RECOMMENDED ORGANIZATIONAL STRUCTURE FOR INFORMATION SYSTEMS WITHIN THE HEALTH INSURANCE ORGANIZATION

Deliverable #20

USAID Project Number: 263-0170
[Develop a Detailed and Updated Management Information System for the Egyptian Health Insurance Organization, Cost Recovery Program]

Prepared by:
The MAXIMUS, Chemonics, Arabsoft Project Team

Date:
February 18, 1996
February 18, 1996

Dr. Nabil EI Mehairy  
Chairman  
Health Insurance Organization  
Heliopolis, Cairo, Egypt

Dear Dr. EI Mehairy:

MAXIMUS is pleased to submit the "Recommended Organizational Structure for Information Systems Within the Health Insurance Organization." This document provides the Health Insurance Organization (HIO) with a recommended organizational structure, a recommended staffing plan for MIS functions, and a blueprint for transition from the current mixed staff of HIO and contractor personnel to a staff comprised entirely of HIO personnel.

The structure contained in the recommendation has been reviewed by HIO consultants, and their additional recommendations have been incorporated into the final document. Included within the presentation, is a description of the hiring requirements that the HIO will have to consider in order to assure an orderly, effective and timely transition before the end of the project. We believe it is critical to this end, that the HIO consider the recommendations provided, and that they implement the described structure, as determined to be practical and appropriate.

While the HIO is not obligated to comply precisely with the recommendations included in this document, it should be noted that the structure presented follows conventional management lines and will provide a proven infrastructure for successful operation of the management information system. The HIO should carefully assess the staffing requirements identified and begin the process of recruitment accordingly, to allow timely phasing of personnel during the MIS Center transition.

We look forward to your comments and suggestions. As always, I am available at any time to discuss any questions that you may have with concerning this document. Please do not hesitate to contact me, in this regard.

Sincerely,

Leslie Graham  
Chief of Party
February 18, 1996

Mr. Carl Abdou Rahman  
Project Officer  
USAID-Egypt  
106 Kasr El Aini Street, 7th Floor  
Cairo, Egypt  

Ref: Project Number 263-0170  

Dear Mr. Abdou Rahmaan:

MAXIMUS is pleased to submit the "Recommended Organizational Structure for Information Systems Within the Health Insurance Organization." This document provides the Health Insurance Organization (HIO) with a recommended organizational structure, a recommended staffing plan for the MIS functions, and a blueprint for transition from the current mixed staff of HIO and contractor personnel to a staff comprised entirely of HIO personnel. This document represents Deliverable #20 for the above referenced contract.

The structure contained in the recommendation has been reviewed by HIO consultants, and their additional recommendations have been incorporated into the final document. Included within the presentation, is a description of the hiring requirements that the HIO will have to consider in order to assure an orderly, effective and timely transition before the end of the project. We believe it is critical to this end, that the HIO consider the recommendations provided, and that they implement the described structure, as determined to be practical and appropriate.

We welcome the opportunity to address any questions or concerns that you may have regarding this document. Please do not hesitate to contact me in this respect.

Sincerely,

[Signature]

Leslie Graham  
Chief of Party

cc. Dr. Nabil El Mehairy, HIO Chairman  
General Faisal Taie, HIO
NOTE ABOUT NAMING CONVENTIONS USED IN THIS DOCUMENT

This document uses position titles such as Supervisor and Manager, and organizational entity names such as Computer Office, Computer Department, and MIS Center. These labels as well as the position titles may need to be adjusted in order to find Arabic equivalents or to adhere to existing HIO personnel title conventions.
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SECTION 1

INTRODUCTION
1 INTRODUCTION

Under a USAID-funded contract, a management information system (MIS) is being developed for the Egyptian Health Insurance Organization (HIO). The bulk of the initial systems development and implementation involves designing automated solutions for the operational needs within existing HIO departments. The goal is to provide, through these operational systems, useful management data for high-level decision making within the HIO.

The project is currently at the point of implementation, and a successful implementation and future sustainability of this system requires that a strong organizational structure be in place to support use of the system. This document presents recommendations for enhancing the current Headquarters MIS Center structure and for building information system structures at other levels of the HIO as well. The aim of this document is to recommend a comprehensive information system organization throughout the HIO which would sustain the MIS, support MIS users, encourage further growth of the MIS, and allow both system users and management to make the most use of this new and powerful tool.

Data are most likely to be accurate when collected at their source. For this reason the automated solutions represented by the MIS are being developed to assist in the daily work of individual departments. In so doing they collect data which can form the basis for future management decisions of the HIO. To enable the systems to be useful to the individual departments and the data to be used for management decisions, a strong structure needs to be in place both on the organizational level at the Headquarters, branches, and clinics, and on the functional level of the daily operations and management of the HIO.

Information systems represent an investment in the future. As with any large investment, information systems require a supporting structure to continue to be useful in the years to come. Most importantly, they are dependent upon the user's ability to assimilate and interpret the information that is being provided.

This document presents a plan for organizing the structure and staffing of MIS departments throughout the HIO to provide these functions and others as the need arises. This plan makes the assumption that the following requirements are present.

- Staff must be trained to use the new system and the information it provides.
- Staff must be assigned responsibility for ongoing maintenance of the system software and hardware.
- Staff must be trained to perform help desk functions to support the users of the system.
- Staff must be prepared to respond to future needs and enhancements required by the increasingly more demanding user base.
The need for a well-organized supporting structure for the MIS cannot be overstated. Strong supporting entities of this nature are not typically evident within the HIO. Budgets are low and personnel sometimes not available for departments. For the HIO to make the best possible use of the information systems being implemented, and to be able to expand its use of information technology, an information system support infrastructure is essential. With a solid information system structure as a part of the HIO organizational plan, the HIO can continue to build its use of information technologies and remain abreast of modern health care services.

Section 2 of this document presents the proposed information systems department structures for each organizational level of the HIO: polyclinics and hospitals, branches, and the Headquarters MIS Center. Section 3 discusses the Headquarters MIS Center in particular. A staffing plan is presented that includes both job descriptions for staff and a transition plan to move from contractor staff to HIO staff. Section 4 presents a plan for implementing these structural changes. Section 5 concludes the document with a recognition of the urgency with which the HIO should act to implement these changes to protect the investment it has already made in the MIS.
SECTION 2

PROPOSED INFORMATION SYSTEMS STRUCTURE
PROPOSED INFORMATION SYSTEMS STRUCTURE

The HIO is a multilevel organization. Exhibit 2-1 illustrates the hierarchy of administrative control within the HIO. With regard to service provision, general practice (GP) clinics and contracted providers feed patients to HIO owned and operated hospitals and polyclinics. Each hospital and polyclinic has an administrative manager who is responsible for the day-to-day operations of the facility. Medical supervision comes from the zone office (one level up). However, daily operations remain the responsibility of the individual facility manager.

This is important because it underscores the need of facility managers to retain control over daily activities in their facilities and to have resources to call upon at higher levels within the organization. Resources at higher levels (i.e., branch and Headquarters) exist to support the polyclinics and hospitals, and may be used jointly by facilities to support common functions such as training programs. It is cost effective to place some support functions at the branch and Headquarters levels, but responsibility for daily work in departments, including the use of information systems within polyclinics and hospitals, must remain under the direct control of individual facility managers.

There are two types of authority that work together in any organization of the size and complexity of the HIO: supervisory authority and functional authority. Supervisory authority relates to the operational activities of the organization while functional authority relates to the long-term goals and objectives of the organization.

Supervisory authority is defined as the accountability chain or reporting structure established within the organization. The supervisory lines of authority reflect the authority of supervisors over subordinates for the accomplishment of day-to-day activities, for work appraisals, and for disciplinary procedures where necessary. Functional authority represents policy making, procedural guidance, or oversight authority vested in a particular corporate activity. Functional authority is exercised by a staff member or group that has specific expertise in a particular area of operations, such as information systems, logistics, administration, finance, and so forth. Not all staff positions have functional authority. Functional authority is exercised within an organization to apply to organizational operations in general; it should not conflict with supervisory lines of authority.

Exhibit 2-2 illustrates the proposed supervisory authority structure for the HIO MIS organizational structure. This chart shows the continuing responsibility of line managers for day-to-day operations, within their span of control. Exhibit 2-3 illustrates the functional authority structure recommended for the information systems department within the HIO. It is emphasized that this structure is for functional guidance only and does not replace the supervisory authority of the line managers. Exhibit 2-4 shows the relationship between organizational entities for line supervision and functional oversight authority. The remainder of this section provides a detailed discussion of this structure and the separate job descriptions for the polyclinics and hospitals, branches, and MIS Headquarters.
Exhibit 2-2
SUPERVISORY AUTHORITY STRUCTURE

CEO/COO
HIO HEADQUARTERS

- Administration and Corporate Services Division
- Policy, Planning Analysis, and Evaluation Division
- Information Resource Management Division (MIS Center)

Branch

- Healthcare Insurance and Clients Division
- Integrated Healthcare Operations Division (Medical Director)
- Finance and Fiscal Services Division

- Information Systems
- Hospital/Polyclinic
- Finance/Budgeting

- Hospital/Polyclinic Departments
- Information Systems
- Hospital/Polyclinic Departments

- Department Workers/Computer Users
- Computer Operators
- Department Workers/Computer Users
Exhibit 2-3
FUNCTIONAL AUTHORITY STRUCTURE

CEO/COO
HIO HEADQUARTERS

- Administration and Corporate Services Division
- Policy, Planning, Analysis, and Evaluation Division
- Information Resource Management Division (MIS Center)
- Healthcare Insurance and Clients Division
- Integrated Healthcare Operations Division (Medical Director)
- Finance and Fiscal Services Division

Branch Information Systems

Polyclinic/Hospital Information Systems

Department Workers/Computer Users

Computer Operators

Department Workers/Computer Users
Exhibit 2-4
RELATIONSHIPS BETWEEN LINE SUPERVISOR AND FUNCTIONAL OVERSIGHT AUTHORITIES

NOTE: Chart does NOT show all elements of the HIO organizational structure—chart is intended only to depict functional and supervisory authority of the information systems structure.

Chart reflects continuing authority of line managers (e.g., polyclinic directors) for day to day operations within their span of control.

LEGEND: Solid lines—Line authority (Supervisory)  Bold Print=Information Systems
Dotted lines—Functional authority (Technical Guidance)
2.1 Information System Structure for Polyclinics and Hospitals

Within a polyclinic or hospital there are a number of departments that use the information system. During initial implementation, information systems are introduced into beneficiary registration areas, pharmacies, and patient records areas. If the HIO chooses to build or buy more modules at a later date, the number of departments using information systems could expand.

The computer office at the polyclinic or hospital level is small, consisting of a Computer Office Supervisor and Facility Computer Operators. An overview of the recommended facility-level staff positions is provided in the following sections. More detailed job descriptions of these staff positions are provided in Appendix A.

2.1.1 Computer Office Supervisor

In addition to departmental computer users, there is a need for a Computer Office Supervisor at the polyclinic or hospital level to perform the daily activities and responsibilities required by the MIS within a polyclinic or hospital. Just as someone must be responsible for locking and unlocking the doors of a polyclinic, someone must be responsible for turning on the computer each day and turning it off each night. These types of basic support functions must be under the control of the Polyclinic or Hospital Director because they affect the daily operations of the facility's departments.

