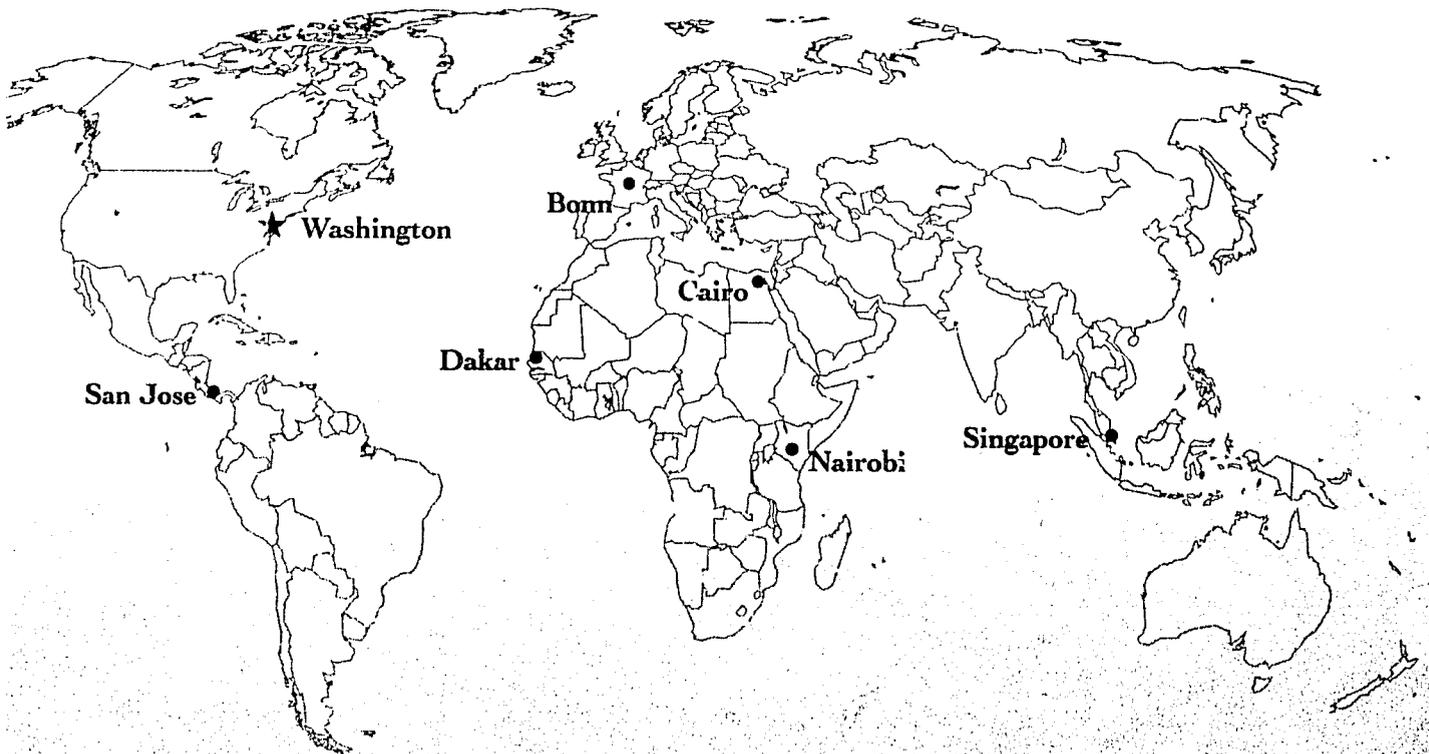


Programs and Systems Audits

AUDIT OF THE
QUALITY OF MACS DATA
AT
USAID/PANAMA

Report No. 9-525-94-013
September 21, 1994





AGENCY FOR
INTERNATIONAL
DEVELOPMENT

September 21, 1994

MEMORANDUM FOR DIRECTOR USAID/Panama, Kevin Kelley

FROM: *for* IG/A/PSA, Toby L. Jarman *Daniel T. Bunnis*

SUBJECT: Audit of the Quality of MACS Data at USAID/Panama

This memorandum is our report of the audit of the quality of Mission Accounting and Control System (MACS) data at USAID/Panama. We considered your comments on the draft report and have included them as an appendix to this report (See Appendix II). Based on your comments, the recommendations are considered closed upon issuance of the report.

