USAID-HIV/AIDS Data Analysis and Model

Phase I Deliverable-Final
January 27, 2004

Executive Overview

Situation and Objectives

The USAID Enterprise Architecture (EA) team has identified the existence of unmet data collection and reporting needs that preclude the Office of HIV/AIDS (OHA) from being able to report out programmatic, financial and budgetary information to key stakeholders. As a result this project was launched, as a component of EA, with the goal of identifying data gaps and possible solutions to those gaps that will be used to support an Executive Information System.

Summary of Phase I Findings

- OHS reporting requirements fall across 5 broad categories:
    1. Budgeting
    2. Obligations and Expenditures
    3. Activities/Commodities
    4. Impact and Progress
    5. Trends (this category is out of scope for this project, but is included as an important category for ongoing measurement)

- Systems that house the above 5 categories of data are "stovepipes" that, for the most part, do not link to each other.

- In addition, as identified by the EA approach, these systems do not use the same core metrics and categories, so "drilling down" from the budget level to the impact level is impossible at present – links across these different data categories must be narrative links only until significant process changes have been made.

- Many systems that contain information that is critical to understanding the success of OHA are updated only on a yearly basis, are not required (and are therefore not fully populated and not always accurate) and often do not reconcile back to budget or accounting financial data.

- No system used for monitoring oversight functions in Washington collects 100% of HIV/AIDS funding. It is possible that even with all systems combined that not all funding information is being reported. These systems are not "operational" systems required for budgetary purposes, but are "cuff" systems which are used for reporting purposes and are often dependant upon hand-keying financial and impact data with no points of reconciliation. These will eventually be brought together by applying the EA approach.

- Because of the large number of systems maintained by USAID, it is extremely difficult to respond to ad-hoc management reporting requests. Individuals must approach multiple systems owners to ask for reports or data extracts to respond to management reporting requests.

- There is a wide gap between systems and data used by USAID/Washington and those that are used in the field. This data and technology gap is indicative of a cultural gap as well. The result is that managers must often make decisions without adequate knowledge to support them. Bringing the two closer together is important to create a clearer unified vision, more effective support roles and more accurate reporting.

Project Background

In October 2003 USAID initiated a project with the objective of defining an approach to reporting management information for the Office of HIV and Aids (OHA). The project was structured to be an early win on the path to the new Enterprise Architecture (EA). Specific deliverables in the statement of work included:

- Define the requirements for reporting on HIV/AIDS Presidential Initiatives
- Identify data available in the existing data model for reports
- Identify gaps in existing data model and processes for reports
- Provide "as is" and "to be" reporting data models
- Make short, intermediate and long-term recommendations to fill gaps

The goal of the Office of HIV and AIDS (OHA) is to measure their complete value chain from planning/budgeting, to obligation and expenditure, to activity and commodity utilization to distribution of good/services to consumers. This value chain was described well in the diagram below taken from the Enterprise Architecture (EA) documentation.

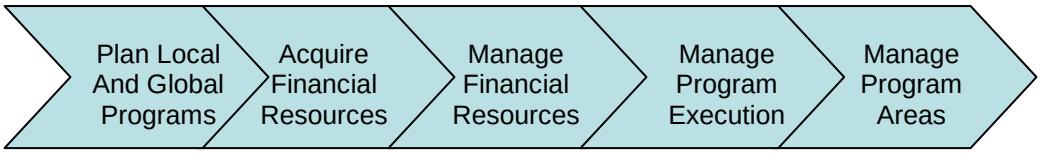


Figure 1: USAID HIV/AIDS Business Strategy and Value Chain (source: Program Performance Monitoring and Measurement As-Is Business and Information Architecture)

This project was designed to be the first phase – with subsequent phases being implemented for purposes of developing the reporting process, technologies and teams. This document is the phase I deliverable.

Phase I Project Approach

Project scoping, requirements gathering and gap analysis processes were combined to deliver this project in the required 8 week period. This process was integrated with the EA approach to process development.

Business Project Framework was defined by meeting with key EA representatives, reviewing EA documents, reviewing USAID process documents and meeting with internal representatives.

Subject Area Defined including reviewing the Statement of Work, outlining process gaps discovered by EA, understanding the EA project approach, discussing reporting gaps with internal contacts and meeting with other consultants working with USAID.

Initial Reporting Requirements were based on the Statement of Work, EA documentation, the presidential initiatives web sites and management discussions. These were vetted with senior managers to ensure they were on strategy for the goals of OHA.

Data Source Evaluation included interviews data source owners identified by the EA project. This included over 25 business process owners, technologists and contractors as well as reviewing numerous internal documents.

Current Reporting Solutions were reviewed to determine reporting requirements that may already be met, EA reporting solutions under development and additional reporting requirements that may not have yet been defined.

Tier 2 Reporting Requirements included more detailed reporting definitions for data model and gap analysis gathering purposes.

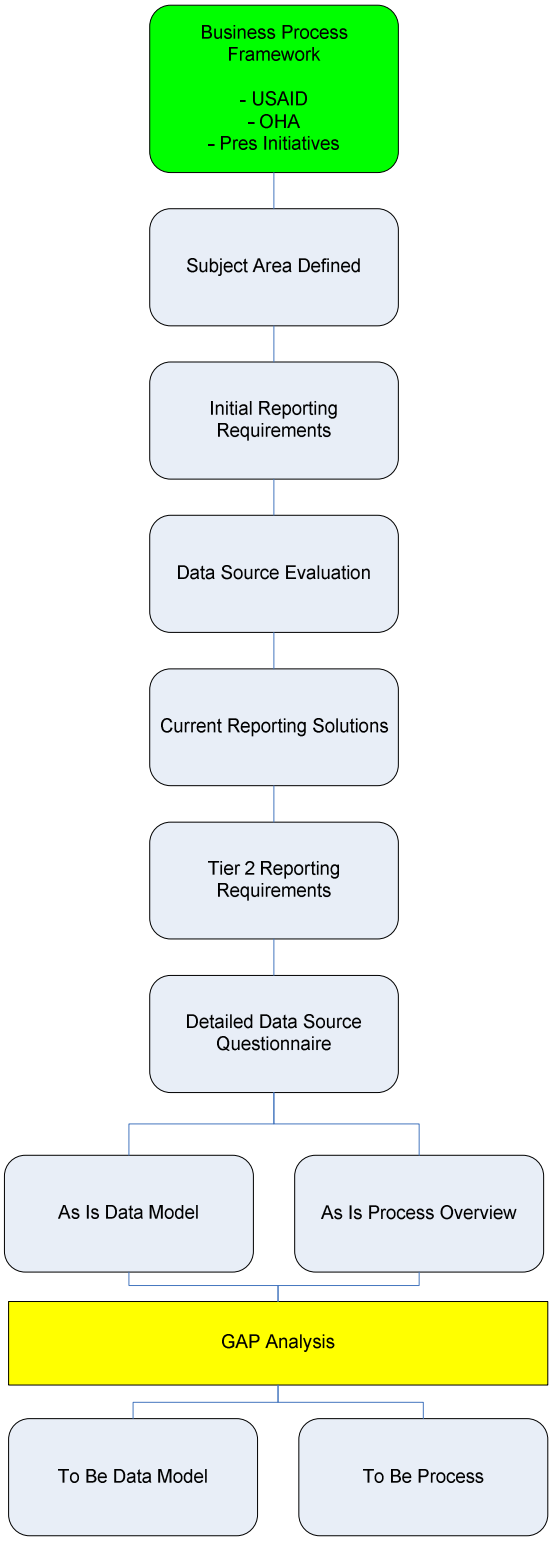


Figure 2: Project methodology

Questionnaires were distributed to missions and systems owners to map out a detailed picture of the data model and to understand the processes that were used to populate

systems. This complemented and validated the process mappings already developed by the EA project.

As Is Data Model was developed by assimilating questionnaires and interview results. To Be Data Model was developed based on requirement needs. GAP Analysis identified gaps in data and process that will need to be filled in a final reporting solution. These models and gaps will be used to inform the next phase of the EA project.

Reporting Requirements

The overarching reporting objective is to "follow the money" form the time it is budgeted to the time an individual receives a benefit from the products/services provided. The EA approach was critical to developing a high level overview of funding flows throughout the organization. Historically, there has been a significant gap between USAID/Washington and mission level reporting. While this gap cannot be closed immediately, this project aims to bring a unified approach to reporting so money can be tracked from the time it is budgeted in Washington all the way to the individual lives it is impacting in the field.

Specific initiatives have outlined specific goals in terms of the number of lives impacted (for example, the goals of PEPFAR are to prevent 7 million new infections, treat 2 million infected individuals, and provide care to 10 million). Therefore, any reporting solution will need to link budget dollars to lives impacted. It is important to note, however, that it is an impossibility to use existing data to link individual budget dollars to individual lives impacted. To manage this reality, the immediate goal of any reporting solution should be to link overall budget, and budget categories, to total lives impacted and types of treatments/programs/commodities delivered.

This reporting will require 5 categories of information: budgeting, obligation and expenditure, activities and commodities, impact and progress, trends. Specific requirements for each category are described below.

I. Budgeting: A high level look at how much is budgeted for categories of HIV/AIDS by country (or how much was spent in past year budgets).

(1)	How much was budgeted last year, this year and next year for HIV/AIDS?
(2)	Break the last year, this year, next year budgets out by region, country.
(3)	Break the budget for each country out by program (Prevention, MTCT, Care and Support, Treatment, Policy and Surveillance).
(4)	Other budget breakouts.

II. Obligations and Expenditures: How much was obligated and spent on HIV/AIDS in each country, and with which vendors was it spent?

(5)	How much was obligated and spent last year and YTD for HIV/AIDS?

(6)	Break obligations and expenditures out by region, country, locale.
(7)	Break obligations and expenditures out by vendor type (i.e. public, private/NGO, faith-based) and specific vendor.
(8)	Break obligations and expenditures out by program (Prevention, MTCT, Care and Support, Treatment, Policy and Surveillance).
(9)	Break obligations and expenditures out by funding mechanism (contract, grant, cooperative agreement, field support, strategic objective agreement, bilateral agreement).
(10)	Other obligation and expenditure reporting breakouts available.

III. Activities/Commodities: What did these expenditures buy in terms of goods and services?

(11)	What good and services were purchased? How much was spent on each of these items last year and YTD for HIV/AIDS? What quantity did this buy?
(12)	Break activities and commodities (including amount spent and units purchased) out by region, country and locale.
(13)	Break activities and commodities (including amount spent and units purchased) out by vendor name.
(14)	Break activities and commodities (including amount spent and units purchased) out by program/category.
(15)	Other available activity/commodity reporting breakouts.

IV. Impact and Progress: How many individuals have been impacted through the distribution of these goods and services in each country?

(16)	How many people have been touched through each type of good/service that was distributed through USAID assisted programs, partners and organizations?
(17)	Break impact and progress figures by region, country and locale.

(18)	Breakout impact and progress by past years (actuals) and future years (goals).
(19)	Other available impact and progress reporting breakouts.

V. Trends: While this is not the focus of this project, we would like a general indication of any country trends that might be tracked in the system.

NOTE: This requirement is out of scope for this project. However, some of the systems containing other data categories contain a partial view of this information as well. We have included it in this document for future assessment.

(20)	Does this system report on trends in any manner (i.e. total number of AIDS infections in a country, contraceptive prevalence rate, condom use at last risky sex, higher risk sex in past 12 months, median age at first sex among men and women ages 15-24, HIV prevalence among tested 15-24 year old pregnant women, etc?)

As Is Data Model

In today's environment, the management reporting process is complex, time consuming and prone to error (see Figure 2, at right). The desired environment, guided by the Enterprise Architecture (EA), will include more efficient and less redundant data gathering, experts that understand data across systems, distributed reports that are modified frequently and a single data source for at least 90% of executive reports. A number of steps will be required in order to move from the As Is model to the To Be model. The first step is to more completely understand the model as it is today.

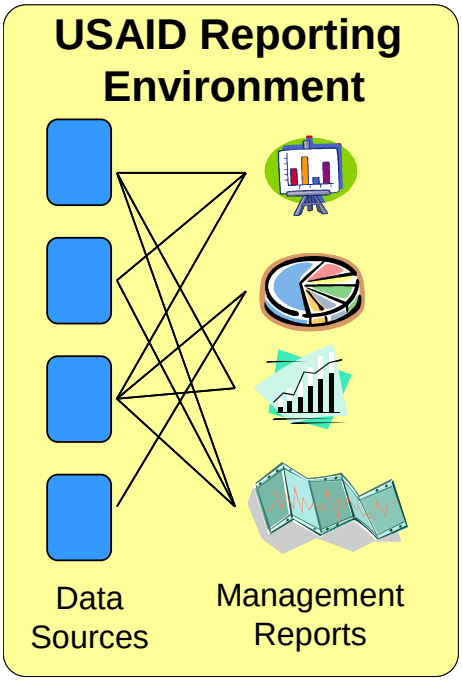


Figure 3: As Is Management Reporting (Conceptual Process Model)

Following the money from budget, to obligation and expenditure, to procurement of products/services to delivery to the consumer is hampered by the number of unique systems utilized by USAID. Data gathering processes, differences between bureau's data metrics and government regulations are all obstacles to developing a clear reporting process. However, all of the obstacles can be overcome in time.

In today's data environment, information is gathered through a combination of planning systems, accounting systems and cuff reporting systems. Only accounting systems are updated on a daily basis; only accounting systems contain consistently reliable data. Other systems are mostly voluntary, contain estimates, and in some cases take a feed from an accounting system in order to attempt to provide base numbers. The result is that inconsistent answers are reported to the same question when reports are pulled. In addition, many questions can only be answered annually, because data gathering systems are updated by users only on an annual basis.

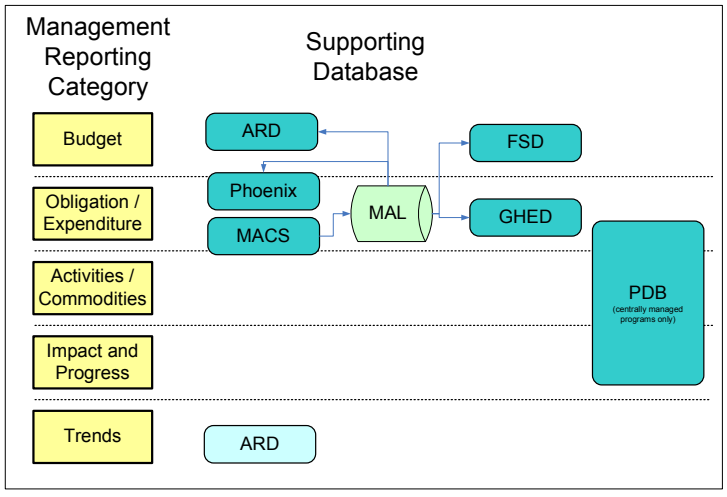


Figure 4: Current OHA reporting architecture (conceptual).

As the EA approach has identified, because of the way data is gathered and stored today, it is impossible to draw direct links (or "drill down") directly from budgets to impacts in the field. Instead, these linkages must be narrative links (at best). In the

near-term, it will be impossible to make these links in any manner other than narrative – but they can become more accurate and efficient. Longer-term, with significant process and systems changes, more direct links will be able to be formed and a more intuitive reporting process can be delivered to management.

Detailed As Is data models for existing systems are in the appendix. Not all systems owners had data models available for disclosure. The model reported below is not intended to be a comprehensive model for source systems – but rather a pointer to systems/tables/columns that contain data relevant to this project.

Table and Column	Description / Reporting Category
System: Phoenix	
Information related to this system was provided in individual interviews. At the time that this document was developed, specific table/column descriptions were not available. However, the relevant data elements are described in the Data Gaps section of this document. As a next step, the data elements for this system outlined in the Data Gaps section should be translated into specific tables/columns, and process gaps required to populate the appropriate tables/columns should be integrated into project planning.	
System: Mission Accounting and Control System (MACS)	
Information related to this system was provided in individual interviews. At the time that this document was developed, specific table/column descriptions were not available. However, the relevant data elements are described in the Data Gaps section of this document. As a next step, the data elements for this system outlined in the Data Gaps section should be translated into specific tables/columns, and process gaps required to populate the appropriate tables/columns should be integrated into project planning.	
System: MACS Auxiliary Ledger (MAL)	
Information in MAL is a subset of what is contained in MACS extracted on a monthly basis. MACS contains all the information listed for MAL as well as some additional information (such as vendor names/vendor codes).	
Disbursement Allowance	Obligation / Expenditure (5), (6)
Disbursement Transaction	Obligation / Expenditure (5), (6)
Disbursement Amt	Obligation / Expenditure (5), (6)
System: Annual Report Database (ARD)	
Data layout information from the ARD questionnaire was difficult to interpret into table/column layouts. This will require further investigation during the launch of Phase II. Parrie Henderson-O'Keefe or Chris Wolter-Nagle were referred to as alternate source of information.	

