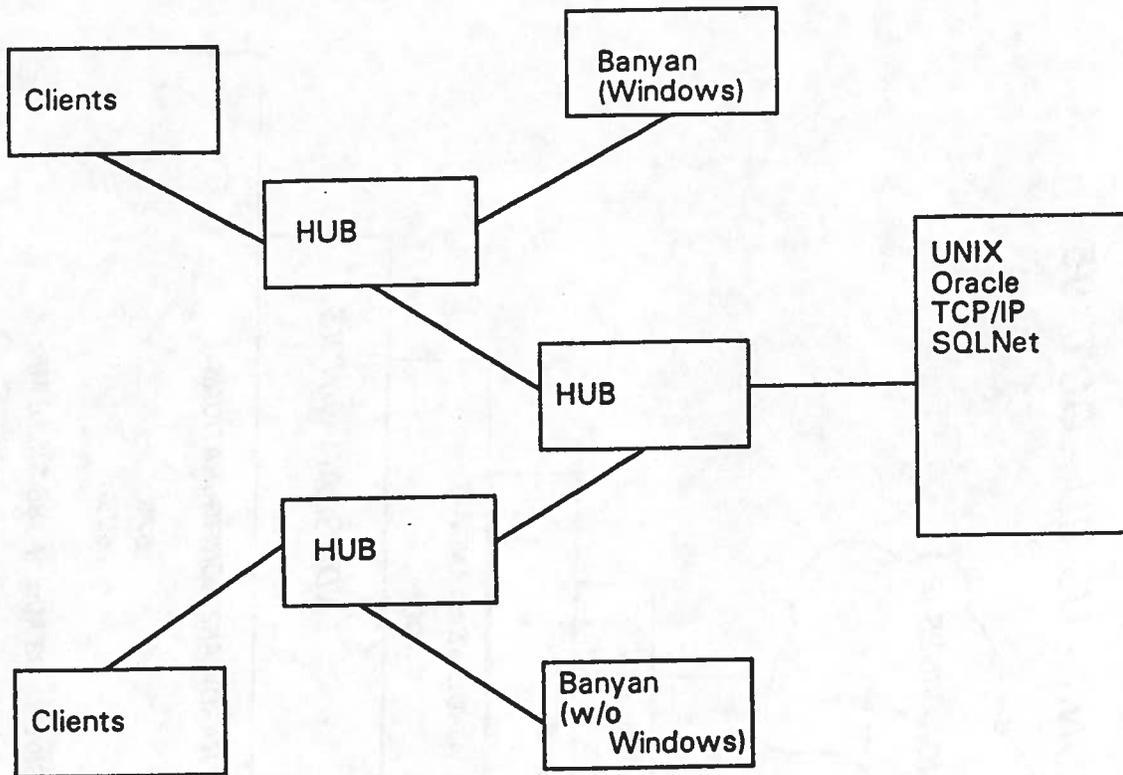
APPENDIX K.

CLIENT PC CONFIGURATIONS - USAID - OCT '95



APPENDIX L.

Planned Production Environment



Clients
TCP/IP
DLL VBX (Approx. 12.5Mb)
SQLNET

Banyan
Developed applications

Section 2.0 Business System Dependency Between Business Areas

This section lists the system dependencies that cross business area lines. For each business area the projected systems are listed. For each system, there is a list of Related systems.

Core Accounting		
Core Accounting Projected Systems	Feed	Related Systems
General Ledger	←	Human Resources: ♦ Payroll
Accounts Receivable		
Accounts Payable	←	Procurement: ♦ Contract Award & Administration
	←	Human Resources: ♦ Payroll
Loans Servicing		
Funds Control & Usage	↔	Budgeting: ♦ Budget Formulation & Distribution
Cost Accumulation		

Budgeting		
Budgeting Projected Systems	Feed	Related Systems
Formulation & Distribution	←	Procurement: ♦ Contract Formulation
	←	Human Resource: ♦ Planning
	↔	Core Accounting: ♦ Funds Control & Usage
	←	Operations: ♦ Implementation Planning
Management Reporting	←	Core Accounting: ♦ General Ledger
	←	♦ Funds Control & Usage
	←	♦ Results Planning & Monitoring
Decision Support		

