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**Regional Inspector General for Audit
Nairobi, Kenya**

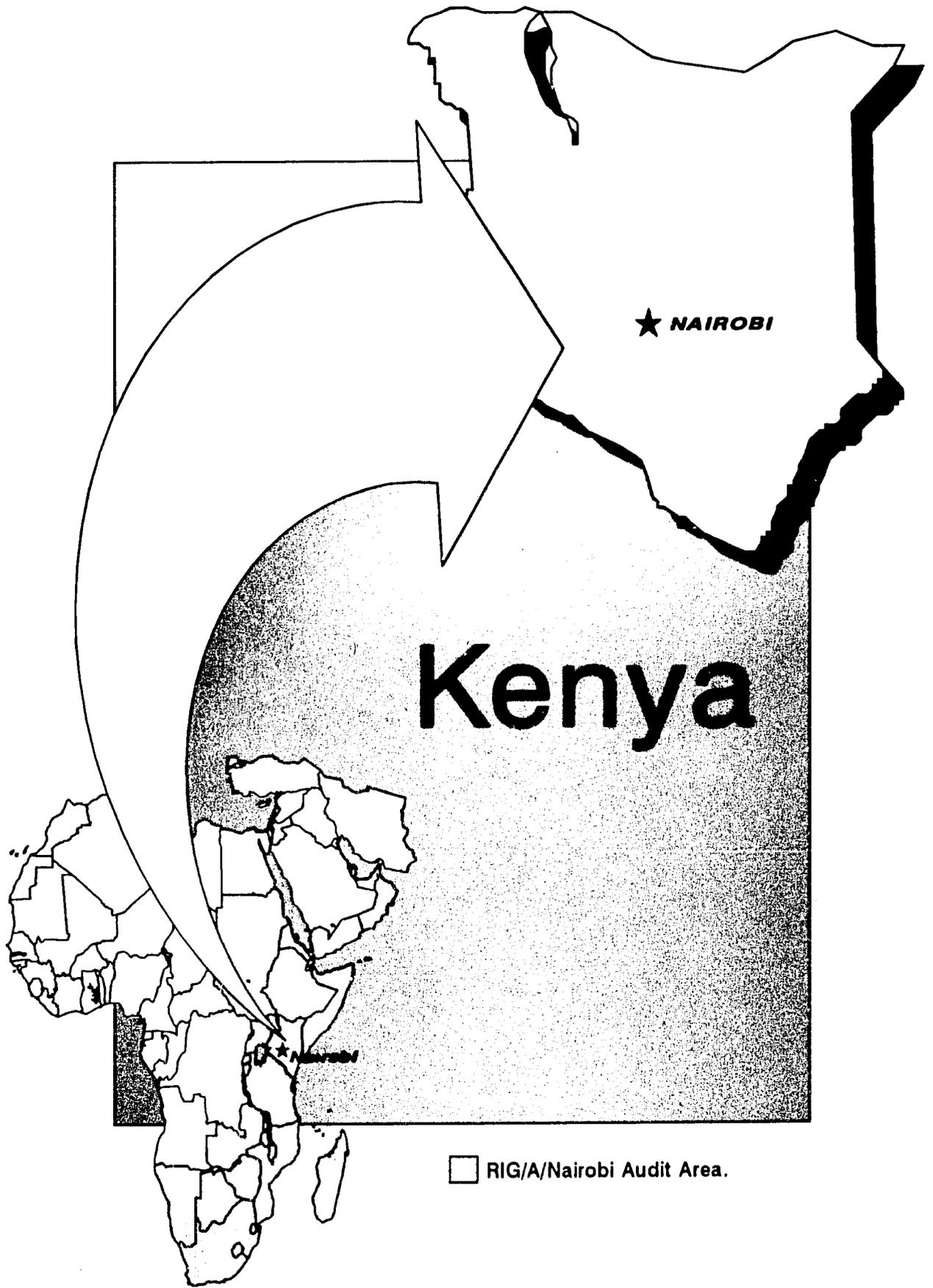
**Audit of
Quality of MACS Data at REDSO/ESA**

**Report No. 3-623-96-002
November 30, 1995**



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★ **NAIROBI**

Kenya

□ RIG/A/Nairobi Audit Area.