Program Country	Budget (1), (2)
Program Region	Budget (1), (2)
Program Bureau	Budget (1), (2)
PrimaryCodeValue Value	Budget/Obligation/Expenditure: program (prevention, MTCT, Care and Support, Treatment, Policy, Surveillance)
Preformance Goals	Obligation/Expenditure & Activities/Commodities & Impact/Progress (9), (11), (16), (17), (18) "Some information about HIV/AIDS is collected in the table pertaining to the State/USAID performance goals."

System: HIV/AIDS Programmatic Database (PDB)	
Table: FY LoP Total Budget FY Total Budget	Budgeting (1) Obligation/Expenditure (5)
Table: Scope LoP Total Budget FY Total Budget	Budgeting (2) Obligation/Expenditure (6)
Table: Activity Type Lop Budget Total FY Budget Total	Budgeting (3) Also available for Implementing Agency
Table: Intervention LoP Budget Total FY Budget Total	Budgeting (3) Also available for Implementing Agency
Table: Scope LoP Budget Total FY Budget Total	Budgeting (3) Also available for Implementing Agency
Table: CA LoP Total Budget FY Total Budget	Obligation/Expenditure (7)
Table: Implementing Partners LoP Total Budget FY Total Budget	Obligation/Expenditure (7)
Table: Activity Type LoP Budget Total FY Budget Total	Obligation/Expenditure (8)
Table: Intervention LoP Budget Total FY Budget Total	Obligation/Expenditure (8)

Tables: OHA Core HIDN Core PRH Core Bureaus Regional Missions Country Missions Other Fields (across all above): LoP Budget Total FY Budget Total	Obligation/Expenditure (9) "At this time the PDB does not collect data from USAID Missions on bilaterally funded programs and projects. The proposal to do so has been made, but out of concern for Missions' reporting burdens, the go ahead to implement this phase of the project has not been given. The system would require minimal adjustments to accommodate this data…While the PDB collects obligation data from the IAs, not expenditure data, per se, the obligation figures at the end of a year represent the amount spent by USAID on a particular thing or by a particular group."
Fields: LoP Total Budget FY Total Budget # ind w/adv HIV Actual Result # condoms sold/dist # indiv tested	Obligation/Expenditure (11) The field listing at left is abbreviated. See the complete PDB questionnaire in the appendix of this document for more information.
Tables: Activity Type Intervention USAID Min Out RR Fields: Scope LoP Budget Total FY Budget Total	Obligation/Expenditure (12), (13), (14)
Fields: # indv w/adv HIV # indiv tested # clients diagnosed # HIV preg wmn Actual Result	Impact and Progress (16) The field listing at left is abbreviated. See the completed PDB questionnaire in the appendix of this document for more information.
Tables: USAID Min Out RR Actual Result Field: Scope	Impact and Progress (17)

Table: USAID Min Out RR Fields: Target Target Date Actual Actual Date	Impact and Progress (18)
	Results (20) The PDB can generate reports on trends over time in all of the key program-level fields collected (i.e. budget over time, actual results over time, etc), but does not do any kind of surveillance.

System: Field Support Database (FSD) Data dictionary/data model and business process diagrams do not exist for this system.	
See Excel spreadsheet	Budgeting (1), (2) Breaks out field support funding by region and country on a year-by-year basis. Multiple year reporting on FSD data is available through the FTS system. The addition of a multi year report is planned for early next year.

System: Global Health Expenditure Database (GHED)	
See questionnaire response in appendix for listing of tables/columns.	Obligation and Expenditure (5), (6), (7), (8), (9), (10) ½ of expenditure data is entered into GHED by cooperating agencies (CAs, aka partners/vendors). The mission expenditures are obtained from the MACS Auxiliary ledger. All coding is completed by the Mission or the Cooperating Agency directly. GHED currently dos not have detailed sub-agreement institution information in cases where a partner is working with a USAID mission. We have the primary partner working with the mission but we do not collect information on other "sub-contractors" that may be working with that primary partner. We do, however have this kind of breakdown for cooperating agencies working under centrally managed agreements with the Bureau for Global Health. We do not breakdown programs to the country level – it is at the project/agreement level. We have expenditure information on HIV/AIDS for mission projects going back approximately 10 years. We have detailed HIV/AIDS expenditure information for centrally managed agreements with the Bureau for Global Health since 2001.

To Be Data Model

USAID's ultimate goal should be to store 95% of reporting information in a single data warehouse that will facilitate all reporting needs. The findings of this project are reflected in the To Be Model and can be further evolved as the model is finalized. This will enable management reports to be created more frequently, efficiently, accurately and consistently. However, it will take several generations to evolve into this model across the bureau. In the short-term, we recommend developing an OHA Rapid Reporting Solution based on combining data from all reporting systems (not creating any new data entry systems).

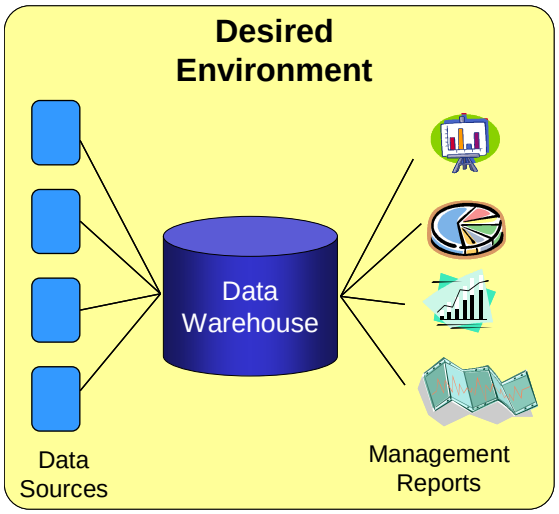


Figure 5: To Be Reporting Process (Conceptual Process Model)

Migrating to an initial OHA Rapid Reporting Solution will enable USAID to provide HIV/AIDS reports through a single database managed by a small team of experts. This will also provide the benefit of identifying the true requirements for the ultimate data warehouse that will be developed in the future. This system will not have an impact on systems that are already being used to gather data – nor will it require gathering additional data from end-users. Rather, it will serve as a central repository of all available OHA reporting data.

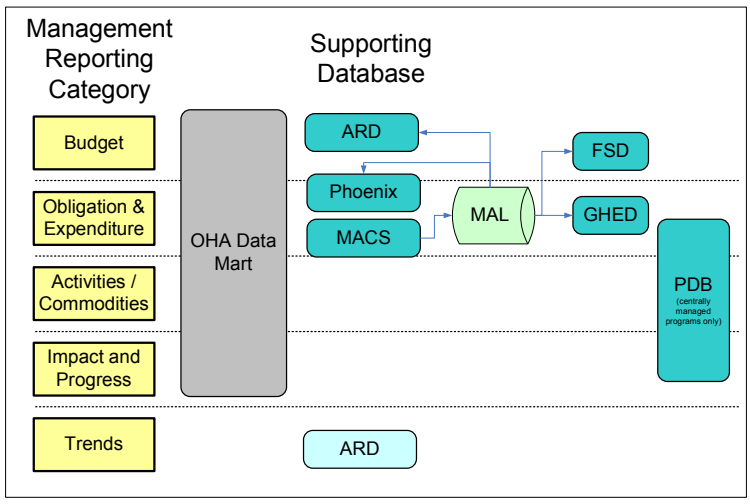
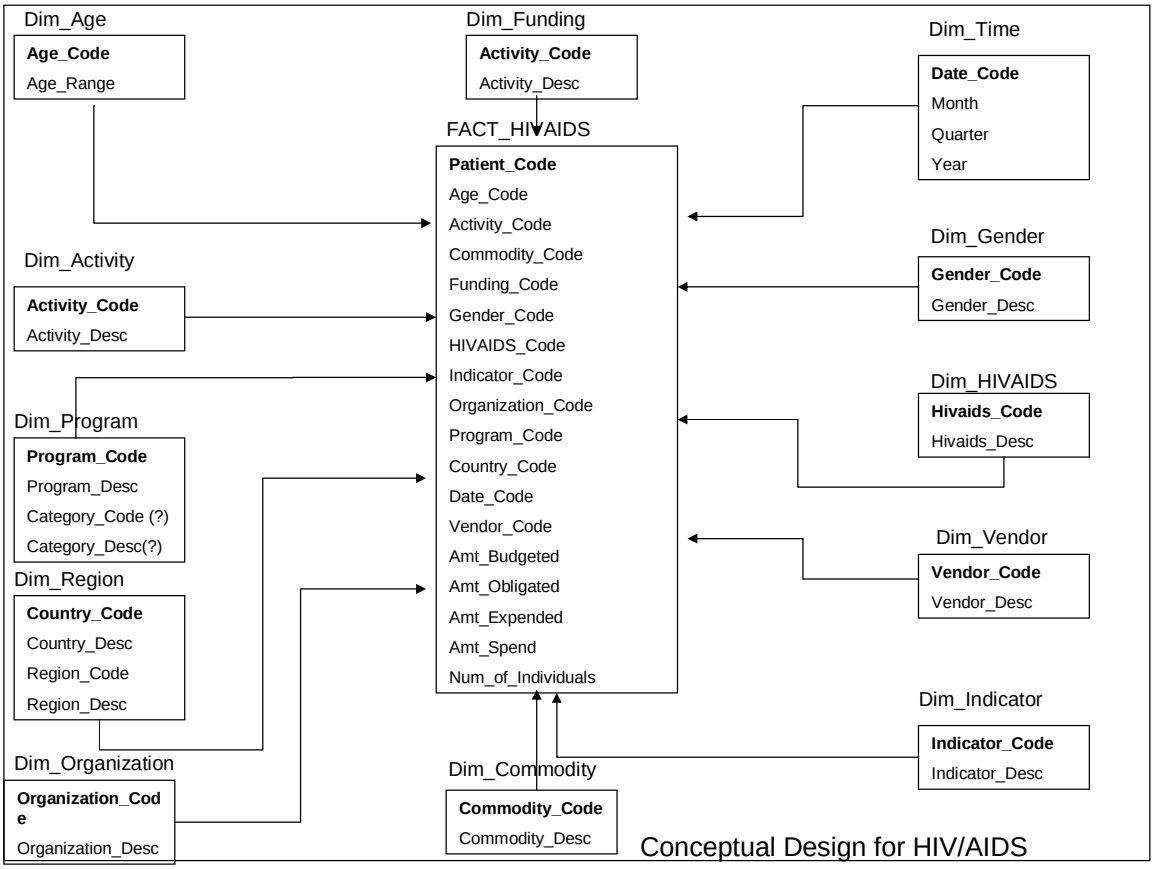


Figure 6: Phase II To Be reporting architecture (conceptual)

The short-term solution also will not add linkages or new depth to the existing data. Instead, it will simply serve as a single location that houses the most currently available data from across all OHA related reporting systems.

An initial physical data model for the OHA Rapid Reporting Solution (ORRS) has been developed and is on the following page. This is an early stage model and will need to be refined and tuned in the event that USAID moves into Phase II of implementation. Gaps that will need to be filled to develop a complete model are documented in the next section.



Conceptual Design for HIV/AIDS

The above Conceptual Design for HIV/AIDS is a data model known as a "star schema." The central box, titled FACT_HIV_AIDS, in the model is called the "fact table" and contains all the key facts which USAID will want to report on regularly. The outer tables are called "dimension tables" – they contain "facts about the facts."

For example, a key fact will be a Vendor_Code (a code referred to a vendor which USAID has contracted with to deliver services or commodities) which is stored in FACT_HIV_AIDS. In FACT_HIV_AIDS, this field will contain codes such as 01ABC or 11XYZ. The dimension table called Dim_Organization will contain specific organization names for each of those codes, such as 01ABC = Care International.

Should USAID move forward with future development phases, these data elements will be joined together in a database and made available to users through an Executive Information System (EIS). The EIS will automatically join values in the FACT_HIV_AIDS table with values in dimension tables to create reports that an end-user can easily understand and act upon.

The table on the following page provides brief descriptions of the data in the FACT_HIV_AIDS table.

TABLE: FACT_HIV_AIDS	
Patient_Code	Individual ID, could not be tracked unless Phase IV is implemented
Age_Code	Age of the Patient, linked to patient or aggretated / reported by Partner and/or agency
Activity_Code	Service delivered
Commodity_Code	Goods or commodities delivered
Funding_Code	Budget Code - origination of funding
Gender_Code	Gender, linked to patient or aggregated / reported by Partner and / or agency
HIVAIDS_Code	Y/N Values, identifies some activities which may benefit the HIV/AIDS initiative but may not be HIV/AIDS fund
Indicator_Code	Code value used to track the results/indicators of a Strategic Objective
Organization_Code	Agency Involved, CDC, HHS, USAID
Program_Code	Different programs under HIV/AIDS (i.e. MTCT, Prevention, Care and Support, Treatment, Policy, Surveillance)
Country_Code	Country where activity is performed
Date_Code	Date of the Acitivity
Vendor_Code	Company performing activity or providing goods (commodity)
Amt_Budgeted	Amount allotted for the activity or goods (commodity)
Amt_Obligated	Accrual amount for the activity or goods (commodity)
Amt_Expended	Accrual & disperse amount for the acitivity or goods (commodity)
Amt_Spend	Accrual, Dispersed & Spent amount for activity or goods (commodity)
Num_of_Individuals	Total Count (derived from a sum of patients in Phase IV - aggregated by Partner and/or agency initially)

Note that some data elements in the table above (specifically, Patient_Code) are included in the initial data model to elicit discussion and to keep at the forefront the need to be able to answer questions related to how many and which demographic segments we are serving. It is recognized that tracking individuals (i.e. Patient_Code) is impossible given current data, political, process and resource realities. Additional data elements that appear to be captured at an individual level (such as Age_Code, Gender_Code, Date_Code) would be summarized in any immediate reporting solution – these elements would not contain codes tracked at an individual level, but tracked at a partner, country, program and/or budget category level.

Data Gaps

The table below documents the evolution of the To Be Data Model and at which points during the process we recommend that specific gaps be filled. Suggestions have been made in terms of which system should be used to house and gather this data. Gathering some of these elements will require simple system updates – other elements will require more significant changes, including changes to business processes that lead to the creation of data. It is important to note that the Phoenix system will be rolling out in the field to replace and/or enhance the functionality of the MACS system – should this project move into Phases III and beyond, it will be dependant upon this rollout.

Source System	Phase	Updte Freq	Gap Notes
MACS	II		MACS records obligations by bureau, mission, SO (project level) and element. Because HIV/AIDS funds are spread over different SOs, MACS cannot identify specific HIV/AIDS funds.
MAL	II	Monthly	MAL does not currently extract vendor codes from MACS. These should be extracted and standardized.
PDB	III	Yearly	This system contains a large volume of critical reporting information, but it is not updated frequently enough, is not mandatory and is not linked to other budget/accounting information (and is therefore not always accurate).
PDB			The PDB is missing some Activity/Commodity data in the requirements. However, it more than compensates with additional data elements which should be used to expand upon the requirements.
FSD	III	Yearly	The FSD tracks funds by Fiscal Year and Country at the account, directive and Country Strategic Objective level. Processes should be refined to also gather/track information at the program level (i.e. prevention, MTCT, care and support, treatment, policy and surveillance)

Specific data gaps are outlined in the table on the following page. This table details the columns in the to be data model, and the presence of these columns in Phoenix and MACS systems. Also noted are: changes in column names that were discovered during the interviewing process; future ability to capture data elements in Phoenix; process changes that will be required in order to capture these elements in the future.