Procurement (Acquisition & Assistance)		
Procurement Projected Systems	Feed	Related Systems
A & A Planning	← ↔	Operations: ◆ Implementation Planning Budgeting: ◆ Budget Formulation & Distribution
Contract Formulation	→	Budgeting: ◆ Budget Formulation & Distribution
Contract Award & Administration	→ ↔ → ↔	Budgeting: ◆ Budget Formulation & Distribution Core Accounting: ◆ Funds Control & Usage ◆ Accounts Payable Property: ◆ Usage Management & Inventory
Contract Support	← ← ← ← ← ← ←	Budgeting: ◆ Budget Formulation & Distribution ◆ Management Reporting Core Accounting: ◆ Funds Control & Usage ◆ General Ledger ◆ Accounts Payable Property: ◆ Usage Management & Inventory Human Resource: ◆ Payroll

Operations		
Operations Projected Systems	Feed	Related Systems
Implementation Planning	→ →	Budgeting: ◆ Budget Formulation & Distribution Procurement: ◆ Planning
Results Planning & Monitoring		

Human Resources		
Human Resources Projected Systems	Feed	Related Systems
Planning	← →	Operations: ◆ Implementation Planning Budgeting: ◆ Budget Formulation & Distribution
Administration		
Career Development		
Payroll	← → →	Budgeting: ◆ Budget Formulation & Distribution Core Accounting: ◆ General Ledger ◆ Accounts Payable

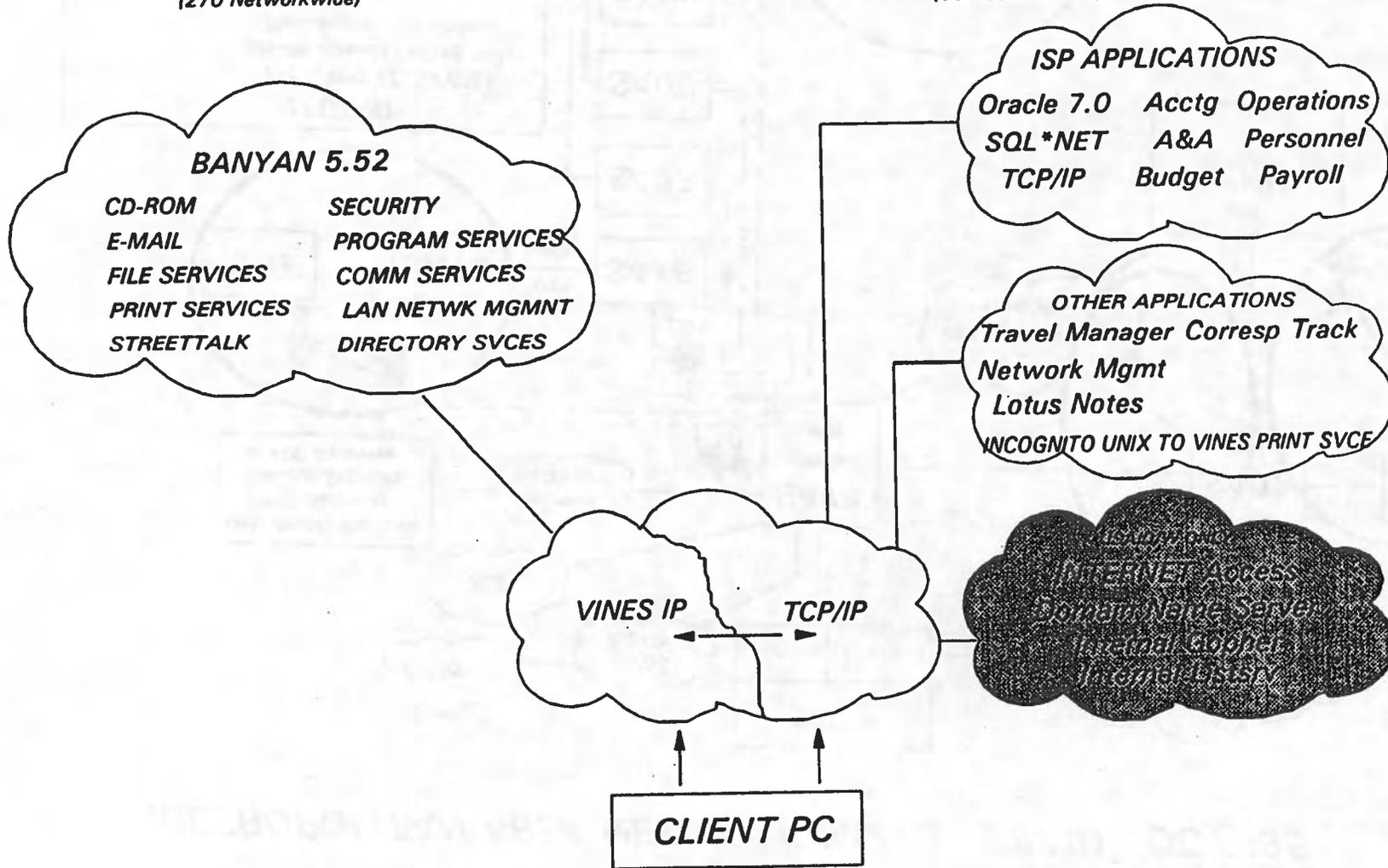
Property		
Property Projected Systems	Feed	Related Systems
Property Planning & Evaluation	← ←	Operations: ◆ Implementation Planning Procurement: ◆ A & A Planning
Usage Management & Inventory	↔ → → →	Procurement: ◆ Contract Award & Administration Core Accounting: ◆ Funds Control & Usage ◆ General Ledger ◆ Accounts Payable
Motor Pool Management	↔ → → →	Procurement: ◆ Contract Award & Administration Core Accounting: ◆ Funds Control & Usage ◆ General Ledger ◆ Accounts Payable