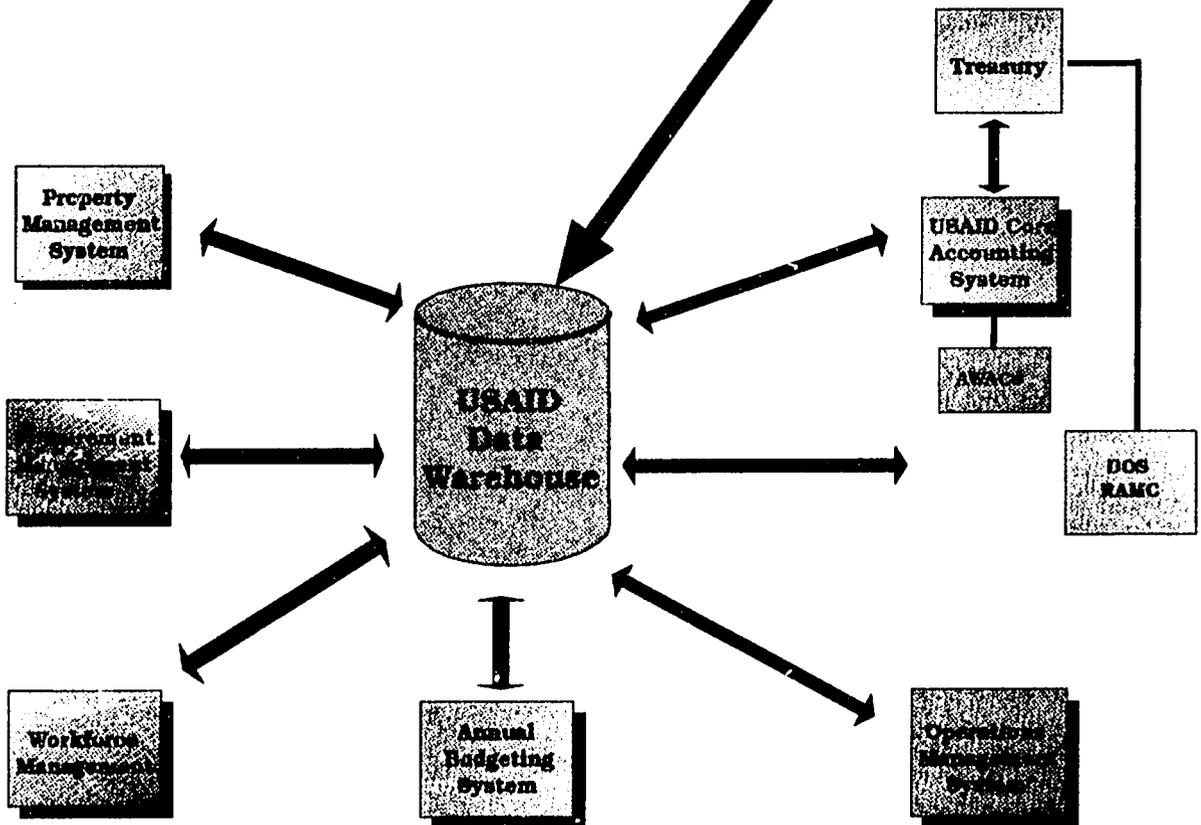
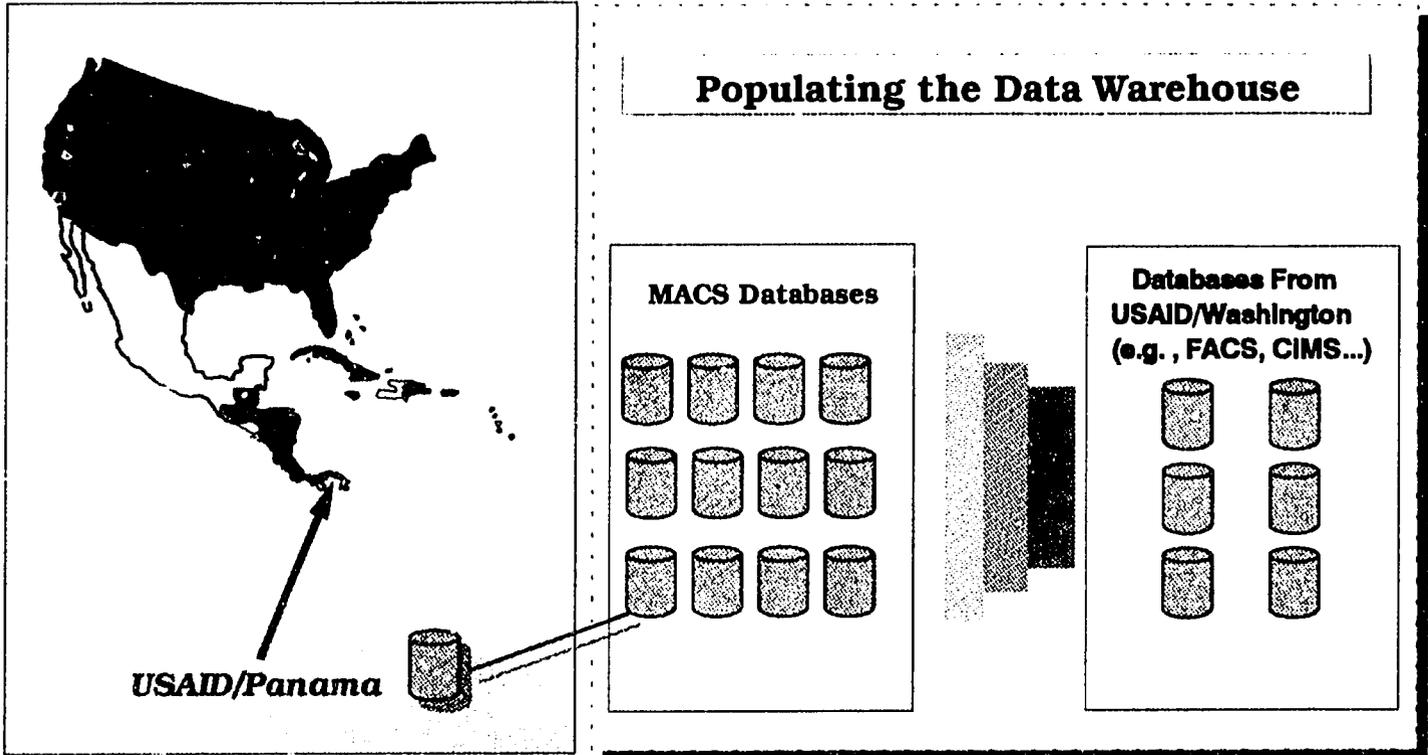
I appreciate the cooperation and courtesy extended to my staff during the audit.