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

November 30, 1995

*Regional
Inspector General
for Audit/Nairobi*

MEMORANDUM

TO: Keith Brown, Director, REDSO/ESA

FROM: RIG/A/N, Everette B. Orr

SUBJECT: Audit of the Quality of MACS Data at REDSO/ESA
(Audit Report No. 3-623-96-002)

This memorandum is our report of the audit of the quality of Mission Accounting and Control System (MACS) data at REDSO/ESA. We considered your comments on the draft report and have included them as see Appendix II. Based on your comments, the recommendations are considered closed upon issuance of this 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 Resource Management (IRM) is undertaking a major initiative. It is

centralizing data collection and improving the management of information by creating a data warehouse as a repository for data from all Agency systems. (See Appendix V.) One of the first steps in bringing data to this warehouse is the Project Information and Pipeline Evaluation (PIPE) initiative. A joint IRM and Financial Management project, PIPE 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.

For this system to succeed, 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 MACS files. An important part of the effort is this audit of the USAID Regional Economic Development Services Office for East and Southern Africa (REDSO/ESA).

Audit Objective

The audit was designed to answer the following question:

Is the data in REDSO/ESA's Mission Accounting and Control System (MACS) accurate?

Audit Findings

REDSO/ESA's MACS data was not considered to be accurate in 36 of the 39 data elements reviewed. This occurred primarily because REDSO/ESA was unable to locate supporting documents. For the purposes of this audit, and in agreement with USAID's Office of Financial Management (FM), we considered any unsupported transaction, as well as any differences between original REDSO/ESA input documents and data contained in MACS, to be errors. Thus, REDSO/ESA's inability to locate supporting documentation contributed significantly to the high error rates noted during the audit. The following table illustrates the results of our review.

MACS Files	Data Elements Reviewed	Elements With Significant Errors	Elements With No Significant Errors *
Budget Allowance Transaction	3	0	3
Reservation/Obligation Transaction	4	4	0
Commitment Transaction	7	7	0
Disbursement Transaction	10	10	0
Advance Transaction	8	8	0
Project Information Master	7	7	0
Total	39	36	3

*Error rates of less than 5 percent were not considered significant for reporting purposes. Error rates for each of these elements can be found in Appendix III.

The significant error rates noted during the audit were caused by two different problems:

- Documentation was not maintained to support transactions; and
- Computational and other errors were made during data entry.

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 REDSO/ESA 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.

**Documentation Supporting
Entries in MACS Was Not Maintained**

The U.S. General Accounting Office's Internal Control Standards require that all transactions be documented by written evidence. In addition, the standards require documentation to be available and easily accessible for examination. Additionally, USAID Handbook 1 provides that:

"The head of each bureau, staff office, and overseas post is responsible for implementing effective records management procedures within his or her organization."

REDSO/ESA is the official accounting station for itself and 15 USAID missions and offices. As the official accounting station, REDSO/ESA should retain the source documentation it uses to enter information into MACS.. However we found that this was not always the case. For example, REDSO/ESA could not find documentation, primarily from client controller missions, to support 24 records in the Disbursement Transaction (MXDIT) File and 35 records in the Advance Transaction (MXADT) File. Because documentation was not available to support the entries, we could not verify the records in the MACS. The following table illustrates the extent of missing information from REDSO/ESA's MACS data document files.

MISSING INFORMATION FROM REDSO/ESA'S DOCUMENT FILES

MACS FILE	REDSO /ESA	% OF SAMPLE	OTHER MISSIONS	% OF SAMPLE	TOTAL SAMPLE
MXPIM	0	0.00	7	10.61	66
MXBAT	0	0.00	0	0.00	78
MXROT	2	2.47	5	6.17	81
MXCOT	0	0.00	5	6.25	80
MXDIT	4	4.94	20	24.69	81
MXADT	2	2.50	33	41.25	80
TOTALS	8	1.72	70	15.02	466

The documents were not available because REDSO/ESA's procedures did not ensure that source documents used for original entries into MACS were maintained in its official files. For example, our review of records in the Advance Transaction File showed that documents supporting advances and liquidations from missions serviced by REDSO/ESA were not maintained after the information was posted into MACS. Thirty-five transactions (43.75 percent) in our sample could not be supported because REDSO/ESA could not locate the applicable documents. This occurred because, according to REDSO/ESA staff, previous REDSO/ESA controllers stopped requiring the use of MACS coding sheets, thereby precluding their retention in REDSO/ESA's official files.