APPENDIX O.

NETWORK SERVICES CONFIGURATIONS - USAID - OCT '95

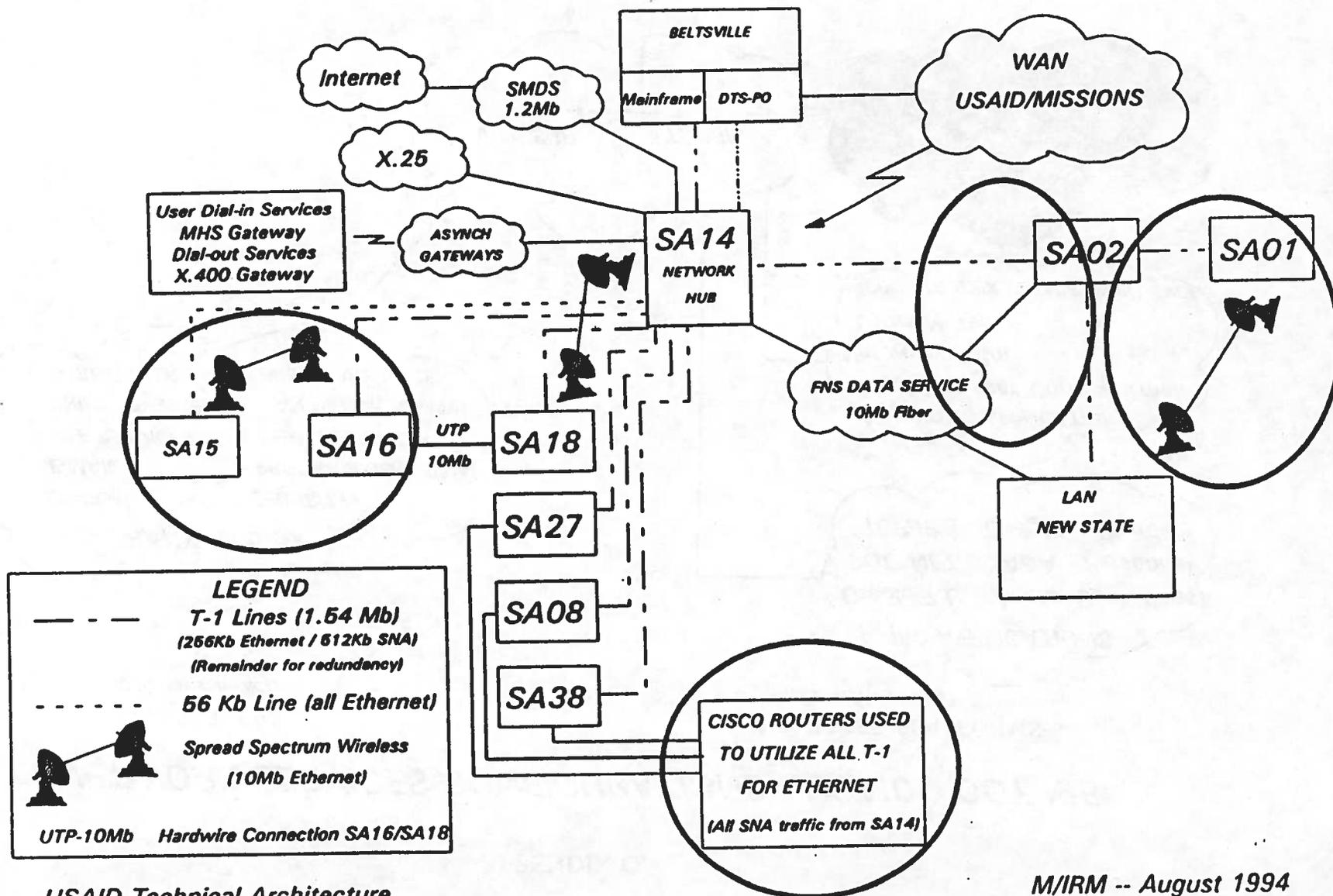
LAN SERVERS
(270 Networkwide)

