INTEGRATED SUPPORT PLAN

for the

Department of Defense Intelligence Information System (DoDIIS) Automated Message Handling System (AMHS)

Deployment Contract

Approved by:
S. Hersch, AMHS Program Manager

Approved by:
Electronic Systems Center

Approved by:
H. Williams, AMHS Quality Assurance Mgr.

Approved by:
H. McDougall, AMHS Logistics Manager

Contract Number: F19628-90-D-0029

DCN: AMHS/D-ISP-04
15 January 1996

Submitted by:
McDonnell Douglas Aerospace D&ES-ISS
11242 Waples Mill Road, Fairfax, VA 22030

Developed for:
Electronic Systems Center (ESC)
Air Force Materiel Command (AFMC)

This Page Intentionally Left Blank

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

APPENDICES

1.0 INTRODUCTION

This Integrated Support Plan (ISP) is written in response to the requirements of Contract Data Requirement List (CDRL) Sequence Number 0121 and DI-ILSS-80395/T. This document describes the plans for the management, control, execution, interface, and integration of all aspects of the Department of Defense Intelligence Information System (DoDIIS) Automated Message Handling System (AMHS) Integrated Logistics Support (ILS) Program. Related documents include: The AMHS Indefinite Delivery/Indefinite Quantity (ID/IQ) Contract (F19628-90-D-0029), the AMHS System Specification (ESD-ICP-A1000), and the Statement of Work (6/28/95).

1.1 Purpose

The purpose of this plan is to describe the logistics support effort for the AMHS system during development, integration, deployment, and operation for the length of the AMHS contract period. Through the use of the principles, concepts, and procedures detailed in this plan, McDonnell Douglas Aerospace (MDA) will support the system performance as specified in the Statement of Work (SOW), the AMHS System Specification, and the AMHS contract.

1.2 Scope

This plan covers management controls and procedures, the MDA organizational structure, interface management plans and procedures, integration and interface activities, control and reporting procedures, and ILS task requirements. The MDA ILS organization will perform requisite actions from contract award until termination of the contract. Hardware support under the ID/IQ contract is provided for each delivery order until such time a site is turned over to the Government ESC Program Office by the government DD form 250. Software support is provided for each delivery order is under a Level of Effort(LOE) TRN.

1.3 Updating Process

This ISP will be updated on an as required basis and revised to reflect the updates through page changes or as complete document revisions. No classified documentation is envisioned, but should it become necessary, all classified material will be under separate cover and cross referenced in the applicable portion of the ISP.

This is the fourth edition of the ISP. It includes changes which bring it up to date with current operational procedures and incorporates any and all changes required as part of the new Statement of Work.(6/28/95).

This Page Intentionally Left Blank

2.0 ILS PROGRAM MANAGEMENT, ORGANIZATION, AND EXECUTION

This section provides a description of the MDA process to manage the execution of the AMHS ILS program. Additionally, it will describe the tailored design interface efforts envisioned to fit the program requirements.

2.1 Objectives, Policies, and General Management Procedures

2.1.1 Objectives

It is the primary objective of AMHS Logistics to ensure product supportability throughout the life cycle of the AMHS system.

2.1.2 Policies

It is McDonnell Douglas Corporation and McDonnell Douglas Aerospace policy to develop and deliver supportable products, and to provide support for these products as specified by the contract and most current SOW throughout their useful lives at the lowest life cycle cost.

Logistics support for AMHS developed products and system is planned, developed, and managed as an integrated function to ensure proper consideration of logistics support requirements.

The AMHS ILS program management ensures that the responsibility for logistics support management is clearly defined and that a logistics support management approach is established for the program. The Integrated Logistics Support (ILS) Manager is accountable for task definition and planning, budgeting, organization of the logistics support effort, compliance with customer and MDA management directives, monitoring progress, and acting as necessary to meet logistics support objectives.

Logistics support personnel participate in internal design reviews, as required. This participation ensures that considerations of operability and supportability are an integral part of design activity, and that related contractual requirements are met.

2.1.3 General Management Procedures

The following general management procedures describe how the above policies are currently implemented:

- Logistics support functions are integrated to meet the requirements of the AMHS Contract, Statement of Work (SOW), and System Specification.
- ILS tasks to be performed to meet contract requirements are carried out, supported by, and coordinated with all other program disciplines as necessary.
- Budgets and schedules for appropriate work breakdown structures are established with the assistance of business management.

- Audits and traceability shall be provided through the use of database management systems which track equipment reliability and sparing requirements.
- MIL-STD 1388-1 requirements defined by the Statement of Work (Post Production Support Analysis) data is maintained to provide data in support of necessary design changes.
- Activities for planning, developing, coordinating, and producing the necessary technical data shall be defined and implemented in coordination with the related schedules.
- ILS management participates as a member on all hardware design reviews and software reviews, when required, to ensure supportability evaluation.
- Logistics milestones are developed for each task, tracked, and adjusted as program milestones change.
- Deployment activities is established to ensure timely and accurate support during Integration and ID/IQ phases.
- A Single Point of Contact (POC) concept is implemented to perform the mission of day-to-day maintenance control and direction.

2.2 ILS Organizational Structure

2.2.1 Description and Authority

We have established a tailored ILS organization to analyze, document, acquire resources, and affect support of the AMHS from initial integration efforts until final warranty expiration (and beyond). Figure 2.2.1-1 "Integrated Logistics Organization and Functions," depicts the ILS organization and individuals responsible. Each function has the authority to carry out the day-to-day assigned tasks and coordinate with any discipline as deemed necessary. Areas which concern budgetary, policies/procedural matters, and major decision will be recommended to and coordinated with the ILS Manager, and authorized under his signature.

2.2.2 Responsibilities

2.2.2.1 ILS Manager

The ILS Manager is responsible for coordination and ILS support of the AMHS. He interfaces with the Chief Engineer, System Development Manager, Operations Support Manager, Quality Assurance Manager, Deployments Manager, and Configuration Manager.

Figure 2.2.1-1 Integrated Logistics Organization and Functions

2.2.2.3 Training Manager

The Training Manager establishes a Training Plan and conducts the necessary familiarization, In-Plant Acceptance Testing (IPAT) and On-Site Acceptance Testing (OSAT) training for each increment and site as required by the SOW. The Training Manager will acquire the necessary training materials in order to develop the training curriculum and conduct the training outlined in Appendix A of this plan. The Training Manager also manages the Code 1 Support Line.

