
**Audit of
the Quality of MACS Data at
USAID/Senegal**

**Audit Report No. 7-685-95-003
December 1, 1994**



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UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL DEVELOPMENT
OFFICE OF THE REGIONAL INSPECTOR GENERAL FOR WEST AFRICA

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MEMORANDUM FOR DIRECTOR USAID/Senegal, Anne Williams

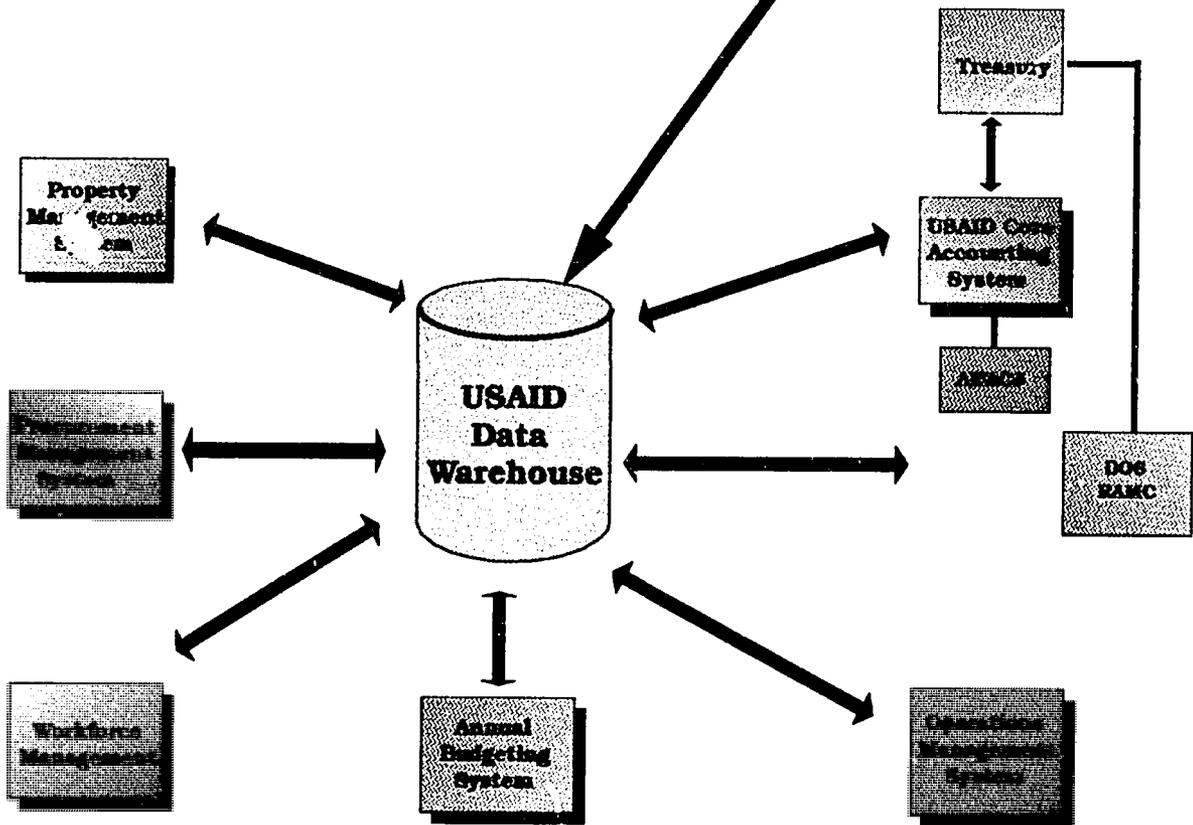
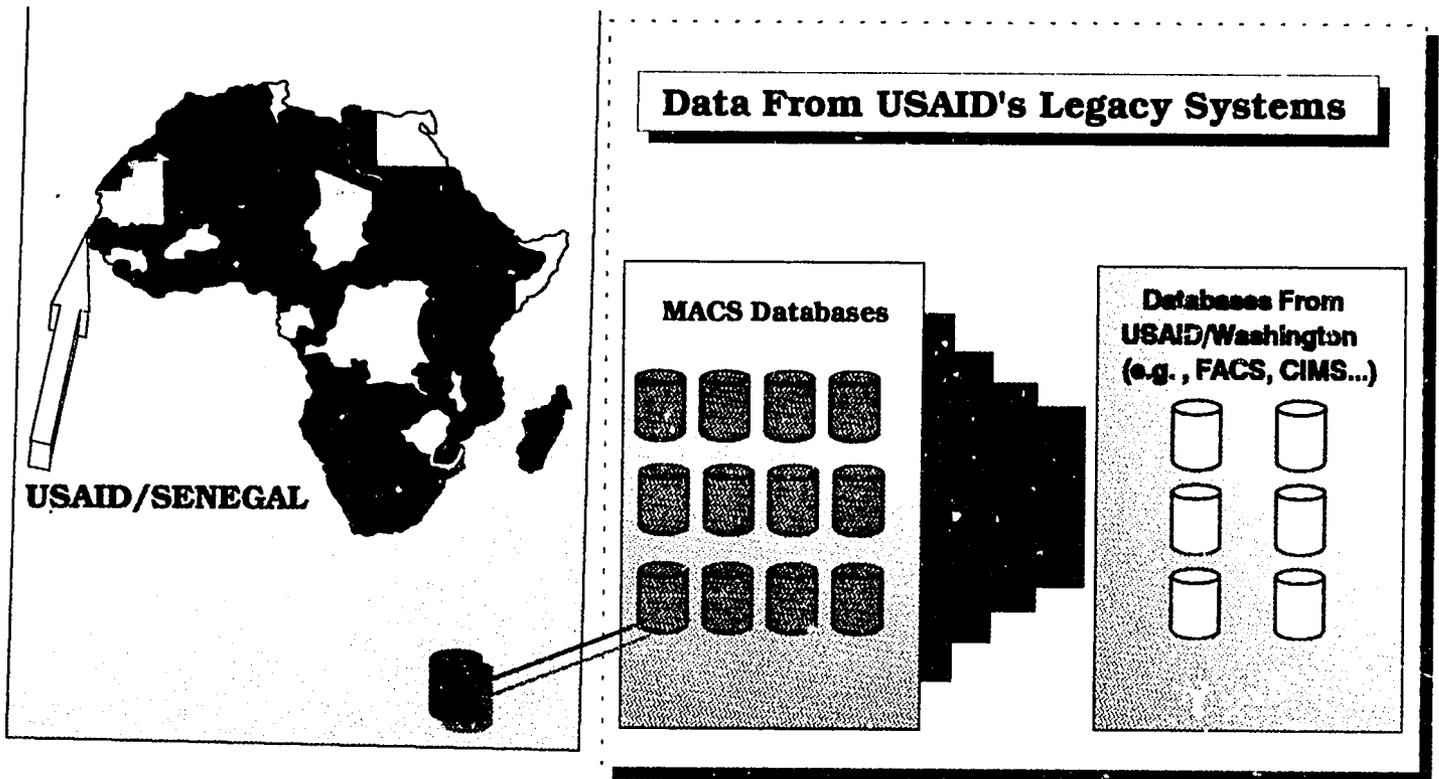
Walter E. Shepherd
FROM: A/RIG/A/Dakar, Walter E. Shepherd