Introduction

Realizing that USAID must operate with increasingly scarce funds, the Agency is undertaking a new and aggressive effort to change the way data and information are managed. Such an effort is critical to our future: in the modern workplace, be it business or government, a high-quality, reliable information system is no longer a luxury—it is a necessity.

To ensure that the data in the entire USAID system is of high quality—and therefore useful to managers concerned about project status and pipeline reports—the Office of Information Resources Management (IRM) is undertaking a major initiative. They are centralizing data collection and improving the management of information by creating a data warehouse (see page 2), a repository for data from all Agency systems. One of the first steps in bringing data to this warehouse is the PIPE (Project Information and Pipeline Evaluation) initiative. The PIPE initiative is a joint IRM and Financial Management project that will combine MACS data from the missions and financial data from USAID/Washington, allowing all Agency managers timely and comprehensive information on USAID projects worldwide.

Accordingly, for this system to succeed, the MACS data from all of the missions must be of the highest quality. Therefore, in support of IRM's work, the Office of Audit is conducting a series of audits designed to evaluate the quality of data—in the MACS files—which is central to the Agency's work. An important part of the effort is this audit of USAID/Panama data.



Data From USAID's Legacy Systems

Audit Objective

The audit was designed to answer the following question:

- Is the data in USAID/Panama's Mission Accounting and Control System (MACS) accurate?

Audit Findings

USAID/Panama's MACS data was accurate in 15 of the 23 data elements reviewed; however, the other eight data elements contained substantial errors.

RESULTS OF OUR REVIEW			
MACS Files¹	Data Elements Reviewed	Elements With Substantial Errors	Elements With No Substantial Errors *
Budget Allowance Transaction	3	0	3
Reservation/Obligation Transaction	5	0	5
Commitment Transaction	8	1	7
Project Information Master	7	7	0
Total	23	8	15

(Error rates of less than 5% were considered accurate for reporting purposes. Error rates for each of these elements can be found in Appendix III.)*

The eight errors were caused by two different problems:

1. project files not maintained accurately; and
2. commitment end dates were not documented.

¹ USAID/Costa Rica is responsible for certifying disbursements and maintaining MACS data for USAID/Panama's Disbursement Transactions. Therefore, the results of our review of USAID/Panama's Disbursement Transaction file and any recommendations will be presented in our audit report on the Quality of MACS Data at USAID/Costa Rica.

Since USAID managers worldwide will rely on information in the Agency's data warehouse for making decisions on where and how to allocate scarce resources, it is critical that the data coming from each mission's MACS be accurate and complete. Therefore, the efforts of USAID/Panama to ensure the integrity of data in MACS will contribute to the Agency's overall goal of providing accurate and timely information on all project activity worldwide in USAID.

An analysis of each problem area and recommendations to correct the problems are discussed in detail below.

1. Project Files Not Maintained Accurately

The MACS User's Guide (Release 18) establishes the document processing and data control procedures to be used when project information is entered into MACS. These procedures include the need to:

- verify 17 data elements including the Project Number, Agreement Date, Authorization Date, and Project Assistance Completion Date (PACD) when entering information into the system; and
- periodically review the data elements and adjust them as required.

We reviewed all of the Mission's 46 Project Information Master (PIM) records and tested seven data elements in each record. All seven of the data elements tested contained significant errors ranging from 6.52 to 80.04 percent. Project information in USAID/Panama's MACS was inaccurate because (1) supporting documentation was not always available, (2) information was not entered, maintained and updated according to procedures established by MACS User's Guide (Release 18), and (3) data was entered erroneously.

Supporting documentation for project information entered into MACS was not always available. The USAID/Panama Mission was closed in 1987 and the accounting documentation was shipped to USAID/Costa Rica. When the Mission was reopened in January 1990, the documents were shipped back to USAID/Panama. During these transfers, some of the documentation for the project files was either misplaced or lost. In addition, accounting personnel were unable to locate supporting documentation (unrelated to the 1987 Mission closure) for some of the records we reviewed. Since documentation was not available, we could not verify that the information entered into MACS for these records was accurate.

