Logistics Management Institute

Functional Description of an Electronic Data Interchange System for Defense Fuel Supply Center

PL002RD1

Morey M. Henderson

LMI

October 1992

Functional Description of an Electronic Data Interchange System for Defense Fuel Supply Center

PL002RD1

Morey M. Henderson

Prepared pursuant to Department of Defense Contract MDA903-90-C-0006.

Logistics Management Institute
6400 Goldsboro Road
Bethesda, Maryland 20817-5886

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

SECTION 1. GENERAL

1.1 Purpose of This Functional Description

This *Functional Description of an Electronic Data Interchange System for Defense Fuel Supply Center* achieves the following:

a. Identifies prospective Electronic Data Interchange (EDI) projects. The following areas have been identified by Defense Fuel Supply Center (DFSC) as candidate EDI projects:

(1) *Into-Plane.* The EDI system will provide an electronic interface between the DFSC and contractors that supply fuel for Into-Plane purchases. Paper invoices and aviation fuel sales slips will be converted to the American National Standards Institute (ANSI) Accredited Standards Committee's (ASC) X12 EDI standard for business transactions. The data exchanged will conform to the *Aviation Fuel Providers and Users (AVNET) Implementation Guide for EDI.*

(2) *Bulk Petroleum Shippers (PIPENET).*

(3) *Posts, Camps, and Stations (PC&S).*

(4) *Petroleum Quality Information System (PQIS).*

(5) *Bulk Petroleum.*

(6) *Electronic Procurement.*

(7) *Electronic Funds Transfer (EFT).*

(8) *Electronic Posting.*

(9) *Bunkers.*

(10) *Electronic Mailing List Applications [e.g., Standard Form (SF) 129].*

(11) *Government Bills of Lading (GBLs).*

(12) *Electronic Point-of-Sale.*

(13) *Natural Gas (Gasflow/Grade).*

(14) *Electronic Aircraft Refueling Identification System (EARIS).*

(15) *Aircraft Identa-plate.*

(16) *Modernization of Defense Logistics Standard Systems (MODELS).*

b. Identifies the system requirements to be satisfied that will serve as a basis for a mutual understanding between the user and the developer.

c. Provides information on system performance requirements, preliminary design considerations, and user impacts including fixed and continuing costs.

d. Is the basis for the development of system tests.

1.2 Project References

Documents supporting this project include the following:

a. *Defense Energy Program Policy Memorandum (DEPPM) No. 89-2*, Office of the Assistant Secretary of Defense (Production and Logistics) [OASD(P&L)] (L/EP), 14 July 1989.

b. *AT&T 3B2 EDI Translator Evaluation*, DLA Systems Automation Center (DSAC)-F, 14 December 1990.

c. *Program Implementation Plan (PIP) for Electronic Commerce*, DFSC-ZF, 28 May 1991.

d. Draft *AVNET Implementation Guide for EDI*, dated June 1992.

e. *EC/EDI/PLUS Project Survey*, DFSC-Z, 14 June 1991.

f. *Economic Analysis of the Program Implementation Plan (PIP) for Electronic Commerce*, DFSC-RO, 13 August 1991.

1.3 Terms and Abbreviations

a. *ASC X12.* An "Accredited Standards Committee" operating under procedures of the American National Standards Institute (ANSI) to develop uniform standards for inter-industry electronic interchange of business transactions.

b. *AVNET.* A joint project of the Air Transport Association of America, American Petroleum Institute, and International Transport Association. The goal of AVNET is to develop EDI transactions to be used by airlines and companies providing the supply or distribution of aviation fuel and related products and services.

c. *EDI.* Electronic data interchange. The computer-to-computer exchange of information in a standard format.

d. *Into-Plane.* A term used to identify the process associated with the payment of aviation fuel sales.

SECTION 2. SYSTEM SUMMARY

2.1 Background

The Deputy Secretary of Defense directed the DoD Components to make the maximum use of EDI for the paperless processing of all business-related transactions. In response to this directive, the OASD(P&L) issued DEPPM No. 89-2 which directed that EDI be used to improve coordination between the private sector and DoD and to reduce costs through the reduction of paper and improved energy management.

The DFSC was designated as the focal point for managing wholesale petroleum and natural gas EDI efforts and for establishing projects to achieve the goals of DEPPM No. 89-2.

2.2 Objectives

The goal of the Defense Energy EDI program is to convert 85 percent of existing, routine paper business documents to the EDI format by the end of FY94. The DFSC established the following subgoals:

a. Eliminate DFSC's manual processing of over 300,000 Into-Plane-related documents a year received from 250 separate private sector fixed base operators

b. Eliminate the manual processing of paper transfer documents between pipeline companies and DFSC's fuel regions

c. Reduce the workload in fuel accounting and control by electronically capturing data at the time fuel is dispensed and by moving that data directly to the accounting systems without using manual processing.

The objective of the EDI system is to provide for computer application to computer application exchange of business information in computer-processable ANSI, ASC X12 standard format. The EDI system will provide the standard interface between software application systems – both internal and external to DFSC's automated information system.

2.3 Existing Methods and Procedures

This subsection briefly describes, by functional area, the current methods and procedures being employed to process documentation and to satisfy the existing interface between computer applications currently being used. The system relationships to manual workflows are also discussed.

a. Into-Plane. Currently, there is no automated interface between aviation fuel suppliers and DFSC. The workflow is as follows:

(1) The fuel suppliers manually prepare and submit paper invoices along with their supporting *Aviation Fuels Sales Slips* (DD Form 1898) for payment of purchases made by approved Government agencies.

(2) The invoices and "sales slips" are mailed by fuel suppliers to DFSC.