2.2.2.4 Supply Support

The Supply Support section is responsible for reassessing the sparing philosophy as previously determined via vendor supplied data. This section will utilize maintenance data and failure rates from data base management systems to detect high failure items, potential risk areas, and sparing quantities adjustment requirements. It also controls inventory management of spares, support equipment, and Consumables. Pack, Handle, Storage, and Transport (PHS&T) is under it's control, and is the point of contract for shipping and receiving. The section ensures that all the required equipment and support equipment are packed and shipped per schedule in support of the deployment phases.

2.2.2.5 Hardware Maintenance Support

The HW Maintenance section is the prime interface and control point for all the hardware maintenance activities associated with the installed sites. It maintains status of the total system on a day-to-day basis and coordinates all maintenance actions as required with the appropriate functions. It performs any required LSA and is the focal point for any maintenance planning with the hardware engineering section.

2.2.2.6. Technical Publications

The Training Manager is also responsible for the writing, testing, and publishing of the User Positional Handbooks. Upon receipt of the commercial data, the Training Section performs the necessary analysis and extraction of information to begin the writing tasks in conjunction with the software development schedule. All publications created by the training section as well as all vendor supplied hardware documentation are stored in the Configuration Management library.

2.3 Subcontractor and Vendor Interface Management

2.3.1 Major Subcontractor

With the advent of the ALPHA systems the requirement for sub contractor support has been deleted.

2.3.2 Major Vendors

Table 2.3.2-1 lists all major vendors and their products currently selected for the AMHS program.

HARDWARE	
Vendor	Product Description
Digital	AlphaSvr 2100, RAID, Drives, Monitors
ACC	ACP 3020 Async/Sync Comm Device
AMCO	Equipment Racks
SOFTWARE	
Vendor	Product Description
Digital	Operating System
Applix	Office Automation
Verity	Text Management System

Table 2.3.2-1 Major Vendors and Products

2.3.2.1 Scope of Work

The scope of work for all vendors includes providing to MDA the selected products in a specified amount of time once a purchase order has been released and meeting their published reliability rates. All hardware vendors used for the AMHS system provide warranties with their products. MDA passes this warranty on to the government for each delivery order when the DD Form 250 is signed for each site installation. MDA hardware maintenance support and responsibilities terminates when the DD form 250 is signed off.

2.3.2.2 Organizational Interface

MDA has established standard organizational interfaces through its contracts and procurement departments. All selected vendors used for the AMHS system must agree to meet published quality standards and reliability rates and provide warranty service to MDA and, in turn, to the Government through pass-through warranties for each deployed site. The AMHS ILS organization interface with the vendors is primarily through the MDA contracts department. Direct interface may be required in the event chronic problems are found with an item that require first hand knowledge of the problem.

2.3.2.3 Controls over Specified Work

All selected products are scrutinized through testing and evaluation. Vendor hardware received at MDA AMHS is visually inspected upon receipt. It is then loaded into an equipment cabinet where power checks and other vendor supplied diagnostics are performed. After all hardware is received for a site job, cable integration and a full cabinet check is performed. If at any time during these procedures problems occur with an equipment component, MDA contacts the designated vendor customer support representatives for immediate problem resolution and/or replacement of the effected component. After software loading is completed, additional hardware checks are performed to ensure hardware operational capability which can not be performed without the system software. Additional control on the vendor products is provided through warranty stipulations for all products.

If the quality of the products prove themselves in the initial stages of the program, then the pre-installation hardware checks may be deleted to reduce turn around time and repackaging damage to the products. However, the hardware checks will still be carried out when the system is installed at the sites. Hardware vendors are on contract to supply warranty service for their products.

Software supplied by vendors and utilized within the AMHS System is reviewed and checked by our software development team. Direct contact between the AMHS software development staff and the vendors through discussions and meetings is an ongoing process. This constant dialog ensures the quality and operability of the final software product. When necessary, personal visits to vendors are performed. A close working relationship has been developed which enhances our influence on the vendor schedules and efforts.

2.3.2.4 ILS Specified Requirements

During the development phase of the proposal process, vendors were required to produce reliability and maintainability reports on their equipment. They were also required to state their supportability capabilities. Each vendor is required to provide a Certificate of Performance on their products

2.4 Government ILS Organizational Interface.

The AMHS ILS interface with the ESC ILS organization is through the ESC ILS Manager for all Logistics and Training actions. The primary formal interface structure is the Logistics/Training Working Group (L/TWG). The ESC ILS manager is the chairman, and the MDA ILS manager is responsible for interfacing all Logistical matters through this group. Minutes are produced for each L/TWG as directed by contract F19628-90-D-0029, CLIN 0102. Other organizational interfaces include Technical Interchange Meetings(TIMs), Program Management Reviews(PMRs), and Implementation Planning Working Groups(IPWGs).

Figure 2.4-1. MDA/Government ILS Organizational Interface

2.5 Design Interface Planning and Reporting

Design Interface Planning and Reporting efforts are tailored to the AMHS program and primarily include the actions and activities required for the program through the Integration, Deployment, and ID/IQ Phases.

2.5.1 Approach

Our approach is to tailor DOD 5000.39 series to fit the needs and requirements of the AMHS program. It is directed toward establishing Integrated Logistics Process (LSP) processes for the purposes of analyzing data when required, due to operational need or design change and providing results and/or alternative supportability solutions. Processes will be accomplished in an orderly manner and documented through database management systems. ILS interfaces include, but are not limited to the following:

- Utilizing Specialty Engineering data such as R & M to determine supportability impact in the areas of sparing, manpower, training requirements, and support equipment.
- Coordinating with Budget Management to determine impact on life cycle cost.
- Coordinating with System Development Engineering on operational criteria and restraints.
- Performing trade studies for optional supportability methodologies.
- Performing studies on alternative maintenance concepts.
- Packaging, Handling, Storage, and Transportation (PHS&T) impacts.
- Deployment and installations impacts.