UNIX BASED PLATFORMS
(150 Networkwide)



APPENDIX P.

METROPOLITAN AREA NETWORK (MAN) - USAID - OCT '95



USAID Technical Architecture

M/IRM -- August 1994

Last update: 9/11/94

Appendix Q. PC Configuration for ISP Systems

Desired PC hardware configuration for USAID ISP applications is:

- 486 CPU, 8-16 MB RAM
- 100MB free disk space
- Etherlink III Network Interface Card

Software that will already be loaded on client PCs before ISP installation procedure is ran:

- DOS 5.0 or higher
- Windows 3.1 or higher either networked, as the rule, or PC based, as the exception
- DOS 6.22
- QEMM Memory Manager Version 7
- OnNet Version 1.1 from FTP Software Inc.
- Oracle SQL*Net Version 1.1 or 2.0

Clients PCs will run network version of Word Perfect and Lotus.

Appendix R. Cost /Benefit Table for Rolloout Options

January 23, 1995

<p>Option I Regional Plus</p>	<p>Option II All Sites</p>
<p>Description:</p> <p>Five installation conferences will be given at selected regional centers. Five sites nominated for the conferences are Miami, Budapest, Paris, Pretoria, and Manila.</p> <p>All missions will send 1 or 2 staff to the conferences. Pre-configured software will be given at the conferences for the system administrators to bring back for mission installation. IRM will provide on-site assistance only if the missions have problems in their installations.</p>	<p>Description:</p> <p>Installation teams will travel to all 46 MACS sites plus a number of missions that will have partial systems.</p>

ISP Systems Rollout and Training Plan

<p>Pros:</p> <p>20 sites will have on site assistance, 80 sites will receive installation training at the conferences.</p> <p>Cons:</p> <p>Complication of multiple conferences in foreign countries. Some of the sites that will receive the training will not have the machine capacity for the new systems. Only half of the sites that have the machine capacity will have on-side support and training.</p> <p>Difficult to plan for which countries will need assistance</p>	<p>Pros:</p> <p>Less costly</p> <p>All 46 missions that have the servers will have on-site assistance. Problems would be solved on the spot.</p> <p>IRM team can test remote systems administration and batch data transfer.</p> <p>Cons:</p> <p>54 missions will not have any assistance or training.</p> <p>More IRM technicians will be away from headquarters</p>
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Variation of Option I.

Washington Training --
Conduct one conference in Washington
and have all the missions send 1 to 2
people for installation training.

Costs:

(These estimates are extrapolated from
TCO's EXOs/Sys. Administrators'
conference in Leesburg, VA) :

Travel and per diem for 170 people:

Travel : \$300,000
Per diem: \$150,000

Total: \$450,000

Travel and per diem for trouble shooting:

Assume 20% will need on-site assistance:

20 problem sites, 10 TDYs (1 per region)

$\$4000 * 2 * 10 = \$80,000$

Total \$530,000

ISP Systems Rollout and Training Plan

<p>Pros:</p> <p>One conference to plan Missions' preference</p> <p>There is no extra conference facility charge.</p> <p>Cons:</p> <p>20 sites receive on-site assistance, 80 receive training and indirect assistance.</p>	
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TIME REQUIREMENT FOR IRM TECHNICIANS AWAY FROM HEADQUARTERS

Option I - Regional conferences plus trouble shooting at 20 sites

3 IRM technical staffs spend 5 weeks at the conferences plus
6 technical people spend 6 weeks and 3 staffs spend 8 weeks away from the headquarters.