Recommendation No. 1: We recommend the Director, REDSO/ESA establish procedures necessary to ensure that documentation is retained to support all transactions entered in the REDSO/ESA Accounting and Control System.

Accountability Dates Computed Incorrectly

The Accountability Dates in REDSO/ESA's MACS contained inaccuracies. According to MACS User Guide (Release 19), the Accountability Date data element is used to specify the date by which advances are to be liquidated or repaid. We reviewed 80 MACS advance transactions and found that 30 transactions (37.50 percent) contained incorrect accountability dates. This occurred because controller staff were not adequately trained in the proper computation of the accountability dates.

REDSO/ESA's internal procedures provide that the Accountability Date for:

- *Travel advances* is 30 days after completion of operational travel, 60 days after completion of home-leave and return to post, and 60 days after post assignment;
- *Quarters or temporary lodging advances* is 30 days from the time the employee is expected to move into permanent accommodations; and
- *Advances against contracts* should not be more than 30 days after expiration of contracts lasting less than 1 year, and not more than 90 days for contracts lasting more than 1 year.

As stated above, we reviewed 80 of 6,361 advance transactions contained in the MXADT file and tested 8 data elements in each record. All 8 elements contained significant errors, with error rates ranging from 47.50 percent to 93.75 percent. The significant error rates were mainly caused by unsupported documents and input errors as shown in the table below.

RESULTS OF REVIEW OF ADVANCE TRANSACTION FILE (80 Sample Items)				
MACS DATA ELEMENT	Items With Missing Documents/ Information	Error Rate	Items With Input Errors	Error Rate
Advance Number	38	47.50%	2	2.50%
Obligation Document No.	38	47.50%	0	00.00%
Commitment Document No.	38	47.50%	0	00.00%
Project Number	41	51.25%	3	3.75%
Advance Type	35	43.75%	8	10.00%
Accountability Date	45	56.25%	30	37.75%
Advance Transaction Amt.	41	51.25%	0	00.00%
Local Currency Amount	41	51.25%	0	00.00%

* Input errors include computational errors.

REDSO/ESA's procedures did not ensure that appropriate controller staff were properly trained in the correct computation of the Accountability Date. All 30 input errors in the Accountability Date data element (see table above) were due to staff incorrectly computing the date. Thus, REDSO/ESA had no assurance that advances were liquidated or repaid in accordance with its own internal procedures.

Recommendation No. 2: We recommend that REDSO/ESA re-issue internal procedures pertaining to Accountability Dates to appropriate staff in the Controller's office and ensure that Controller staff members implement these procedures correctly.

Advance Type Codes Were Not Entered Correctly

The Advance Type Code data element of the Advance transaction file contained inaccuracies. The Advance Type Code is used to identify the purpose of the advance. We reviewed 80 MACS Advance Type Code transactions and found that 43 of the transactions (53.75 percent) contained incorrect or unsupported codes. These errors occurred for 2 different reasons: accounting personnel did not enter the correct code (8 instances) or they could not locate the appropriate documentation (35 instances). Because REDSO/ESA has already taken actions to correct this problem, we are not making a recommendation for this area.

Management Comments and Our Evaluation

REDSO/ESA agreed with the report's findings and recommendations. Based on its comments and actions taken, we consider both recommendations closed upon issuance of this report. REDSO/ESA's response to the draft report is contained in its entirety in Appendix II of this report.

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APPENDICES

SCOPE AND METHODOLOGY

Scope

The Office of the Regional Inspector General for Audit, Nairobi, audited the quality of data maintained in MACS files of REDSO/ESA in accordance with generally accepted government auditing standards. The audit was performed from March 27, 1995, through May 11, 1995, at REDSO/ESA. We reviewed 6 MACS Transaction/Master files and 39 data elements from a universe of 28 MACS Transaction/Master files and 757 data elements (21.4 percent and 5.2 percent respectively). If the error rate for any data element was considered to be significant, we determined the cause and made appropriate recommendations.