2.5.2 Integration

The MDA ILS program is integrated into the engineering activities to ensure that logistical issues influence system design. In the course of defining the hardware architecture, Logistics was key in determining the impacts of component redundancy, life cycle costs, and production and sparing issues on the AMHS system design.

Figure 2.5.2-1 illustrates the integration of the ILS program. As engineering decisions are formulated, Logistics influences these decisions to ensure the system is maintainable and supportable in addition to being technically correct. While the majority of the hardware component decisions have been made during the proposal phase of the program, TRNs and ECPs will introduce new component options that will upgrade the existing design. Consideration of each component modification or addition must incorporate maintenance and life cycle cost issues to ensure the AMHS remains economical beyond the development phase and throughout the life of the program. This shall be a ongoing process for the life of the AMHS program. These same issues must be considered in case already selected components prove to be unreliable or production/ delivery problems arise.

The audit trail of ILS involvement in engineering activities is accomplished specifically through weekly internal status reviews held with the MDA AMHS Program Manager and are summarized in formal PMRs and TIMs, where applicable. ILS influence is evidenced through participation in in-house design reviews and formal reviews.

Figure 2.5.2-1. ILS Interfaces and Audit Trail for System Engineering

2.5.3 Controls and Reporting Procedures

Formal and informal in-house procedures used to ensure that logistics considerations have been made are reflected in the matrix in Tables 2.5.3-1 and 2.5.3-2. He is a primary participant in all program and technical reviews, when required. His function is to ensure that logistics considerations have been incorporated into all appropriate program activities. As required, he is made aware of program planned activities such that he can personally provide guidance to other engineers or can see that appropriate expertise is provided during the formulation of engineering concepts, designs, or approaches.

CDRL	Title	O&M	Tech Pubs	Tng	Supply	ILS Mgr
0101	Master Integrated Program Schedule	X	X	X	X	X
0102	Conference Minutes	X	X	X	X	X
0103	Engineering Change Proposal	X	X	X	X	X
0104	Specification Change Notice	X	X		X	X
0105	Engineering Drawings, Installation	X	X		X	X
0106	Version Description Document (VDD)					X
0107	Site Preparation Rqmts & Install Plan	X			X	X
0108	S&T Rpts, As-Build Documentation	X				X
0109	Information Sys Accreditation Document					X
0110	Contract Schedule Status Report					X
0111	Software Design Document				X	X
0112	Software User's Manual/ UPHs	X	X	X		X
0114	Software Product Specification					X
0115	S & T Reports; FRACAS	X			X	X
0116	Test Plans/Procedures					X
0117	Test Reports					X
0118	Trainee Guide		X	X		X
0119	Lesson Plan		X	X		X
0120	Training and Training Course Completion Rpt			X		X
0121	Integrated Support Plan	X	X	X	X	X
0122	S & T Rpts; TRN					X
0123	Technical Information Report; Work Plans					X

Table 2.5.3-1 Logistics Control Points for ID/IQ Contract

This Page Intentionally Left Blank.

3.0 ILS PROGRAM TASKS

3.1 Introduction

This section contains the list of SOW and MIL-STD 1388-1 and 2 tasks which have been called out in the SOW as deliverables and non-deliverables. A detailed description is provided on how these tasks will be accomplished.

3.2 SOW Required Tasks

3.2.1 Prepare and Maintain a Spares and Consumables List

This effort commences with provisioning and continues throughout the life of the contract. Analysis of vendor provided recommended sparing and consumables was performed to form a base for initial sparing based on each site size.

A list of recommended spares is found in Appendix C. It includes the National Stock Number (NSN), if assigned, original Vendor Part Number, Contractor and Government Entity (CAGE) Number, if available, and recommended sparing quantities for each site size. This list also contains the Vendor addresses. This list will be updated every four months for the duration of the contract. The recommended spares listed in Appendix C. are, in fact, now supplied with each ALPHA system to the sites as part of the hardware installation inventory.

3.2.2 Prepare User Positional Handbooks

As part of provisioning, vendors are required to deliver copies of all hardware technical data and software manuals. Because this requirement for user positional handbooks (UPHs) is software related, a significant portion of the information required to complete the task comes from the software manuals.

UPH development and maintenance occurs incrementally and is contingent upon receipt and review of both vendor-supplied hardware and software manuals, and internally developed software code.

UPH development occurred in stages. First, the training department reviewed the pertinent vendor supplied documentation. Next, it read and analyzed the engineering design documentation. Then it identified user tasks. Once the tasks were defined, a working outline for each positional manual was developed. Finally, the contents of the manuals were completed and internal review was held to insure accuracy. Because of the phased testing and addition of functionality, the UPHs were completed and submitted to the Government for review as a series of drafts.

The UPH submission schedule was synchronized with the IPAT schedule. A first draft of the UPHs was submitted for Government review 29 January 1993. Since that time, 5 drafts have been submitted representing significant changes in the software and/or hardware. The latest draft is dated 29 December 1995.

Updates to the UPHs may be necessary due to changes to the software initiated by TRN or ECP. If these updates do not represent a new version release of the AMHS then they will in the form of change pages or Appendices. Submission of the changes will be made to the Government within 45 days of the formal testing of the TRN or ECP.

3.2.3 Establish and Maintain a Current Technical Library

A master library set for all AMHS technical documentation is established in our Configuration Management office to control and maintain all hardware and software documentation. The Maintenance Section maintains copies of each activated site drawing, rack configuration, and working copies of all necessary maintenance technical documentation. The Training Sections maintains working copies of all vendor and MDA produced UPH documentation.

3.2.4 Prepare Training Plan

The AMHS training plan addresses the skills and knowledge required by all of the functional positions identified in the AMHS System Specification. In doing so, we ensure that trained and qualified personnel can use the AMHS to complete their mission. Appendix A to this plan presents our training plan. A tailored training plan will also be created for each site as they are installed.

3.2.5 Training Conferences

An initial training conference was hosted by the ILS training function in conjunction with the System Requirements Review (SRR). The specific agenda and attendees were developed after coordination with the Government. This initial meeting was the first formal meeting of the Logistics/Training Planning Working Group (L/TWG).

A training conference is also required in conjunction with each incremental Critical Design Review (CDR). The training conference for Increment I was held in McLean, Virginia on 17 January 1992.