DESTINATION	Exists in Source? SOURCE: MACS	SOURCE: Phoenix	SOURCE: cuff systems	NOTES
TABLE: FACT_HIV_AIDS				Data from Phoenix will be extracted at the sub-obligation level for bi-lateral agreements and at the obligation level for unilaterial agreements.
Patient_Code	No	No	None	Not available until Phase V. Will require an individual record-per-patient. Data will source from a non-accounting system (i.e. a Patient Management System)
Age_Code	No	No	ARD	Not available until Phase V.
Activity_Code	No	No	PDB	Will exist in Phoenix in the future - will require process changes to gather info into Phoenix.
Commodity_Code	No	No	PDB, ARD	Will exist in the ITEMIZED_DOCUMENT in Phoenix. Gathering information at this level in Phoenix will require process changes. This will place a heaver data entry burden on the field - but this may be offset by reducing data entry into redundant cuff systems. If a commodity is defined as an individual, then the number of individuals served can be tracked.
Funding_Code	No	No	PDB, GHED	New column name: FUNDING_TYPE. Will exist in Phoenix in the future as the DOCUMENT_TYPE. Will require data entry process modifications. Funding_Type is captured in A&A.
Gender_Code	No	Yes	GHED	Can be gathered at an aggregate level into Phoenix (not a patient level).
HIVAIDS_Code	No	No	Each cuff system (excepton: ARD) is focused on HIV/AIDS	New column name: SUB_MANAGEMENT_CODE. Can be gathered in Phoenix in the future. Will require changes in coding standards and data entry processes.
Indicator_Code	No	No	PDB, GHED	Can be gathered by Phoenix in the future. Will require process changes. This would require contractual changes with vendors. The TRAINING_DOCUMENT in Phoenix may also be able to be used to gather employee, training delivery dates, etc.
Organization_Code	No	Yes	PDB, GHED	Vendor. Will require standardization of vendor codes. Project to standardize codes is underway as part of the Phoenix rollout.
Program_Code	No	No	PDB, GHED, ARD	New column name: STRATEGIC_OBJECTIVE_HIERARCY. Will be gathered by Phoenix in future versions.
Country_Code	Yes	Yes	PDB, GHED, FSD, ARD	AID and the State Department use different country codes. It may be necessary to capture both (or build a x-ref table) in order to provide reports that are meaningful to all parties.
Date_Code	Yes	Yes	PDB, GHED, FSD, ARD	New column name: DISPERSEMENT_DATE.
Vendor_Code	Yes	Yes	PDB	Vendor category / vendor type columns in Phoenix may be able to be used to capture faith-based vs other types of organizations.
Amt_Budgeted	Yes	Yes	PDB, FSD, ARD	
Amt_Obligated	Yes	Yes	PDB	New column name: SUB_OBLIGATED_AMT.
Amt_Expended	Yes	Yes	PDB, GHED	New column name: DISPERSE_ACCRUAL_AMT.
Amt_Spend	Yes	Yes	PDB, GHED	New column name: DISPERSE_AMT.
Num_of_Individuals	No	No	PDB, ARD	Can be captured by Phoenix in the future within ITEMIZED_DOCUMENT as a unit of measure.

Process Gaps

Process migration will be an important part of the reporting efforts at USAID. Some of new processes can be implemented in the near term, while others are dependant on downstream infrastructure developments before they can be deployed.

Should the project be rolled out into Phases II, III and IV, the investment that USAID has made in developing an Enterprise Architecture (EA) will provide a significant benefit for development and rollout. For this reason, we recommend that implementation of this phase of the project be managed by the project management office responsible for Enterprise Architecture (EA). The phase could leverage the learning gained through the EA process and could serve as a pilot program for using the EA to make process improvements.

The table below describes initial process gaps identified during the development of Phase I. If the project moves into Phase II, additional process gaps will be discovered during that phase and will be added to the list. Requirements to fill these gaps fall into one or more of the following categories:

- Development: existing systems must be modified (either at the coding level, data model level or both) in order to fill this gap.
- Training: users must be trained in new processes in order to fill this gap.
- Governance/Policy: new policies must be set and governed in order for this gap to be filled.
- Updates: data in underlying systems must be updated more frequently to satisfy reporting needs.
- Integration: data must be integrated across two or more existing systems in order to report data accurately.

Gap	Priority	Requirements / Notes
Business rules for identifying data categories	1	Development Training Selecting data out of existing systems will require providing the logic of the BPC structure of HIV/AIDS funding. Depending upon business rules followed by USAID from year to year, this task could be quite time consuming.
Standardized reporting codes and system categories	1	Governance/Policy

Gap	Priority	Requirements / Notes
		Develop a standardized coding system which can be implemented on operational systems (Phoenix, MACS) and mirrored on cuff systems so that data can be more readily linked across systems.
Add reporting categories to Phoenix to support breaking obligation and expenditure reports down into clearer categories.	1	Training Governance/Policy Adding categorical data to Phoenix can be done by an administrator without programming. Policy for using new categories and fields must be set by management, and users must be trained on utilizing appropriate fields.
MACS: Track to the HIV/AIDS category level in MACS	1	Training Governance/Policy Create and use a new coding system to identify HIV/AIDS obligations. Create budget plan codes unique to HIV/AIDS to track to this level too. Develop MACS extracts to use for reporting these figures.
Cleanup and deduplicate vendor information in MACS in order to gain a clearer picture of which vendors we are spending budget with. Add this vendor information to MAL so it can serve as a single go to resource for MACS data.	2	Updates Development MACS vendor codes and lookup tables must be extracted either directly to vendor partners or through the MAL. The cleanup process will take place as part of the ODM – a cleaned up feed can be shared with MAL to improve reporting processes agencywide.
Tracking and data gathering inconsistencies.	2	USAID gathers relevant data in a variety of systems. But because each of these systems is used to report to a different set of decision makers, there is little consistency across the elements that are tracked. A consistent set of elements should be tracked across these systems (especially cuff systems such as ARD, PDB, FSD, GHED) so narrative data links can become clearer.
Complete the deployment of Phoenix to the mission level.	4	Development Training

Gap	Priority	Requirements / Notes
		Governance/Policy Integration This initiative is already in progress. However, it is expected to take at least 18 months to complete and may not fully replace MACS.
Convert key cuff systems from voluntary to mandatory in order to release funds in current or future years; link these more tightly with accounting systems; require regular (daily, weekly or monthly) updates of data in these systems.	3	Governance/Policy Training Integration Updates The PDB is already used to gather data from IAs, and can easily be expanded to gather information from the mission level. However, this would impose yet another reporting requirement on the field. Instead, PDB should be combined with FSD and GHED, with real-time information (or perhaps monthly) gathered into this single new system from within USAID and missions.
Consider consolidating some cuff systems to minimize redundant reporting burdens.	3	Development Training Integration Training
Test the deployment of a goods/services point of delivery measurement system so that Impact and Progress numbers can be produced more accurately, efficiently and frequently than now.	5	Governance/Policy Development Training Integration Updates
Define key metrics to be used across all of USAID. At present, each agency uses significantly different reporting metrics. If an agency-wide approach is to be developed, then a finite number of metrics must be defined and used across all agencies.	4	Governance/Policy Integration

Recommendations

Recommendation Summary

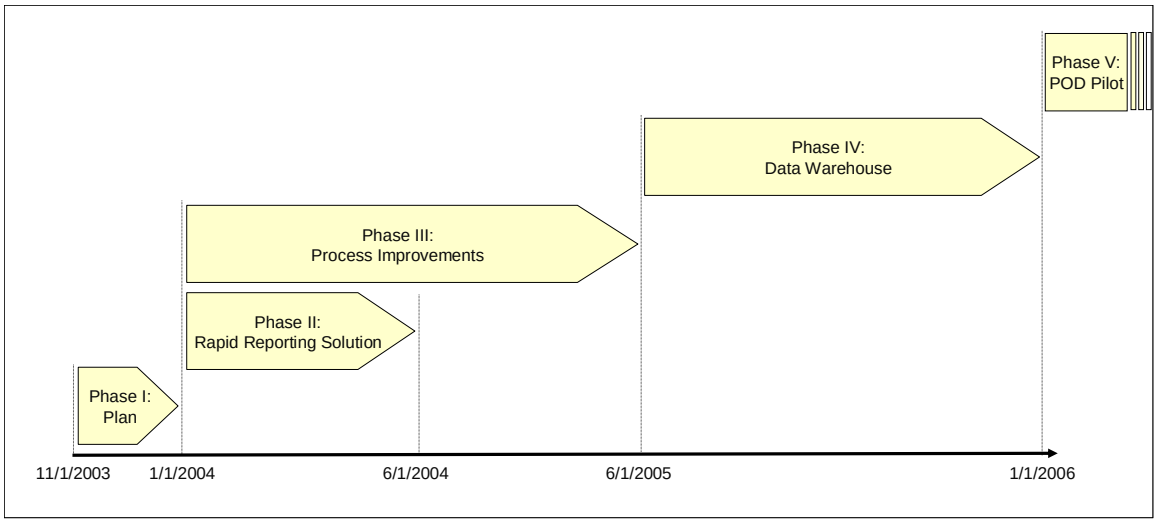
The short-term goal of OHA is to be able to more efficiently produce more complete, accurate and timely management reports. The reality, however, is that the data and process gaps that exist today make a conventional EIS (Executive Information System) or data warehouse an impossibility.

Given these realities, our recommendation is four future phases of development. The next phase (phase II) should address the efficiency and completeness of reporting through a rapidly developed data mart that centralizes existing information. This phase could also begin the process of bringing the field and USAID/Washington closer together from a goal setting and reporting standpoint. Phase III should address longer term process, data and systems integration gaps and could result in improved accuracy and timeliness – this phase will depend heavily upon the processes identified by the EA team, and process evolution methods implemented by the EA team. Phase IV should deliver the EIS/data warehouse which will vastly improve all reporting functions. We are also proposing a fifth phase to include piloting a "point of delivery" system to measure impact and progress more accurately and quickly than is now possible.

The Phase II OHA Rapid Reporting Solution (ORRS) is an "80% solution" that would be able to address critical OHA reporting needs which can be resolved in the short term. The benefits of this phase would include:

- Create a single location for 95% of OHA reporting data that exists today
- Develop an expert team who can develop standardized reports, can respond to most OHA ad-hoc management report requests rapidly, and understands all data systems from which OHA reporting data is drawn
- An expert user team which will assist USAID in developing detailed requirements for the data warehouse

These benefits are substantive, but it is important to point out the gaps which will remain until Phases III and IV are complete. Much of the data in the ODM would be updated only annually. There would be gaps in how information can be summarized (many systems do not have the program level categories that OHA uses in their reports). Data quality would be lacking until important cuff systems are transitioned into core operational systems which are updated at least monthly and have required input before budgets are released.



Phase I — Plan: This document is the conclusion of an initial planning phase. Each subsequent phase would begin with a more detailed planning phase prior to implementation.

Phase II — Rapid Reporting Solution (ORRS): Develop a data mart that houses all OHA related reporting information and deploy a small team that can produce reports from this data mart on an as needed basis.

NEED

OHA's immediate need is for more timely and comprehensive reporting. While accuracy and consistency are important, the short-term need is to be able to create reports more quickly than possible today – and across a wider range of information sources.

OBSTACLES

USAID data is too disparate to rapidly create a traditional "drill down" view from budget to impact. Business process, governance and IT changes required to feed this type of data warehouse would take at least 2 years to implement.

Previous efforts at USAID to build a comprehensive data warehouse have fallen short of expectations. This is a common experience – developing a warehouse with requirements that the current infrastructure cannot support has resulted in frustration in many business and governmental organizations.

SOLUTION

To meet the immediate need, while overcoming the inherent obstacles, OHA should take a two-fold approach:

(1) develop a data mart that contains data extracted from existing systems which is cleansed and standardized for rapid reporting;

(2) deploy a small group of individuals who will become hands-on experts in the business data contained in the data mart, and in the systems which supply data to the mart.

The OHA Rapid Reporting Solution (ORRS) should contain data exclusively of the HIV/AIDS Presidential Initiatives.

BENEFITS

- Reporting System: OHA would have a reporting system available within 6 months.

- Milestone Reports: New reports and data consolidations would be available at 60 day intervals during the 6 month development process.

- Rapid Reporting / Minimal Business Impact: An expert team would be able to rapidly handle ad-hoc reporting requests from management without having to request additional extracts from multiple business and IT stakeholders.

- Standard Ongoing Reports: Monthly, quarterly and annual reports would be defined which will be pulled from ORRS and provided to internal stakeholders.

- Agency-Wide Data Expert Center: The expert team would become key members defining requirements for future steps (including filling process gaps, evolving current data systems, and the data warehouse).

- One Team: There would be one reporting team for OHA reporting needs – managers and data analysts would only need to go to one team to ask questions.

LIMITATIONS

While the development of ORRS would provide short-term and long-term benefits, it is important to recognize some of the inherent limitations of ORRS.

- No Interactive Tool: ORRS would contain "raw" data (with some standardization and cleansing applied) from multiple USAID systems. It would not contain a user interface, but would be accessed exclusively by programmers and analysts who can produce requested reports. Existing systems (from which ORRS would draw data) already have interactive tools for most standard reports, so this is not a significant limitation.

- No Drill Down Capability: Because data at USAID is stored in multiple systems with no consistent key values, it would not yet be possible to drill directly down across reporting categories. Instead, the links between each category (i.e. budget and obligation/expenditure) must be narrative links (i.e. total expenditure amounts may not total to the budgeted amount).

- Little Accuracy Improvement: Systems used by USAID for data collection are not yet as accurate as desired. Because ORRS would work with data extracted from these systems (without making any changes to the systems or data collection processes), the accuracy of reports would not improve at this point. Data accuracy would be addressed by subsequent phases and, as these phases are implemented, the improved accuracy would be reflected in ORRS.

- Marginal Completeness Improvement: ORRS would not be adding to the volume of data available for reporting. However, we expect many ad-hoc reports to be more complete simply because it would require less effort to use ORRS to consolidate reports across data systems than the current process of requesting extracts from multiple sources for every ad-hoc reporting need.

- Data Update Frequency: Many systems used by USAID only require users to update data annually (in addition, many of these systems are voluntary and do not reconcile back to budget or accounting numbers). These systems should be addressed in Phase III, and would then be reflected in ORRS, but until that time ORRS will contain data sources that are updated only annually.

PROJECT PLAN

(1) System Build Team Definition: Define an initial team of 2 to 3 consultants to manage the process of building the ORRS.

(2) Extract Requests: Request extracts from systems owners. This would be an iterative process requiring data model reviews, more detailed interviews with systems owners, and fine tuning the request.

(3) Extract, Transform, Cleanse, Load: Extracts would be delivered from systems owners. Transforms and cleansing processes will be established to prepare data for more efficient reporting (cleansing may include items such as cleaning up/householding vendor names; standardizing some metrics, etc). Data would be loaded to the ORRS staging area.

(4) Quality Assurance: Initial QA reports would be developed to ensure data extracts are still accurate after load. Ongoing reports would also be defined to ensure that future loads of ORRS would reconcile back to the source system.

(5) System Maintenance and Analyst Team Definition: An ongoing team of 2 analysts and 1 ETL consultant would be defined to manage ORRS and the reporting process on an ongoing basis.

(6) Define Standard Reports: Monthly, quarterly and annual reports would be defined for automatic production and distribution. As ad-hoc requests are made, some would be added to the list of standard reports.

(7) Support Ad-Hoc Reporting: Ad-hoc reporting requests from management would be supported by the group. These requests could grow dramatically – expanded hours beyond contract should be approved on a case-by-case basis, only growing the reporting team for critical reporting needs.

(8) Extract System of Record: ORRS would become the extract system of record for OHA data needs. This could save other systems managers from having to support multiple extract requests for OHA reporting. Note that other offices of USAID may need to make separate data requests from systems that are not included in ORRS.

(9) Support Process Migration and Warehouse Development: The ORRS support team would be expected to play a critical role in Phases III and IV because they would be in a unique position to understand user needs and IT systems and capabilities across the agency.

Phase III Process Improvements: Identify and prioritize necessary process improvements. Many of these improvements could be identified and deployed relatively quickly. Some tasks would require a more deliberate deployment process (i.e. completing the rollout of Phoenix to the field). This phase would require a tight linkage with the Enterprise Architecture (EA) project in order to modify current enterprise processes at a granular level and roll these out internally and externally.

There are many opportunities to improve the processes at USAID which could lead to more complete, accurate and timely reporting. Some of these process changes can be made relatively quickly, others are dependant upon other downstream infrastructure changes (i.e. deployment of Phoenix to the mission level).

This project has identified a number of process gaps (outlined in the Process Gaps section of this document) which could lead to significant improvements. Because of the investment USAID has made into developing an Enterprise Architecture (EA), modifying processes would be more focused.

We recommend that OHA form a management reporting process improvement team to better define these improvement opportunities, prioritize them and assign ownership for deployment. The team should be accountable for developing a specific list of short-term improvements within 45 days of creation, and deployment of new changes every 90 days for the first 18 months.

Phase IV Data Warehouse: Replace ORRS with a data warehouse that includes integrated executive reporting tools and interactive drill down capabilities.