ERRORS IN THE PROJECT INFORMATION FILE -- BY CATEGORY				
MACS DATA ELEMENTS	NO DOCUMENTS DUE TO MISSION CLOSURE	NO SUPPORTING DOCUMENTS	UPDATING AND DATA ENTRY ERRORS	TOTAL
Project Assistance Completion Date	2	3	5	10
Authorized Amount	9	1	1	11
Agreement Date	9	3	10	22
Terminal Disbursement Date	2	3	8	13
Host Country Contribution	2	0	2	4
Project Number	0	2	1	3
Life of Project (Years)	9	3	25	37
Totals	33	15	52	100

Additionally, the Mission's procedures did not ensure information entered into the data elements was correct and that all data elements were updated when changes were made to project information. Fifty-two of the 100 errors found in the seven data elements reviewed were a result of all the data not being properly updated and/or data entry errors when the information was entered. For example, the life-of-project data element should contain the number of years between the project agreement date and the project assistance completion date (PACD). The number of years in this data element should be checked whenever the PACD changes to determine if a new value should be entered. Our review found 25 of the 37 errors in this field resulted from accounting personnel (1) entering the number of months instead of years, (2) not updating the life-of-project data element when the PACD changed, and (3) data entry errors (human error).

Had the Mission periodically reviewed the information contained in the PIM file, the errors found in these seven data elements could have been discovered and corrected.

Recommendation No. 1: We recommend that the Director, USAID/Panama:

- 1.1 correct the Project Information Master file to ensure the information is accurate;**
- 1.2 revise procedures and train personnel in the proper method of entering updating information in the Project Information Master file; and**
- 1.3 periodically review the data entered into the Project Information Master file to ensure the data is correct.**

2. Commitment End Dates Were Not Documented

The MACS User's Guide (Release 18) describes the document processing and data control procedures to be used when data is entered into the Commitment Transaction file. These procedures require accounting personnel to ensure the data entered is supported by a source document.

Commitment end dates in USAID/Panama's MACS were not accurate for ten (12.82 percent) of the seventy-eight transactions we reviewed. These errors occurred because accounting personnel were not adequately documenting commitment end dates when they were established and updated, as well as human error.

Documentation supporting commitment end dates was not maintained for seven of the ten errors in the commitment end dates. When accounting personnel entered and updated commitment end dates, they did not ensure the accounting records contained documentation to support the new dates. Instead they entered the changes directly into MACS without supporting documentation. Since accounting documentation was not available to support these entries, we could not verify the commitment end dates entered into MACS were accurate. Additionally, we found the remaining three errors in the commitment end dates were a result of human error when the data was entered into MACS.

Recommendation No. 2: We recommend that the Director, USAID/Panama provide additional training to Controller personnel to ensure proper procedures are used to document commitment end dates when they are established and updated.

Management Comments and Our Evaluation

USAID/Panama agreed with the report's recommendations. Based on their comments and aggressive corrective actions taken during the audit, we consider the two recommendations closed upon issuance of this report. Their response to the draft report is included in its entirety in Appendix II of this report.

SCOPE AND METHODOLOGY

Scope

The Office of Programs and Systems Audits audited the quality of data maintained in MACS files of USAID/Panama in accordance with generally accepted government auditing standards. Performed from April 11 through 21, 1994, at USAID/Panama, the audit reviewed four files and 23 data elements (14.3 and 3.0 percent respectively) from a universe of twenty-eight MACS Transaction/Master files and 757 data elements. If the error rate was substantial on any of the data elements, we also evaluated the cause and made the appropriate recommendations.

Methodology

After consulting with financial management officials in Washington, D.C., we identified the MACS files and key data elements that we would review for each file. We analyzed fiscal year 1992 and 1993 data from four of the twenty-eight MACS Transaction/Master files²:

- Budget Allowance Transaction
- Reservation/Obligation Transaction
- Commitment Transaction
- Project Information Master

We selected a statistical sample for three of the data files that would provide a confidence level of 90% and a precision level of plus or minus 4% and an expected rate of occurrence not over 5%. We reviewed 100 percent of the records in the Project Information Master file. For each data element reviewed (dollar amounts, dates, document numbers, etc.), we determined whether the data in MACS was supported by information from a source document(s). Based on the results of these determinations, we calculated error rates for each data element and assessed whether the error rate was substantial. An error rate of five percent or greater was considered substantial. Data elements with an error rate of less than 5% were considered accurate for reporting purposes. We statistically projected the number of errors in the MACS file. These projections indicate the total number of errors estimated for each data element based on the errors found in the statistical sample.