(3) Data entry clerks validate critical data indicated on the forms and then they enter the data into the Automated Voucher Examination and Disbursement System (AVEDS). If data errors identified cannot be corrected by the DFSC clerks, the forms are mailed back to the fuel supplier.

Figure 2-1 depicts this entire process.

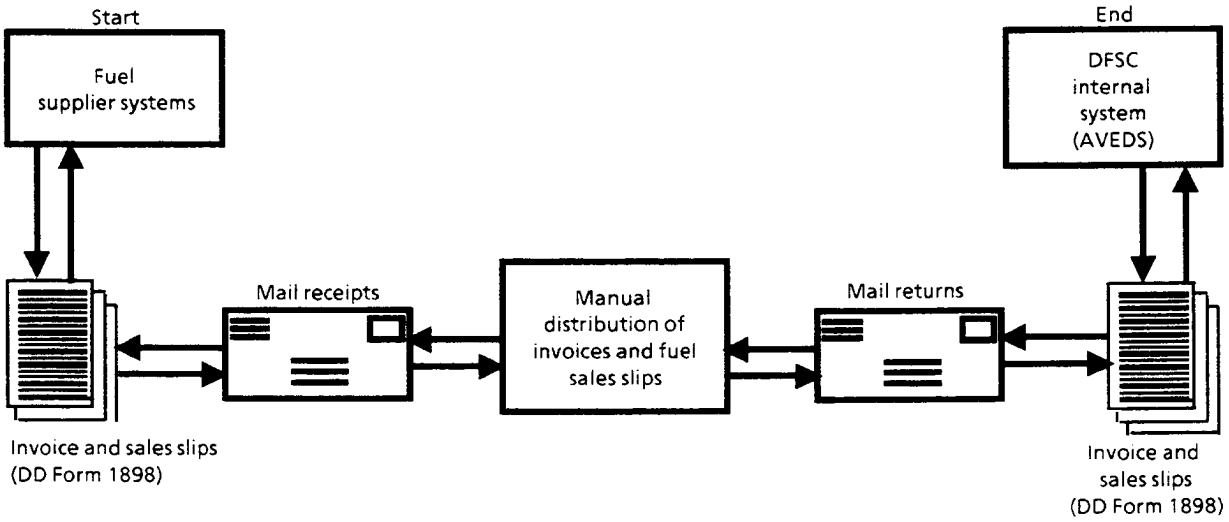


FIG. 2-1. CURRENT MANUAL PAPER FLOW PROCESSING OF FUEL DOCUMENTS

(4) Manual handling and processing of paper documents requires several labor-intensive and costly activities for DFSC. These activities include document sorting, distribution, reconciling and auditing, data entry, error resolution, mailing, and document storage and retrieval. Also, costs incurred associated with the completion of similar operations at the suppliers' sites are passed on to DFSC.

b. PIPENET (to be developed).

2.4 Proposed Methods and Procedures

This subsection describes the proposed workflow methods and procedures by functional area. The workflow is as follows:

a. Into-Plane

(1) Aviation fuel suppliers will transmit, through EDI, invoice data and the associated *Aviation Fuels Sales Slips* (DD Form 1898) data to DFSC using the AVNET conventions for the use of ASC X12 EDI standards.

(2) The ASC X12-formatted data will be automatically converted into a neutral file format by the EDI system and will be released to AVEDS for uploading.

(3) The AVEDS/EDI subsystem will validate the data.

(4) Nonprocessable invoice records will be released to the EDI system for conversion to ASC X12 standards and transmission back to the sender.

(5) Valid invoice records will be identified as EDI records and processed by AVEDS. Figure 2-2 depicts the Into-Plane information flow.

b. PIPENET (to be developed).