The data warehouse would be facilitated by the ORRS team. Prior to the launch of this project, some important decisions must be made and some upstream systems and process changes must be implemented.

KEY DECISIONS

- USAID must determine if the data warehouse should be limited to OHA needs, or if it should be an agency wide warehouse. We recommend beginning the data warehouse such that it would meet the needs of 2-3 agencies and then rolling it out to support other agencies.

DEPENDANCIES

- The completion and at least 6 months of utilization of the ODM.
- Rollout of Phoenix to the mission level.
- Updating cuff systems to support more frequent, required and accurate collection of data.
- Definition of core metrics that are measured down to the Impact and Progress level.

Phase V Point-of-Delivery Data Gathering System Pilot: Evaluate a "consumer level" approach to capturing the delivery of goods and services to the individual level.

In the current environment, USAID can only collect granular impact data (i.e. number of individuals who have been served) through qualitative data gathering. This includes having vendors, bureau directors or mission directors key data in annually. This process delivers estimates rather than hard numbers – and is prone to data gaps due to the voluntary nature of data collection and diverse definitions of different data elements.

We recommend implementing an aid deployment process that uses an identification process to isolate the specific amount of product/service delivered and the number of individuals served. At the point-of-delivery this can be administered through ID card, retinal scanning or other unique individual identification. This project will justify itself not only through more accurate and timely reporting, but also through cost savings, accountability and time savings for critical business process owners.

There are obvious obstacles (both mechanical and political) to deploying this approach in the field. However, if USAID intends to become to leader in delivering foreign aid for a diverse range of programs, this process will become a center piece of demonstrating the value that the United States is providing to countries and individuals needing assistance and to measuring/improving the effectiveness of delivering these services.

We recommend testing this approach in one or two countries that are favorably disposed to implementing such a system. Once a successful model has been established, the approach can be rolled out to additional countries.

Risk Factors

We have identified the following critical risk factors in implementing this approach.

(1) Data Extracts: Systems groups that support USAID have significant daily time requirements today. Freeing up the time for them to create an initial extract and an ongoing data extraction process would require an additional time commitment.

(2) Process Migration: Migrating processes would present significant obstacles (political, bureaucratic, technical and business needs). This process would need to have a business owner at the highest levels of influence within USAID in order to make decisions and push stakeholders to make the appropriate contribution. We recommend that a senior individual (or perhaps a team of up to 3 individuals) review current obstacles twice monthly in order to push through necessary improvements.

(3) Phoenix Deployment: Because of the plan to roll Phoenix out to replace MACS, it is assumed that MACS data would not play a role in the ultimate data warehouse. However, skepticism exists as to how rapidly and successfully Phoenix can be rolled out to the missions. Delays in this rollout would result in delays to the deployment of the warehouse and to improvements in the mart reports.

(4) Agency Reporting Needs: USAID agencies have vastly different reporting needs and reporting metrics. It is assumed that ORRS would include only the reporting needs of OHA – circumventing this problem in the near term. However, if agency-wide reporting needs are to be taken into account for the development of the warehouse, this could create significant delays. For this reason, we recommend creating an initial warehouse for 2 or 3 agencies and gradually expanding upon the warehouse to serve all departments of the agency. An alternative strategy could be to develop different marts for different parts of the agency (much as large businesses often create different warehouses and marts to serve different business divisions).

Appendix A: Interview List

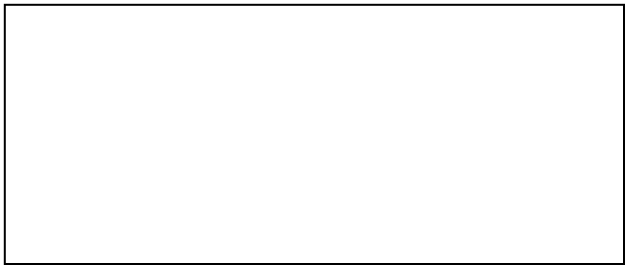
Name	Role	Organization
Aimee David	Project Management	USAID
Mark Kneidinger	Management	USAID
Anthony W. Starks	Contract Management	SETA
Joe Gueron	Project Management	USAID
Adriel Bush		OMB
Anne Peterson	Management	USAID
Ken Schofield	Project Management	USAID
Chris Bergen	IT Systems	CSC
Glen Schneider	IT Systems – Phoenix	AMS
Paul Eavy		
Paul Knepp	Business Expert	USAID
Eldred Maduro	IT Systems	IBM
John Jerome	IT Systems – FSD, GHED	Jorge
Renee Fiorentino	IT Systems – PDB	Social & Scientific Systems
Jerry Hensley	IT Systems – MAL	USAID
Charlene Febrea	IT Systems – MACS	
Tim Fain	IT Systems	IBM
Robert Baker	Business Process / OPIN	USAID
Sharon Nichols	IT Systems	USAID
Scott McKissock	IT Systems – ARD	
Harvey Weiner	IT Systems – Phoenix	IBM
Kirstin Walsh	IT Systems – FSD, GHED	Jorge
Kristen Bobes	IT Systems – FSD, GHED	Jorge
David Noble	IT Systems – MACS	
Winston Allen	IT Systems – PDB	Social & Scientific Systems
Ken Krakower	IT Systems – Phoenix	AMS

Appendix B: Data System List / Selected Data Systems

#	Priority	Application Name	Description
1	A	Annual Report Database (ARD)	Agency wide database that is used to collect information from all Operating Units one time per year for multiple uses in Washington. The database collects both narrative and indicator results information including baseline, targets and actuals.
2	B	Surveillance DB (subset of Annual Report Database)	Used in reporting functions of ARD
3	A	Field Support Database or Funds Transfer System (FSD, FSDB or FTS)	Web-based system that supports: field process transfers program funds allocated to field offices to OHA so that the field offices can take advantage of the centrally administered technical assistance agreements established by OHA for global use, such as drugs, condoms, and training. Source SG Rest Meetings GHED FTS NewVern 09172003.doc
4	A	Global Health Expenditures Database (GHED)	Web-based system that provides the expenditures for an operating unit. In addition to operating unit, SO and Fiscal Year, the data is also available by program category (e.g. Prevention, Care & Support, etc), thus bridging the gap between the financial reports produced by Phoenix and reports requested by OMB and Congress, etc.
5	?	Not sure - this could be the same as OYB, OPIN, Red Light/Green Light.	Indepent reporting systems to support accounting of obligated funds.
6	A	HIV/AIDS Programmatic Database (PDB)	Personnel in each IA enter their obligation and outcome survey data. Supervisors in each IA QA the data that is entered into the PDB system. Personnel at the Synergy Project review about 25% of all data entered, spot checking for consistency and anomalies. Data entered is done manually in the PDB system.
7	B	S04 AR DB	Used to do ad hoc analyses on outcomes statistics at the Synergy Project
8	B	Newvern System	Web-based system. The system tracks expenditures for HIV/AIDS program commodities, such as condoms. It can track the supply chain for the Missions for commodities - procurement, financial, shipping, forecasting, etc.
9	B	OP New Management System / A&A	The A&A DB system is the backbone used in Washington to track and manage the procurement process. ProDoc is the primary interface. ProDoc is used to generate all documentation and interface with the field missions.
10	D	ProDoc	Primary interface for NMS A&A (#9, above). Used to help draft A&A documents.

#	Priority	Application Name	Description
11	C	AID Worldwide Accounting and Control System (AWACS)	Primary auditing tool. "AWACS contains the agency's general ledger and reporting functions as well as accounts payable, accounts receivable, and funds management. Phoenix will replace AWACS as the agency's financial management system, but AWACS will remain in use for reporting historical data." Source B-5 TEIA System Rqmts Report Rev 1.doc (May 2001 Page3-7) Documentation indicates that AWACS is one of the four NMS modules.
12	D	Documentum	Used to scan and track all SOWs and Contracts in Washington.
13	B	Mission Accounting and Control System (MACS)	Used for accounting function in the field.
14	A	Mission Auxiliary Ledger (MAL)	MAL summarizes transactions by transaction type, budget, fiscal year, fund, mission accounting system, and mission into MAL's Interface Data Table.
15	D	Online Presidential Initiative Network (OPIN)	A PPC web based system used to track the presidential initiatives. Used to collect quarterly budget and performance data. Source OPIN Reporting System_09_29_03.doc
16	A	Phoenix	"Phoenix is used for processing Agency transactions in the areas of general ledger, budget execution/funds control, accounts payable, disbursements, accounts receivable, loan management/credit, and cost allocation. Phoenix is also being used as the Agency tool for estimating accruals." Source FM Business and Information Architecture v1.0.doc
17	D	OYB Spreadsheet	The Budget office uses an MS Excel OYB spreadsheet to track OYB. Phoenix does not track back to the original funding level so the office established the OYB spreadsheet to track every transfer and the historical information for the year.
18	D	Vehicle Management System	
19	D	Motor Vehicle Inventory	
20	D	Expendable Property System	
21	D	AETA	Automates the time and attendance function at USAID.
22	D	FTE	Provides ability for PPC/RA to report the agency's full time equivalency work years to OMB.
23	D	Travel Manager Plus	System for processing travel authorization and travel vouchers.
24	D	Automated Inventory Management System (AIMS)	System maintains a detailed inventory of ADP hardware and software used in USAID/W.
25	D	Barscan	Works with AIMS
26	D	Trainet	System used to track training participants
27	D	USDO Cashier	Cash transactions data.

#	Priority	Application Name	Description
28	D	Cashlink	Allows agency to monitor EFTs submitted to treasury on behalf of USAID.
29	?	DHHS Payment Management System	DHHS is responsible for the servicing USAID issued LOCs (letter of credit) through their PMS
30	D	Personal Service Contracts (PCS - various)	Not a system. Mission level payroll processed. Missions use their own payroll software.
31	D	Time & Attendance Conversion System	Time and attendance system
32	D	Connect: Direct	System utilized by USAID/W for disbursements.
33	D	Intra-Government Payment and Collections System (IPAC/GOALS)	US Govt system to bill, pay and collect interagency expenditures.
34	D	Loan Servicing System	USAID outsources servicing of credit portfolio to Riggs Bank.
35	?	e-Focus	Accrual Reporting System is a web based tool. It is used for estimating accruals.
36	?		Active project portfolio monitoring - MS Access system maintained by IBM
37	?		Europe and Eurasia information system
38	D	Red Light / Green Light	
39	?	AFR Budget Cuff System	



Appendix C: Completed Surveys

THESE WILL BE HAND-INSERTED INTO THE PRINTED DOCUMENT

Appendix D: Detailed As Is Data Models and Process Diagrams

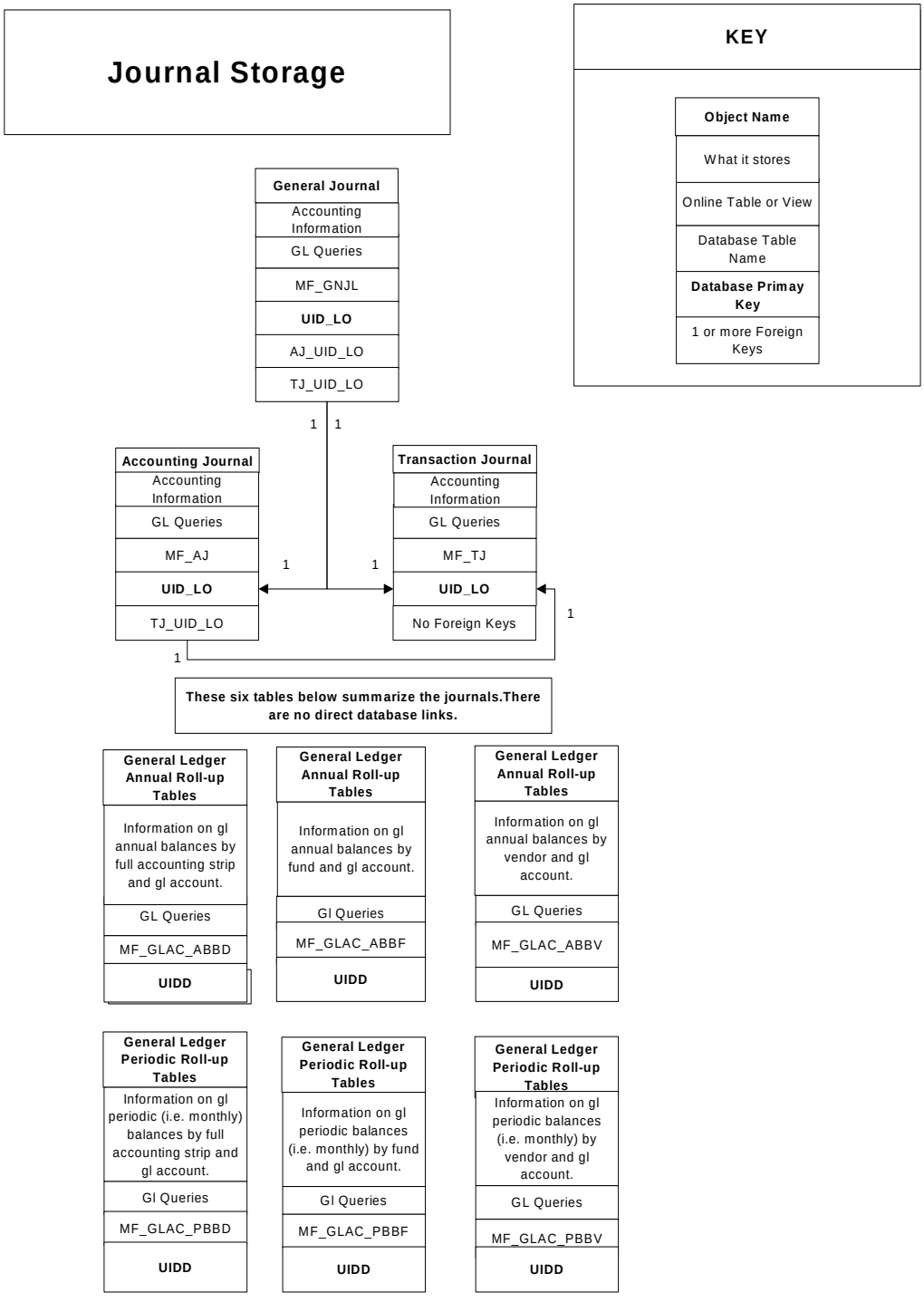


Figure 7: Phoenix (1 of 10)

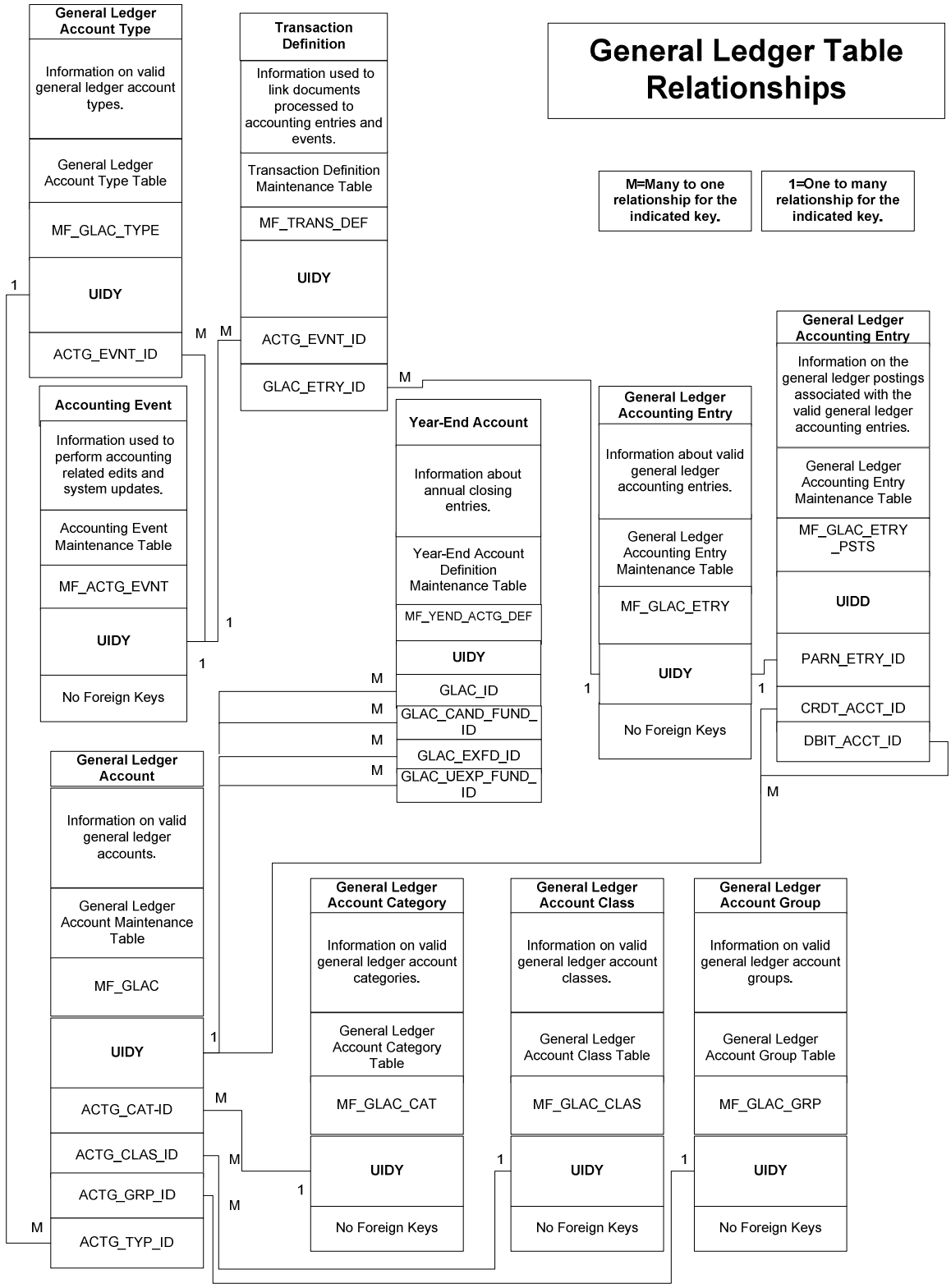


Figure 8: Phoenix (2 of 10)