The Computer Office Supervisor of a polyclinic or hospital has supervisory authority for the Facility Computer Operators, and overall responsibility for the computer system as a whole. This responsibility includes acting as liaison between the facility computer users and the branch help desk to ensure that reported problems get resolved and system updates are known to end users; ensuring that resources including staff and supplies are available when needed; and responding to requests from the Polyclinic or Hospital Director and Branch Computer Center Manager. The Computer Office Supervisor and the Facility Computer Operators at hospitals and polyclinics receive the same training, yet one is designated as the Computer Office Supervisor.

Communication is one of the primary duties of the Computer Office Supervisor. The Computer Office Supervisor must develop ties to each of the departments that use information systems, work to see that their needs are being met to the best of the resources of the HIO, and keep the director informed of any problems with the computer that could affect daily operations in the facility's departments.

We recommend that there be one Computer Office Supervisor at each facility. He/she reports directly to the Polyclinic or Hospital Director.

2.1.2 Facility Computer Operators

Within each polyclinic and hospital, the information system must be supported by a team of Facility Computer Operators. These operators are responsible for all activities
related to the day-to-day operations of the computer facility. These duties include creating and maintaining the backup library; resolving simple computer problems reported by facility users; and maintaining other basic system functions such as login rights and printer queues.

The number of Facility Computer Operators in each hospital or polyclinic varies depending on the number of shifts a facility operates. We recommend that one Facility Computer Operator be available for each shift, with a minimum of one backup operator available for every two shifts. No facility should have less than two Facility Computer Operators, even when operating only one shift. The total number of operators necessary may vary dependent on the level of proficiency (state of training) of the currently employed operators. The Facility Computer Operators reports directly to the Computer Office Supervisor.

2.2 Information Systems Structure at the Branch

The branch represents a pivotal point in the success of the information system within the HIO. Just as in a polyclinic or hospital, there must be a Branch Computer Department that ensures the computer is functional and well maintained so that individual departments within the branch can make the best use of the information system. Therefore, the Branch Computer Department has a Branch Computer Department Manager and Branch Computer Operators.

Additionally, the Branch Computer Department has additional responsibilities. It provides the primary end-user support not only to departments at the branch facility but also — through facility computer offices — to end users in polyclinic and hospital departments. The Branch Computer Department also provides training to the end users at the branch, polyclinic, and hospital levels.

An information systems organizational infrastructure for a representative branch is presented in Exhibit 2-5. In a branch facility, the Branch Computer Department Manager has supervisory authority over the day-to-day operations of the computer and has functional authority over hospital or polyclinic operations. This functional authority exists through his/her existing reporting relationship to the Polyclinic or Hospital Director.

An overview of these recommended branch-level staff positions is provided in the following sections. More detailed job descriptions of these staff positions are provided in Appendix B.

2.2.1 Branch Computer Department Manager

The Branch Computer Department is supervised by the Branch Computer Department Manager. The Branch Computer Department Manager represents the branch's best interests in configuration control meetings held at the Headquarters MIS Center to decide on features and changes for upcoming releases of information system applications.
* In the Cairo and Northwest Delta Branches, there is a separate position of Training Center Supervisor, who reports to the Branch Computer Department Manager.
The Branch Computer Department Manager has the primary **functional authority** for all computer operations within the branch. The Branch Computer Department Manager is responsible for:

- informing the Branch Manager of any ongoing issues or problems regarding computer systems for any of the facilities within the branch;
- collecting change requests and communicating these to the Headquarters MIS Center, after consultation with the Branch Manager; and
- communicating information from the Headquarters MIS Center to the polyclinic or hospital computer offices within the branch.

In addition to this role as a communicator, the Branch Computer Department Manager has **supervisory authority** for scheduling the branch facility computer operators and supervising the Branch Help Desk/Training Coordinator. In Cairo and the Northwest Delta Branches, the Branch Computer Department Manager also supervises the Training Center Supervisor. Finally, the Branch Computer Department Manager is responsible for assuring the availability of computer supplies for the branch facility and for assisting the Facility Computer Office Supervisors with any difficulties they may have in fulfilling their roles.

We recommend that there be one Branch Computer Department Manager at each branch. He/she reports directly to the Branch Manager.

**2.2.2 Branch Help Desk/Training Coordinator**

In addition to supporting the departments within a branch facility, the branch also offers further technical support to the hospitals and polyclinics. The branch computer department staff includes a team of technical support specialists. These technical support specialists fall into two categories: 1) Technical Specialists—Telecommunications/Hardware Support, and 2) Technical Specialists—End User Support. This staff is managed by the Branch Help Desk/Training Coordinator who has **supervisory authority** over its activities. The Branch Help Desk/Training Coordinator also advises the Branch Computer Department Manager concerning hardware and software maintenance.

As the Branch Training Coordinator, he/she assists the MIS Center trainers by providing branch-level training, after first having received the training himself/herself, and then by tracking the incidence of help requests, trends, and problem resolutions that can be translated into training requirements. The Branch Training Coordinator is also responsible for coordinating training at the branch and polyclinic level.

As the Branch Help Desk Coordinator he/she manages the telecommunications/hardware and application support provided by the technical support staff. Help Desk functions are performed at all branches. All problems beyond the capability of the technical support staff are referred to the Branch Help Desk Coordinator. Any problems that he/she is unable to resolve are elevated to the Help Desk at the Headquarters MIS Center for resolution.

2-9
While at this time the HIO wishes that this staff position serves as both the Training Coordinator and the Help Desk Coordinator, we recommend that these functions be split and be the responsibility of two separate staff persons. The Branch Help Desk/Training Coordinator reports directly to the Branch Computer Department Manager.

2.2.2.1 Technical Specialist—Telecommunications/Hardware Support

The Technical Specialist—Telecommunications/Hardware Support staff is responsible for all communications with ARENTO and EgyptNet concerning installation or resolution of problems on X.25 lines serving the information systems. This staff is also responsible for dealing directly with the hardware maintenance vendors at the request of polyclinic, hospital, or branch departmental staff. Logs must be kept and follow-up actions completed to assure that problems are resolved in a timely fashion.

We recommend that there be two Technical Specialists—Telecommunications/Hardware Support at the branch. They report directly to the Branch Help Desk/Training Coordinator.

2.2.2.2 Technical Specialist—End User Support

Technical Specialists—End User Support are familiar with all modules in the information system and have observed the systems in use in a number of different facilities. Technical Specialists—End User Support operate the branch-level help desk. Polyclinic and hospital departmental users can contact these specialists to answer questions about the use of modules. Other duties include:

- assisting in a branch, polyclinic, or hospital department when a new individual is being trained in the use of the information system (when no group training course is currently scheduled);
- traveling to facilities to help diagnose problems;
- gathering statistics on frequently-asked questions or common problems, and communicating results to the Branch Help Desk Coordinator/Training Coordinator; and
- participating as an instructor or assistant during end-user training.

We recommend that there be one Technical Specialists—End User Support for every four facilities in the branch. They report directly to the Branch Help Desk/Training Coordinator.
2.2.3 Branch Computer Operators

Branch Computer Operators perform much the same duties as polyclinic or hospital Computer Operators (see Section 2.1.2). We recommend that at least one Computer Operator per shift plus a minimum of one backup operator overall be appointed for each branch. They report directly to the Branch Computer Department Manager. Note: Ideally, the branch computer would be kept operational from 8 A.M. to 10 P.M. It must be kept operational until one hour past the latest scheduled close of facility Computer Offices.

2.2.4 Branch Training Centers (Cairo and Northwest Delta Branches only)

The Cairo and Northwest Delta Branches have separate training facilities. These training facilities have a Branch Training Coordinator for the Training Center as well as a staff of Trainers drawn from the Technical Specialists—End User Support. The Branch Training Coordinator is responsible for all training-related activities including scheduling training, recruiting trainers, and working with the Headquarters Training Coordinator to implement future training.

We recommend that one Training Coordinator be placed at Cairo Branch and one at Northwest Delta Branch. He/she reports directly to the Branch Computer Department Manager.

Training at the Branch MIS Centers is given by the Technical Specialists—End User Support. These are the individuals most experienced in the applications of each of the modules, and also the best qualified for conducting training in their use. For each new module, Technical Specialists—End User Support receive initial training themselves from the Headquarters MIS Center Training Unit. Upon successful completion of this training, they are authorized by the MIS Center to provide training at the branch level. See Section 2.2.2.2 for a further description of Technical Specialist—End Users Support job functions and staffing recommendations.

2.3 The Headquarters MIS Center

Under the restructured HIO Headquarters (see "Reengineering of the Health Insurance Organization Headquarters Final Report," August 1995), overall guidance and policy for information systems including the MIS is provided by the Information Resource Management Division. The MIS Center then serves as the operational agent to carry out policy. Most support provided by higher levels of the HIO information systems structure is at the request of the lower levels.

The Headquarters MIS Center represents the top operational level for information systems management within the HIO information systems organizational structure. The Headquarters MIS Center functions like a branch or polyclinic in that staff exists both to support managerial needs as well as to maintain the modules at the Headquarters. Additionally, all systems development, enhancement, and modification takes place at the MIS Center. All software updates, training materials, and user documentation come from the MIS
Center. The MIS Center is also responsible for procuring maintenance contracts for the standard hardware and software used throughout the information system.

The structure of the MIS Center differs somewhat from the information systems organizational structures at the branch, polyclinic, or hospital levels. This is reflected in Exhibit 2-6. (Note: Staffing requirements are indicated as a number in parentheses within an organizational box. For boxes with supervisory control, the total number of personnel in that organizational area is shown in parentheses on the left of the supervisory box. The total number of supervised positions is shown at the right side of the box.) The MIS Center is structured to provide support for ad hoc rather than daily issues. The support provided is similar to the support provided by the Branch Help Desk Coordinator/Training Coordinator and the staff under him/her as described in the Section 2.2.2.

One purpose for the introduction of information systems into the HIO is to standardize both operating procedures and organizational structure within the branches and facilities. The MIS Center provides functional authority in the form of centralized guidance and direction to the branches to accomplish this objective. The MIS Center does this on behalf of the HIO Information Resources Management Division. The MIS Center is divided into three divisions: a Systems Support Division, a User Support Division, and an Administration and Procurement Division.

An overview of these recommended Headquarters-level positions is provided in the following sections. Detailed job descriptions of these positions are provided in Appendix C.

2.3.1 HIO Headquarters MIS Center Director

The HIO Headquarters MIS Center Director is responsible for all aspects of the HIO MIS at the Headquarters level. The MIS Center Director does all that is necessary to ensure that the HIO MIS is an effective, efficient, secure, and reliable system. He/she is accountable for all operations of the MIS Center and for assuring that information systems support is provided to all subordinate HIO levels, including branches, polyclinics and hospitals. The MIS Center Director has supervisory authority over the Systems Support, User Support, and Administration and Procurement Managers.

We recommend that there be one MIS Center Director at the HIO HQ MIS Center. He/she reports directly to the Chief of the Information Resources Management Division.