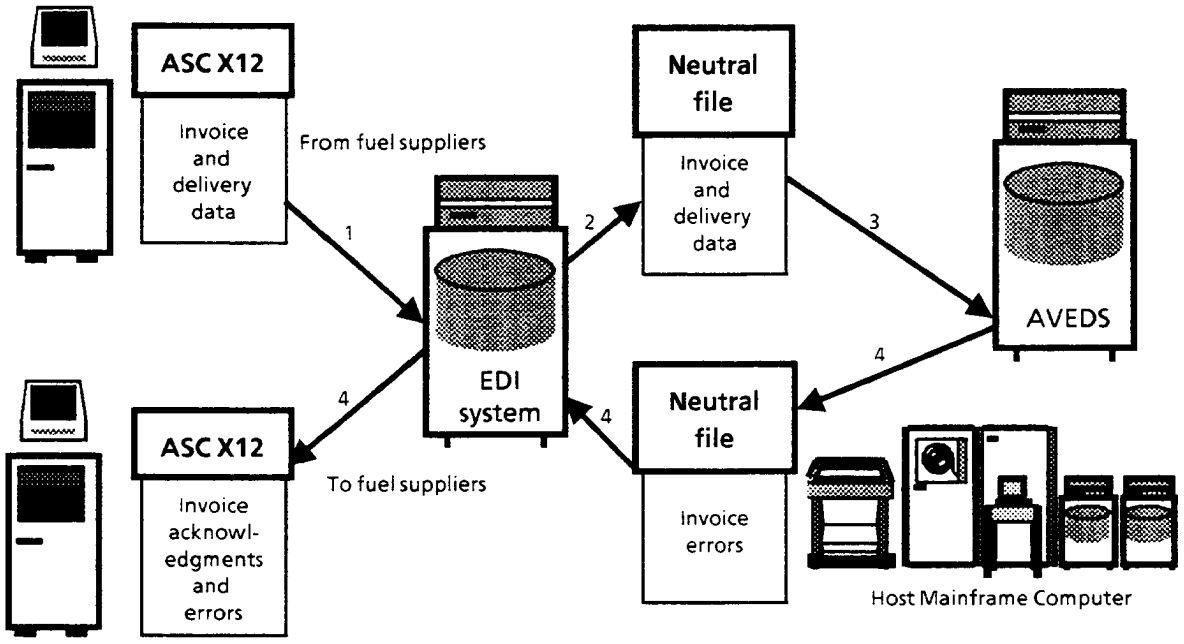


FIG. 2-2. PROPOSED EDI METHOD FOR PROCESSING INTO-PLANE TRANSACTIONS

2.4.1 Summary of Improvements

The use of the EDI system to replace the manual paper document flow will result in direct cost savings. These costs include the cost of document distribution (making copies and distributing them among users); mailing (principally the purchase of stamps and envelopes); document sorting, reconciling, and auditing (comparing the document to other documents); data entry; error resolution (checking for and correcting mistakes); document storage and retrieval; and telephone usage. Other benefits will result from improved information flow and greater data accuracy.

2.4.2 Summary of Impacts

2.4.2.1 User Organizational Impacts. The EDI system will cause a redistribution of resources as a result of the elimination of manual processes associated with paper documents. This redistribution of resources will occur primarily in the areas of document processing and data entry.

2.4.2.2 User Operational Impacts. The EDI system replaces the manual processing of input and output paper documents associated with DFSC's standard systems. The input and output processes of these systems will be impacted the most by EDI.

Other user operations currently associated with processing the data in their electronic form will not be significantly impacted.

2.4.2.3 User Development Impacts. The EDI system only provides a standard electronic interface between application systems. As a result, the current application functions do not change significantly. During development, users will be required to define input and output data requirements, edit criteria, and data security requirements. Users will also be required to support parallel operations during the testing phase of the system.

2.5 Assumptions and Constraints

The focus of the EDI system is on the elimination of manual processes associated with paper input and output documents. Changes to the applications systems should be limited to input and output processes. Other functions associated with the application should not change.

SECTION 3. DETAIL CHARACTERISTICS

3.1 Specific Performance Requirements

Inbound EDI batch transmissions are received daily from participating contractors. Each batch is validated, translated from an ASC X12 format to a file format acceptable to the application systems, and uploaded on demand. Acceptance and rejection data are created for outbound translation. Before and during the translation process, critical files are backed-up for recovery and audit trails are created. Outbound EDI data are downloaded from the application systems in a file format acceptable to the translator. Outbound data are translated into ASC X12 format, prepared for transmission, and transmitted to the participating contractors.

3.1.1 Accuracy and Validity

The EDI system will validate ASC X12 transmission header/trailer formats, transmission and functional group counts, ASC X12 syntax and code compliance and create an interchange and functional acknowledgment transaction set to indicate the results of the syntactical analysis of the electronic transmission. This functional analysis does not cover the semantic meaning and accuracy of the data elements; that is a function of the application program. Tables 3-1 and 3-2 provide the data elements that must be present and valid for AVEDS input records to be accepted.

3.1.2 Timing

The timing of transactions is critical to the smooth flow of work and directly affects the EDI network transmission cost (off-peak hours are less costly).

a. The system will, at a minimum, complete all transaction processing and all communications within 24 hours.

b. The system will respond to users in 3 seconds during on-line editing and updating.

c. The communication, translation, and security subsystems are subordinate to the system control subsystem.

d. Production transactions will be given priority over test transactions during the testing period.

TABLE 3-1

INVOICE RECORD

Data element (# positions)	Validation – Legal values
CONTR.AGRMT.NO.ABRV (7)	POSITIONS 1-2 MUST BE GREATER THAN 79 AND BE NUMERIC. POSITION 3 MUST BE A, B, C, D, F, L, M, N, P, Q, R, S, T, X, Y, Z. POSITIONS 4-7 MUST BE NUMERIC; REQUIRED.
INVOICE.NO (6)	MUST BE ALPHANUMERIC; REQUIRED.
DOD.FM.1898.SERNO.DATE	MUST FALL WITHIN THE BILL.MOD.EFF.PERD; REQUIRED.
DOD.FM.1898.SERNO (7)	LENGTH MUST BE 7. POSITION 1 MUST BE ALPHA. POSITIONS 2-7 MUST BE NUMERIC. ALL MUST BE UNIQUE; REQUIRED.

TABLE 3-2

SUPPORTING AVIATION FUELS SALES SLIPS

Data element (# positions)	Validation – Legal values
CONTR.AGRMT.NO.ABRV (7)	POSITIONS 1-2 MUST BE GREATER THAN 79 AND NUMERIC. POSITION 3 MUST BE A, B, C, D, F, L, M, N, P, Q, R, S, T, X, Y, Z. POSITIONS 4-7 MUST BE NUMERIC; REQUIRED.
DD FORM 1898.JULN.DT (5)	MUST FALL WITHIN THE BILLED.MOD.EFF.PERD; REQUIRED.
DOD.FM.1898.SERNO (7)	LENGTH MUST BE 7. POSITION 1 MUST BE ALPHA. POSITIONS 2-7 MUST BE NUMERIC. ALL MUST BE UNIQUE; REQUIRED.

3.1.3 Capacity Limits

The implementation strategy calls for a pilot test with phased implementation of application areas. Initial transaction volumes will be small and build to a total of 220,000 per year over a 5-year period.