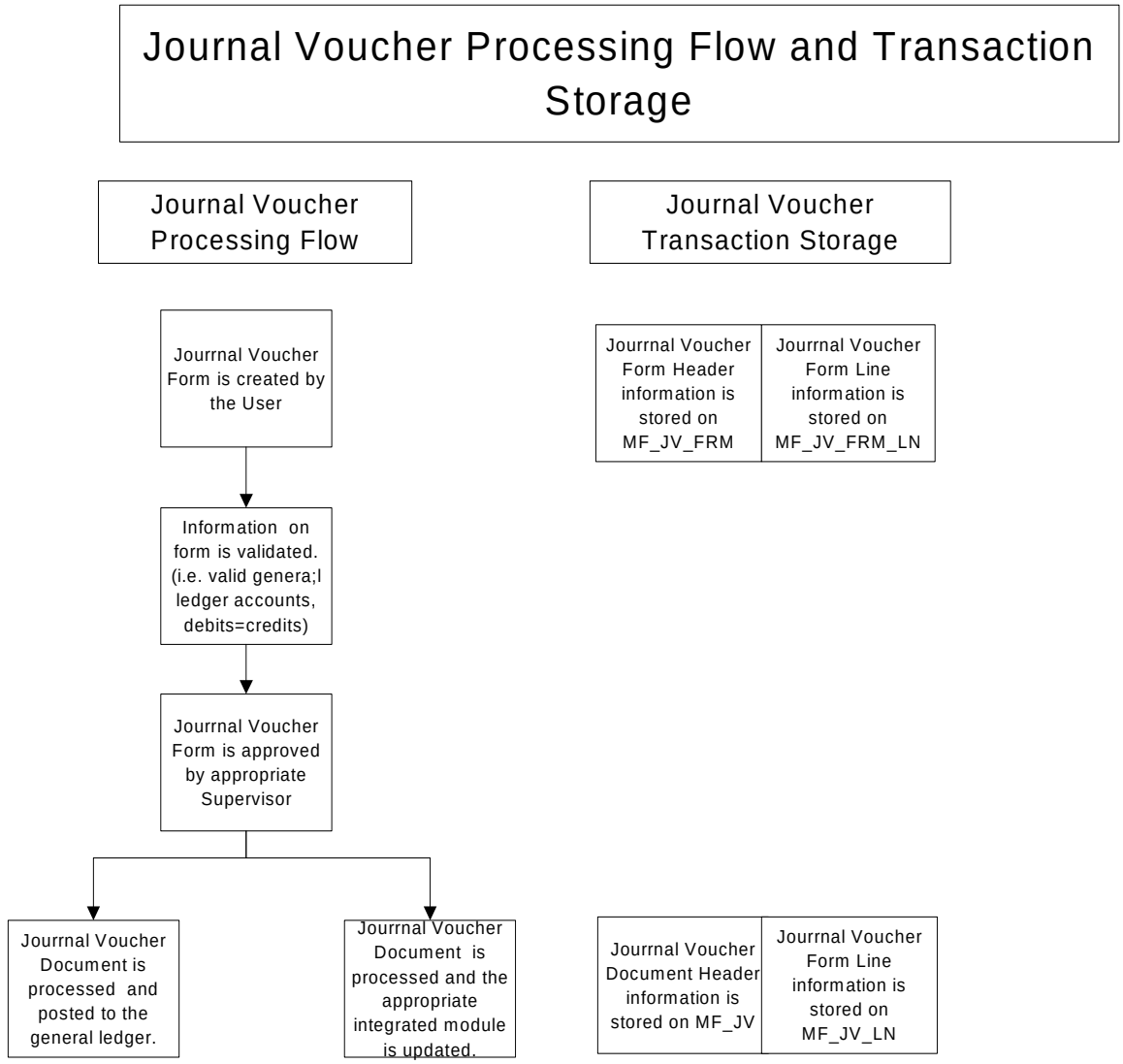


Figure 9: Phoenix (3 of 10)

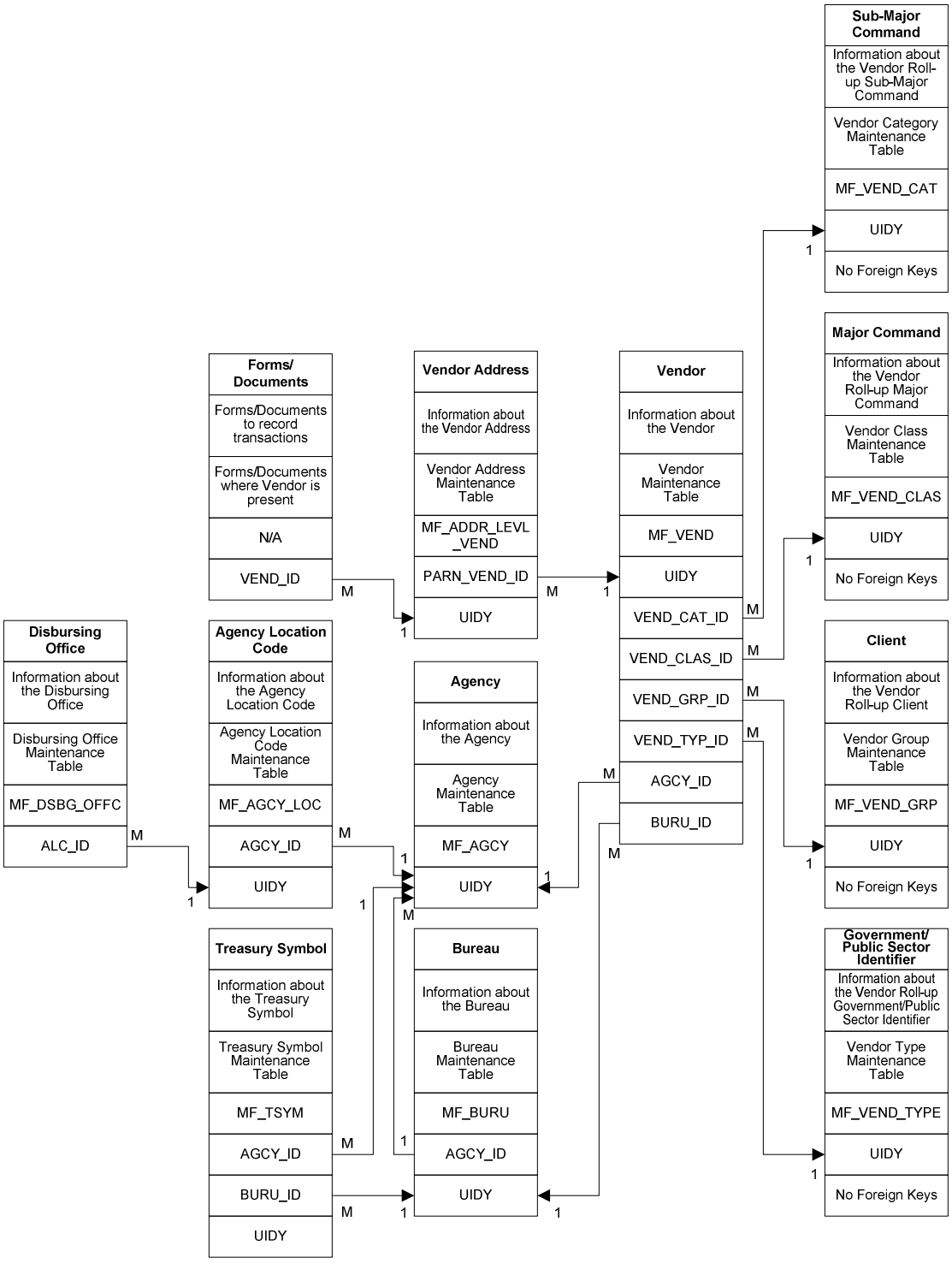


Figure 10: Phoenix (4 of 10)

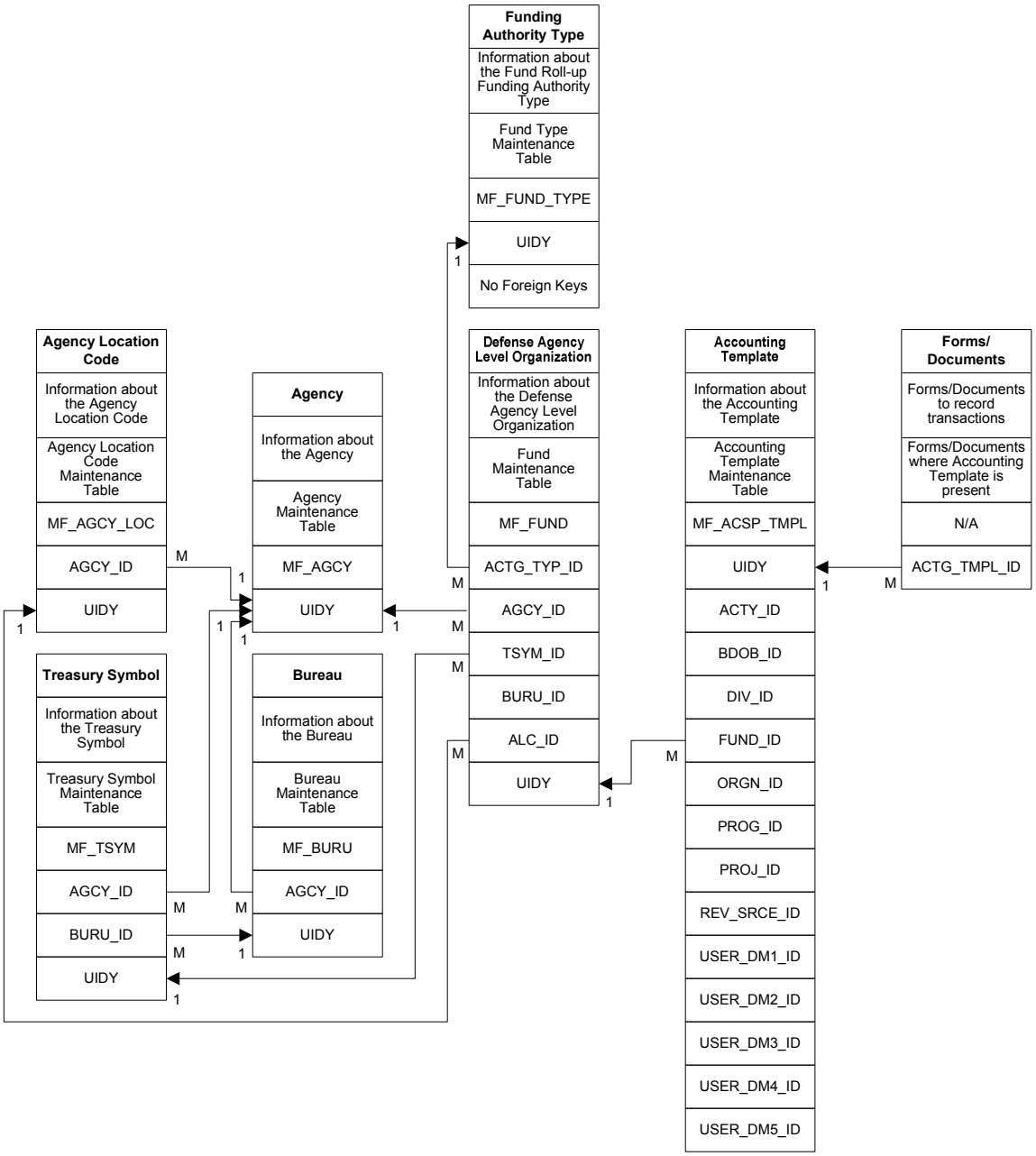


Figure 11: Phoenix (5 of 10)

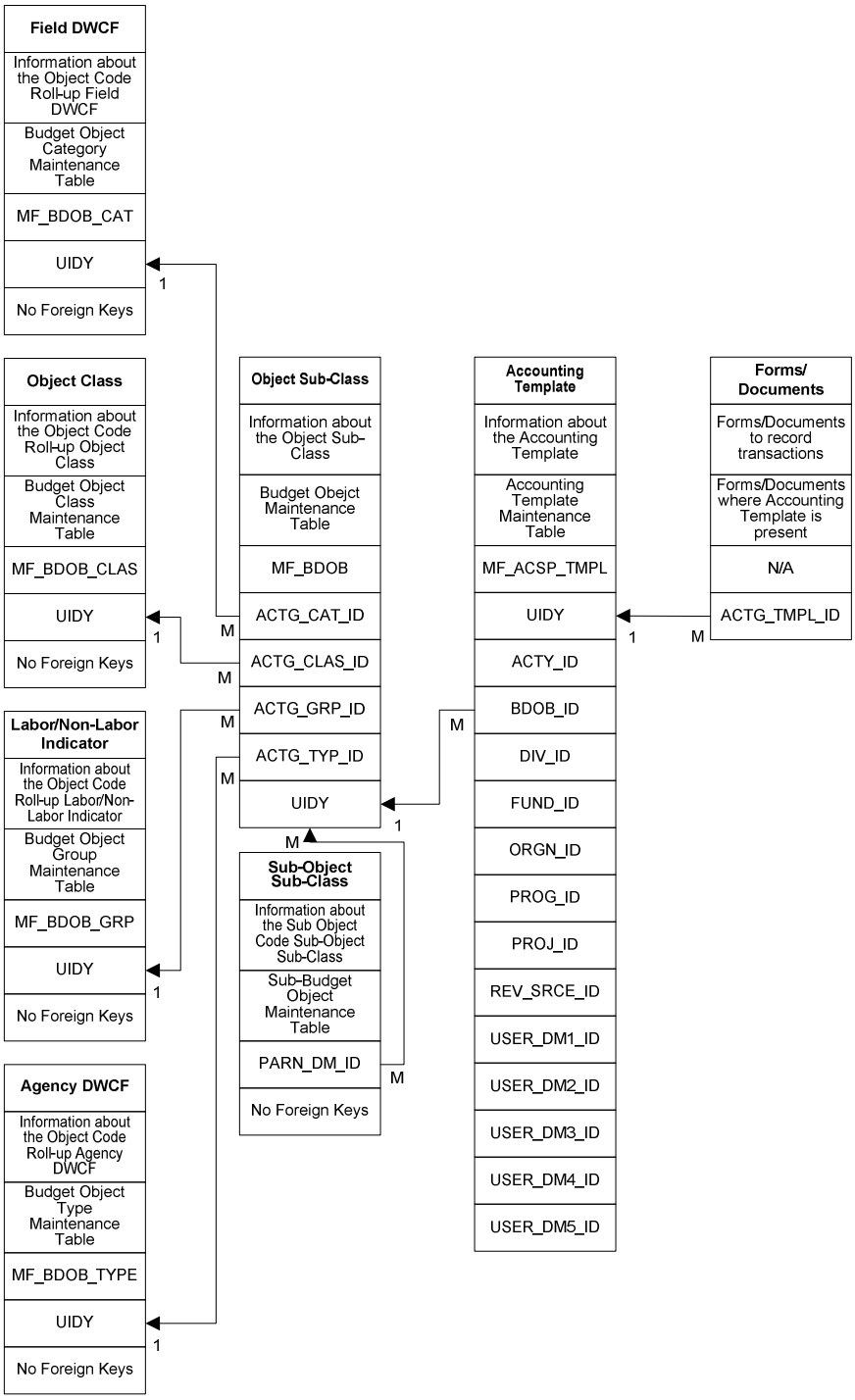


Figure 12: Phoenix (6 of 10)