SUBJECT: Audit of the Quality of MACS Data at USAID/Senegal
(Audit Report No. 7-685-95-003)

This memorandum is our report on the "Audit of the Quality of MACS Data at USAID/Senegal," Report No. 7-685-95-003. We considered your comments to the draft report and have included them as an appendix to this report (see Appendix II). The report contains two recommendations, both of which are resolved. Please notify our office within 30 days of the status of actions taken by USAID/Senegal to close these two recommendations.

Summary of Audit Findings

In the report, we state that the Life of Project and Project Agreement Date data elements of the MACS Project Information Master file were not being properly updated. We recommend that the Mission implement procedures and train its personnel to update and regularly review these data elements for correctness. In addition, in four transactions for the Budget Allowance Transaction file we were unable to assess the correctness of any of the three data elements we tested. This was because the supporting documents for these four transactions could not be located. We recommend that the Mission retrain its personnel on established filing procedures to assure that supporting documents are maintained and accessible.



**Populating the Data Warehouse
Future and Transitional Systems Schematic**

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 pipelines reports—the Office of Information Resource 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 and Appendix V), 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/Senegal data.

Audit Objective

The audit was designed to answer the following question:

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

Audit Findings

USAID/Senegal's MACS data was accurate in 32 of the 37 data elements from the six files reviewed. However, the other 5 data elements contained significant errors.

RESULTS OF OUR REVIEW			
MACS Files	Data Elements Reviewed	Elements With Significant Errors	Elements With No Significant Errors *
Budget Allowance Transaction	3	3	0
Reservation/Obligation Transaction	4	0	4
Commitment Transaction	8	0	8
Disbursement Transaction	8	0	8
Advance Transaction	7	0	7
Project Information Master	7	2	5
Total	37	5	32

(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 five significant errors were caused by two different problems:

1. files were not updated properly; and
2. documents were not maintained properly.

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/Senegal to ensure the integrity of data in MACS will contribute to the Agency's overall goal of providing accurate and timely information on USAID project activity on a worldwide basis.

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

1. Files Not Updated Properly

Data in two elements of USAID/Senegal's Project Information Master (PIM) file were inaccurate because the information was not updated according to procedures established by MACS User's Guide (Release 18). These procedures detail the need to:

- verify data elements, including the Project Agreement Date, Life of Project, and Commitment End Dates, when entering information into the system; and
- periodically review the data elements and adjust them as required.

We reviewed all 55 of the Project Information Master File records and tested seven of the 115 data elements contained in each record. Two data elements among these seven contained significant errors concerning the Project Agreement Date with a 7.2 percent error rate and Life of Project (in years) data with a 12.7 percent error rate.

SIGNIFICANT ERRORS			
DATA ELEMENT FILE NAME	NUMBER SAMPLED	ERRORS	ERROR RATE
Project Agreement Date (PIM)	55	4	7.27%
Life of Project (PIM)	55	7	12.72%

The information in these data elements was inaccurate because the Mission's procedures did not ensure that the data was updated when new information was received and because periodic reviews for accuracy were not conducted.

Documents used to enter information into MACS do not always contain all the necessary data. Sometimes accounting personnel must use estimated information in order to create a file, especially for new projects. When revisions or corrections are received, accounting personnel should verify that the data in the MACS record is accurate. USAID/Senegal personnel did not always make the necessary verifications and corrections.

For example, it was often necessary to enter estimated project data in the Project Information Master file before a grant agreement was actually signed. Accounting personnel created a project record, and assigned a project number and project agreement date to the proposed grant. These steps were necessary to allow the entry of budget and other accounting information into MACS for planned projects. However, in four of 55 PIM records (7.2 percent) accounting personnel did not revise the information in MACS to correspond with approved project/grant agreement dates, once the project agreement was signed.

Similarly, Life of Project data elements were not updated when project end dates were changed. The Life of Project (in years) is a calculated field which should show the number of years between the Project Agreement Date and the Project Assistance Completion Date (PACD). When a project is extended, the Life of Project needs to be recalculated. However, in seven of 55 PIM records reviewed (12.7 percent), Life of Project data elements were inaccurate.

In addition, information contained in the Project Information Master file was not periodically reviewed for accuracy. If the project information files had been periodically reviewed, it is likely that the errors described above would have been detected and corrected.

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

- 1.1 correct the errors found in Project Agreement and Commitment End Dates and the Life of Project data elements identified in this report;**
- 1.2 train personnel in the proper method of updating information in the Mission Accounting and Control System files; and**
- 1.3 establish procedures to ensure that data in the Mission Accounting and Control System files are periodically reviewed to ensure the data is accurate.**

2. Documents Not Maintained Properly

GAO Internal Control Standards require that all transactions be documented by written evidence. In addition, these standards require that the supporting documentation be available and easily accessible.

We reviewed 61 of the 281 Budget Allowance Transaction File (BAT) records and tested three of the 12 data elements contained in each record. Our review found that all three of these data elements contained significant error rates as shown below.