3.2 Functional Area System Functions

a. Into-Plane. An AVEDS EDI subsystem will integrate EDI data files (invoice and delivery tickets) for processing by AVEDS. The subsystem will initiate the uploading of the EDI invoice and delivery ticket data files and prepare the data for batch editing. The edit criteria employed by the EDI system will be identical to the criteria used by AVEDS for transactions entered during data entry. A daily AVEDS/EDI transaction listing (report) will be produced. This listing, containing both valid and invalid transactions will be used to monitor processing and will become part of the audit trail. Rejected EDI transactions will be available on-line for subsequent corrective action and eventual release for continued processing. Validated EDI transactions will be processed in the same way as transactions that entered AVEDS during the data entry process.

b. PIPENET (to be developed).

3.3 Inputs, Outputs, and Data Base Characteristics

The EDI system replaces data entry and paper output with electronic equivalents for selected (standard system) high-volume transactions.

Into-Plane.

(1) Inputs. Tables 3-3 and 3-4 contain the data element names, record identifiers, and record positions for the AVEDS/EDI input files for invoice and delivery ticket records (also called aviation fuels sales slips). Refer to the *AVEDS Data Element Dictionary* for detailed data characteristics.

(2) Outputs.

(a) *Daily AVEDS/EDI Transaction Listing.* This report listing will provide a record of valid and invalid transactions and will be used to monitor daily performance. The report also provides an input audit trail.

(b) *Rejected EDI Transactions for Correction.* This report will be available on-line to facilitate correction of invalid records.

TABLE 3-3

INVOICE FILE RECORD LAYOUT

Data element name fields for AVEDS input files	Record identifier (positions 17-18)	Record positions
INVOICE.NO	10	19-24
DATE.RECEIVED	10	25-30
CONTR.AGRMT.NO.ABRV	10	31-43
CONTROL.NO	10	44-54
INVOICE.DATE	10	55-60
BILL.MOD.EFF.PERD.START	10	61-66
BILL.MOD.EFF.PERD.END	10	67-72
DLVY.ORD.NO	11	19-22
ADJUSTMENT.INVOICE	12	17-18
DISCOUNT.TYPE	15	19-20
DISCOUNT.RATE	15	21-26
DISCOUNT.DAYS	15	27-29
DISCOUNT.CENTS	15	30-34
DISCOUNT.UNITS	15	35-36
CLIN	20	19-24
DOD.FM.1898.SERNO	20	25-30
UNIT.OF.MEAS	20	31-32
QT.BILLED	20	33-42
UP.BILLED	20	43-50
CLIN.INVOICE.AMOUNT	20	51-61
DOD.FM.1898.SERNO.DATE	20	62-67
DEFUEL.CLIN	20	68-73
RESERVICE.CLIN	20	68-73
TOTAL.AMOUNT.BILLED	30	19-29
TAXES	30	30-37

Note: Several input records may occur within a single transmission. Record identifiers (e.g., types 10, 15, 20, etc.) appear grouped together and in sequential order. The occurrences of new lower numerical record identifiers signal the beginning of a new transaction (e.g., a type 10 following a type 30).

TABLE 3-4

DD FORM 1898 FILE RECORD LAYOUT

Data element name fields for AVEDS input files	Record identifier (positions 17-18)	Record positions
CONTR.AGRMT.NO.ABRV	40	19-31
DOD.FM.1898.SERNO	40	32-38
DD FORM 1898.JULN.DT	40	39-44
AMDS	50	19-21
DODAAC	50	22-27
TAIL.SERNO	50	28-31
FUND.CD	50	32-33
MAJ.FRC.PGM	51	22
SIG.CD	52	22
SUPAAC	53	22
CUST.ID	54	24
AVFUEL.CLIN	60	19-24
AVFUEL.QTY	60	25-33
AVFUEL.UM	60	34-35
DEFUEL.CLIN	70	19-24
DEFUEL.QTY	70	25-33
DEFUEL.UM	70	34-35
DEFUEL.PROD.CLIN	70	36-41
RESERVICE.CLIN	80	19-24
RESERVICE.QTY	80	25-33
AVOIL.CLIN	90	19-24
AVOIL.QTY	90	25-33
AVOIL.UM	90	34-35

Note: Several input records may occur within a single transmission. Record identifiers (e.g., types 40, 70, 90, etc.) appear grouped together and in sequential order. The occurrences of new lower numerical record identifiers signal the beginning of a new transaction (e.g., a type 40 following a type 90).

3.4 Failure Contingencies

User notification.

Users will be notified of expected system operational delays lasting over 24 hours and asked to stop input. If the EDI system is expected to be "down" for more than 48 hours, users will be given the options of stopping input or completing paper input documents for subsequent (batch) data entry at DFSC. If the standard system

which interfaces with the EDI system is expected to be down more than 72 hours, users will be given instructions based upon the contingencies established for that standard system.

SECTION 4. DESIGN CONSIDERATIONS

4.1 System Description

The proposed EDI system shown in Figure 4-1 is composed of both software and hardware. The system has the ability to exchange data between computer applications electronically using ASC X12 standard transactions. This is accomplished by interfacing the EDI system with the current application systems that are external and internal to DFSC.