Other training conferences must be held thirty to sixty days prior to the first operational installation of each increment. The training conference for Increment I was held in Rome, New York on 12 March 1993.

Meeting minutes are drafted and distributed within 10 working days following each conference. Final approval and content of all published minutes is the responsibility of the ESC Program Office. Minutes were issued and approved by the Government for each of the conferences held to date.

3.2.6 Logistics Guidance Conferences

A Logistic Guidance Conference was held in conjunction with the SRR on 27 November 1990. It was co-chaired by the AMHS ILS Manager and the Government ILS Manager. The

meeting included a review of the draft ISP and clarification of logistics and training questions still outstanding in developing system design and logistics interfaces.

Meeting minutes were published and distributed within 10 working days after the conference.

3.2.7 Logistics/Training Working Group Meetings

In addition to the scheduled Training Conferences, it has been agreed by both contractor and ESC PMO that a combination Logistics and Training Working Group meeting will be held periodically to discuss matters pertaining to the status of the AMHS program areas of logistics and training. These meeting will be chaired by the ESC ILS Manager and include an open membership of those individuals and/or organizations whose interests warrant membership by Charter direction. The L/TWG meetings are scheduled in conjunction with other required meetings when possible. MDA is responsible for all minutes in accordance with contract F19628-90-D-0029, CLIN 01022. The LTWG meeting have been an integral part of the AMHS program since it's conception and will continue to do so.

3.2.8 Prepare and Maintain a Maintenance Plan

This requirement is not listed as a CDRL deliverable, and therefore will not be addressed as such. However, to express our maintenance concepts the information below is written to SOW 3.3.

3.2.8.1 Objectives of O & M Support

The primary objective of the AMHS ILS management is to provide timely, effective, and professional operations and maintenance support to the AMHS system throughout its life cycle of integration, deployment, and the ID/IQ phases of the contract. This shall be accomplished by:

- Establishing the most efficient organization with the proper skills, procedures, and controls to accomplish the requirements of the Contract, SOW, and System Specification.
- Providing an effective training program for user personnel to include clear and concise positional handbooks.
- Implementing methods which will assure the users of prompt and effective hardware and software maintenance support as required by the current contract.
- Ensuring that sufficient sparing is available at all times to meet day to day needs as well as critical situations.

3.2.8.2 Operations Support for Integration

The AMHS Engineering function is organized to assume full responsibility for all operational-oriented tasks required of the AMHS Program. Our engineering function will perform operational checkout of the system prior to use by the Government and stand by to offer assistance. Logistics personnel will provide the necessary tools and support equipment required of the tasks.

3.2.8.3 Hardware Maintenance and Supply Support for Integration Assets

The primary hardware maintenance and supply support is established and managed by AMHS Logistics located at the MDA AMHS office in Fairfax, VA. The AMHS Logistics office shall support all AMHS Government procured hardware systems and equipment located at the Fairfax office for the duration of the contract. This support includes:

- Providing receiving and inventory support,
- Hardware build and cable integration,
- Hardware checkout prior to operational use,
- Performing troubleshooting and repair actions,
- Vendor and customer coordination,
- Spares storage and accountability,
- Repair parts turnaround,
- Trained hardware technicians through formal and informal training.

The above hardware logistical support was activated prior to RPV testing with the proper hardware skills to support all requirements. It successfully supported the integration, RPV, In-Plant Acceptance Testing, and optional demonstrations phase of the contract. At the same time, our Supply Support function was equipped with the proper sparing and necessary support equipment to support the engineering section. Both maintenance and supply activities were designed to carry on support for the duration of the contract.

3.2.8.4 Software Maintenance Support for Integration Assets

The AMHS incorporates software obtained from several vendors, including ACC, Applix, DEC, and Verity. The initial purchase of the AMHS includes all of the required vendor provided software and licenses. The licenses are permanent licenses and do not expire; however, sites must insure that requests for software service renewal are provided, along with appropriate funding, to the Program Office prior to expiration of the support/warranty. Delivery documentation provided with the AMHS will identify vendor warranty expiration dates. Software services must be current in order for MDA to provide support, patches, and version upgrades.

3.2.8.5 Hardware Maintenance and Supply Support for Deployed Assets

It is the goal of MDA to supply its customers with quality built hardware AMHS system when it arrives on site during the installation phase and provide the proper support for the system until official release to the Government. The below constitute the actions MDA takes to initially provide the customer with a quality hardware suite.

3.2.8.5.1 Hardware Support and Processing at MDA, Fairfax, VA

• Each component is visually checked for damage and inventoried against the purchase order and receiving report.

• All items received are inventoried and this data entered into a database (FileMaker Pro).

• Once all items are received the hardware components are integrated into appropriate cabinet.

• Required components are affixed with labels to include all cables per the specified drawings.

• The HW suite is then checked with built in diagnostics provided by the vendor supplied diagnostics.

• After successful completion of hardware testing, the hardware suite is processed for software loading, software testing, and QA inspection by MDA QA and Government DCAS.

• The hardware suite is processed back to the logistics office for final inventory, tear down, and packing.

• The logistics office arranges and coordinates all shipping to the sites.

3.2.8.5.2 Hardware Support and Processing Upon Site Arrival

• A MDA hardware technician unpacks and performs a component inventory with a site representative. Inventories are signed and copies are provided to the site. The inventories include all sparing components, documentation, and vendor software provided with the system.

• The hardware suite is reassembled in final form and checked out.

• Copies of inventories are turned over to the site personnel for their use.

• The hardware suite is turned over to the MDA software installer for continued processing and testing.

3.2.8.5.3 Day to Day Hardware and Supply Support to Deployed Sites

The above constitute all actions and support from the initial receipt of components to the hardware turnover at the site. At all times while the hardware is under MDA management all systems, components and hardware shall be provided day to day support until the system is officially turned over through the DD Form 250.

AMHS tailored databases will provide the needed information to report on performance and warranty information. Using information from these databases, the Program Management Office will be kept informed of maintenance problems through the CUBIC system which could impact

the schedule or results of the AMHS integration or operational activities. Also, warranty and performance data will be reported at Program Management Reviews.