No. missions	No. TDYs	No. missions/per TDY	No. of teams	No. of staff per team	Total No. of staff
12	6	2	2	3	6
8	4	2	1	3	3

Option II -- IRM visits all 46 Unix sites

15 IRM technical people will be traveling away from the headquarters for 8 weeks and 3 people travel for 6 weeks.

No. missions	No. TDYs	No. missions/per TDY	No. of teams	No. of staff per team	Total No. of staff
40	10	4	5	3	15
6	2	3	1	3	3

ISP Systems Rollout and Training Plan

1. Introduction

The purpose of this plan is to outline the strategy for the rollout and training of the new Information System (ISP) across the organization. This document will define the scope, objectives, and key milestones of the project, ensuring a smooth transition to the new system.

Phase	Start Date	End Date	Key Activities
Phase 1: Planning	2024-01-01	2024-02-15	Requirement gathering, system selection, and initial budgeting.
Phase 2: Design	2024-02-16	2024-03-31	Detailed system architecture and user interface design.
Phase 3: Development	2024-04-01	2024-06-30	Software development, testing, and integration with existing systems.
Phase 4: Deployment	2024-07-01	2024-08-31	System installation, data migration, and initial user training.
Phase 5: Post-Implementation	2024-09-01	Ongoing	Monitoring system performance, providing ongoing support, and conducting advanced training.

Department	Lead	Rollout Date	Training Status
Finance	J. Doe	2024-07-15	Completed
Operations	A. Smith	2024-07-20	In Progress
Marketing	B. Johnson	2024-08-01	Not Started
HR	C. Williams	2024-08-15	Not Started
IT	D. Brown	2024-09-01	Not Started

Appendix S. Recommended ISP Unix Server Configuration For The Missions

The recommended ISP Unix Server configuration for missions is:

- Sparc Station10 or Sparc Station 20 CPU with 128 to 256 MB RAM
- 17" Color Monitor
- 1.05 GB Internal Disk
- Internal 1.44 MB Diskette Drive
- Sun Sbus Adapter
- Sun External Disk Storage, 4 x 2.2 GB
- Sun CD-ROM Drive
- Controller Card for SCSI Connection
- 5 GB 4 mm Tape Backup Drive
- Sun ¼" Cartridge Tape Drive
- Sun Sparc Printer

Appendix T. Current New Management System Rollout Issues

USAID is actively working on the following rollout issues:

- Washington and Mission Hardware/Software Requirements -- M/IRM Technical Architecture teams have performed benchmarks to test and validate recommended system configurations able to support existing and future Agency's applications. M/IRM performed the benchmark on Sparc 2 and Sparc 10 computers simulating 10 to 100 concurrent users accessing a database application with MACS running reconciliation in the background at the same time. This represented a worst case scenario with heaviest CPU load.

It is the intent of the technical planners to standardize on the Sun Sparc 10 or 20 as the ISP server platform with memory and/or storage upgrades needed to accommodate anticipated performance levels. For those missions with Sparc 2S, IRM recommends that they consider upgrading to Sparc 20s since the future maintenance and functionality needs can be better served under this newer, more powerful architecture. A Sparc 10 or 20 server with 128 MB memory would be sufficient to support about 30 Oracle users at a time. Missions with a larger number of users accessing Oracle at the same time would want to consider upgrading up to 256 MB, depending on their specific processing needs.

Regarding the PC workstations that will run the ISP applications, the ideal environment for these machines is a Windows-based, 486 CPU with 16 MB of memory.

A more detailed workshop session on hardware configurations will take place on April 6. A cable is being sent to all missions on the same subject.

- Interoperability Lab - The Interoperability Lab has been set up and is now testing the A&A modules. All of the NMS software modules will be tested on PCs that simulate the diversity of the USAID/W and USAID/missions environment. An Interoperability Lab Status Report, dated 3/29/95, follows this handout.
- A combined Oracle, UNIX, Banyan technical group is in the process of developing detailed installation plans for ISP rollout. The group is working on an installation plan that is (1) as fully automated as possible, (2) standardizes the client and server environments for easier long-term support and (3) provides for an expedient and successful restoration of an individual's working environment when a problem occurs.