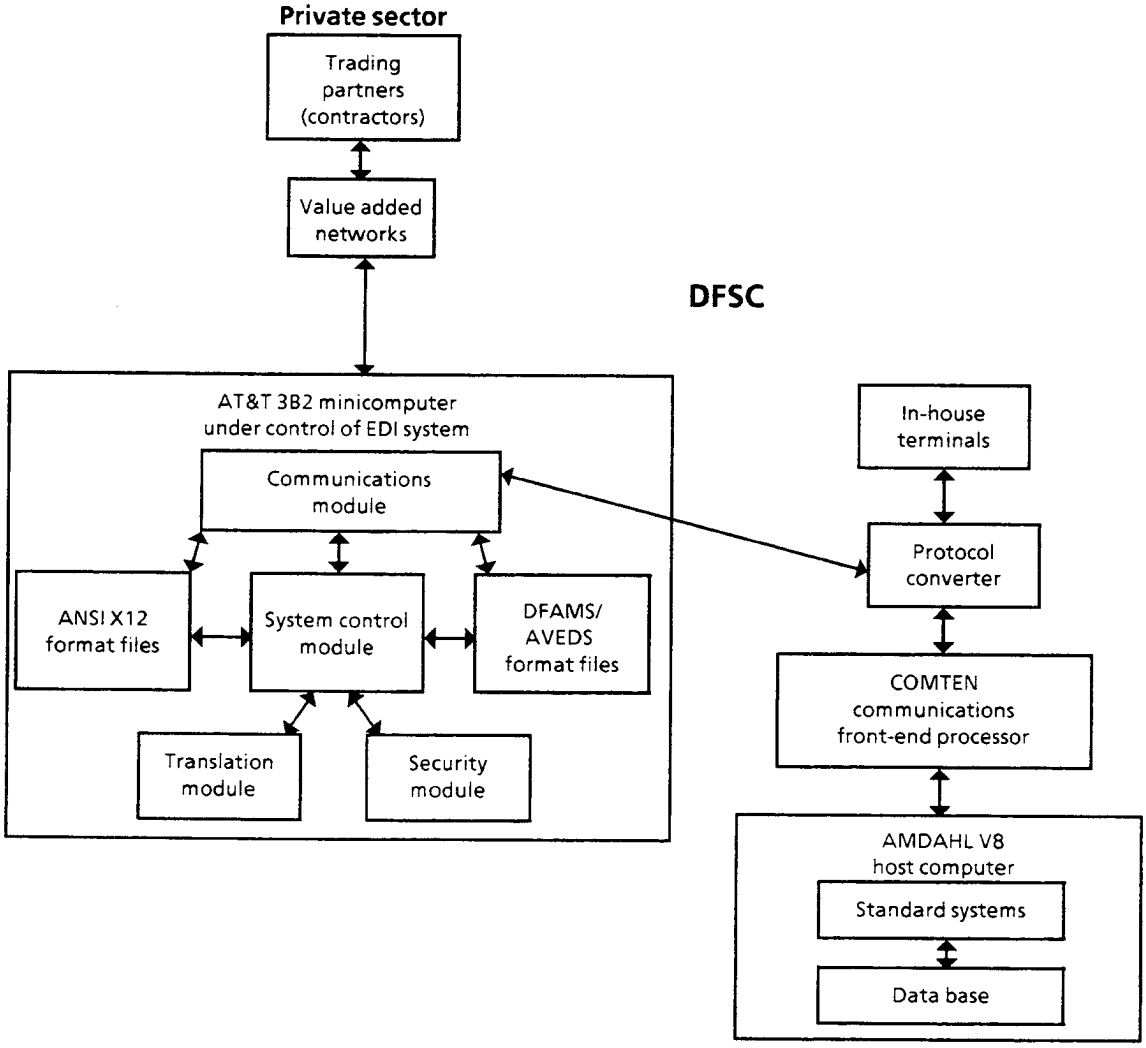


FIG. 4-1. PROPOSED EDI SYSTEM

4.2 System Functions

Figure 4-2 shows the relationships between system functions. The functions are as follows:

a. *System control* provides the primary means for controlling the interfaces with external applications.

b. *Communication* ensures proper data transmission and network access.

c. *Translation* converts application data files to and from ASC X12 standard transactions.

d. *Security* logically secures the EDI transactions to prevent or detect tampering or unauthorized disclosure.