2.3.2 Systems Support Manager

The Systems Support Manager assists the MIS Center Director in the development and execution of all operating procedures for the MIS Center, and participates in all plans and discussions concerning new technology. In this capacity, the Systems Support Manager plans and manages a staff development program for all production and development staff. This development program ensures that existing staff members maintain and improve their skills and that training is provided as necessary. The Systems Support Manager assures that all appropriate vendors provide required maintenance for software and hardware support.
Exhibit 2-6
HIO HEADQUARTERS MIS CENTER ORGANIZATIONAL STRUCTURE

Director,
MIS Center
(62)
(1)

Special Consultants

Mgr, Systems Support
(30)
(1)

Mgr, Production
(10)
(1)

Telecom Specialists
(2)

Help Desk Coordinators
(7)

Help Desk Specialists
(5)

Mgr, Development
(13)
(1)

Programmers/Analysts
(8)

Database Administrators
(2)

Documentation Specialists
(2)

Mgr, MIS Center Support
(6)
(1)

PC Support Specialists
(2)

Computer Operators
(3)

Mgr, User Coordination/Configuration
(4)
(1)

Training Coordinator
(1)

Training Specialists
(3)

Implementation Coordinator
(1)

Mgr, User Support
(8)
(1)

Mgr, User Coordination/Configuration
(2)

Mgr, MIS Center Support
(6)
(1)

Implementation Coordinator
(1)

Accounting/Budget Specialists
(2)

Mgr, Administration/Procurement
(24)
(1)

Mgr, Administration Support
(7)
(1)

Secretaries/Clerks
(4)

Publications Mgr/Editor/Librarian
(1)

Publications Secretary
(1)

MIS Support Services
(13)

Security
(2)

Maintenance
(1)

Drivers
(4)

Office Boy
(2)

Messengers
(2)

Cleaning
(2)
The Systems Support Division has **functional authority** for all of the technical aspects of building, supporting, and enhancing the management information system. It is divided into three separate units: the Production Unit, the Development Unit, and MIS Center Support Unit. These units are managed by the Systems Support Manager, who has **supervisory authority** over the Production Manager, the Development Manager, and the MIS Center Support Manager. He/she bears ultimate responsibility for the successful operation of these divisions.

We recommend that there be one Systems Support Manager at the MIS Center. He/she reports directly to the MIS Center Director.

### 2.3.2.1 Production Manager

The Production Manager is responsible for the continuous and smooth operation of the management information system, including its hardware, operating systems, operating procedures, and applications. The Production Manager is ultimately responsible for the security of all system hardware, operating systems, UNIX, Oracle, and any applications, including utilities at the Headquarters, branch, and facility levels. The Production Manager provides general supervision over other functions of the MIS Center including Telecommunications and the Help Desk, in support of the Center's operational responsibilities. The Production Manager has **supervisory authority** over the work of the Help Desk staff and the Telecommunications/Network Specialists.

We recommend that there be one Production Manager at the MIS Center. He/she reports directly to the Systems Support Manager.

#### 2.3.2.1.1 Telecommunications Specialists

MIS Center Telecommunications Specialists interact directly with Branch and Facility Computer Operators to assist in diagnosing problems. Problems that cannot be resolved locally are reported to the MIS Center Telecommunications Specialists by the Branch Technical Specialist—Telecommunications/Hardware Support. Telecommunications Specialists are ultimately responsible for all file transfers. For problems that must be resolved centrally, the MIS Center Telecommunications Specialists deal directly with ARENTO or EgyptNet, while informing the Computer Department Manager of the appropriate facility of the status of action underway.

We recommend that there be two Telecommunications Specialists at the MIS Center. They report directly to the Production Manager.

#### 2.3.2.1.2 Help Desk Coordinators

Help Desk Coordinators support the software currently in production from both the user and the technical perspective. The Help Desk Coordinators work with the branch Help Desk/Training Coordinator to respond to questions and problems from the Branch and Facility...
Computer Operators. They are responsible for providing a higher level of centralized knowledge than is available at the branch or facility level. Help Desk Coordinators are responsible for referring programming issues to the appropriate Programmer/Analyst in the Development Unit.

We recommend that there be two Help Desk Coordinators at the MIS Center. They report directly to the Production Manager.

The Help Desk Coordinators have supervisory authority over the Help Desk Specialists who assist them in responding to user questions and problems. We recommend that there be five Help Desk Specialists at the HIO HQ MIS Center, they report directly to the Help Desk Coordinators.

2.3.2.2 Development Manager

The Development Manager's primary task is to ensure that existing applications are upgraded, and that new applications are designed and developed to meet HIO’s changing information needs. He/she is also responsible for the adherence to technical standards. As the project matures, he/she has functional authority for setting policy regarding requests from end users and upper management for various enhancements to the applications, developing entirely new applications, and resolving any software or application problems which may become evident. The Development Manager has supervisory authority over the Programmer/Analysts, Database Administrators, and Documentation Specialists.

We recommend that there be one Development Manager at the HIO HQ MIS Center. He/she reports directly to the Systems Support Manager.

2.3.2.2.1 Programmer/Analysts

The Programmer/Analysts are responsible for the development of new code as well as for supporting existing code. The Programmer/Analysts need to be familiar with the software development life cycle (SDLC) and work within that iterative framework for developing code. They need to conduct user groups to gather information, perform internal code reviews to ensure adherence to programming standards, and develop and revise system documentation. Documentation for the SDLC includes functional designs, detailed designs, and system documents. Standard formats for each of these documents have been developed for use by the HIO.

Programmer/Analysts also participate in initial training and implementation activities to facilitate a smooth transition into production. These personnel are required to respond to technical issues beyond the scope of the Help Desk Specialists.

We recommend that there be eight Programmer/Analysts at the HIO HQ MIS Center. They report directly to the Development Manager.

2-15
2.3.2.2 Database Administrators

The Database Administrators are responsible for monitoring each of the databases and resolving difficulties before they become problems. They perform system tuning so that databases at all facilities run at peak efficiency. It is also their responsibility to determine recovery procedures in the event of a disaster with one of the databases. In addition, the Database Administrators support development efforts by creating necessary tables, indexes, and constraints.

We recommend that there be two Database Administrators at the HIO HQ MIS Center. They report directly to the Development Manager.

2.3.2.2.3 Documentation Specialists

The Documentation Specialists are primarily responsible for producing and updating user manuals for each MIS software application. As needed, they may assist the Programmer/Analysts in the creation of the functional designs, detailed designs, and system documents. These specialists must have knowledge of PCs and desktop publishing tools, including a familiarity with screen capturing routines. In addition, some level of technical understanding is required as they must learn each application to write its associated technical text. Documentation Specialists need to conduct interviews with Programmers/Analysts to resolve issues. They also need to coordinate their efforts with the Training Coordinator to ensure a consistent interpretation of the material.

We recommend that there be two Documentation Specialists at the MIS Center. They report directly to the Development Manager.

2.3.2.3 MIS Center Support Manager

The MIS Center Support Manager is responsible for the general supervision of all computer activities that affect daily operation of the MIS Center. In this capacity, he/she exercises direct supervision over all computer services. He/she has supervisory authority over the Computer Operators and the PC Support Specialists. Standard maintenance contracts are monitored by these personnel, who are responsible for dealing with maintenance vendors, enforcement of warranty provisions, and installation activities.

We recommend that there be one MIS Center Support Manager at the HIO HQ MIS Center. He/she reports directly to the Systems Support Manager.

2.3.2.3.1 PC Support Specialists

The PC Support Specialists are responsible for supporting all MIS Center PCs and their users, and for operation and maintenance of the local area network (LAN) at the center. Personnel assigned are responsible for initialization, configuration, and installation of all office automation packages required by the MIS Center users.
We recommend that there be two PC Support Specialists at the HIO HQ MIS Center. They report directly to the MIS Center Support Manager.

2.3.2.3.2 HQ Computer Operators

HQ Computer Operators have the responsibility of ensuring a smooth daily performance of the central MIS server for all users. This includes such tasks as "start up," "shut down," and "backup." The HQ Computer Operators must maintain a daily journal of all their activities. This journal documents all extended visits to the operations room, system discrepancies, and user assistance. In addition, HQ Computer Operators maintain an inventory stock list, making reorder requests in a timely fashion so as not to interrupt daily procedures. Monitoring the server for all activities (UNIX, Oracle, etc.) is another responsibility of the HQ Computer Operators. When a discrepancy occurs or a difficulty is anticipated, the HQ Computer Operator attempts to correct those discrepancies defined under his control.

We recommend that there be three HQ Computer Operators at the MIS Center. They report directly to the MIS Center Support Manager.

2.3.3 User Support Manager

The User Support Manager ensures that the system has a sufficient number of trained staff members, assists HIO management to understand and use the system, and promotes system improvement and support. The User Support Division is divided into User Coordination/Configuration, Training, and Implementation Units. The User Support Manager exercises direct supervisory authority over the managers of each of these units.

We recommend that there be one User Support Manager at the HIO HQ MIS Center. He/she reports directly to the MIS Center Director.

2.3.3.1 User Coordination/Configuration Managers

The User Coordination/Configuration Managers actively solicit recommendations for system improvements from various groups including MIS staff and HIO facility managers. They present these recommendations to the HIO Policy Council and other appropriate HIO review committees for approval or implementation. As such, they participate in the functional authority lines associated with policy decisions of the HIO. The User Coordination/Configuration Managers also maintain regular contact with all system users and demonstrate potential use, capabilities, and benefits of the system to them.

We recommend that there be two User Coordinator/Configuration Managers at the MIS Center. They report directly to the User Support Manager.
2.3.3.2 Training Coordinator

The Training Unit is responsible for developing and updating all training materials for the MIS. The Training Unit is managed by a Training Coordinator and assisted by a team of Training Specialists who conduct "train-the-trainer" programs to educate branch technical support staff on new or updated modules. The Training Unit also conducts initial training. The Training Coordinator and Specialists review and prepare job descriptions as a basis for designing instruction programs and materials and work closely with HIO managers to train MIS staff in the necessary skills.

We recommend that there be one Training Coordinator at the HIO HQ MIS Center. He/she reports directly to the User Support Manager.

The Training Coordinator has supervisory authority over the Training Specialists who assist him/her in serving the training needs of the MIS users. We recommend that three Training Specialists be appointed for the MIS Center. They report directly to the Training Coordinator.

2.3.3.3 Implementation Coordinator

The Implementation Coordinator is responsible for assuring timely and successful implementation of the management information system at all planned sites. He/she is responsible for planning and coordinating adequate site preparation, procurement and distribution of supplies, installation of equipment, selection of personnel, training, and all other implementation-related activities. The Implementation Coordinator does not perform these activities himself/herself, but rather maintains functional authority over all implementation activities. As such, he/she schedules the events, informs those with authority in the specific areas, and monitors progress of the activity.

We recommend that there be one Implementation Coordinator at the MIS Center. He/she reports directly to the User Support Manager.

2.3.4 Administration/Procurement Manager

The Administration/Procurement Unit, supervised by the Administration/Procurement Manager, provides support to the previously-described technical units of the MIS Center. The Administration/Procurement Manager assists the MIS Center Director in managing general office affairs and staff. He/she has supervisory authority over the accounting/budget, administrative support, and support service functions. Areas of support services include: accounting/finance, secretarial and administrative assistance, publications and editing, hospitality services, procurement and distribution of office supplies, transportation for staff, personnel issues, office cleaning, and general maintenance of all office property.
We recommend that the following positions be filled to perform MIS Center administrative functions:

- two Accounting/Budget Specialists;
- one Administrative Support Manager who has supervisory authority over the following staff:
  - two Secretary/Receptionists,
  - two Administrative Clerks,
  - one Production Manager/Editor/Librarian, and
  - one Publication Secretary; and
- a Support Services Unit consisting of the following staff:
  - two security guards,
  - one maintenance person,
  - four drivers,
  - two office boys,
  - two messengers, and
  - two office cleaners.