During the life cycle of the program, all system hardware, software, support equipment, and documentation shall be maintained to the current configuration. The primary means of ensuring this is through baseline and formal Configuration Control Board (CCB) controls. All hardware and software changes which will affect fit, form, or function will be coordinated through the Government's Program Office. Any request for non-incorporation of a vendor recommended update shall be supplied by MDA to the PMO along with the justification for not incorporating the change.

The original MDA plan to support all installed sites through the proposed five Regional Support Facilities (RSF) has changed. Currently, the revised plan of action is to support all installed hardware and software from the MDA AMHS office located in Fairfax, VA. All problems, hardware and software, will be reported to this centralized location. Detailed information on this plan is discussed in the following paragraphs.

3.2.8.6 Software Support for Deployed Assets

The MDA AMHS staff is organized to maintain and enhance the AMHS software as required by the contract and through the CUBIC Configuration Management Plan. MDA AMHS CM is charged with acting on all CUBIC Problem Reports(PRs) and/or CUBIC Change Request(CRs) when notified by the Government through the CUBIC process. MDA AMHS CM has a process in effect which ensures that all change requests are reviewed upon completion and tested prior to being made a part of the baseline. The software and SOW specified documentation is then delivered to the Government for testing and verification. Only after Government release will MDA AMHS CM duplicate and distribute the software and documentation to the AMHS sites.

The MDA AMHS CM office shall provide a monthly PR/CR status report which entails the current status on all open PRs/CRs. This report includes the following information:

- Date of Submission,
- Date Work Plan sent to Government,
- Date of Notification from Government to begin work,
- Labor hours and schedule required to fix/develop the software,
- Total hours used to date,
- Total hours used this reporting period.

MDA AMHS currently provides a work plan for each category 1 PR received, and for any other PRs/CRs the Government approves, Each work plan is in the format as specified by the CUBIC Configuration Management Plan. All critical(Category 1) Work Plans are provided to the Government within 2 working days. All others are provided within 10 working days. Extensions may be requested by MDA on non critical PRs with approval by the Government.

All critical hardware problems which could impact the schedule results of AMHS integration or operational activities will be verbally reported to the Government PM and followed with a letter outlining the problem, the impact, and actions taken to rectify the problem. In addition, MDA AMHS has established a monthly hardware maintenance review for the purpose of reviewing all FRACAS reports which have occurred during the previous 30 days. The data gained from this review is used for monitoring vendor hardware performance and detecting trends. The information is also used in a Quarterly Summary of Performance summary which is provided to the Government PMO. This same data will be used in Program Management Reviews. More information is contained under the following paragraph

3.2.8.7 Failure Reporting, Analysis and Corrective Action System(FRACAS)

MDA has established a Hardware and Software FRACAS system which meets the basic requirements of Mil Std 785 as pertains to COTS products. The hardware reporting encompasses analysis down to the assembly, subassembly, component or part failures as allowed by the vendors to ensure warranties are not voided. This allows MDA the information necessary to deal with our current vendors once pattern and/or catastrophic failures occur at the outset of hardware integration through the turnover of hardware to the government Program Office through the DD Form 250. MDA terminates all responsibility for the hardware and data collection for each site installation once the hardware system is officially turned over to the site customer. CAF hardware responsibilities continue for the length of the contract.

MDA Logistics will prepare and submit a quarterly summary report of all hardware failures to the ESC AMHS Program Office the first week following the end of each quarter. The data elements which will be shown are:

- FRACAS Report Number and date
- Failed item Nomenclature
- Model/Part #
- Serial #
- Next Higher Assembly (NHA)
- NHA Serial #
- Vendor
- Assignment (Site Name or CAF)
- Failure Date
- Failure Phase (HW Test, SW Test, Site Test, Site SW Test, Training/Operational)
- Operational System Impact

- System Down
- Symptom
- Failure Key
- Repair/Replacement Date
- Time to Repair
- Primary System Operational Start Date
- Remarks

All FRACAS software reporting/analysis requirements are presently being satisfied through the CUBIC reporting procedures. MDA submits a monthly PR/CR status report as well as work plans on each government approved category 1 PR.

3.2.8.8 AMHS Support "Hotline"

The "Hotline" is a telephonic service which is located at the MDA AMHS office. It provides support to the users as well as any MDA AMHS field support representatives in the areas of trouble shooting requests, training support requests, operations and maintenance. There is also a separate consultation and informational support line. For more information about the Hotline, see paragraph 3.2.8.5, Problem Reporting and Procedures. While the site fielded hardware is turned over to the site through pass through warranties, software support continues via TRN authorized support. Site hardware support will be provided to the MDA installation team during the installation only.

3.2.8.9 Problem Reporting and Procedures

All software support is centered at the MDA AMHS office in the Fairfax, VA office. Any dispatches of technicians and engineers are initiated from this office. All problem reports reported via the Hotline are logged into a database for tracking and historical records. The priority of these hotline calls is based on the CUBIC priority system and is established by the sites.

3.2.8.10 Priority Codes and Problem Reaction Times for Hotline Calls.

Initially, the site determines the call priority using the following CUBIC guidelines:

- Emergency, Impact Code 1: This code is assigned whenever "mission failure occurs or probable mission failure is expected." In accordance with CUBIC procedures a local official, only a 06 or above, can authorize a code 1 problem.

- Urgent, Impact Code 2: This code is assigned whenever "significant mission support degradation occurs."

• Routine, Impact Code 3: This code is assigned whenever "minor mission degradation occurs or when an emergency or urgent priority is not applicable."

When a problem is encountered, the site calls the appropriate phone number based on this priority. The phone numbers are:

Code 1 (site down) 703 219 3920

Codes 2 /3 (problem or question) 703 219 3879

The Code 1 phone is manned 24 hours, seven days a week. However, for the times outside of 0700 to 1600 Monday through Friday, EST, an answering service is active. When a Code 1 call is received, the answering service pages the appropriate MDA AMHS standby individual. This person will return the site's call as soon as possible, but normally within 20 minutes of notification. The focus of the support engineer assisting a site with a Code 1 call is to get the site operational as quickly as possible. This may be accomplished by developing a temporary work-around to the problem. Once the site is operational, the call is no longer an emergency and further examination of the problem is post-postponed until the next business day. All Code 1 calls are reported to the PMO. It is the prerogative of MDA to re-prioritize Code 1 calls if it is determined at the onset of the call that the site AMHS is indeed operational.