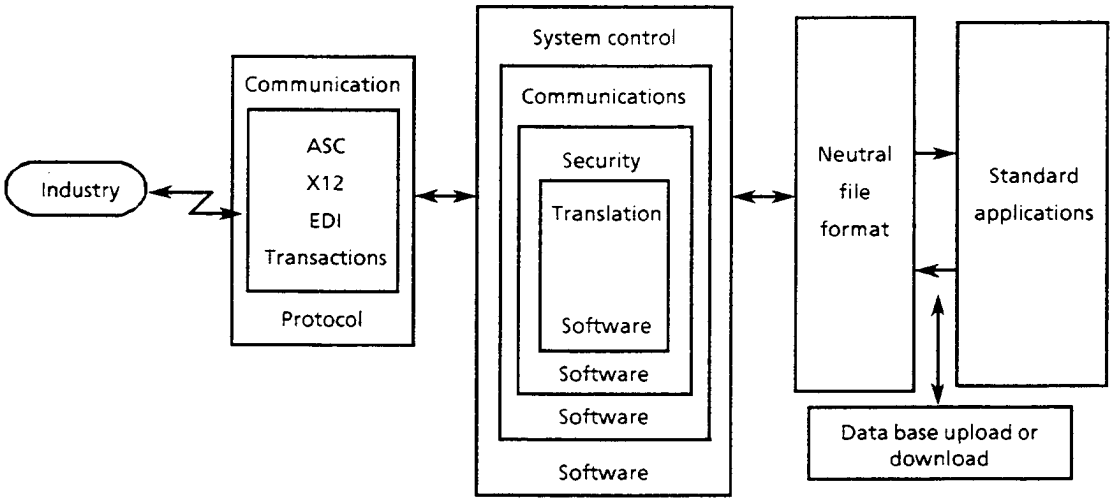


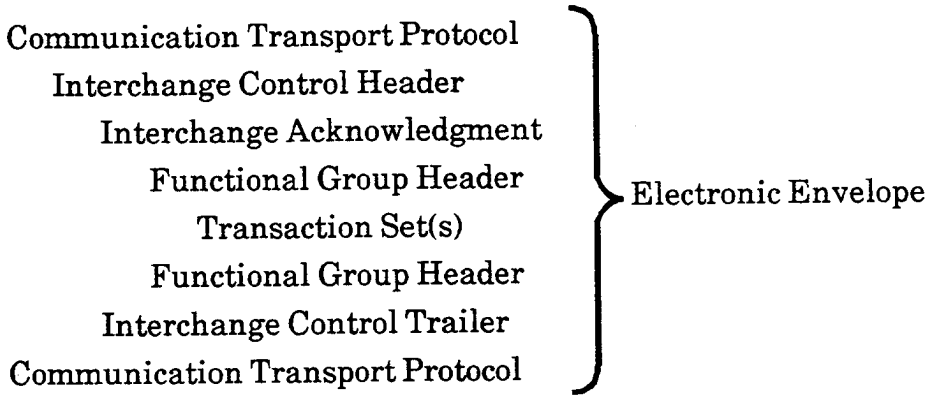
FIG. 4-2. EDI SYSTEM FUNCTIONS

4.3 Flexibility

To facilitate change and ease of maintenance, the EDI system will be directory and table driven. Each subsystem will be modular and capable of independent operation. The system control subsystem will isolate the application systems from the transaction subsystem to protect them from expected changes in the ASC X12 standards. The communication subsystem will isolate the application systems from changes in the communication environment.

4.4 System Data

Inputs are received from external EDI systems in what is known as an "electronic envelope." Each input record is arranged in an electronic envelope as indicated in the example below. The electronic envelope contains both control and application data. Application and control data are arranged in transaction sets which conform to ASC X12 standards. The list below illustrates the nested input data.



Inputs from, and outputs to, DFSC's internal systems will be simple file structures containing fixed-length records.

SECTION 5. ENVIRONMENT

This section describes the current ADP environment and forecasts the environment needed to satisfy the requirements delineated in Sections 2 and 3.

5.1 Equipment Environment

The EDI system hardware shown in Figure 5-1 consists of the following components:

a. A central processing unit (CPU) with a console and printer and 16 megabytes (Mb) of main memory

b. One 300 Mb fixed-disk drive, one 720 kilobytes (Kb) flexible-disk drive, one 9 track tape drive, and one $\frac{1}{4}$ inch cartridge tape drive

c. One high-speed line printer

d. Four personal workstations with display terminals, a printer, and a flexible-disk storage capability.

5.2 Support Software Environment

The EDI system will use the Defense Logistics Agency's (DLA's) UNIX System V standard support software configuration for EDI. This includes a relational data base, ASCENT gateway with supporting telecommunication software, ADA and C compilers, and supporting software utilities.