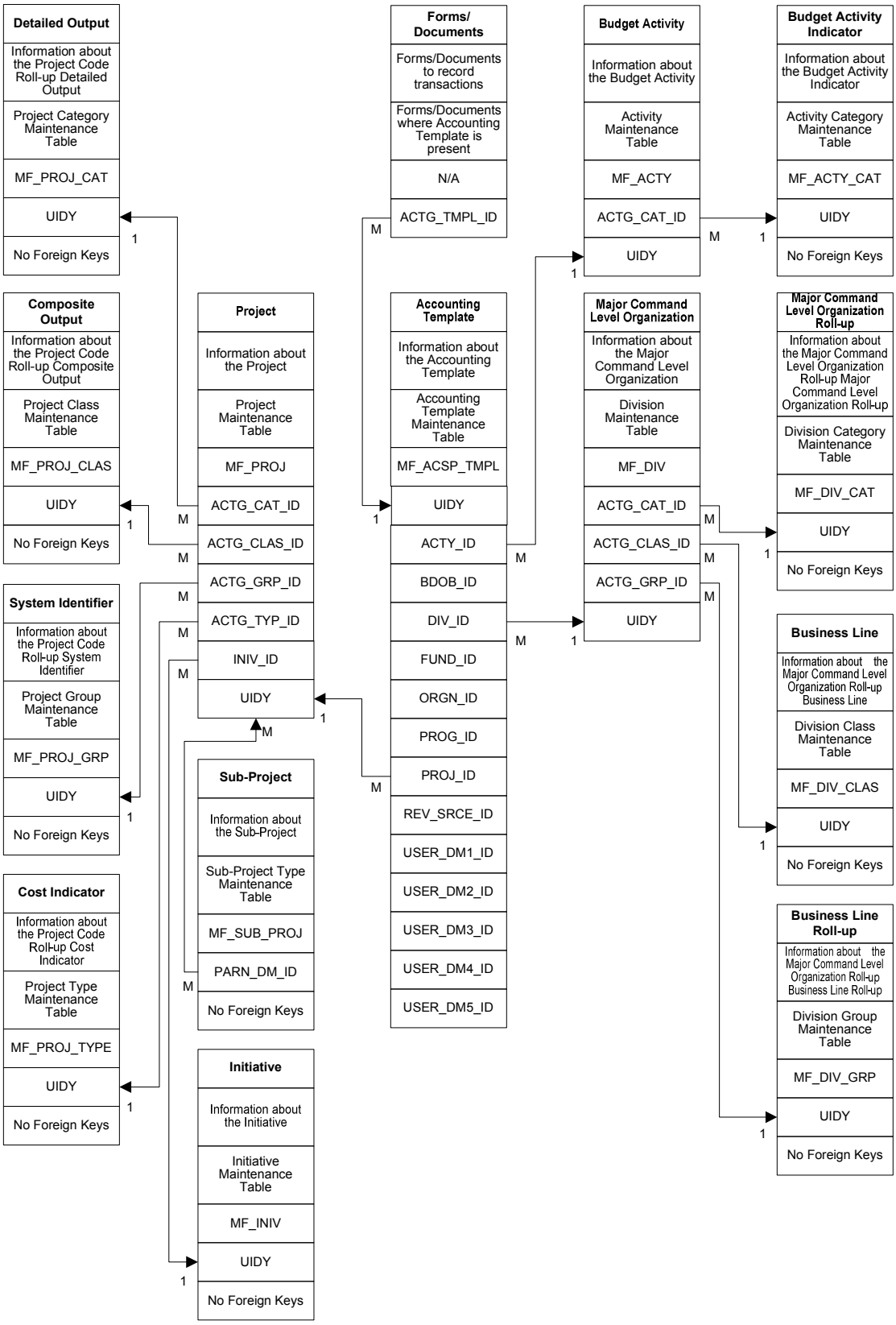


Figure 13: Phoenix (7 of 10)

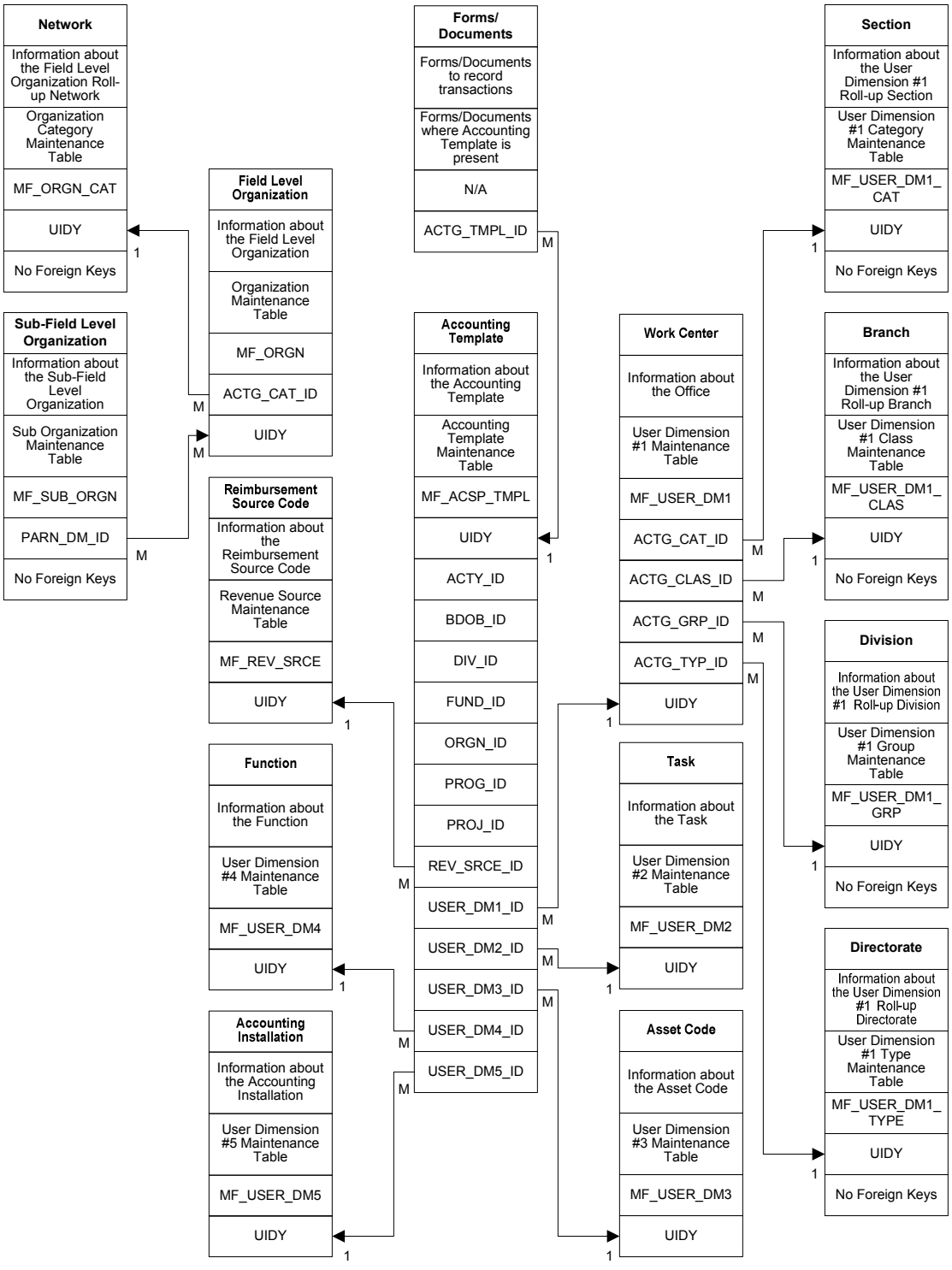


Figure 14: Phoenix (8 of 10)

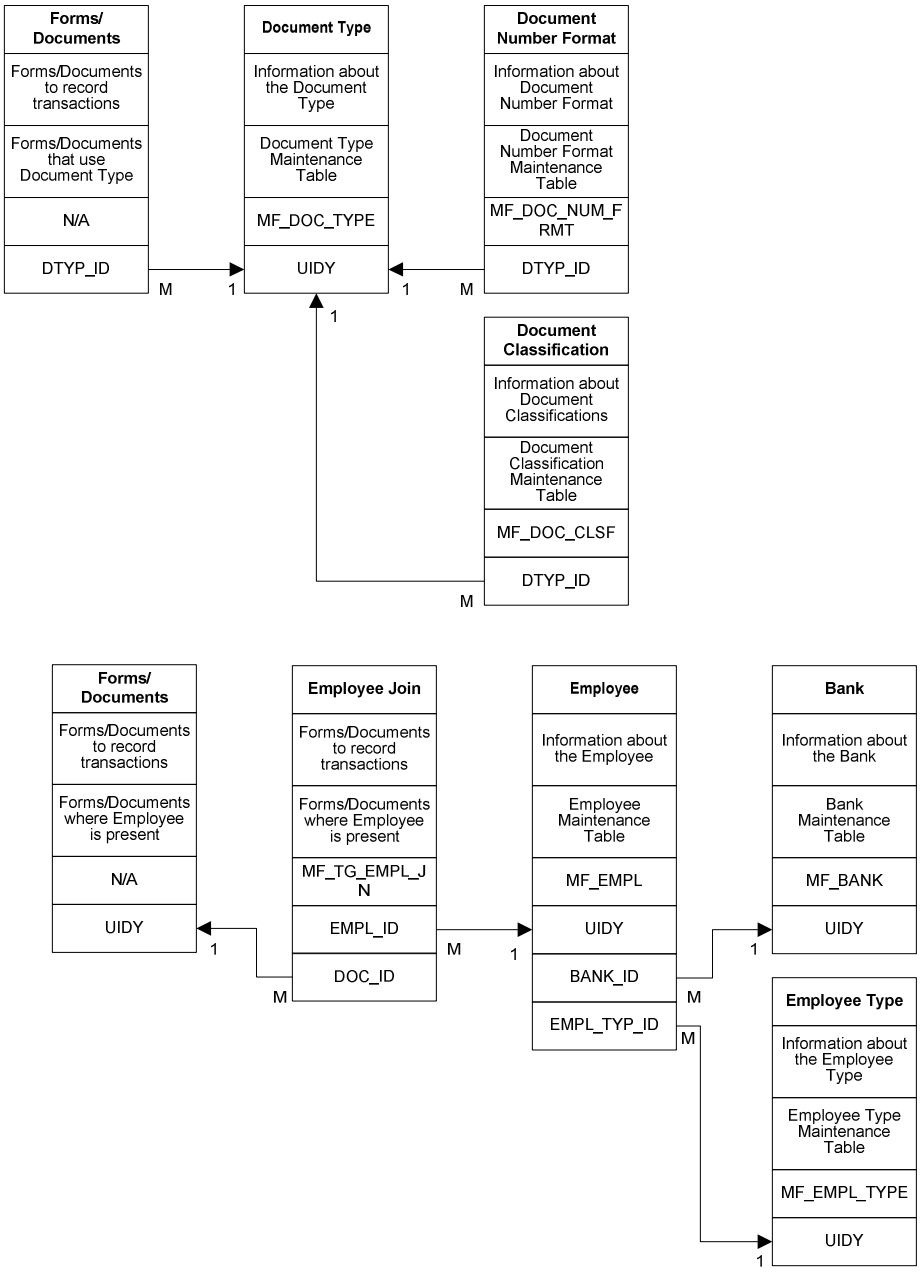


Figure 15: Phoenix (9 of 10)

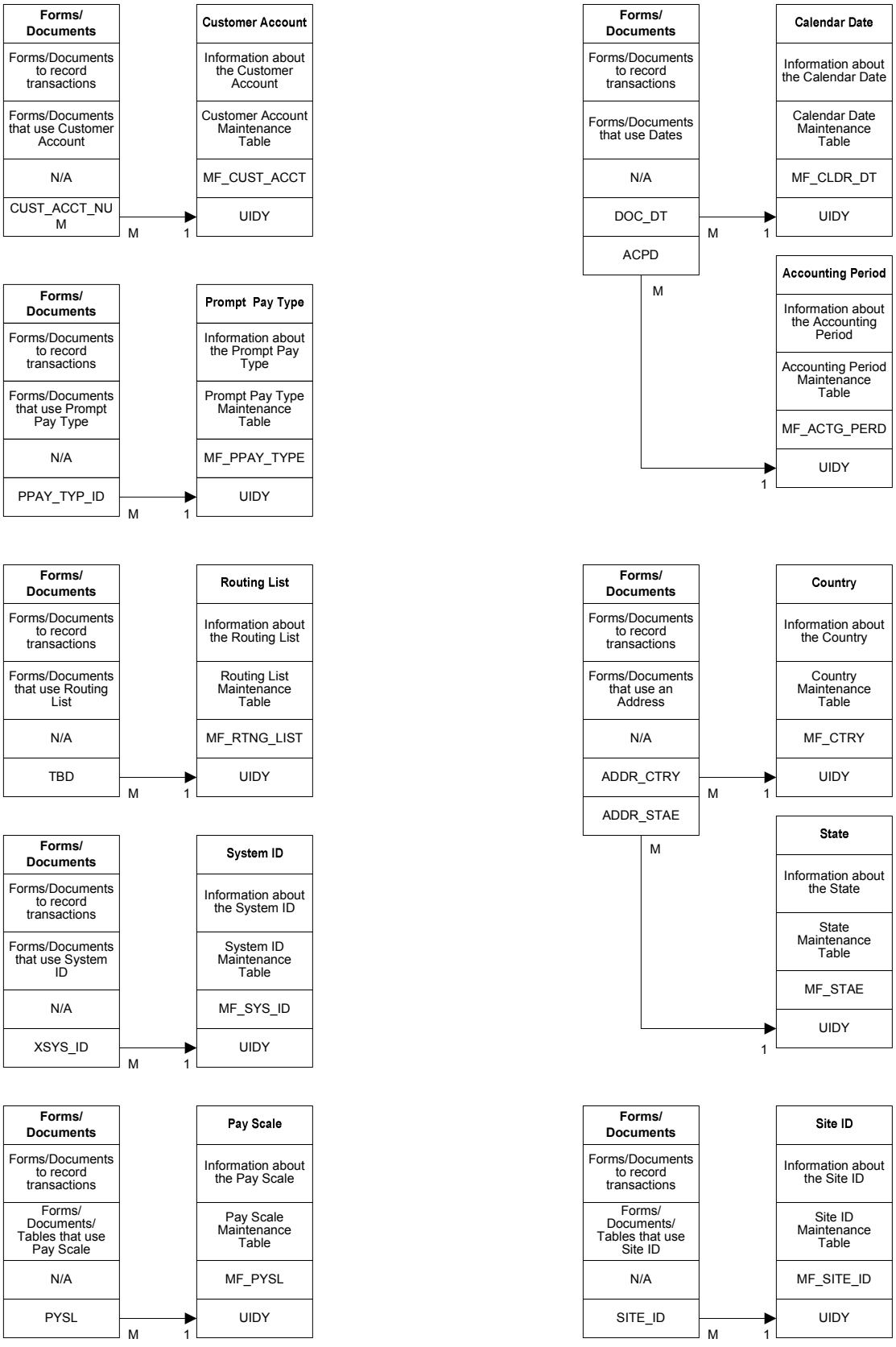
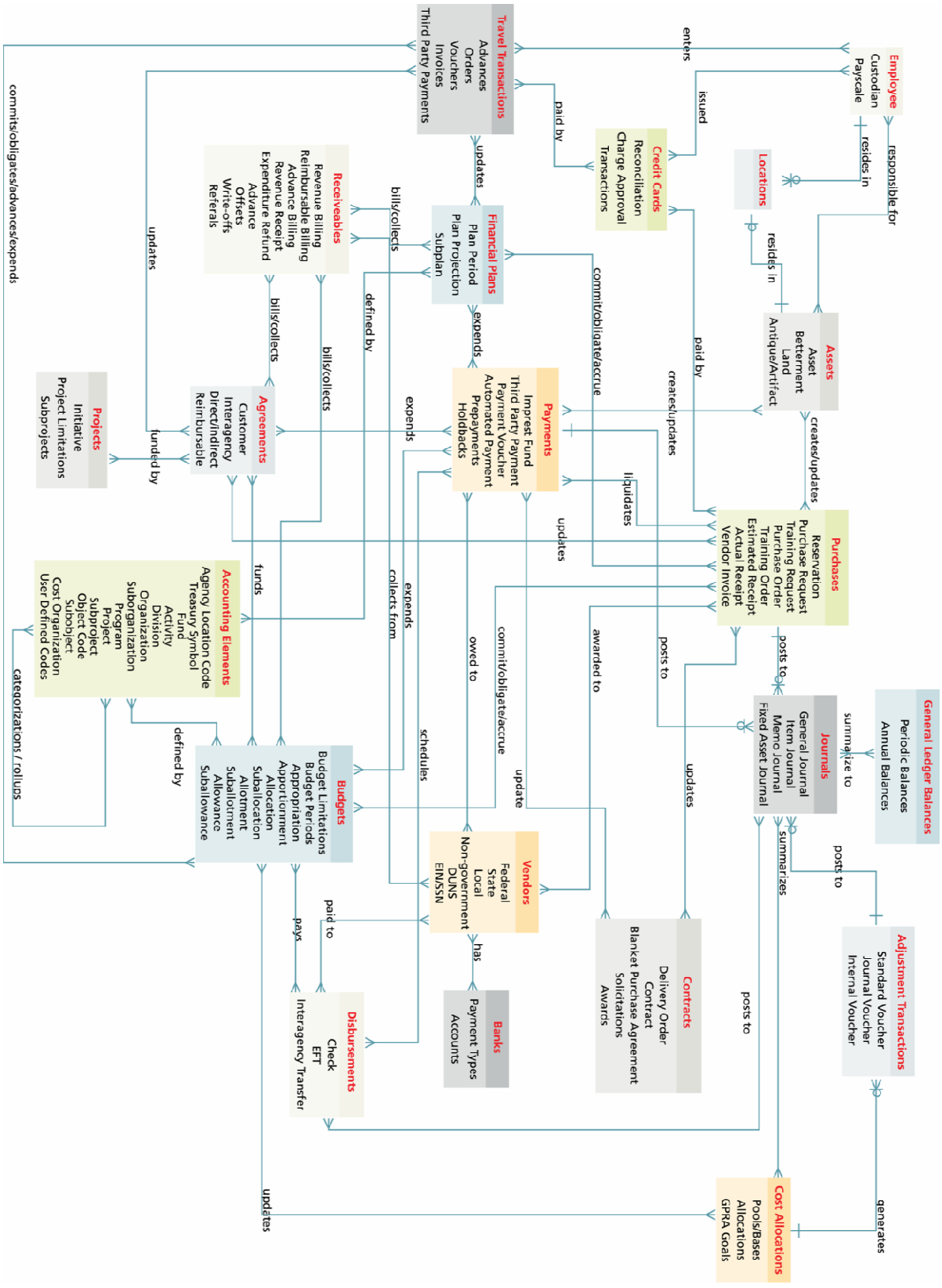