We recommend that there be one Administration/Procurement Manager at the MIS Center. He/she reports directly to the Director of the MIS Center.
SECTION 3

PHASED APPROACH TO STAFFING THE MIS CENTER
3 PHASED APPROACH TO STAFFING THE MIS CENTER

As the HIO MIS moves towards full implementation, a staffing plan is necessary to project required new appointees for the HIO to fill newly-created positions, and to fill positions being vacated by contractor personnel. The staffing requirements for the MIS Center shown in Exhibit 2-7 show a full staff level, to be achieved by January 1998, when contractor staff are fully demobilized. Included in this exhibit are the staffing requirements for each area. However, it is necessary to phase the filling of these positions over a period of time to take into consideration available space, equipment requirements, necessary training overlap or staff development time, and supervisory needs.

This section details a phased staffing plan for the HIO MIS Central Center and describes the transition of positions from contractor to HIO staff. The staffing plan assumes a relatively constant HIO personnel loss of not more than 20 percent, and anticipates replacement of these personnel as attrition occurs. This assumption is based on several more fundamental assumptions which relate to the quality of employment within the MIS Center:

- The work has meaning and staff members feel that they are making an important contribution to Egypt, the HIO, the beneficiary population, and their own self-interest.
- The administration's treatment of staff is predictable and fair.
- Wages, while less than the general marketplace, are approximately three times ordinary government wages.
- Significant opportunities exist for training through formal courses, on-the-job programs, self effort, and interpersonal exchange.
- A harmonious workplace exists, providing compatible staff members, a satisfactory environment, and adequate equipment resources.

It is important that the HIO strive to preserve a working environment reflective of these characteristics to minimize personnel turnover and its associated replacement costs. With attrition, any investment in staff training and development is lost. Alternatively, the HIO could appoint individuals with fully-developed skills in the needed replacement areas. This would decrease the training and development investment, but would require a more competitive wage structure.

3.1 Job Descriptions

It is important that present and future employees of the MIS Center understand the nature of their jobs, their responsibilities, and their positions in the supervisory chain. Individuals must report to one supervisor only and should receive direction from no one else without the express permission of their supervisor.
To make job responsibilities clear, draft job descriptions for all positions at the HIO Headquarters MIS Center are included in Appendix C. While each description provides a comprehensive outline of an MIS Center position, each will continue to require further refinement as the operation of the MIS Center matures. Job descriptions should be reviewed, and updated or amended as needed on an annual basis.

3.2 Transition from Contractor Staff to HIO Staff

The transition of personnel from a mixture of contractor staff and HIO staff to one with only HIO personnel requires some advance preparation. Consideration must be given to the impact of additional personnel within the confines of the existing physical facility, specifically with regard to the availability of desk space and computer hardware. Supervisory responsibilities and orientation or training lead time must be considered as well. The consensus of the project leadership is that the transition can be managed within these constraints. There may be brief periods of overlap where personnel need to share desk space, opt for flexible scheduling of work shifts or workdays, or when supervisors may need to schedule additional shifts. The impact of any of these alternatives is anticipated to be minimal and of very short duration.

Exhibit 3-1 provides a detailed schedule of the transition, showing the transition from the current combined MIS Center staff total of 76 (HIO and contractor) personnel to the projected total of 62 (HIO only). Exhibit 3-2 displays the projected HIO hiring requirements for the duration of the transition.

3.3 Proposal for Use of Interns

A recommendation for the HIO to assist it in recruiting talented resources with a minimum commitment is the establishment of internship or work-study programs. These programs are designed to help college students gain experience in the competitive job market while offering employers the opportunity to assess future employees.

Exposure to the state-of-the-art development environment at the HIO would act as a magnet for these young, energetic, and highly-qualified individuals. In exchange for their learning how the HIO operates, the HIO receives their services at a very economical price, far below the market value of a college student.

In addition to the economic benefits, the HIO also benefits in the area of new technology. There is no better window to new technology than those to whom it has just been taught. It is important for the HIO to stay abreast of new technology in order to move forward, and this arrangement can act as a facilitator. Provided students' ideas are considered with an open mind, the HIO should benefit in technology as well as in recruitment.

At least one internship exists in Egypt through the American University in Cairo. A copy of a brochure describing this summer internship program is reprinted in Appendix D. Other internship programs may exist as well.
### Exhibit 3-1

**MIS CENTER PERSONNEL ROTATION PLAN — HIO/PROJECT STAFF (BY MONTH)**

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3-3
### Exhibit 3-2
SCHEDULE OF PROJECTED HIRING REQUIREMENTS — MIS CENTER

<p>| | | |</p>
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<tr>
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<tr>
<td>4</td>
<td>Jan-96</td>
<td>Programmer/Analyst</td>
</tr>
<tr>
<td>5</td>
<td>Jan-96</td>
<td>Publications Mgr/Editor/Libr.</td>
</tr>
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<td>6</td>
<td>Feb-96</td>
<td>Telecommunications Specialist</td>
</tr>
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<td>7</td>
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<td>Programmer/Analyst</td>
</tr>
<tr>
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<td>Mgr, User Support</td>
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<td>21</td>
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<td>Secretary/Reception</td>
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<td>22</td>
<td>Jan-97</td>
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<td>23</td>
<td>Jan-97</td>
<td>Implementation Coordinator</td>
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<td>Publication Secretary</td>
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<td>25</td>
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<td>Mgr., MIS Center Support</td>
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<td>Jun-97</td>
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<tr>
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SECTION 4

IMPLEMENTING THE STRUCTURE
4 IMPLEMENTING THE STRUCTURE

The organizational structure described in this document is a cornerstone to the success and institutionalization of information systems within the HIO. It also represents a modern organizational structure with clear distinction between supervisory and functional authority. To summarize, we reiterate the following points of emphasis:

- The information system is intended to be used in the departments (at branches, polyclinics and hospitals) as a tool, not as a separate task. Therefore, the department has the responsibility for making best use of the system.

- Polyclinic/hospital directors must maintain day-to-day control over system operations. They are responsible for making sure that the information provided to the system is available to higher organizational levels, just as they are now responsible for doing this in paper form. Only the media and some content have changed.

- Higher levels of the organization can place certain demands in terms of functional requirements on lower levels, such as:
  - the types of information that must be reported,
  - the format of forms (screens) and reports (output),
  - the operational procedures that must be followed in gathering the information,
  - the times that information is due to the upper levels of the organization, and
  - the types of and qualifications for staff positions in various departments or job functions.

- Higher levels of the organization provide functional support to ensure that polyclinics/hospitals can meet their daily operational needs.

Implementation of this proposed structure has already begun in some instances. However, the following steps must take place to ensure the structure has a recognized status:

1. The structure should be formally approved by the HIO Chairman.

2. The HIO must determine salary ranges and incentive schemes for these positions.

3. Job descriptions must be further refined and should be updated on an annual basis.
4. A training plan for these job positions must be developed.

5. Qualified staff must be selected and trained at the appropriate intervals.

Adherence to these recommendations ensures that the transition from contractor staff to HIO staff is both smooth and successful, and that the HIO benefits from the anticipated operational and management gains that the information system offers.
SECTION 5

CONCLUSIONS
5 CONCLUSIONS

The HIO should carefully consider the recommended organizational structure contained herein and implement it to the maximum extent practical. Based on discussions with the HIO, the plan is feasible. The main area for concern, and therefore concentration, is the salary and incentive structure. The HIO should carefully assess the staffing requirements identified and the hiring schedule presented, and begin the process of recruitment accordingly. This allows timely phasing of personnel during the transition from contractor staffing to HIO staffing.

This plan represents a flexible approach to the continuing sustainability of the information systems of the Health Insurance Organization. It provides a manageable approach to the transition of the HIO MIS Center from a mix of contractor personnel and HIO personnel to one comprised entirely of HIO staff. It is not intended to be a permanent document, but rather one that can be adapted and changed as the organization matures, and as further training and staffing requirements develop. Specifically, the functional position descriptions and the individual job descriptions should be expanded and refined by supervisors continuously as the needs of the organization determine.
Computer Office Supervisor

The Computer Office Supervisor is responsible for the polyclinic information system. He/she must coordinate information system activities with beneficiary registration areas, pharmacies, and patient records areas, as well as any other facility functions which may be expanded to include information system modules. The Computer Office Supervisor directly supervises the Facility Computer Operators.

Responsibilities:

The Computer Office Supervisor reports directly to the Hospital or Polyclinic Manager. He/she:

- Serves as a liaison between the facility and the branch in computer matters.
- Assures smooth operations of the computer at the facility.
- Develops a detailed annual work plan and a budget to support computer activities in the facility.
- Prepares an inventory of all computer-related equipment and supplies, and update the inventory every three months.
- Places orders for necessary supplies in sufficient time to ensure uninterrupted computer operations in the facility.
- Supervises and supports the work of Computer Operators, Beneficiary Registration Clerks, Patient Record Registrars, and Pharmacy End Users.
- Performs periodic tasks specified by a maintenance plan to ensure computer equipment is properly maintained.
- Prepares an annual report for the Branch Computer Department Manager that describes the full extent of computer operations at the facility, identifies accomplishments, and raises issues and problems that need to be addressed.

Qualifications:

The Computer Office Supervisor should have the following qualifications:

- Secondary school graduate.
- Three years HIO work experience.
- Excellent attendance record.
Facility Computer Operator

The Facility Computer Operator is responsible for completing daily file transfers, diagnosis and resolution of simple computer problems, and basic support to users within the operational departments.

Responsibilities:

The Facility Computer Operator reports directly to the Hospital or Polyclinic Manager. He/she:

- Assures smooth operation of the computer and terminals in the polyclinic.
- Starts up the computer and computer equipment in the morning.
- Monitors computer operations during the shift.
- Assigns terminals to clerks.
- Provides first-level technical assistance in the case of difficulties, and contacts the branch help desk when problems cannot be solved at the facility level.
- Downloads files from and uploads files to the branch as scheduled.
- Monitors fragmentation and takes corrective action.
- Assists data entry clerks whenever a backlog of forms occurs or a clerk is absent.
- Performs queries on behalf of authorized staff.
- Produces daily, weekly, monthly, and other periodic reports on schedule.
- Keeps a journal to record entries concerning startup, operations, and shutdown.

Qualifications:

The Facility Computer Operator should have the following qualifications:

- Secondary school graduate.
- Three years HIO work experience
- Excellent attendance record.
APPENDIX B

BRANCH INFORMATION SYSTEMS PERSONNEL JOB DESCRIPTIONS
Branch Computer Department Manager

The Branch Computer Department Manager is responsible for all information system support and activity at the branch. The Branch Computer Department Manager must be able to administer complex projects and support a significant staff. The Branch Computer Department Manager directly supervises the Help Desk/Training Coordinator and the Branch Computer Operators.