The Code 2/3 line is manned from 0700 to 1600 Monday through Friday, EST. An answering machine will be available to take messages outside of the regular business hours. These calls will be returned the following business day. The focus of the software engineer answering code 2/3 problems is to (1) identify the problem, (2) determine if the problem is within the AMHS or from another source, (3) walk the site System Administrator through the fix to the problem or, if a fix is not possible, suggest a work-around, and (4) advise the sites when to generate CUBIC PR/CRs.

It is the site's responsibility, regardless of priority, to submit the CUBIC Problem Report (PR) forms if one is determined to be necessary.

3.2.8.11 On Call Maintenance and Supply Support

While on a site installation MDA personnel will not attempt a component swap without the approval of the Site Security Officer.

As stated above, each installed site will have a complete backup sparing kit for all critical components located on site. Should a component need swapping out during the AMHS installation, the MDA AMHS office located at Fairfax, VA will contain a reasonable amount of sparing to be used for backfill and provide for quick turnaround times for maintenance.

3.2.8.12 ILS Data Base Management Systems

Database management systems play an important role in the AMHS ILS program. The selected File Maker Pro database system provides system hardware and spares acquisition control, inventory management, and repair status.

This system is used to detect trends and allows for inventory reconciliation's which keep current serial number data for each installed site.

3.2.8.13 Delivery of Maintenance and Supply Contracts

Copies of all maintenance and supply contracts utilized on the AMHS Program will be provided to the Government. Logistical maintenance and repair of non-warranted hardware will be provided by the vendor on a time and material basis. This applies only to items not covered with the maintenance contracts. and only for that AMHS hardware physically located at the Contractor AMHS Facility (CAF) located at Fairfax, VA. Currently there are no maintenance and supply contracts associated with the MDA AMHS program.

3.2.8.14 Preventative Maintenance (PM)

The current AMHS hardware now requires only three PMs. All PM are consider user responsibility and require no technical support to perform them.

- The TZ87 Tape system supplied as part of the Alpha Server 2100 requires periodic tape cleaning. The tape unit is supplied with a LED indicator that alerts the user when it is time to run a tape cleaning tape through. Detailed instructions are supplied in the TZ87 Owner's manual supplied with delivered system.

- The external form rubber filters located in back of the face plate of the Alpha Server 2100 require periodic cleaning by warm water soaking and rinsing.

- The external form rubber filters located behind the front face plate of the BA350 RAID controllers require periodic cleaning by warm water soaking and rinsing

3.2.9 MIL-STD 1388-Task 1 (Post Production Support)

Vendor reliability and supportability data received account for the inputs to this DID. All hardware items are currently in production and available with minimal lead time. No non-developed items (NDI) are currently planned for the system. Refer to Appendix B for a detailed explanation of our Post Production support efforts.

3.2.10 Other Standards

No other standards apply to this contract.

4. 0 ILS MILESTONE SCHEDULES

With the advent of the portion of the contract the Master Integrated Program Schedule(MIPS) is a composite of all AMHS tasks required, including ILS tasks and schedules, to support all site installations. This documents is to extensive to include in the ISP and can be viewed at the ESC Program Office where a current copy is kept on file at all times.

This Page Intentionally Left Blank.

APPENDIX A

AMHS TRAINING PLAN

This Page Intentionally Left Blank

10. GENERAL DESCRIPTION

This Training Plan presents the MDA framework for developing and conducting effective training for all functional positions identified in the contract. The following paragraphs detail our blueprint for producing trained and qualified personnel to support initial testing and site mission. It is intended to show the general structure of training. A detailed training plan containing training specifics such as the number of users to be trained, class size and class schedule will be designed for each site. This information will be placed in the site's SPRIP.

10.1 Training Management

A successful training program results from the effective management of a disciplined training development process. Our program for the AMHS is such a program. It is one which overlays numerous management checkpoints onto the Instructional Systems Development (ISD) model prescribed by MIL-STD 1379B. This combination of strong management oversight with a disciplined process guarantees a successful training effort. Figure 10.1-1 illustrates both the major tasks of the ISD model, and the management checkpoints in our program.

The use of the ISD model ensures the participation of all necessary personnel in the development process. Inherent to the flow of the process is the continuous interaction among engineering, training developers, and the users. This interaction begins at the start of the development, and proceeds through each stage of the Instructional Systems Development model. Through the analysis, the design, the development, the implementation, and the evaluation stages, the review process provides the feedback necessary to ensure the development of effective training. Additionally, validation of our courses is partially supported through RPVs, and test facility activities.

In accordance with Statement of Work (SOW) paragraph 3.8.5.5, Training Conferences will be held throughout the contract period to review the training plan and the training materials. These conferences will be held at each incremental CDR, and the final review of the training materials will occur 30-60 days prior to the first operational installation of each increment.

In addition, if directed by Government Delivery Order, the training materials will become a contract deliverable and as such, undergo the same review cycle as all other contract deliverables.

The recurring progress/status reviews, the continuous interface among developers and the customer at the Technical Interchange Meetings (TIMs), the Training Planning Working Group (TWG), Program Reviews, and Government validation, will provide the feedback necessary to ensure that all needs of the users are communicated, understood, and satisfied.

10.2 Training Approach

Developing effective, low cost training for the five user groups identified, who each possess diverse responsibilities and perform discrete functions, is the challenge of the AMHS training effort. To meet this challenge we have incorporated the concept of modular design into our training program.

Each module encompasses a function of the AMHS system. Examples of training modules would be the functions "Notices" and "Simple Queries". The first module could be included in most of the courses, while the second example would likely be included in only the Analyst's course.

A course is created by assembling the combination of modules needed by each of the five separate positions of Message Administrator, System Administrator, Profile Administrator, Information System Security Officer, and Analyst. This effort will result in the development of four courses; System Administrator, Profile Administrator, Information System Security Officer and a combined User and Message Administrator course.