Methodology

The Office of Audit consulted with USAID Financial Management (FM) officials in Washington, D.C., to identify the MACS files and key data elements for each file that would be reviewed. At FM's request, we agreed to consider any unsupported MACS transactions, as well as any differences between original REDSO/ESA input documents and data contained in MACS, as errors. Both types of errors were used to compute the error rates.

We analyzed REDSO/ESA MACS transactions for the period October 1, 1991, to September 30, 1994, from 6 of the 28 MACS Transaction/Master files¹:

- Budget Allowance Transaction

¹A complete listing of MACS Transaction/Master files can be found in Appendix IV.

- Reservation/Obligation Transaction
- Commitment Transaction
- Disbursement Transaction
- Project Information Master
- Advance Transaction

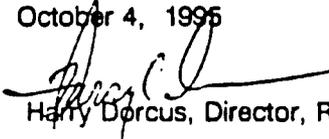
We selected a statistical sample for each of the 6 data files that would provide a confidence level of 90 percent and a precision level of plus or minus 4 percent.

For each data element reviewed (dollar amounts, dates, document numbers, etc.), we determined whether the data in MACS was supported by information from source documents. Based on the results of these determinations, we calculated error rates for each data element and assessed whether the error rate was significant. Error rates of less than five percent were not considered significant. Data elements with an error rate equal to or greater than five percent were considered significant 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.

UNITED STATES GOVERNMENT

memorandum

DATE: October 4, 1995

REPLY TO 
ATTN OF: Harry Dorcus, Director, REDSO/ESA/RFMC

SUBJECT: Audit of the Quality of MACS Data at REDSO/ESA

TO: Everett B. Orr, RIG/A/N

REF: Draft Audit No. 3-623-95-00X

I agree with the basic tenet of the subject audit recommendations. The high error rate in MACS data resulted mainly from: (a) a deficiency in the procedures followed in filing supporting documents which made it difficult to retrieve them for the auditors; and (b) input clerks' lack of understanding of accountability dates for advances. It should also be noted that nearly all of the unavailable supporting documents relate to missions with resident controllers. Error rates of REDSO/ESA, RIG, or other non-controller missions were proven to be minimal evidencing the reliable quality and accuracy of MACS data for these offices.

Following are the management comments keyed to each audit recommendation:

RECOMMENDATION 1:

1) Of the sixteen (16) client missions served by the RFMC, six (6) missions have their own resident controllers who are responsible for maintaining official files containing the supporting documents for MACS data. For these missions, RFMC maintains their official accounting records on MACS. These missions transmit to RFMC their accounting transactions on LOTUS-based code sheets which may include as many as forty (40) transactions on each code sheet. RFMC inputs these transactions into MACS using the code sheets as source documents and provides financial reports and data for USAID/W and mission management. When inputting transactions, some may be rejected for various reasons. Correct transactions only are entered into MACS from the code sheet with the entire code sheet containing the correct transaction(s) returned to the respective RFMC country accountant for further follow-up.

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After the relevant information is received from the affected mission (this may take more than one accounting period), the rejected transactions are corrected and entered into MACS. The code sheet containing the rejected transaction(s) is filed in the folder for the month when the last correction is made and entered into MACS.

This caused some of the code sheets not being easily retrieved and readily available to the auditors. Code sheets may have postings for more than two accounting periods and have been filed in the folder for the accounting period when the last corrected transaction is entered into MACS.

This weakness has now been rectified by: (a) establishing necessary procedures through issuance of the attached notices (RFMC Notices Nos. 95-08 and 96-01) and instructions to data input and filing personnel on filing code sheets from client missions; and (b) performing periodic verification of supporting documents to ensure compliance with the established procedures.

RECOMMENDATION 2:

A notice has been reissued (copy attached) to RFMC staff stressing the importance of entering the correct accountability dates and other data elements for all advances. This notice is a follow-up to the verbal reminders that have been given to accountants during monthly staff meetings. RFMC will ensure its compliance by periodic verification of the transactions and briefings during its monthly staff meetings.