Responsibilities:

The Branch Computer Department Manager reports directly to the Branch Manager at the branch. He/she:

- Serves as a liaison between the branch and the HIO Headquarters MIS Center.
- Assures smooth operations of the computer facilities at the branch offices and in branch polyclinics and hospitals.
- Develops a detailed annual work plan and budget for the Branch Computer Department to support activities at the branch offices (e.g., computer, communications, training, technical support, data entry, etc.)
- Consolidates facility-level budgets into a branch budget.
- Obtains adequate support from branch and Headquarters to ensure uninterrupted operations at branch offices and in branch polyclinics and hospitals.
- Arranges for backup staff to fill in any computer-related position in case the regularly-scheduled person is absent.
- Consults with the Branch Manager to schedule computer-related staff leaves in a way that will not disrupt computer operations.
- Maintains staff records including anticipated retirement, education leaves, military leaves, pregnancy leaves, and other leaves, and informs the Branch Manager of anticipated long-term vacancies. Informs Headquarters technical support staff of the need to obtain/train new staff to fill vacant positions.
- Reviews annual, quarterly, and monthly training schedules for the Training Center.
- Notifies appropriate offices concerning the need to train branch and polyclinic staff, and arranges for the release of designated trainees from their job responsibilities to attend training.
Prepares a maintenance plan for all computer equipment, obtains funding to support the plan, and executes the plan.

Prepares an annual report, identifying accomplishments, issues, and problems that need to be addressed, for the HIO Headquarters MIS Center and the Branch Manager that describes the full extent of computer operations at the branch and its polyclinics and hospitals.

**Qualifications:**

The Branch Computer Department Manager should have the following qualifications:

- Bachelor's Degree.

- Five years experience in computer operations indicating at least three years in an administrative position, preferably with automated management information systems.

- English proficiency, with a minimum score of 450 on the pre-TOEFL exam.
Branch Help Desk/Training Coordinator

The Help Desk/Training Coordinator is responsible for all user support functions at the branch. The Help Desk/Training Coordinator directly supervises the Technical Specialist—Telecommunication/Hardware Support and the Technical Specialist—End User Support.

Responsibilities:

The Branch Help Desk/Training Coordinator reports directly to the Branch Computer Department Manager at the branch. He/she:

In the area of help desk coordination:

- Prepares and implements an annual work plan.
- Advises the Branch Computer Department Manager on necessary hardware and software maintenance and support contracts, and assists in preparing requests for bids, review of bids, and negotiations with bidders. He/she maintains good relations with agencies and individuals providing such support.
- Contacts companies or persons contracted to provide maintenance and support whenever such support is required, and follows up to ensure maintenance and support is provided in a timely fashion.
- Refers to Headquarters all problems that cannot be solved at the branch level.
- Works with the Branch Training Center Coordinator (in Cairo and NWD Branches) and Specialists to plan and conduct training that will improve branch technical support staff ability to respond to help desk requests.
- Prepares quarterly reports on Help Desk operations, including the nature and frequency of help requests, trends identified, whether or not problems were solved, by whom, and how quickly.

In the area of training coordination:

- Assures the smooth functioning of the Training Center.
- Prepares an annual work plan for the center and a budget to support that plan.
- Prepares an annual report for the Headquarters Training Coordinator and the Branch Computer Department Manager, describing the full extent of Training Center operations during the previous year, identifying accomplishments of staff and the center, and raising issues and difficulties that need to be addressed.
Works with Headquarters staff to identify staff development needs.

Works with Headquarters staff to test both courses under development and regular courses for Headquarters, branch, and facility staff.

Ensures the security of all training center furnishings and computer equipment and maintains an inventory for that purpose.

Ensures that all Training Center computer equipment is operational, and monitors the maintenance program for assurance.

Maintains attendance records for all trainees.

Notifies trainers of training schedules to assure availability.

Evaluates, with Headquarters Technical Specialists, training courses in terms of their content, teacher performance, and trainee performance.

Qualifications:

The Help Desk/Training Coordinator should have the following qualifications:

Bachelor's Degree.

Five years of combined experience as a trainer, operating a help desk, or otherwise providing end user support.

Five years experience in computer operations, including at least two years in administrative positions at the manager or higher level.

English proficiency with a minimum score of 450 on the pre-TOEFL.
Branch Training Center Coordinator (Cairo and Northwest Delta only)

The Branch Training Center Coordinator position exists only in the Cairo and Northwest Delta Branches. He/she is responsible for overseeing all aspects of training at these branches. The Branch Training Center Coordinator directly supervises the Technical Specialist—End User Support at these branches.

Responsibilities:

The Branch Training Center Coordinator reports directly to the Branch Computer Department Manager at the Cairo and Northwest Delta Branches. He/she:

- Assures the smooth functioning of the Training Center.
- Prepares an annual work plan for the Training Center and a budget to support that plan.
- Prepares an annual report for the Headquarters Training Coordinator and the Branch Computer Department Manager, describing the full extent of Training Center operations during the previous year, identifying accomplishments of staff and the Training Center, and raising issues and difficulties that need to be addressed.
- Works with Headquarters staff to identify staff development needs.
- Works with Headquarters staff to test both courses under development and regular courses for Headquarters, branch, and facility staffs.
- Ensures the security of all training center furnishings and computer equipment, and maintains an inventory for that purpose.
- Ensures that all training center computer equipment is operational and monitors the maintenance program for assurance.
- Maintains attendance records for all trainees.
- Notifies trainers of training schedules to assure availability.
- Evaluates, with Headquarters technical specialists, training courses in terms of their content, teacher performance, and trainee performance.

Qualifications:

The Branch Training Center Manager should have the following qualifications:
- Bachelor's Degree.

- Five years of combined experience as a trainer, operating a help desk, or otherwise providing end user support.

- Five years experience in computer operations, including at least two years in administrative positions at the manager or higher level.

- English proficiency with a minimum score of 450 on the pre-TOEFL.
Technical Specialist—Telecommunications/Hardware Support

The Technical Specialist—Telecommunications/Hardware Support is responsible for all aspects of the telecommunications and hardware found at the branch and its polyclinics and hospitals.

Responsibilities:

The Technical Specialist—Telecommunications/Hardware Support reports directly to the Help Desk/Training Coordinator at the branch. He/she:

- Ensures that all communications links — X.25 lines, telephone lines, and software — linking the polyclinics and the X.25 network, and linking the branch with the X.25 remain operational at all times.
- Tracks all expenses and billings and notifies appropriate offices about anticipated, current, or past due charges.
- Conducts regular inspections and tests to ensure the integrity and quality of the physical links.
- Works with the Branch Computer Department Manager and the Headquarters Telecommunications Specialist to prepare an annual work plan, and prepares his/her own monthly, quarterly, and annual work schedules.
- Submits written reports on all problems encountered, efforts to solve them, and the extent to which the problems were solved.
- Writes a quarterly report for the Headquarters technical specialists, Branch Manager, and Branch Computer Department Manager describing operations, problems encountered and solved, and outstanding problems or issues.

Qualifications:

The Technical Specialist—Telecommunications/Hardware Support should have the following qualifications:

- Bachelor's Degree in communications, computer sciences or electrical engineering, or three years of experience in operating and maintaining computer hardware.
- English proficiency, with a minimum score of 450 on the pre-TOEFL.
Technical Specialist—End User Support

The Technical Specialist—End User Support is responsible for support to all end users at the branch and its polyclinics and hospitals.

Responsibilities:

The Technical Specialist—End User Support reports directly to the Help Desk/Training Coordinator at the branch. He/she:

- Works with the Branch Computer Department Manager to prepare an annual work plan and prepares his/her own monthly, quarterly, and annual work schedules.

- Trains branch and facility end users in the knowledge and skills necessary to operate each of the modules. This includes initial training for new modules, module enhancement training, remedial and refresher courses.

- Supports all branch end users. This includes assistance in hardware and application installation, operation of the branch-level help desk, and travel to facilities to handle problems that can not be resolved over the telephone. Refers more difficult problems to the Headquarters help desk and substitutes for facility staff when needed.

- Submits written reports on all interaction with end users including descriptions of any problems encountered.

Qualifications:

The Technical Specialist—End User Support should have the following qualifications:

- Bachelor's Degree.

- Three years combined experience with computers as a Programmer, Analyst, Computer Operator, or in some other relevant capacity.

- English proficiency with a minimum score of 450 on the pre-TOEFL.
Branch Computer Operator

The Branch Computer Operator is responsible for the daily operation of the computers and terminals in the branch offices and in the training center. This includes startups, establishing and disconnecting users, monitoring operations during the day, backups, shutdowns, downloading files from Headquarters, uploading files from the facilities, and loading new applications and updates.

Responsibilities:

The Branch Computer Operator reports directly to the Branch Computer Department Manager at the branch. He/she:

- Assists the help desk in answering questions from end users, troubleshoots problems at the branch level, and restores system after system or program crashes.
- Refers unresolved problems to the Help Desk/Training Coordinator.
- Documents operations with daily journal entries, generates periodic reports, assists from time-to-time with training, and assists the technical support staff with problems in the facilities.
- Assures the security of the computer room and its contents.
- Maintains an inventory of all equipment and supplies, and submits monthly reports including requests for supplies sufficiently in advance to ensure uninterrupted operations.
- Maintains cleanliness and orderliness of the computer room, and ensures that the room is kept free of dust, liquids, smoke, and excessive heat.
- Keeps a daily journal making written entries of all significant events including descriptions of problems, efforts to solve them, and the extent to which they were solved.
- Writes quarterly reports summarizing operations, problems encountered and solved, and problems or issues outstanding.
Qualifications:

The Branch Computer Operator should have the following qualifications:

1. Bachelor's Degree.
2. Three years of related work experience.
HIO Headquarters MIS Center Director

The HIO Headquarters MIS Center Director is responsible for all operational aspects of the HIO Management Information System (MIS). This person does all that is necessary to ensure that the HIO MIS is an effective, efficient, secure, and reliable system that operates without disruption. The HIO Headquarters MIS Center Director directly supervises the Systems Support Manager, the User Support Manager, and the Administration/Procurement Manager.

Responsibilities:

The HIO Headquarters MIS Center Director reports directly to the Chairman of the Health Insurance Organization. He/she:

- Develops, with his/her staff, a detailed annual work plan and a budget to support activities of the HIO MIS Headquarters. The director also consolidates annual budgets prepared in the branches into an overall MIS budget for the year.

- Ensures that the department maintains accurate financial records as a basis for keeping expenditures within budget and for accurately estimating future budgets.

- Obtains, in cooperation with the HIO Chairman, adequate support from internal and external HIO sources to ensure uninterrupted operations at all levels of the organization.

-Devises and executes, with the Chairman, operating procedures for the Information and Computer Services Department.

- Communicates HIO's overall MIS work plan and operating procedures to the Branch Computer Department Managers, and oversees compliance with this plan and its procedures.

- Ensures successful completion of all projects within the authorized budget.

- Establishes an efficient development environment enabling the HIO Information and Computer Services Department to design, write, implement, support, and enhance the software HIO needs to operate its MIS.

- Ensures the recruitment and training of a sufficient number of technical staff to support uninterrupted system operations.

- Maintains staff records including anticipated retirement, education leaves, military leaves, pregnancy leaves, and other leaves, and arranges to have staff replacements for those going on extended leave.
Supervises and supports directly the work of Branch Computer Department Managers and all HIO Headquarters MIS technical staff. This supervision and support includes regular evaluation of staff performance.

Conducts research and other activities to determine HIO's future information needs and to estimate the data processing staff and financial resources required to meet those needs.

Reviews monthly reports from the Branch Computer Department Managers and holds quarterly meetings to review progress, identify issues, and plan activities.

Prepares, with his/her staff, a maintenance plan for all computer equipment, obtains funding to support the plan, and oversees its execution.

Prepares, with his/her staff, an annual report for the HIO Chairman describing the full extent of HIO's information and computer operations.