² A complete listing of MACS Transaction/Master files can be found in Appendix IV.

AGENCY FOR INTERNATIONAL DEVELOPMENT
PANAMA CITY, PANAMA

UNITED STATES GOVERNMENT
MEMORANDUM

DATE: July 29, 1994
TO: IG/A/PSA, Toby L. Jarman
FROM: Robert P. Mathia, A/Mission Director
SUBJECT: Draft Audit Report of the Quality of MACS Data at
USAID/Panama

After discussion and careful review by our Controller's Office, the Mission's response to subject draft audit report is presented below. The Mission recognizes the importance of all data base files, agrees with the recommendations and has taken implementation actions. We understand that IG/A/PSA has audited other missions and found similar problems with the Project Information Master file. We believe the report could provide more perspective by explaining why similar problems were found in other missions audited, and by fully describing the positive findings and their relative importance.

Recommendation No. 1: We recommend that the Director, USAID/Panama:

- 1.1 correct the Project Information Master file to ensure the information is accurate;
- 1.2 revise procedures and train personnel in the proper method of entering updating information in the Project Information Master file; and
- 1.3 periodically review the data entered into the Project Information Master file to ensure the data is correct.

Working with the IG auditors, our financial analysts corrected errors in the Project Information Master (PIM) file during completion of the audit fieldwork. See attached copies of MACS input sheets covering various corrections. In order to maintain an accurate PIM file we issued the attached memo to remind the financial analysts that every time they receive a document that modifies the PIM, they must immediately update the PIM. Although the original document modifying the PIM is the

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authority and support for the change, in order to thoroughly document the modification, a MACS coding sheet will also be prepared prior to the input of the modification into MACS and filed together with the project documents. We instructed the financial analysts to review the PIM file after every update and on a quarterly basis.

Based on the above actions please close all parts of recommendation number 1 upon issuance of the final report.

Recommendation No. 2: We recommend that the Director, USAID/Panama provide additional training to Controller personnel to ensure proper procedures are used to document commitment end dates when they are established and updated.

The financial analysts when posting the commitment end dates (CEDs) for projects estimated the time for completion of services or reception of goods. In many cases, the services or goods were not delivered within the estimated CED. Whenever this occurred, based on verbal concurrence of the project officer and the EXO Office, the CED was then extended without preparing any further documentation. In order to correct this situation the following steps will be taken:

- The EXO Office will set a delivery date on all commitment documents (for example, 60 days, 90 days or one year).
- The delivery date established above will be used to post the CED into MACS.
- If an extension of the CED is required, then either an amendment to the commitment document or a MACS coding sheet, stating the reason for the extension will be used as the substantiating document. In many cases, such as minor purchase order delivery date extensions an approved MACS coding sheet will be sufficient.

Based on the revised procedures, please close recommendation number 2.

In the wording of recommendations 1 and 2, we request that instead of to the Director, the recommendations be directed to the Mission in general, ie. USAID/Panama, or to the Controller, USAID/Panama.