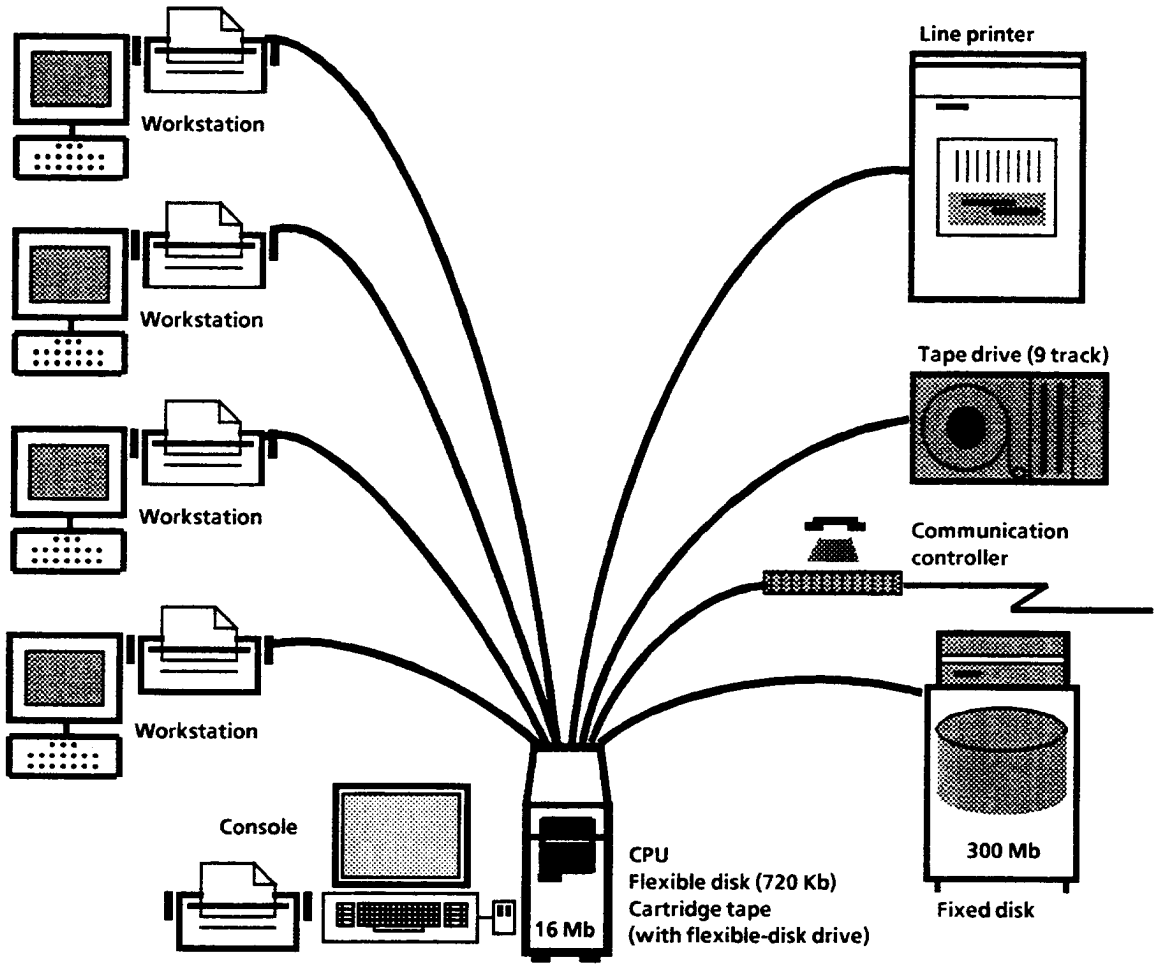


FIG. 5-1. PROPOSED EDI SYSTEM HARDWARE

5.3 Communications Requirements

5.3.1 Graphic Overview

The EDI system will electronically link computers from different contractors (trading partners) and other Government agencies. This linkage will be directly between individual activities or through VANs and/or direct dial (either public or Government). Refer to Figure 5-2.

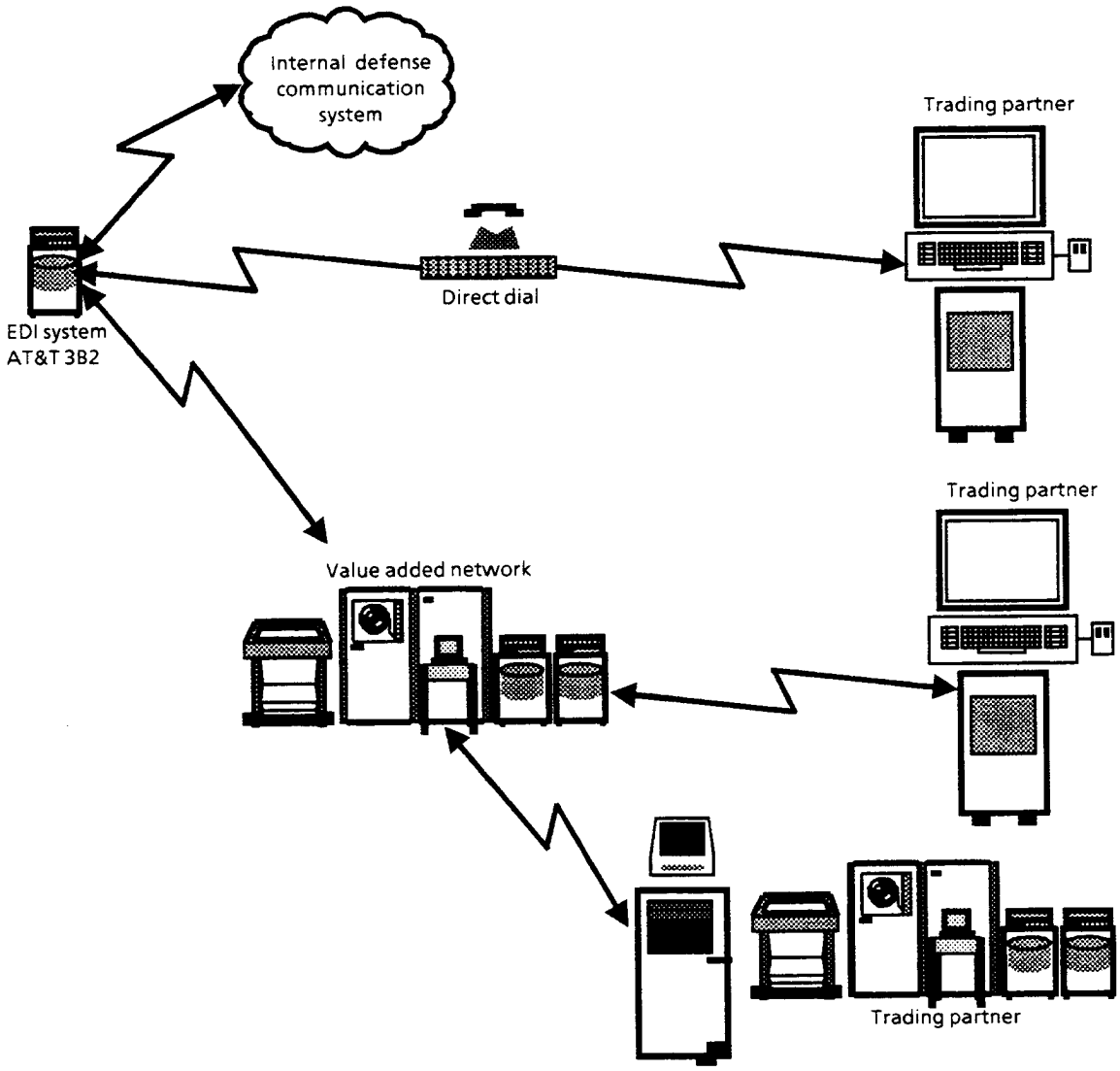


FIG. 5-2. COMMUNICATIONS REQUIREMENTS

5.3.2 Hardware

The following are the communications hardware components known to be required to support the proposed system:

a. Four, 8-port I/O controllers for connecting synchronous peripheral devices

b. IBM 3270/3274 emulation port to access an IBM host (mainframe) and emulate IBM terminals and devices

c. Ethernet controller

d. X.25 I/O controller

e. Six modems.