I believe the audit was very useful and educational to all RFMC staff. This has certainly helped RFMC in rectifying the weaknesses noted in the audit report.

cc: Allan McKenna, Chief /RFMC/FSD
: Eliphas Mugo, Chief Accountant, RFMC/AD
: Charles Githaiga, D/Chief Accountant, RFMC/AD
: John Seong, Chief/RFMC/FAD
: Rashmi Amin, Controller, RFMC/AD

Attachments: a/s

**REDSO/ESA
MACS FILES AND ELEMENTS REVIEWED**

MACS FILES/ELEMENT	UNIVERSE	NUMBER IN SAMPLE	ERRORS IN SAMPLE	ERROR RATE	PROJECTED ERRORS IN UNIVERSE
BUDGET ALLOWANCE TRANSACTION					
Budget Plan Code	2349	78	0	0%	None
Transaction Amount	2349	78	0	0%	None
Project Number	2349	78	0	0%	None
RESERVATION/OBLIGATION TRANSACTION FILE					
Obligation Number	28,487	81	7	8.64%	2,462
Reservation Control Number	28,487	81	8	9.87%	2,814
Budget Plan Code	28,487	81	9	11.11%	3,168
Transaction Amount	28,487	81	12	14.81%	4,220
COMMITMENT TRANSACTION FILE					
Commitment Number	9,834	80	5	6.25%	615
Earmark Control No.	9,834	80	8	10.00%	983
Call Forward Date	9,834	80	21	26.25%	2,581
Budget Plan Code	9,834	30	10	12.50%	1,229
Transaction Amt (AID/W)	9,834	80	6	7.50%	738
Transactn Amt (REDSO/ESA)	9,834	80	15	18.75%	1,844
Commitment End Date	9,834	80	29	36.25%	3,565
DISBURSEMENT TRANSACTION FILE					
Obligation Number	82,444	81	27	33.33%	27,481
Reservation Control Number	82,444	81	27	33.33%	27,481
Commitment Number	82,444	81	25	30.86%	25,446
Earmark Control Number	82,444	81	28	34.57%	28,499
Budget Plan Code	82,444	81	29	35.80%	29,517
Disbursing Code	82,444	81	32	39.50%	32,570
Federal Outlay Code	82,444	81	35	43.21%	35,624
Local Currency Disbursement	82,444	81	34	41.97%	34,606
Budget Allow. Disbursement	82,444	81	37	45.68%	37,660
Transaction Type	82,444	81	26	32.10%	26,464

REDSO/ESA
MACS FILES AND ELEMENTS REVIEWED
(continued)

MACS FILES/ELEMENT	UNIVERSE	NUMBER IN SAMPLE	ERRORS IN SAMPLE	ERROR RATE	PROJECTED ERRORS IN UNIVERSE
PROJECT INFORMATION MASTER					
Agreement Date	360	66	37	56.06%	202
PACD	360	66	33	50.00%	180
Authorized Amount	360	66	28	42.42%	153
Terminal Disb. Date	360	66	35	53.03%	191
Host Country Contribution	360	66	29	43.94%	158
Project Number	360	66	7	10.61%	38
Life of Project (In Years)	360	66	42	63.64%	229
ADVANCE TRANSACTION FILE					
Advance Number	6,361	80	40	50.00%	3,181
Obligation Document Number	6,361	80	38	47.50%	3,021
Commitment Document No.	6,361	80	38	47.50%	3,021
Project Number	6,361	80	44	55.00%	3,499
Advance Type	6,361	80	43	53.75%	3,419
Accountability Date	6,361	80	75	93.75%	5,963
Advance Amount	6,361	80	41	51.25%	3,260
Local Currency Amount	6,361	80	41	51.25%	3,260

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 Information Systems Plan, Volume I: Report To Management, February 1993.). 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 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 three BAA's are being conducted—Core Accounting, Procurement, and Budgeting. 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. Project Information and Pipeline Evaluation (PIPE) 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.

**Regional Inspector General
for Audit, Nairobi, Kenya**

David Conner, Audit Manager
Marshall Henderson, Auditor-in-Charge
Francis Kimali, Auditor
Nelson Kaburu, Referencer