- **Beta Test Sites** - The early version of the integrated systems will be tested at Beta test sites to obtain representative mission feedback. There will be two levels of Beta testing: (1) the testing of each module, and (2) testing the rollout of the full suite as one integrated system. The BAs should try to use as many of the same missions for Beta testing. IRM will coordinate the identification of test sites to achieve as much consistency as possible. A&A, for example, has chosen Guatemala, Dakar, Cairo, and Manila.

- Taking all the input from the BAs, costs, and implementation factors into consideration, the following alternatives are recommended for rollout. It is recommended that the corporate systems be rolled out in phases in Washington if schedule allows and be rolled out as an integrated suite in the missions. This will include the integrated AWACS, Acquisition & Assistance, Budget, and Operations Results Tracking systems. It is scheduled to be completed by October 1995. In FY 1996, Operations Planning & Implementation, Payroll, and the Human Resources modules will be deployed. The next BAs will be Property Management, Communications, and Guidance.

Washington - Considering the code delivery dates and inter-dependencies among the systems, the systems will be installed in Washington beginning June 1, 1995.

Missions - The full suite of these applications will be rolled out as one system in each mission. Sending an installation team to each mission for installation is recommended. This option ensures each site successful installation and on-site training of the systems administrators. This is the lowest cost alternative.

The target date for completion of system installation must allow the mission staff to get familiar with the system and receive training. The total system will be officially in use by October 1, 1995, even though it may have been installed several weeks prior to production use.

Resources - Installation personnel may consist of an Information Technology systems administrator, a Business Area specialist, and/or an Oracle software developer. A model for an Installation Team is being developed, taking into account recent experiences of the A&A implementation team in Guatemala.

Local Support - As systems become distributed, support is needed at the missions to reduce the time required to deliver assistance to the end users. There should be one or two in-house experts established in each mission as the first line of support for answering system and functional process questions. An ISP coordinator should also be assigned at each mission as the point of contact for scheduling rollout and training, identifying users, and keeping up-to-date on ISP status.

● **Non-Unix Sites Solution -** The ISP Executive Sponsors met on January 13 and 24, 1995. The group agreed to the following system delivery requirements: Systems will be installed in every USAID site that does "real live project work." This requirement excludes representational sites, such as Geneva, Paris and Tokyo. For very small sites where implementation of the corporate systems may be too much, a design must be put into place that will translate information from the site into and out of the system. AWACS, Budget, A&A, and OPS Results Tracking modules will be operational in MACS sites by October 1, 1995.

● **Telecommunication Infrastructure -** A separate session on this topic is scheduled for later this week.

● **Network Management Planning -** M/IRM has conducted a study on Network Management. The study addresses requirements in the following areas:

- Fault Tolerance
- Problem Management
- Performance Management
- Configuration Management
- Security Management

A separate session on this topic is scheduled for later this week.

● **Database Architecture -** The Database Architecture Team is finalizing the recommendations concerning the architecture of the database environment. The team is working with the Data Administration team on the logical/physical corporate database model.

● **Log-on and Main Menu -** A single log-on and a main menu will be developed. The shared data screens should be integrated so that the screens would look the same if a user

accesses shared data across application systems.

- Configuration Management - There might be features requested for incorporation into the ISP systems that might need to await a Version II release in FY 96. The Agency Configuration Management Control Board will approve all changes and enhancement requests and determine when they can be accommodated.
- Security - Security should be built in a integrated manner to implement security at the network, systems, application and data file levels. Access control for systems, applications, and data files will be implemented. Development of a prototype for a standard computer security utility has been done by the IRM Security Architecture Group. This utility is a dynamic role-based access control system (DRBACS). The Security Architecture group is documenting all the security requirements. This will cover firewalls, gateways, routers, UNIX security guidelines, and Oracle security guidelines. Rollback and recovery procedures need to be tested and documented prior to systems rollout. The database administrators should analyze the frequency of the data table usage and develop a database rollback and recovery procedure. This procedure should be tested in the interoperability lab before rollout. This procedure should be included in the systems administrators training.