BUDGET ALLOWANCE TRANSACTION FILE SIGNIFICANT ERRORS			
DATA ELEMENT FILE NAME	NUMBER SAMPLED	ERRORS	ERROR RATE
Budget Plan Code	61	4	6.56%
Project No.	61	4	6.56%
Budget Allowance Amount	61	4	6.56%

The information in these data elements was unsupported because the Mission could not locate documents supporting four transactions (all relating to 1311 Reviews) that had been entered into the MACS. Such documentation should have been located in a Journal Voucher folder or a 1311 Review folder. We did note that the index summary sheet for the Journal Voucher folder indicated that at one time, the supporting documentation had been properly filed, but it could not be located during the audit fieldwork. The missing documentation is, therefore, believed to have been removed from its folder and not refiled properly.

Because the Mission could not locate documents supporting the four BAT records, the Mission could not support any of the three elements audited for these four transactions.

Recommendation No. 2: We recommend that the Director, USAID/Senegal retrain Office of Financial Management personnel on established filing procedures to ensure that documentation to support all transactions entered in the Mission Accounting and Control System is maintained and accessible.

MANAGEMENT COMMENTS AND OUR EVALUATION

The Mission fully agreed with Recommendation No. 1 of the report's two recommendations. In regard to Recommendation No. 2, the Mission agreed in substance with the problem area cited in this area, but took exception to our statement that the four transactions discussed were not accurate. We have no objection to the Mission's assertion that it is more precise to characterize these four transactions as unsupported. Accordingly, we have made this change in the text of the audit report. In response to Recommendation Nos. 1 and 2, the Mission has proposed staff training and procedural changes which will alleviate the problem areas cited in the report. Based upon the actions proposed by the Mission, recommendation Nos. 1 and 2, are resolved. Closure of both recommendations will be considered upon receipt of evidence of the Missions implementation of these proposed actions.

SCOPE AND METHODOLOGY

Scope

The Office of the Regional Inspector General for Audit, Dakar audited the quality of data maintained in the USAID/Senegal MACS files in accordance with generally accepted government auditing standards. Performed during the period from August 8, 1994, through September 13, 1994, at USAID/Senegal, the audit reviewed six files and 37 data elements from a universe of twenty-eight MACS Transaction/Master files and 757 data elements (21.4 and 4.8 percent respectively). If the error rate was significant on any of the data elements, we also evaluated the cause and made the appropriate recommendations.

Methodology

The Office of Audit consulted with Financial Management officials in Washington, D.C. and identified the MACS files and key data elements that would be reviewed for each file. We analyzed USAID/Senegal MACS transactions for the period October 1, 1991 to July 31, 1994 from six of the twenty-eight MACS Transaction/Master files¹:

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

We selected a statistical sample for five of the data files that would provide a confidence level of 90 percent and a precision level of plus or minus four percent. 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 significant. An error rate of five percent or greater was considered significant. Data elements with an error rate of less than five percent were considered accurate for reporting purposes. We statistically projected the estimated number of errors in the Mission MACS by multiplying actual number of errors in our statistical sample by the total number of MACS entries in each MACS file.

¹ A listing of MACS Transaction/Master files is in Appendix IV.



UNITED STATES GOVERNMENT
M E M O R A N D U M

DATE: November 15, 1994

FROM: Anne Williams,  Director, USAID/Senegal

SUBJECT: Audit of the Quality of MACS Data at USAID/Senegal (Audit Report No. 7-685-95-XXX)

TO: Thomas B. Anklewich, RIG/A/Dakar

USAID/Senegal has reviewed the subject draft audit report and make the following comments regarding the findings and recommendations.

1. Files Not Updated Properly

The Mission fully agrees with the finding and will implement corrective action for the recommendation as follows:

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

- 1.1 correct the errors found in Project Agreement Dates and the Life of Project data elements identified in this report;

Mission Action: Project accountants have been provided the list of errors and instructed to make appropriate corrections. Mission will provide hard-copy documentation when corrections have been accomplished.

- 1.2 train personnel in the proper method of updating information in the Mission Accounting and Control System files; and

Mission Action: Within 30 days Mission Controller will conduct a training seminar for all Accountants, Financial Analysts and Financial Specialists in the proper procedure for entering and updating Project Master File Data. Mission will provide RIG a list of attendees and the training material covered after conclusion of the training.

- 1.3 establish procedures to ensure that data in the Mission Accounting and Control System files are periodically reviewed to ensure the data is accurate.

Mission Action: Within 30 days the Mission will amend the bi-annual 1311 Review procedures (A "1311 Review" is USAID's procedure to validate existing obligations, earmarks and commitments) to include verification and certification by the Accountants, Financial Analysts and Financial Specialists that all project data is accurate and current.