Qualifications:

The HIO Headquarters MIS Center Director should have the following qualifications:

- Bachelor's Degree and graduate degree in a related field.
- Ten years management experience including at least five years experience as a successful manager of a large computer department and one year experience as a software developer.
Systems Support Manager

The Systems Support Manager is responsible for the Production, Development, and MIS Center Support Units, and bears ultimate responsibility for the successful operation of these units. The Systems Support Manager directly supervises the Production Manager, the Development Manager, and the MIS Center Support Manager.

Responsibilities:

The Systems Support Manager reports directly to the HIO Headquarters MIS Center Director. He/she:

- Develops a detailed annual work plan and a budget to support activities of the production and development components.
- Obtains adequate support from within HIO to ensure uninterrupted operations at all levels.
- Devises and executes, with the HIO Headquarters MIS Center Director, operating procedures for the Information and Computer Services Department.
- Develops, with the Production Manager and the Development Manager, annual plans, work schedules, and quarterly and monthly work calendars for their separate components.
- Communicates HIO's overall MIS work plan and operating procedures to his/her staff and oversees compliance with this plan and these procedures.
- Maintains staff records including anticipated retirement, education leaves, military leaves, pregnancy leaves, and other leaves, and arranges to have staff replacements for those going on extended leave.
- Writes and submits quarterly reports to the HIO Headquarters MIS Center Director describing HIO information and computer operations.
- Arranges for and ensures that NCR, Oracle, and other companies regularly perform required maintenance.
- Monitors provisions of all contracts to ensure that the HIO obtains regular software upgrades as they become available.
- Plans and manages a staff development program for all production and development staff that ensures existing staff maintain and improve their skills, and that provision is made to train new staff to fill anticipated vacancies.
Qualifications:

The Systems Support Manager should have the following qualifications:

- Bachelor's Degree in a related field and course work in business applications.
- Three years relevant experience with a large computer center as Director of Operations, Production Manager, or Development Manager.
Production Manager

The Production Manager is responsible for the continuous and smooth operation of the system including its hardware, operating systems, operating procedures, service software, and applications. His/her special focus is keeping the system running (as opposed to the Development Manager, whose principal responsibility is upgrading existing and developing new software). The Production Manager directly supervises the Telecommunications Specialists and the Help Desk Coordinators.

Responsibilities:

The Production Manager reports directly to the Systems Support Manager at the HIO Headquarters MIS Center. He/she:

- Ensures the security of all system hardware, operating systems, UNIX, Oracle, and all other applications, including utilities.
- Maintains and upgrades all system hardware, operating systems, UNIX, Oracle, and all applications including utilities.
- Installs UNIX patches (upgrades) and Oracle upgrades.
- Ensures that file transfers are received at the correct destination and in a timely fashion.
- Ensures that the operating system, telecommunications, and hardware in the HIO Headquarters MIS Center, branches, and facilities is operational.

Qualifications:

The Production Manager should have the following qualifications:

- Bachelor’s Degree in Computer Science and course work in business applications.
- Seven years experience with UNIX, Oracle, and a distributed environment.
- Knowledge of X.25 and TCP/IP services.
- Familiarity with PC word processing, spreadsheet, and time management packages.
Telecommunications Specialist

The HIO Telecommunications Specialist's primary job is to operate the Wide Area Network (WAN) and Local Area Networks (LAN) connecting HIO's computer sites. This includes operating and maintaining network hardware, network operating systems and telecommunications software in use for local and wide-area E-mail, remote control diagnostics, and other network communication components.

Responsibilities:

The Telecommunications Specialist reports directly to the Production Manager at the HIO Headquarters MIS Center. He/she:

In the area of network operations and maintenance:

- Operates and maintains a wide area network using X.25 and point-to-point leased line configurations to connect 75+ nodes with NCR 3000 equipment.
- Performs network system administrator and troubleshooter activities in a mixed UNIX/Netware environment.
- Installs, operates, and maintains telecommunications software related to network operation, including LAN E-mail, X.400 interfacing (MCI Mail), remote control packages, and the like.

In the area of technical support:

- Provides technical assistance to other data processing personnel in telecommunications and network operation.
- Assists with the training of the Branch Technical Specialist—Telecommunications/Hardware Support.

In the area of documentation:

- Documents WAN and LAN configurations, operating policies and procedures, diagnostic routines, and troubleshooting procedures.
- Maintains diagnostic logs on network operations to track problems and follow up actions, and to identify repeated problem areas requiring systematic attention.
Qualifications:

The Telecommunications Specialist should have the following qualifications:

- Bachelor's Degree in Computer Science or Electrical Engineering.
- Five years experience installing and configuring X.25 and TCP/IP packages.
- Knowledge of UNIX and UNIX shell scripts.
Help Desk Coordinator

The primary responsibility of the Help Desk Coordinator is to assist users at the branch and facility levels to solve problems encountered during use of the applications. The Help Desk Coordinator directly supervises the Help Desk Specialists.

Responsibilities:

The Help Desk Coordinator reports directly to the Production Manager at the HID Headquarters MIS Center. He/she:

0 Manages a help desk that answers phone calls and E-mail messages from users at the branch and facility levels.
0 Recreates events leading to reported problems to identify likely causes and to suggest remedial action.
0 Coaches end users through a series of remedial actions via telephone or E-mail to solve current problems.
0 Refers problems to Headquarters Programmer/Analysts when a problem cannot be solved via telephone or E-mail.
0 Uses the automated Help Desk Problem Tracking System to maintain a log of all contacts accurately describing who called (or otherwise contacted the help desk), the time of the call, the facility and the terminal calling, and the nature of the call; if a problem, whether a solution was reached over the phone, whom the problem was referred to, the time the problem was referred, and the eventual outcome.
0 Writes and submits a monthly report to the Production Manager and to the Training Coordinator on the frequency, nature, outcomes, origins, and other relevant details of help desk contacts.

Qualifications:

The Help Desk Coordinator should have the following qualifications:

0 Bachelor’s Degree in Computer Science.
0 Three to five years experience in management with a significant experience in managing a help desk.
0 Experience in user and application support.
Help Desk Specialist

The primary responsibility of the Help Desk Specialist is to assist users at the branch and facility levels to solve problems encountered during use of the applications.

Responsibilities:

The Help Desk Specialist reports directly to the Help Desk Coordinator at the HIO Headquarters MIS Center. He/she:

- Staffs a help desk that answers phone calls and E-mail messages from users at the branch and facility levels.
- Recreates events leading to reported problems to identify likely causes and to suggest remedial action.
- Coaches end users via telephone or E-mail through a series of remedial actions to solve the problem.
- Refers problems that cannot be solved via telephone or E-mail to Headquarters Programmer/Analysts and Database Administrators.
- Maintains a log of all contacts accurately describing who called (or otherwise contacted the help desk), the time of the call, the facility and the terminal calling, the nature of the call, whether a solution was reached over the phone, whom the problem was referred to, the time the problem was referred, and the eventual outcome of the instance.
- Writes and submits a monthly report to the Production Manager and to the Training Coordinator on the frequency, nature, outcomes, origins, and other relevant details of help desk contacts.

Qualifications:

The Help Desk Specialist should be a secondary school graduate with two years computer experience, or a university graduate in a related field.
Development Manager

The Development Manager's primary task is to ensure that existing applications are upgraded and new applications designed and developed to meet HIO's changing or growing information needs. The Development Manager directly supervises the Programmer/Analysts, Database Administrators, and Documentation Specialists.

Responsibilities:

The Development Manager reports directly to the Systems Support Manager at the HIO Headquarters MIS Center. He/she:

- Develops a detailed annual work plan and a budget to support activities of the Programmer/Analysts, Database Administrators, and Documentation Specialists.
- Obtains adequate support within HIO for his/her staff.
- Maintains regular contact with HIO managers and end users to identify ways in which automation can improve HIO operations. Works closely with the User Coordination/Configuration Manager to coordinate the department’s efforts in this area.
- Supports, coordinates, and supervises Headquarters Programmer/Analysts, Database Administrators, and Documentation Specialists in all phases of software development. Ensures the quality of their work and its conformity with department standards.
- Maintains staff records, including anticipated retirement, education leaves, military leaves, pregnancy leaves, and other leaves, and arranges to have staff replacements for those going on extended leave.
- Prepares an annual report for the HIO MIS Headquarters and the Branch Managers that describes the full extent of computer operations at branches, polyclinics, and hospitals; identifies accomplishments; and raises issues and problems that need to be addressed.

Qualifications:

The Development Manager should have the following qualifications:

- Bachelor’s Degree in Computer Science.
- Five years of direct programming and analysis.
- Experience with UNIX and Oracle.
- Familiarity with TCP/IP and X.25 packages, and C programming language.
Programmer/Analyst

The Programmer/Analyst is able to successfully undertake the responsibilities of both a programmer and an analyst. As a Programmer, he/she should have the ability to design and code program modules using Oracle tools and the associated fourth generation languages. He/she must have an understanding of Oracle programming languages and the UNIX operating system on which the HIO applications runs.

As an Analyst, he/she should have the ability to analyze, design, implement, and document new applications in a UNIX environment as well as to maintain existing applications. He/she must develop structured specifications that meet HIO requirements in a full range of HIO operational areas.

Responsibilities:

The Programmer/Analyst reports directly to the Development Manager at the HIO Headquarters MIS Center. He/she:

In the area of programming:

- Develops application programs, including writing code according to program specifications provided by each module’s detailed design document.
- Implements and tests programs according to standards.
- Maintains production source code.
- Identifies and corrects errors in program specifications during development.
- Compiles and documents all program and system test results.
- Documents program codes according to established standards.
- Documents all program and system test results.

In the area of analysis:

- Conducts field and document research to determine information flow and functionality in HIO operational areas targeted for automation.
- Prepares system requirement specifications in the form of functional designs, detailed designs, and system documents. As such, the he/she must be familiar with the software development life cycle (SDLC).
- Develops and designs systems according to structured design principles.
Conducts tests of processing cycles or programs, identifies anomalies, and makes required corrections.

Obtains confirmation that functional and detailed application designs conform to user understanding of data flow, functionality, and user expectations concerning application performance.

Documents all system designs through flowcharts, structured design techniques, and narrative descriptions according to standards.

In the area of user support:

Acts as liaison between users and technical staff to resolve reported problems.

Assists in the preparation of user documents and training materials.

Assists with prototype user training.

Conducts demonstrations of prototypes for clients and user groups.

Assists in the preparation of user documents and training materials.

Qualifications:

The Programmer/Analyst should have the following qualifications:

Bachelor's degree in Computer Science or course work at a technical institute.

Experience with UNIX or Oracle, and preferably both.

Strong analytic or programming skills.

Ability to work in a team environment.
**Database Administrator**

The Database Administrator is responsible for database design and maintenance of the Oracle relational database management system (RDBMS). He/she consults with Programmer/Analysts to ensure that the database designs are properly normalized and otherwise set up to optimize their performance on NCR equipment.

**Responsibilities:**

The Database Administrator reports directly to the Development Manager at the HIO Headquarters MIS Center. He/she:

- Prepares database requirement specifications.
- Designs database structures using standard normalization techniques for the design of relational systems.
- Initializes and maintains databases used in HIO applications.
- Uses fourth generation database languages to program specialized database processing procedures.
- Conducts tests of procedural routines, identifies anomalies, and makes required corrections.
- Provides technical assistance to data processing personnel.
- Reviews and approves all database-oriented documentation of HIO software.
- Organizes and controls development and implementation of database software.
- Provides system tuning to all branch and facility databases to ensure that they operate at peak performance levels.
- Acts as a go-between for software development staff and HIO users to establish software requirements in terms of compatible database structures.