Figure 16: Phoenix (10 of 10)


Employee
Custodian
Payscale
responsible for
resides in
enters
issued
Locations
resides in
Assets
Asset
Betterment
Land
Antique/Artifact
Travel Transactions
Advances
Orders
Vouchers
Invoices
Third Party Payments
paid by
updates
Credit Cards
Reconciliation
Charge Approval
Transactions
Financial Plans
Plan Period
Plan Projection
Subplan
Receivables
Revenue Billing
Reimbursable Billing
Advance Billing
Revenue Receipt
Expenditure Refund
Advance
Offsets
Write-offs
Referals
bills/collects
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creates/updates
paid by
creates/updates
expends
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Payment Voucher
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Purchase Request
Training Request
Purchase Order
Training Order
Estimated Receipt
Actual Receipt
Vendor Invoice
posts to
posts to
Agreements
Customer
Interagency
Direct/Indirect
Reimbursable
Projects
Initiative
Project Limitations
Subprojects
expends
expends
collects from
awarded to
commit/obligate/accrue
owed to
update
Accounting Elements
Agency Location Code
Treasury Symbol
Fund
Activity
Division
Organization
Suborganization
Program
Project
Subproject
Object Code
Subobject
Cost Organization
User Defined Codes
funds
categorizations / rollups
defined by
Budgets
Budget Limitations
Budget Periods
Appropriation
Apportionment
Allocation
Suballocation
Allotment
Sublallotment
Allowance
Suballowance
schedules
Vendors
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State
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Non-government
DUNS
EIN/SSN
has
Banks
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pays
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Check
EFT
Interagency Transfer
Contracts
Delivery Order
Contract
Blanket Purchase Agreement
Solicitations
Awards
posts to
updates
General Ledger Balances
Periodic Balances
Annual Balances
summarize to
Journals
General Journal
Item Journal
Memo Journal
Fixed Asset Journal
posts to
summarizes
Adjustment Transactions
Standard Voucher
Journal Voucher
Internal Voucher
posts to
generates
Cost Allocations
Pools/Bases
Allocations
GPRA Goals
updates
commits/obligates/advances/expends

ɔprietary")

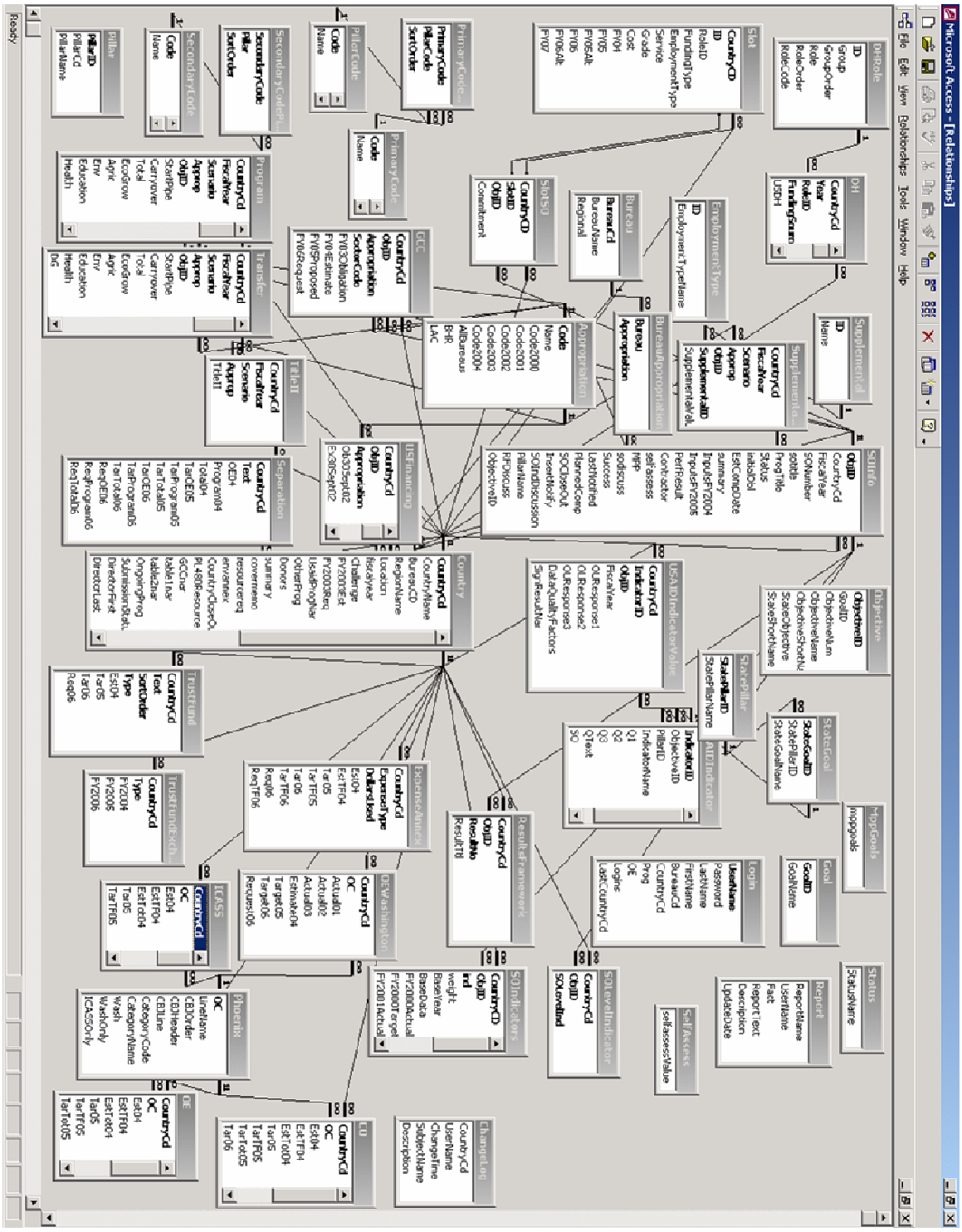

Figure 18: Annual Report ER Diagram

Phoenix-Centric Environment

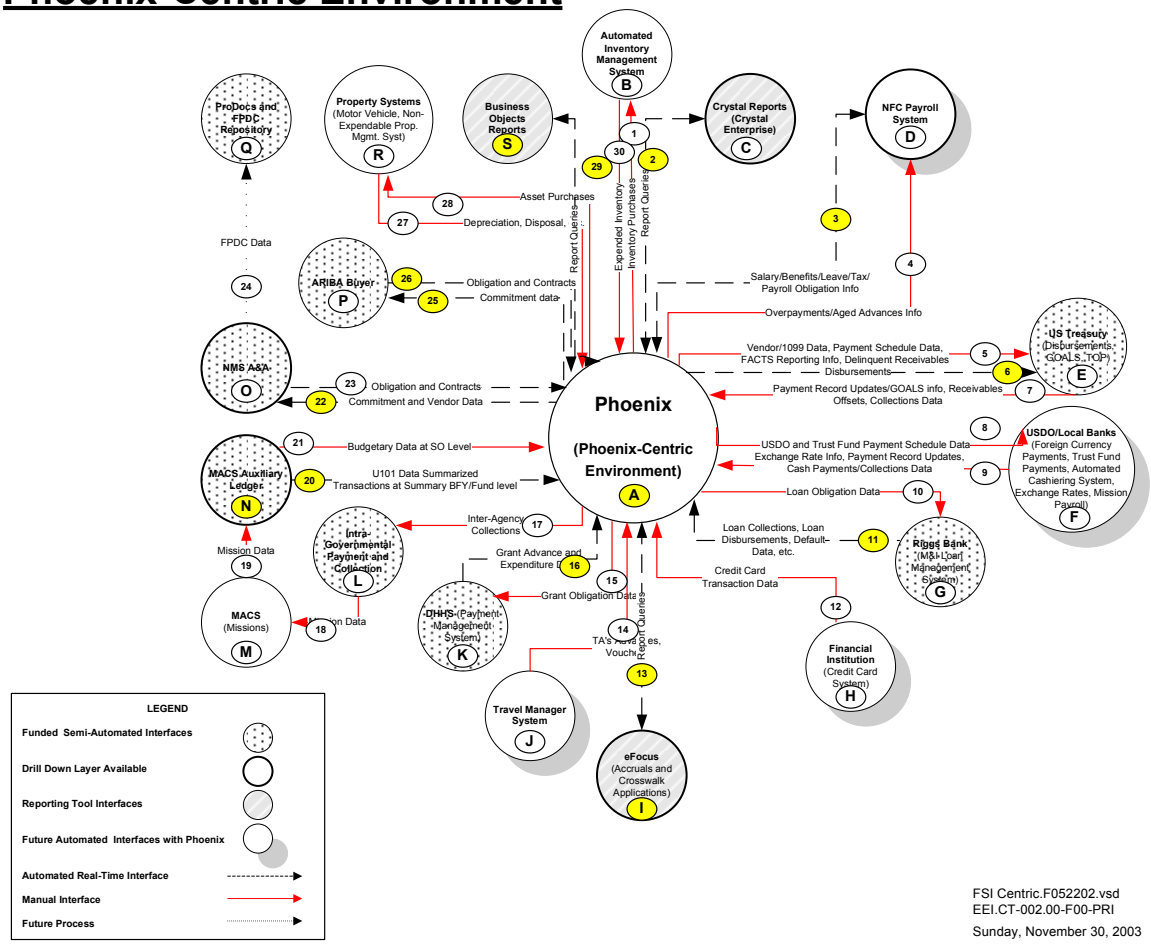

Figure 19: Phoenix-Centric Environment (Source CSC)

MACS Auxiliary Ledger-Centric Environment

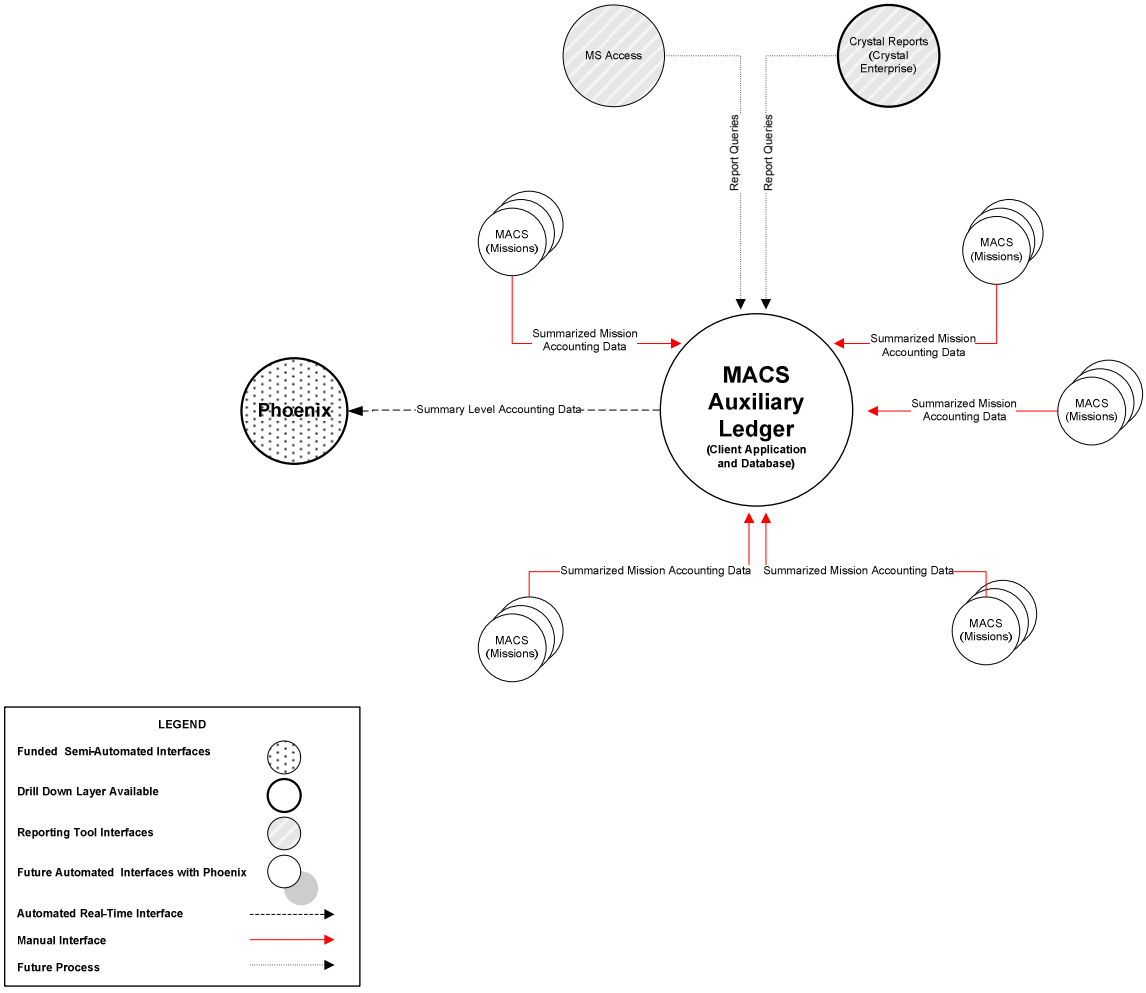

Figure 20: MACS Auxiliary Ledger-Centric Environment (Source CSC)