2. Files Not Maintained Properly

Mission takes exception to the conclusion that the data elements reviewed were inaccurate because the supporting documents were not available. As pointed out in the audit report the finding relates to three journal vouchers supporting 1311 Review actions. In effect these were deobligations of Operating Expense funds that had been obligated through various mechanisms such as purchase orders, travel orders or recurring obligation estimates and subsequently found to be unneeded. The deobligation actions were, in fact, accurate and appropriate based on a decision that the original Operating Expense estimates were obligated at an amount greater than necessary.

The Mission does, however, agree that complete and accurate filing is absolutely necessary to fully support accounting transactions. The three misplaced files from 1989 should have been filed and available for review and since they are missing the transactions are "undocumented" or "unsupported". The Mission will take the following action to address Recommendation 2:

Recommendation No. 2: We recommend that the Director, USAID/Senegal retrain Office of Financial Management personnel on established filing procedures to ensure that documentation to support all transactions entered in the Mission Accounting and Control System is maintained and accessible.

Mission Action: The Office of Financial Management will issue an internal operating procedure that will instruct all staff in the appropriate filing procedures to be used relating to accounting transactions. This procedure will include a check-out procedure to assure complete control of accounting files. Additionally, after the move to USAID's new office building official accounting records will be maintained in a controlled area which will facilitate the check-out procedures.

The Mission would like to thank the RIG audit team for the thorough as well as collaborative audit they performed. The findings and recommendations were constructive and should lead to better internal controls within the Mission.

USAID/Senegal
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	281	61	4	6.56%	19
Transaction Amount	281	61	4	6.56%	19
Project Number	281	61	4	6.56%	19
RESERVATION/OBLIGATION TRANSACTION FILE					
Obligation Document Number	12,879	80	0	0.00%	None
Reservation Control Number	12,879	80	0	0.00%	None
Budget Plan Code	12,879	80	0	0.00%	None
Transaction Amount	12,879	80	1	1.25%	154
COMMITMENT TRANSACTION FILE					
Commitment Doc. Number	2,543	78	0	0.00%	None
Earmark Control Number	2,543	78	0	0.00%	None
Call Forward Date	2,543	78	3	3.85%	98
Training Months	2,543	78	1	1.28%	32
Transaction Amount (AID/W)	2,543	78	0	0.00%	None
Transaction Amount (Mission)	2,543	78	0	0.00%	None
Commitment End Date	2,543	78	3	3.85%	164
Budget Plan Code	2,543	78	0	0.00%	None
DISBURSEMENT TRANSACTION FILE					
Obligation/Commitment Doc. No.	17,284	80	0	0.00%	None
Reservation/Earmark Control No.	17,284	80	0	0.00%	None
Transaction Type Code	17,284	80	2	2.50%	432
Budget Plan Code	17,284	80	0	0.00%	None
Disbursing Office Code	17,284	80	0	0.00%	None
Federal Outlay Code	17,284	80	1	1.25%	216
Actual Disbursement Amt. (local)	17,284	80	1	1.25%	216
Budget Allowance Disbursement	17,284	80	0	0.00%	None
ADVANCE TRANSACTION FILE					
Advance Number.	2,648	78	0	0.00%	None
Obligation Doc. No.	2,648	78	1	1.28%	31
Commitment Doc. No.	2,648	78	0	0.00%	None
Project No.	2,648	78	0	0.00%	None
Advance Type	2,648	78	2	2.56%	66
Accountability Date	2,648	78	0	0.00%	None
Advance Transaction Amount	2,648	78	0	0.00%	None
Local Currency Amount	2,648	78	2	2.56%	66

PROJECT INFORMATION MASTER FILE

PACD	55	55	0	0.00%	None
Authorized Amount	55	55	2	3.63%	2
Project Agreement Date	55	55	4	7.27%	4
Terminal Disbursement Date	55	55	0	0.00%	None
Host Country Contribution	55	55	0	0.00%	None
Project Number	55	55	0	0.00%	None
Life of Project (In Years)	55	55	7	12.72%	7

* Error rates of less than five percent were considered accurate for reporting purposes.

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 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. 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.

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