The modular approach to course development provides greater flexibility to adapt our modules for incremental additions, approved PNDI/NDI upgrades, and site specific requirements. In addition to this, our modular approach provides these benefits:

- Actual training time is reduced; trainees will only participate in the course modules required for their function.
- Courses are tailored to specific tasks.
- Course development time is reduced: we are, in essence, only developing one course with multiple modules. An independent module may require expansion to support a specific position.
- Rapid availability for implementation through each increment; course development paces software integration and development .

The goal of our training effort is to bring all five user groups to a skill level which will enable them to apply the AMHS capabilities to their operational environment.

Entry level competencies assume each user has an understanding of his current functions, and each user possesses human machine interface experience to include mouse, keyboard, and windowing technologies. We also expect a high degree of knowledge of UNIX operating system by the System Administrator.

10.3 Formal Over the Shoulder Training (FOTS)

For training accessibility and ease of use for all members of the AMHS community, our Formal Over the Shoulder (FOTS) training may be conducted directly on the AMHS. The only additional required training equipment is an overhead projector. The FOTS training courses will be updated and modified as new capabilities resulting from increment upgrades are added. Upgrades and modifications resulting from the TRN process will be included with each TRN as applicable. Subsequent portions of this plan detail the specifics of the training course.

20. TRAINING LENGTH

The length of the AMHS training program depends on the user position involved. Table 20-1 presents our class time estimates for each of the four courses. If an individual performs more than one function, e.g., System Administrator and Profile Administrator, the user will be required to attend all applicable courses. However, no one course exceeds 40 hours.

The total amount of formal training delivered is 80 hours. Note that the total of the four courses does not add up to 80 hours. Sites will determine what additional training (additional formal classes, floor support) they prefer in order to total 80 hours.

Position	Class Hours
Analysts/Message Administrator	12 hours
Profile Administrator	16 hours
Information System Security Officer	4 hours
System Administrator	24 hours

Table 20.-1 Training Length for Each FOTS Course

The course created for the analysts will consist of modules which train the functions necessary to operate the AMHS to satisfy their daily mission.

The Profile Administrator, Information System Security Officer and System Administrator receive an overview of the AMHS functions. However, the majority of each of these courses covers the areas unique to their job functions.

It is expected that the System Administrator will be available throughout the installation period to receive informal, hands-on training by the installation engineers.

Note that it is recommended that all four courses be taught at each site. However, the site has the option to select which courses are to be taught as long as the total number of hours does not exceed 80 hours of classroom training.

30. METHOD OF PRESENTATION

The methods of presentation to be employed in the training of the AMHS personnel will include a combination of lecture, demonstration, and hands-on activities. The lecture to hands-on ratio is approximately 20/80; twenty percent of the training time will be spent in lecture and demonstration of the functions, and eighty percent of the training time will actually be spent on the AMHS system. Table 70.-1 indicates the amount of hands-on training to be provided to each student.

The number of students in each class is determined by the site. However, by contract, there can be no more than 20 students per class with no more than two students per available workstation.

40. MANUALS OR TRAINING EQUIPMENT NEEDED

The software user's manuals and vendor manuals were used to develop the FOTS training for the AMHS effort.

Manuals needed in the FOTS training will consist of the User Positional Handbooks, the Instructor's Guides, and the Student Guides.

The hands-on portions of the FOTS training can be conducted directly on the AMHS workstations. A workstation must be available for each training participant. No additional hardware is required. The lecture portion of the training will require an overhead projector.

The AMHS Program Office purchased a suite of hardware which can be requested by sites for training. This mobile system (MTS) is composed of one workstations and four x-terminals to accommodate up to ten students. It is a stand-alone system and will be loaded with unclassified data so that it can be assembled anywhere. This gives site's who have difficulty fulfilling the classroom requirements another option. However, training on this system is less effective because students will not have the advantage of using their own account and accessing real message traffic. For more information on how to reserve the MTS, contact the AMHS SPO.

50. LOCATION OF TRAINING

FOTS training shall be provided during the site installation. It will normally occur for a two week period after the site has been accredited. However, this can be modified if the site elects to use the MTS.

At each site, training requires a classroom suitable to contain the projected number of students. The classroom will be used for the lecture portion of the training. An overhead projector is required.

The hands-on portion of the training will occur at the workstation location using the AMHS. It is recommended that there be no more than two students per workstation.

60. PROPOSED SCHEDULE FOR TRAINING COURSES

The schedule for the implementation of the FOTS training will be coordinated with each site during the site survey. Although the site can select any combination of courses up to a total of 80 hours of classroom training, it is recommended that the site receive all four courses. It is also recommended that the courses be presented in the order shown in Figure 60-1 and that at least one System Administrator attend all four courses.

Sequence	Course Title
1	System Administrator
2	ISSO
3	ISSO Analyst/Message Administrator
4	Profile Administrator

Figure 60.-1 Recommended Sequence of Training

70. NUMBER OF HOURS OF HANDS ON-TRAINING TO BE PROVIDED EACH STUDENT

The AMHS training courses are designed to maximize the amount of hands-on instruction and minimize the lecture portion. However, the exact ratio is dependent on the material which is presented. For example, the Analyst course lends itself to a great deal of hands-on experience and, therefore, the ratio of hands-on to lecture is about 80% to 20% respectively. By contrast, the System Administration course has a great deal of information which can only be presented via lecture; therefore, the ratio of hands-on to lecture is about 40% to 60% respectively.

Position	Total Class Hours	Lecture Hours	Hands-On Hours
Analyst/Message Administrator	12	3	9
Profile Administrator	16	8	8
ISSO	4	2	2
System Administrator	24	14	10

Table 70.-1 Amount of Hands-On to Classroom Training Time Per Student

80. TRAINING DESCRIPTION

80.1 Format

The training materials comprise instructor guides, view graphs, student guides, and student evaluation forms.

The instructor guides contain lecture notes which cover the information that should be presented with the accompanying view graph.

The view graphs contain pictures of the AMHS windows and any additional schematics which are considered helpful.

The student guides contain a copy of the view graph being presented, lecture outlines, the course title, menu paths to the options and commands being presented, and references to the UPHs and other associated documentation as required.

80.2 Objectives

The educational objective of the AMHS training effort is to provide the users of the system with sufficient information and skill to use the AMHS successfully in accomplishing their daily missions.

Specific terminal performance objectives (TPOs) will be created for each user group to be trained. These objectives will identify the final behavior, action, or outcome which results from the training. They are the end goal or the end point of the training.