**Qualifications:**

The Database Administrator should have the following qualifications:

- Bachelor's degree in Computer Science or course work at a technical institute.
- Three years experience with UNIX, Oracle DBA performance tuning, and SQLNet.
- Ability to support a product in a distributed environment.
- Desire to solve problems in a timely fashion.
Documentation Specialist

The primary responsibility of the Documentation Specialist is to prepare user manuals for HIO applications. This includes writing user manuals for newly-developed software and modifying existing user manuals to accurately reflect changes as they are made.

Responsibilities:

The Documentation Specialist reports directly to the Development Manager at the HIO Headquarters MIS Center. He/she:

- Uses approved standard outlines to draft user manuals once application detailed designs, produced by the Programmer/Analysts, are available.

- Works closely with the Programmer/Analysts as the applications (or revisions) are coded to document all changes from the detailed design.

- Assists the Programmer/Analysts in writing the functional designs, detailed designs, and system documentation to support each new application.

- Uses application prototypes and alpha test versions to learn each application completely.

- Works closely with the Training Specialists to ensure he/she is aware of the nature of the application, its development status, and the status of the user manual.

- Writes and submits a draft of each user document to the Programmer/Analysts responsible for its development.

- Writes and submits a final draft of each user manual to production and to the Training Specialists as soon as it is completed, but not later than a week after Programmer/Analysts have communicated their suggestions for the final draft.

Qualifications:

The Documentation Specialist should have the following qualifications:

- Bachelor's Degree in a related field.

- Demonstrated writing ability.
MIS Center Support Manager

The MIS Center Support Manager is primarily responsible for providing users at the MIS Center with an uninterrupted operational environment. The MIS Center Support Manager directly supervises the PC Support Specialists and the Headquarters Computer Operators.

Responsibilities:

The MIS Center Support Manager reports directly to the Systems Support Manager at the HIO Headquarters MIS Center. He/she:

- Supervises the efforts of the PC Support Specialists to configure, install, and audit all services required of PC users.
- Supervises the daily operational tasks of the Headquarters Computer Operators to support the server. Monitors all daily online computer activities to ensure their successful completion.
- Identifies and resolves all staffing and shift issues related to the PC Support Specialists and the Headquarters Computer Operators.
- Prepares and implements an annual work plan and hardware budget.
- Prepares quarterly reports on operational and outstanding issues.
- Advises the System Support Manager of necessary hardware, software, or upgrade procurements that are necessary for daily operations to continue in a smooth fashion.
- Participates in the review of available vendors, as well as the bidding process.

Qualifications:

The MIS Center Support Manager should have the following qualifications:

- Bachelor's Degree in Computer Science and course work in business applications.
- Seven years experience in the computer industry, three of which have been involved with the management of a department or team of individuals.
- Two years experience with a UNIX system.
- Knowledgeable in DOS and Novell.
PC Support Specialist

The PC Support Specialist is responsible for all operational issues involving PCs in the MIS Center.

Responsibilities:

The PC Support Specialist reports directly to the MIS Center Support Manager at the HIO Headquarters MIS Center. He/she:

- Maintains an accurate inventory of all PCs, monitors, keyboards, or other PC-related hardware, as well as a roster of all individuals who have been issued a PC.
- Configures and installs all required software for MIS Center PC users.
- Monitors and maintains the local area network (LAN).

Qualifications:

The PC Support Specialist should have the following qualifications:

- High School Diploma.
- Two to three years work experience with DOS and Novell. Course experience at a technical institution may be considered for substitution in place of actual work experience.
- Knowledge of UNIX is desired.
- Some English language proficiency.
Headquarters Computer Operator

The Headquarters Computer Operator’s primary function is to operate the NCR computer system. This includes operating the hardware and limited system troubleshooting. In general, the operators must run Oracle application and system utilities, maintain files, and control print functions. They are also responsible for other duties required within a UNIX environment.

Responsibilities:

The Headquarters Computer Operator reports directly to the MIS Center Support Manager at the HIO Headquarters MIS Center. He/she:

In the area of hardware operations and maintenance:

- Initiates and manages system startup and shutdown procedures.
- Backs up and restores files or file systems according to a prescribed schedule and maintains a library for tape and disk backups of the HIO MIS database, documents, and the like.
- Performs file system checking, repairing, and tuning activities.
- Maintains system, software, and data backup tapes on a regular basis.
- Uploads periodic files from the respective branches and integrates newly-received data into the current database. Likewise, downloads updated data received from SIO and PIO to the branches.
- Configures hardware (terminals, printers, personal computers and other equipment).
- Adds, deletes, and manages users on the system.
- Completes and maintains computer operations logs, including error logs and backup logs.
- Establishes system security procedures and oversees the administration of passwords, disk library access, and operations area access, including the maintenance of user accounts.
- Regularly reviews user logs to identify anomalies and takes corrective action.
- Establishes and maintains printing queues.
o Assists NCR, Oracle, and other company staff contracted to perform maintenance.

In the area of systems programming:

o Installs and configures the operating system.

o Manages and maintains application software including adding, upgrading, deleting, and configuring applications. Performs diagnostics and troubleshooting activities.

o Ensures proper programming of system security levels.

o Runs Oracle application and system utilities as required.

o Maintains database files.

In the area of library functions:

o Works with the MIS Center Support Manager to develop and implement an archival system for dated files.

o Establishes and maintains a general HIO MIS reference library comprising NCR hardware documentation, field maintenance manuals, software documentation, user manuals, general texts on computer science, and other material.

In the area of technical support:

o Provides technical assistance to data processing personnel in operations.

o Configures, installs, and troubleshoots designated computer systems at the branch level.

o Works with branch staff to design and implement, on a day-to-day basis, a computer support program which includes standardized procedures (e.g., tasks such as file backups), an equipment tracking system, a spare parts and supplies inventory system, and a technical support program for end users.

o Advises the MIS Center Director, as required on system hardware and software needs including, but not limited to, microcomputers, software, software upgrades, and uninterrupted power supplies (UPSs).

Qualifications:

The Headquarters Computer Operator should have a Bachelor's Degree or have completed course work at a technical institute.
User Support Manager

The User Support Manager is responsible for the successful implementation of the system in all sites. He/she also ensures that end users and technicians are properly trained to operate and support the system. He/she designs and oversees seminars and workshops for managers in the use of the MIS for management purposes. He/she works closely with the System Support Manager and the Administration/Procurement Manager. The User Support Manager directly supervises the User Coordination/Configuration Manager, the Training Coordinator, and the Implementation Coordinator.

Responsibilities:

The User Support Manager reports directly to the MIS Center Support Manager at the HIO Headquarters MIS Center. He/she:

- Develops a detailed annual work plan and a budget to support activities of the User Coordination/Configuration Manager, Training Coordinator, and Implementation Coordinator.
- Maintains regular contact with HIO managers and end users to identify ways in which the automated system can be improved. Solicits manager and end user recommendations and channels recommendations for review and action.
- Supervises the Training Coordinator's identification of staff for computer-related training needs, including training of new staff and upgrading existing staff capabilities, and reviews the annual training work schedule.
- Ensures that the training group regularly assesses its training efforts to ensure adequate support and operation of the system.
- Maintains staff records including anticipated retirement, education leaves, military leaves, pregnancy leaves, and other leaves, and arranges for staff replacements for those going on extended leaves.
- Prepares an annual report for the HIO MIS Headquarters and the Branch Managers that describes the work of his/her division.

Qualifications:

The User Support Manager should have the following qualifications:

- Bachelor's Degree.
- Five years experience working directly with end users of an automated system with multiple operating sites.
0 Proficiency in Microsoft Arabic Word.
0 Proficiency in English.
User Coordination/Configuration Manager

The User Coordination/Configuration Manager is responsible for soliciting recommendations for system enhancements from all MIS users and managers, and presenting these requests to the HID Policy Council and other committees for approval or implementation. He/she is also tasked with increasing the awareness of and positive public relations towards the MIS.

Responsibilities:

The User Coordination/Configuration Manager reports directly to the User Support Manager at the HID Headquarters MIS Center. He/she:

- Actively meets with users to collect recommendations for system improvements.
- Participates in HID Policy Council activities to work towards future sustainability and enhancement of the MIS.
- Maintains regular contact with all levels of users to promote the importance and regular use of the system.
- Makes presentations to new and current users to demonstrate the benefits and capabilities of the system.

Qualifications:

The User Coordination/Configuration Manager should have the following qualifications:

- Bachelor's Degree.
- Three years experience in public relations.
- Previous service on policy-making councils.
- Knowledge of automated systems and experience in presenting them to users.
Training Coordinator

The Training Coordinator's primary task is to design and deliver quality training to the system managers, technicians, and end users at the Headquarters, branches, and facilities. He/she directly supervises Training Specialists.

Responsibilities:

The Training Coordinator reports directly to the User Support Manager at the HIO Headquarters MIS Center. He/she:

- Conducts research to determine the number and type of managers, technicians, and end users who are to receive training.
- Prepares and executes an annual plan, and periodic (annual, quarterly, and monthly) work calendars to develop and deliver training to HIO staff.
- Prepares an annual budget, integrating cost estimates provided by the Training Center.
- Maintains financial records to ensure that expenditures remain within budget.
- Plans, organizes, supports, and supervises course work and on-the-job training for all technicians.
- Supervises technical specialists in the development of courses and course materials.
- Works closely with the Decision Support Specialist at the Information Resource Management Division to develop training programs and materials for managers at all levels. Training programs include courses, seminars, workshops, and other events to support managers' learning how to use the MIS and its products.
- Writes an annual report for the User Support Manager that details activities of the Technical Support Group, problems and issues, and outlines future activities.

Qualifications:

The Training Coordinator should have the following qualifications:

- Bachelor's Degree.
- Five years of management experience with similar duties.
Training Specialist

The principal responsibility of the Training Specialist is to assist the Training Coordinator. Together they are responsible for developing and delivering training for all HIO MIS staff.

Responsibilities:

The Training Specialist reports directly to the Training Coordinator at the HIO Headquarters MIS Center. He/she:

- Assists with research to determine the number and type of managers, technicians, and end users who are to receive training.
- Assists the Training Coordinator in preparing and executing an annual plan and periodic (annual, quarterly, and monthly) work calendars to develop and deliver training to HIO staff.
- Assists with planning, organizing, and supervising course work and on-the-job (OJT) training for all technicians.
- Assists the design of specific courses by working closely with the Documentation Specialists, Programmer/Analysts, and Database Administrators throughout the development of new applications.
- Writes and tests prototype training materials.
- Tests prototype courses.
- Works closely with the Training Center Manager to schedule and deliver courses at the center.
- Works closely with the Decision Support Specialist at the Information Resource Management Division to develop training programs and materials for managers at all levels. Training programs include courses, seminars, workshops, and other events to support managers' learning how to use the MIS and its products.
- Conducts research including extensive interviews of managers at each administrative level to determine the nature and kinds of decisions they have to make and at what times in the HIO work calendar. Identify information managers currently use to make those decisions, and the source and quality of that information.
Qualifications:

The Training Specialist should be a general secondary school graduate with two years college course work, or a graduate of a commercial secondary school with two years work experience.
Implementation Coordinator

The Implementation Coordinator is responsible for the preparation of sites for installation of hardware, and for the ongoing maintenance of computer sites. He/she works closely with the Production, User Support, and Systems Support Managers to coordinate site preparation efforts related to software development, telecommunications cabling, and hardware procurement and installation.