APPENDIX III

USAID/Panama
MACS FILES AND ELEMENTS REVIEWED

<u>MACS FILES/ELEMENT</u>	<u>UNIVERSE</u>	<u>NUMBER IN SAMPLE</u>	<u>ERRORS IN SAMPLE</u>	<u>ERROR RATE</u>	<u>PROJECTED ERRORS IN UNIVERSE</u>
BUDGET ALLOWANCE TRANSACTION					
Budget Plan Code	194	58	0	0.00%	None
Transaction Amount	194	58	0	0.00%	None
Project Number	194	58	0	0.00%	None
RESERVATION/OBLIGATION TRANSACTION FILE					
Obligation Number	4,008	79	0	0.00%	None
Reservation Control Number	4,008	79	0	0.00%	None
Budget Plan Code	4,008	79	0	0.00%	None
Transaction Amount	4,008	79	0	0.00%	None
Project Number	4,008	79	0	0.00%	None
COMMITMENT TRANSACTION FILE					
Commitment Number	2,066	78	0	0.00%	None
Earmark Control Number	2,066	78	0	0.00%	None
Call Forward Date	2,066	78	0	0.00%	None
Training Months	2,066	78	0	0.00%	None
Budget Plan Code	2,066	78	0	0.00%	None
Transaction Amount (AID/W)	2,066	78	0	0.00%	None
Transaction Amount (Mission)	2,066	78	0	0.00%	None
Commitment End Date	2,066	78	10	12.82%	265
PROJECT INFORMATION MASTER FILE					
PACD	46	46	10	21.74%	10
Authorized Amount	46	46	11	23.91%	11
Agreement Date	46	46	22	47.83%	22
Terminal Disb. Date	46	46	13	28.26%	13
Host Country Contribution	46	46	4	8.70%	4
Project Number	46	46	3	6.52%	3
Life of Project	46	46	37	80.43%	37

APPENDIX IV

MACS TRANSACTION AND MASTER FILES NUMBER OF DATA ELEMENTS	
MACS FILE NAME	# OF ELEMENTS PER RECORD
Operating Expense Budget Master	10
Operating Expense Budget Transaction	12
Budget Allowance Master File	13
Budget Allowance Transaction File	12
Reservation Master File	17
Obligation Master File	37
Reservation/Obligation Transaction File	20
Project Information Master File	115
Project Information Transaction File	25
Condition Precedent Transaction File	96
Project Element Master File	13
Project Element Transaction File	12
Direct Reimbursement Authorization (DRA) Master File	16
Direct Reimbursement Authorization (DRA) Transaction File	17
Earmark Master File	20
Earmark Transaction File	19
Commitment Master File	41
Commitment Transaction File	25
Advance Master File	22
Advance Transaction File	30
Planned Expenditures Master File	13
Planned Expenditures Transaction File	15
Accrual Transaction File	18
Prepayment Amortization Transaction File	23
Disbursement Transaction File	28
Interface Disbursement/Advance File	36
Interface Disbursement/Advance Reject File	35
Prepayment Amortization File	17
Totals 28 MACS FILES	757

USAID'S INFORMATION MANAGEMENT

This new USAID effort to establish a quality information system is described in the Agency's Information Systems Plan (ISP).¹ A primary goal of this plan is to have corporate data managed at the Agency level rather than "owned" by each individual office.

Using an information engineering methodology, models of the Agency's business processes and data requirements were created. These models were then broken into eight logical Business Areas. Each Business Area represents related functions within the Agency that share similar business processes and data needs. Each of these eight areas will be studied in depth, in a process called Business Area Analysis (BAA).

The Business Area Analysis (BAA) provides a greater level of detail on the functions in each area and provides a basis for designing system requirements. Each BAA 1) continues to model the data requirements and business functions, 2) includes this information in the Agency's electronic repository, and 3) reconciles the new models back to the Agency-wide models. This results in a high degree of standardization, stability, and reusability.

Currently four BAA's are being conducted—Core Accounting, Procurement, Budgeting and Operations. The inter-dependencies of these three business areas are high and will require significant sharing of data. Therefore, to facilitate the systems development work, IRM is planning a data warehouse that will allow movement to a data sharing environment.

Populating this data warehouse will begin with transferring MACS transaction level data into the warehouse. The Core Accounting BAA, which includes the AWACS project, needs a functioning warehouse to provide the most benefit to the Agency.

Smaller initiatives are under way to begin the transition to a corporate database. PIPE (Project Information and Pipeline Evaluation) currently brings in summary MACS and FACS data, to provide project status and pipeline information to Agency managers. In order to make sound decisions, it is important that managers using such information know the quality of the data being used.

¹ Information Systems Plan, Volume I: Report To Management, February 1993.

APPENDIX VI**REPORT DISTRIBUTION**

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