In addition to the TPOs, enabling objectives, those sub-objectives or component actions, skills, etc., which the student must learn if he is to attain the TPOs, will be created for each training module. These will function as checkpoints that must be passed before reaching the terminal performance objective.

80.3 Syllabus

The specific content of each of the four courses is listed in Tables 80.3-1 through 80.3-4. These were based on a task analysis and represent the activities that each user performs in order to accomplish his daily mission.

Sequence	Lesson Title
1	Introduction
2	Simple Message Retrieval
3	Advanced Message Retrievals
4	Message Composition
5	Message Coordination
6	Special Messages and Other Things

Figure 80.3-1 Analyst and Message Administrators Course Curriculum

Sequence	Lesson Title
1	Introduction
2	Topic
3	Query Manager Window Relationships
4	Queues
5	Access Profiles
6	Thesaurus
7	Notices

Figure 80.3-2 Profile Administrator Course Curriculum

Sequence	Lesson Title
1	Introduction
2	Setting Defaults
3	Establishing User and Group Accounts
4	Audits

Figure 80.3-3 Information System Security Officer Course Curriculum

Sequence	Lesson Title
1	Introduction
2	System Overview
3	AMHS Data Flow
4	Establishing User and Group Accounts
5	RAID/Advfs
6	GIU/Directory Relationships
7	Daily Operations
8	Trouble Shooting
9	Miscellaneous

Figure 80.3-4 System Administrator Course Curriculum

APPENDIX B

POST PRODUCTION SUPPORT PLAN

This Page Intentionally Left Blank

10. AMHS PROCURING ACTIVITY

The MDA-W Material Office, located in Santa Ana, California, is responsible for the coordination and implementation of procurement in support of AMHS. The Post Production Support Plan for AMHS is the responsibility of the MDA AMHS Program Office. The AMHS is being developed and integrated under contract F19628-90-C-0151. Deployment of the AMHS will be under contract F19628-90-D-0029.

20. POTENTIAL OUT YEAR SUPPORT PROBLEMS

Currently, no out year support problems are foreseen with any of the current Vendors. All current hardware and software is expected to be supported for 10+ years.

30. PLANNED PRODUCT DELIVERY TIMES FOR AMHS ITEMS

All materials being purchased for the AMHS program are commercial-off-the-shelf(COTS) items. Accordingly, our concern is with delivery times rather than with planned product production time. Following are the quoted delivery times for each vendor:

Vendor	Delivery Time
ACC	30 Days
AMCO	8 Weeks
Digital	60 Days
Applix	Golden Master*
Verity	Golden Master*

*Golden Master is the authority to reproduce from a master copy of the product.

40. POTENTIAL ALTERNATIVES

The primary alternative to satisfy support problems for the COTS hardware and software items is to search for other COTS products which will provide the same or better capabilities with more competitive pricing. With COTS technological advancements, there are many opportunities to resolve support problems as well as enhance the AMHS. Below are listed the current hardware/software components of the AMHS and alternative sources, where available. All alternate sources can be procured off the shelf. Because the AMHS system incorporates many components which are current state of the art technology, there are several sources which do not have alternatives. We feel that advancing technology will eliminate these particular voids in the near future.

VENDOR	COMPONENT	PART#/ MOD#	PROD TIME	PROBLEM	ALT SOURCE	PART#/ MOD#
Digital	Alpha Sever 4/275	PM-381-AK	60 days	None	None	N/A
Digital	RAID 5 Subsystem	RAID 5	60 days	None	Falcon	RAID 5
ACC	Comm Interface ACP 3020	ACP 3020	45 days	None	Hewlett Packard	CV1710A
AMCO	Verical Frame (Rack)	FX 61-19-36	45 days	None	None	N/A
Applix	Aster*X	N/A	Golden Master	None	None	N/A
Verity	TOPIC	N/A	Golden Master	None	None	N/A

Figure 40.-1 Post Production -- Out Years Supt Problems/Alternatives

50. PLAN FOR LOGISTIC SUPPORT

The useful life of the AMHS system is 10+ years . As stated in previous ISPs, the probability of hardware changeouts was likely and this has occurred throughout the AMHS program as long as there are likely candidates which will afford the program cost performance improvements over the life cycle years. Figure 50-1 above reflects the most current Hardware utilized for the AMHS system alone with the alternative sources if available.

The AMHS system was designed using 100% PNDI hardware in an open architecture precisely to take advantage of this situation. Our plan to ensure effective logistic support over the useful life of the system, and to extend that life continues, and will continue, for the life cycle of the program.

Software upgrades can be expected throughout the life of the system to accommodate site unique requirements and to take advantage of new software capabilities. Software upgrades could include such features as performance enhancements and new functional capabilities.

Our plan to assure effective Logistic support revolves not around LRUs, but rather by keeping current with advancements in COTS products. Not only will we monitor new releases of the COTS products we currently have defined for the AMHS program, but we will keep abreast of new technology, if and when funded, which could aid in the effectiveness of the AMHS system. In brief, we will:

- Keep apprised of changes to current vendor hardware support status through contacts with these vendors.
- Keep abreast of new technology through trade studies and trade conferences.

- Perform desktop analysis of potential hardware which may have positive impact on the AMHS System. This includes demonstrations and hands-on analysis of hardware at the CAF.

This Page Intentionally Left Blank.

APPENDIX C

SPARES SUPPORT REPORT

This Page Intentionally Left Blank

10. INTRODUCTION

This appendix identifies all recommended spare AMHS LRUs and consumables. Part A lists all LRUs, Next Higher Assembly (NHA), Quantity Per Assembly (QPA), recommended spare quantity of each LRU per site size, National Stock Number (NSN), Contractor and Government Entity (CAGE) number, and current ordering address of each vendor. Part B lists all consumables by part number and CAGE number. It also lists two alternative vendor sources and ordering addresses for each.

With the determination of the current AMHS hardware platform and installation of the Contractor AMHS Facility, lists A and B will be updated and reported on every 4 months from the date of this document as requested by the SOW. If no changes occur to the defined sparing within the prescribed period, a letter to that effect will be forwarded to the government.

This Page Intentionally Left Blank