NMS/A&A-Centric Environment

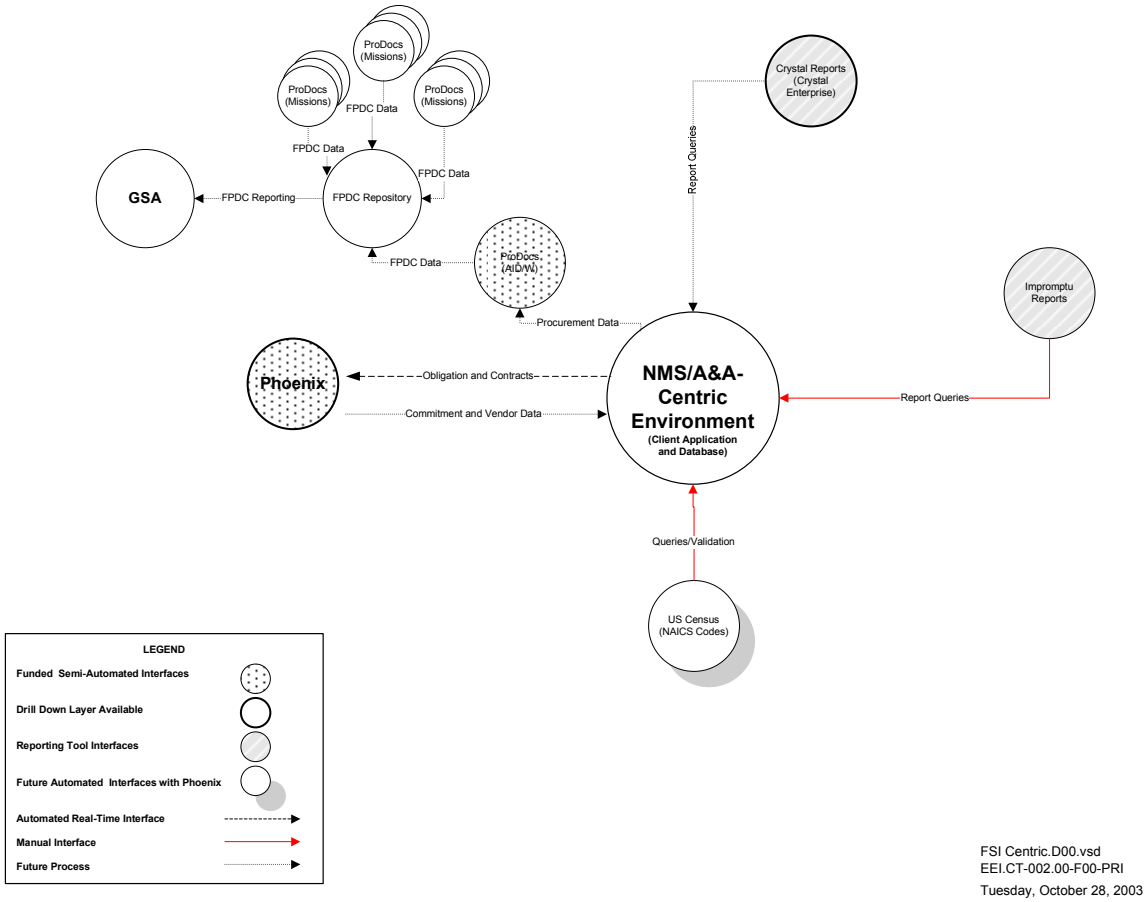

Figure 21: NMS/A&A-Centric Environment (Source CSC)

Crystal-Centric Environment

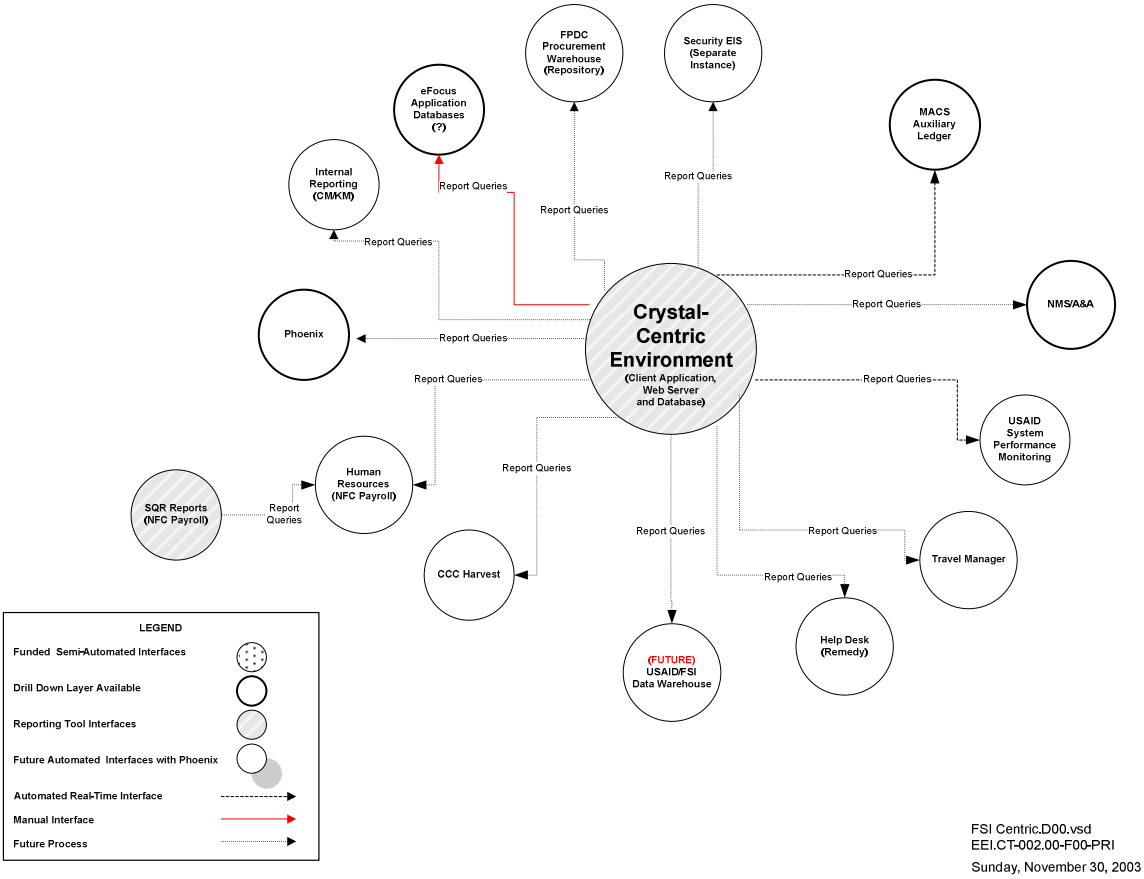

Figure 22: Crystal-Centric Environment

eFocus-Centric Environment

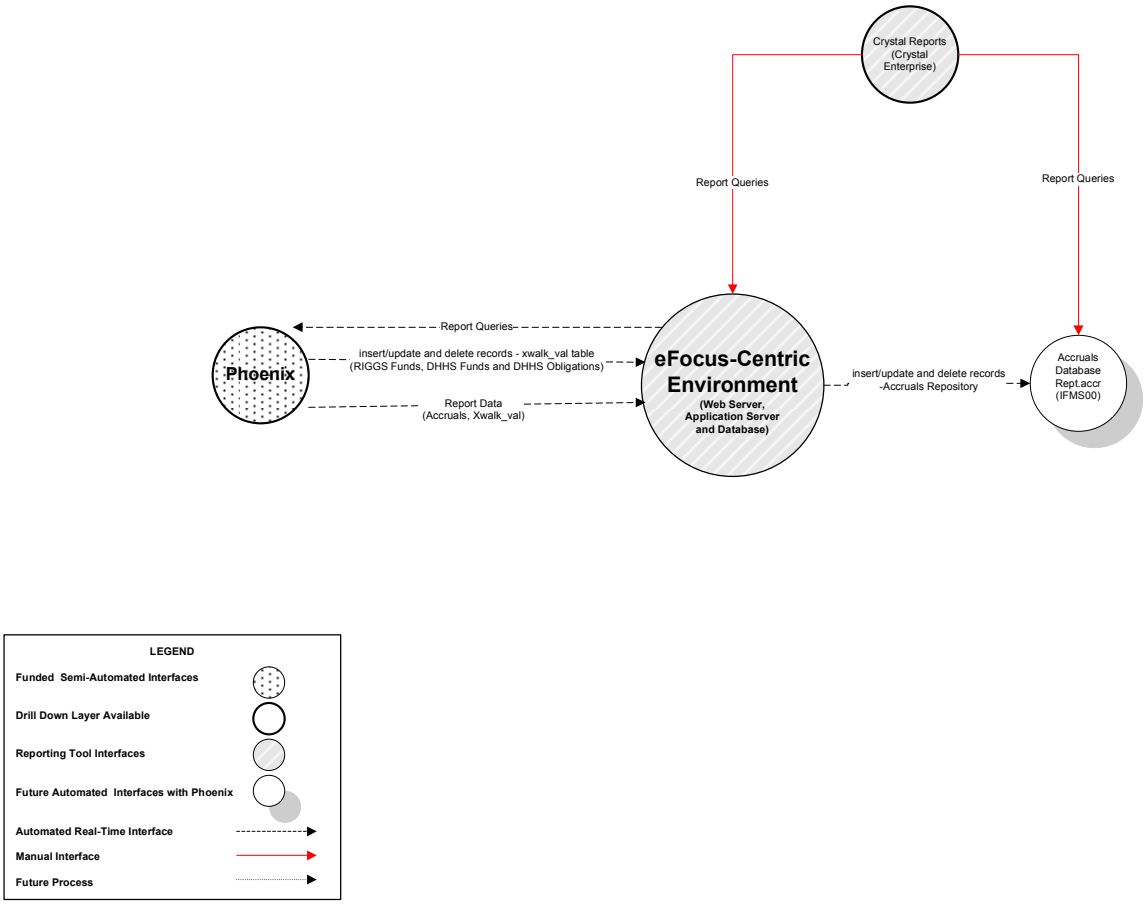

Figure 23: eFocus-Centric Environment (Source CSC)

NFC (HR/Payroll) Centric Environment

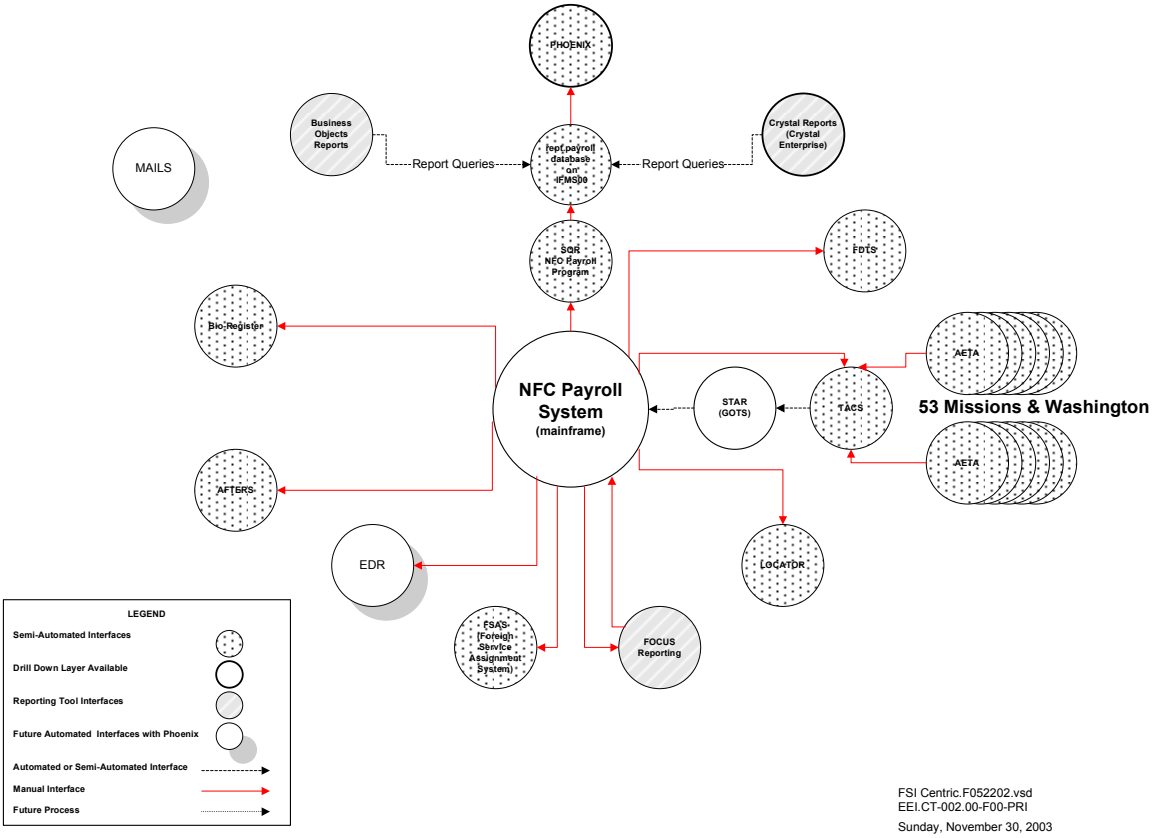

Figure 24: NFC (HR/Payroll) Centric Environment (Source CSC)

Appendix E: Results of Mission Questionnaires

Appendix F: Document Library

The following documents were utilized as reference materials for the development of this deliverable document.

Document	Date	Source
USAID Field Transfer Process Assessment	12/31/2002	
Expanded Response Guide to Core Indicators for Monitoring and Reporting on HIV/AIDS Programs	1/2003	Schofield
Department of State and USAID Performance Measures	11/13/2003	Schofield / ARD
Synergy Project Program Level Monitoring & Reporting Resources		Social & Scientific Systems
Definition of HIV/AIDS Activities, Interventions and USAID Minimum Program Reporting Requirements for the PDB		Social & Scientific Systems
The HIV/AIDS Programmatic Database: An Overview	10/2003	Social & Scientific Systems
HIV/AIDS Programmatic Database User's Guide	7/2003	Social & Scientific Systems
USAID: Population, Health and Nutrition (GHED User Guide)	10/2003	
Agency-Wide Expenditures for Family Planning, HIV/AIDS, Health and Nutrition (GHED Results)	9/2002	Jorge Scientific
Applications and Systems Inventory for USAID HIV/AIDS Programs	10/20/2003	Gueron
FY 2003 CSH Legislative Analysis		Gueron
HIV/AIDS Information Source Survey		Gueron
USAID HIV/AIDS Segment Acquisition and Assistance As-Is Business and Information Architecture	10/8/2003	IBM
USAID HIV/AIDS Segment Program Performance and Measurement As-Is Business and Information Architecture	10/8/2003	IBM
USAID HIV/AIDS Segment Financial Management As-Is Business and Information Architecture	10/8/2003	IBM
DRAFT Statement of Work HIV/AIDS Data Analysis and Model	10/1/2003	IRM / PMO
HIV/AIDS Information System – Desired	10/22/2003	Schofield
President Bush's International Mother and Child HIV Prevention Initiative	6/19/2002	www.whitehouse.gov
Fact Sheet: The President's Emergency Plan for AIDS Relief	1/29/2003	www.whitehouse.gov
USAID Performance and Accountability Report, FY 2002		

Document	Date	Source
Initiative to Prevent Mother-to-Child Transmission (PMTCT) of HIV: Organizational Structure		
MTCT Strategic Approach		
USAID Office of HIV/AIDS Enterprise Architecture Documentation Database		
USAID Advice of Program Change – LAC – MTCT		Schofield
USAID Advice of Program Change – Africa – MTCT		Schofield
Proposal for a Decision Support and Reporting Framework		Gueron
FY03 USAID Managed Programs		
Following the Money		
Phoenix-Centric Environment and other data schematics	10/28/2003	CSC
TA Agreement Fund Transfers		Jorge Scientific
FY 2002 Field Support Transfers		Jorge Scientific
Field Transfer Process – As Is		Jorge Scientific
HIV/AIDS Program Monitoring System – Data Sources by measurement category		Schofield
Office of HIV/AIDS Business Processes	7/24/03	
Technical Report regarding E&E Bureau's Bureau Data Resource Center (BDRC) and Application Development	11/15/02	
FY 2002 HIV/AIDS Budget Data by Category (email)	7/24/2003	Schofield
E A major findings.doc	11/26/2003	Schofield
Annual report ER Diagram.doc		ARD
Momentum CERN.doc		
MACS User Manual		MACS
MAL User Manual		MAL
GHED Data Dictionary		GHED