Responsibilities:

The Implementation Coordinator reports directly to the User Support Manager at the HIO Headquarters MIS Center. He/she:

- Selects appropriate sites for the installation of hardware.
- Develops terms of reference for site preparation contractors and prepares draft contracts.
- Supervises site preparation contractors, draftsmen, cabling requirements, and hardware delivery.
- Verifies that site preparation meets all the technical specifications outlined in the contract.
- Ensures that furniture is available for the installation of hardware.
- Maintains files including correspondence, contracts, delivery receipts, copies of invoices, layouts, wiring diagrams, and other reports/trackers related to the general management of site preparation activities.

Qualifications:

The Implementation Coordinator should have the following qualifications:

- Five to ten years of experience in construction, site preparation, or related field.
- Previous experience or background in civil and/or electrical engineering.
- Familiarity with hardware and software equipment.
- Experience in producing and monitoring equipment inventories.
- Dedicated to high quality and timeliness.
- Familiarity with word processing systems.
Administration/Procurement Manager

The Administration/Procurement Manager assists the MIS Center Director in managing general office affairs and staff. He/she directly supervises the Accounting/Budget Specialists, the Administrative Support Manager, and other support services functions.

Responsibilities:

The Administration/Procurement Manager reports directly to the MIS Center Director at the HIO Headquarters MIS Center. He/she:

- Prepares annual implementation plans, budget, and reports.
- Coordinates procurement of office supplies, equipment, and furniture.
- Monitors production and distribution of publications.
- Oversees financial records, expenditures, and project inventories.
- Monitors all contracts with outside vendors for the maintenance of office equipment and the purchase of hardware and software.
- Monitors office equipment/furniture, site preparation, and hardware/software inventories.

Qualifications:

The Administration/Procurement Manager should have the following qualifications:

- Five to ten years experience working in office administration and/or finance.
- Previous supervisory experience.
- Demonstrated ability to manage procurement actions, inventories, and contracts related to procurement.
- Familiarity with Government of Egypt rules and regulations.
- Familiarity with word processing and spreadsheet software packages.
Accounting/Budget Specialist

The Accounting/Budget Specialist is responsible for the financial accounts and budget.

Responsibilities:

The Accounting/Budget Specialist reports directly to the Administration/Procurement Manager at the HIO Headquarters MIS Center. He/she:

- Manages and maintains an automated accounting system.
- Maintains all journals, ledgers, and financial files.
- Processes routine vouchers, receipts, staff payroll, and associated benefits.
- Tracks monthly expenditures.
- Corresponds with the bank.
- Prepares monthly invoices and reports for review by the Administration/Procurement Manager.

Qualifications:

The Accountant/Budget Specialist should have the following qualifications:

- Minimum of five years of experience working as an accountant or financial officer.
- Familiarity with automated accounting systems.
- Demonstrated ability to adhere to detail and deadlines.
Administrative Support Manager

The Administrative Support Manager is responsible for the day-to-day management of the administrative activities. The Administrative Support Manager directly supervises the Secretary/Clerks, Publications Manager/Editor/Librarian, and Publication Secretary.

Responsibilities:

The Administrative Support Manager reports directly to the Administration/Procurement Manager at the HIO Headquarters MIS Center. He/she:

- Manages office support staff.
- Ensures that filing is complete and up to date.
- Processes employee permits and papers.

Qualifications:

The Administrative Support Manager should have the following qualifications:

- Previous experience in managing office staff.
- Five to ten years experience in administration.
- Familiarity with word processing and spreadsheet software packages.
Secretary/Receptionist/Clerk

The Secretary/Receptionist/Clerk is primarily responsible for receiving incoming calls and guests to the MIS Center and for managing routine administrative duties.

Responsibilities:

The Secretary/Clerk reports directly to the Administrative Support Manager at the HIO Headquarters MIS Center. He/she:

- Processes, distributes, and tracks all facsimiles and long-distance communications.
- Coordinates and arranges for special meetings, receptions, and other social events.
- Compiles and sends faxes as needed.
- Maintains a master file system and arranges travel/transportation for staff.
- Distributes and tracks requests for office supplies.

Qualifications:

The Secretary/Clerk should have the following qualifications:

- Three to five years experience in administration.
- Strong oral and written communication skills in both Arabic and English.
- Familiarity with word processing software packages and, preferably, spreadsheet packages.
Publications Manager/Editor/Librarian

The Production Manager/Editor/Librarian is responsible for the preparation and distribution of documents, overseeing files, and maintaining a library of all pertinent documents and publications.

Responsibilities:

The Production Manager/Editor/Librarian reports directly to the Administrative Support Manager at the HIO Headquarters MIS Center. He/she:

- Edits, formats, and translates documents and miscellaneous publications.
- Supervises the reproduction and binding of documents.
- Maintains a library of technical publications and software manuals of interest to staff.

Qualifications:

The Publications Manager/Editor/Librarian should have the following qualifications:

- Bachelor’s Degree.
- Five years experience in editing, writing, and coordinating the production of technical documents.
- Strong oral and written communication skills in both Arabic and English.
- Extensive experience working with word processing and graphics packages.
- Ability to work independently and meet deadlines.
Publication Secretary

The Publication Secretary assists the Publications Manager/Editor/Librarian in the day-to-day production of reports and filing of project documents.

Responsibilities:

The Publications Secretary reports directly to the Administrative Support Manager at the HIO Headquarters MIS Center. He/she:

- Files and distributes documents.
- Maintains a file index of all documents published.
- Assists the publications manager in editing, formatting, and translating of documents.
- Provides production services as needed to the technical staff, such as word processing, preparation of tables/graphs, and formatting of publications.

Qualifications:

The Publications Secretary should have the following qualifications:

- Three years experience as a secretary.
- Good written communications skills.
- Fluency in both Arabic and English.
- Experience working with word processing and graphics packages.
APPENDIX D

DESCRIPTION OF THE AMERICAN UNIVERSITY IN CAIRO'S SUMMER INTERNSHIP PROGRAM
THE AMERICAN UNIVERSITY IN CAIRO
CAREER ADVISING & PLACEMENT SERVICES

1996 Summer Internship
The office of Career Advising & Placement Services (CAPS) at the American University in Cairo takes pleasure in inviting your organization to participate in the 1996 Summer Internship (SI) Program. While allowing companies to assess future employees, internships help students develop marketable job skills and explore the corporate world. The SI program has proven to be beneficial for both corporations and students.

**Summer Internship Day**
**Wednesday, April 3, 1996**

The April SI Day is an ideal opportunity to meet with potential interns and to facilitate your screening and decision-making process. This year, CAPS will hold the SI Day on Wednesday, April 3, 1996, on the AUC Main Campus. However, if your company is interested in providing internship opportunities to AUC students but cannot participate in the SI Day, CAPS can act as your campus liaison.

**Summer Internship Booklet...** A summer internship booklet will be published as a reference guide to provide potential candidates with information about your company (i.e. type of business, address, contact person, internship descriptions, and required qualifications). The booklet will include internship opportunities offered by companies participating in the SI Program, whether or not they are represented at the SI Day.
CAPS is interested in making this event work well for you. Internship requests in Egypt will be processed in the Spring of 1996, whereas internship opportunities outside Egypt may be communicated to CAPS during the Fall of 1995. The following information will help you target potential interns that can best contribute to your organization:

* Registration ... To register in the Summer Internship Program, complete the Summer Registration Form and the Internship Opportunities Form and be sure to attach a company profile. Please indicate the available internship opportunities within your organization, specifying the internship title, description, qualifications, duration, compensation, and required academic background (refer to the list of AUC Degree Programs on the reverse side). Return the form no later than Thursday, February 29, 1996 to:

Ms. Maha Fakhry, Assistant Director for Placement
The American University in Cairo
Career Advising & Placement Services, Hill House - Room 104
113, Kasr Al Aini Street, P.O. Box 2511, Cairo 11511, Egypt
Tel: (202) 357-5748 Fax: (202) 355-7565

* Company Literature ... We encourage you to provide the CAPS office with copies of your brochures, annual reports and all other company leaflets, to be kept in our Career Resources Library as a reference for AUC students. Your informational material will be a valuable contribution to the CAPS Library. If you are planning to attend the Summer Internship Day, we recommend that you bring along an ample supply of brochures, application forms, and any other recent company material.
Please indicate below the internship title, duties, qualifications and monthly compensation for each available position. If you wish to include more details, please feel free to attach them to this form.

INTERNSHIP 1

Internship title: ___________________________ Number of interns required: __________
Duties: __________________________________________________________
________________________________________________________________
Qualifications: ____________________________________________________
________________________________________________________________
Location: ___________________ Internship duration: __________ Monthly compensation: __________

INTERNSHIP 2

Internship title: ___________________________ Number of interns required: __________
Duties: __________________________________________________________
________________________________________________________________
Qualifications: ____________________________________________________
________________________________________________________________
Location: ___________________ Internship duration: __________ Monthly compensation: __________
SI REGISTRATION FORM

Company Name: ________________________________

Company Profile (include a short explanation of your business to be published in the Summer Internship Booklet)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Street Address: ___________________________ Area/City: ___________________________

Country: ___________________________ Telephone: ___________________________ Fax: ___________________________

Our company will participate in the 1996 Summer Internship Program. If yes, please complete the reverse side of this form.  

☐ Yes  ☐ No

Our company will participate in the 1996 Summer Internship Day to be held on Wednesday, April 3, 1996.  

☐ Yes  ☐ No

Indicate below the name(s) and title(s) of company representative(s) who

☐ Will attend the Summer Internship Day  ☐ Should receive resumes of interested candidates

1. ____________________________________________

2. ____________________________________________

3. ____________________________________________
AUC DEGREE PROGRAMS

UNDERGRADUATE

Bachelor of Arts
Accounting
Anthropology
Arabic Studies
  with specialization in Islamic Art and Architecture or Arabic Language and Literature
Business Administration
Economics
Egyptology
English and Comparative Literature
Journalism and Mass Communication
  with specialization in Journalism, Photographic Journalism, or Public Relations/Advertising
Middle Eastern History
Middle East Studies
Political Science
  with specialization in International Relations, Middle East Politics, and Public and International Law
Psychology
Sociology
Theatre

Bachelor of Science
Chemistry
Computer Science
Construction Engineering
Mathematics
Mechanical Engineering
  with specialization in Industrial, Materials, or Design Engineering
Physics

GRADUATE

Master of Arts
Arabic Studies
  with specialization in Islamic Art, Architecture, Language and Literature, or Middle Eastern History
Economics
English and Comparative Literature
Mass Communication
  with specialization in Television Journalism
Middle East Studies
Political Science
  with specialization in Professional Development, Area Studies/Comparative Politics, and International Relations
Sociology-Anthropology
Teaching Arabic as a Foreign Language
Teaching English as a Foreign Language

Master of Business Administration

Master of Public Administration

Master of Science
Engineering

Graduate Diploma
Engineering
Management
Middle East Studies
Teaching English as a Foreign Language
Television Journalism

Professional Diploma
Hospitality Management