5.3.3 Software

The following are the communications software applications known to be required to support the proposed system:

a. Defense Data Network protocol, file transfer, virtual terminal, Simple Mail Transport, and Berkeley "R" Series commands

b. UNIX-to-UNIX communication

c. Transmission Control Protocol/Internet Protocol.

d. Carrier Sense, Multiple Access with Collision Detection IEEE 802.3 standard for an Ethernet LAN.

e. PC-to-UNIX (emulation) program allows the workstation to act as a terminal connected to the host

f. PC-interface software for MS-DOS interaction with UNIX host.

5.4 Interfaces

The EDI system will interface with DFSC's standard application systems to provide input data and receive output data for translation into ASC X12 standard formats. The interface will be accomplished by file transfers between systems. The format of the files will be a fixed-length record and neutral to both systems.

The VAN interface will be accomplished using UNIX-to-UNIX communication or Transmission Control Protocol/Internet Protocol software.

The EDI system users will use the PC-to-UNIX (emulation) program, which allows the workstations to act as a host terminal, and the PC-interface software for MS-DOS interaction with the UNIX host.

5.5 Summary of Impacts

5.5.1 ADP Organizational Impacts

The introduction of the EDI system into the existing ADP operational environment will require additional manpower for system operation and software support.

An EDI project differs from traditional internal automation projects in that planning, development, and implementation tasks must be performed by organizations outside of DoD's authority and control, which adds an additional level of complexity to the project manager's tasks. To offset this control problem, an EDI manager must be appointed at a grade level that will facilitate coordination at the corporate level. Implementing the EDI system will involve many people in a variety of roles. It will require a great deal of coordination between the functional managers and the automation managers. At a minimum, manpower should be provided as follows:

a. Project manager

b. Functional coordinator (for each business area impacted)

c. Technical coordinator

d. EDI coordinator.

5.5.2 ADP Operational Impacts

The implementation strategy calls for a pilot test with phased implementation of other application areas. There must be an initial allocation of manpower for the pilot test – with the allocation of additional manpower being timed with the implementation of other applications.

5.5.3 ADP Development Impacts

The DLA's standard application interface information exchange (INX) along with commercial software will be used to reduce the EDI system development requirements. Manpower for the EDI system will be required for integration and implementation of the system within DFSC's existing ADP environment. Application development manpower will be required to change existing programs to accept files from, and output files to, the EDI system. There must be an initial allocation of resources for the pilot test. Additional manpower must be allocated and timed with the implementation of the applications.

5.6 Assumptions and Constraints

The hardware and software environments will conform to the DLA's standard application interface (information exchange).

SECTION 6. SECURITY

6.1 Background Information

Classified data will not be processed on the system; however, the elimination of paper document processing will require changes to existing security processes and procedures. Sufficient controls will be provided by the EDI system to ensure confidentiality, integrity, and availability.

6.2 Control Points, Vulnerabilities, and Safeguards

The EDI system provides controlled access to data, a read-only capability for extracted data, control counts on file transfers, generation of an audit trail, archiving, and restart facilities. The controls provided by the EDI system will match the existing controls in the application systems to ensure a consistent security policy.

6.3 System Monitoring and Auditing

Software compliant with the ASC X12 standards has procedures designed to ensure the integrity of data. When an EDI transmission is received, the software verifies that all required headers and trailers (interchange level, functional group level, and transaction set level) are present, that they have identical control numbers, and that trailer counts are equal to those counted by the software. The results of this validation process are documented in system generated reports and in the functional acknowledgment sent electronically to the originator of the EDI transmission.

SECTION 7. SYSTEM DEVELOPMENT PLAN

To expedite implementation of the pilot system, developers of the EDI system will use the DLA-supported INX application interface software, commercially available American Business Computer ExCel EDI translation software (recommended by DLA), and the AT&T 3B2 Computer (currently on Government contract). Commercial VAN services will be obtained through an existing DFSC contract. (DFSC will migrate to the DoD standard EDI system when it becomes available.)

Into-Plane (AVEDS) will be the first application system to receive EDI data.

Once the pilot system is operational, phased testing will begin with Mobil International Aviation and Marine Sales to verify data requirements and system operation.

Concurrent with this testing, an AVEDS/EDI subsystem will be developed to provide an interface between AVEDS and the EDI system.

After successful production testing of new procedures and the AVEDS/EDI subsystems with Mobil, other Into-Plane contractors will be migrated to the EDI system. During this period, the decision to begin development of other applications will be made.

SECTION 8. COST FACTORS

The proposed system's costs are documented in DFSC-RO Inter-Office Memorandum, Subject: *Economic Analysis of the Program Implementation Plan (PIP) for Electronic Commerce,* dated 13 August 1991 and a DFSC-Z letter, Subject: *EC/EDI/PLUS Project Survey*, dated 14 June 1991. The estimated costs are summarized below.

Nonrecurring costs ($)		
	Hardware	197,000
	Software	35,000
	Site	1,000
	Analysis	50,000
	Training	2,000
Total		$ 285,000

Recurring costs (over 8 years)		
	Personnel	2,788,000
	Telecommunications	65,000
	System maintenance/operation	134,000
	Training	35,000
	Supplies	7,000
Total		$ 3,029,000

REPORT DOCUMENTATION PAGE

Form Approved
OPM No. 0704-0188

1. AGENCY USE ONLY *(Leave Blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	Oct 92	Final

4. TITLE AND SUBTITLE
FUNCTIONAL DESCRIPTION OF AN ELECTRONIC DATA INTERCHANGE SYSTEM FOR DEFENSE FUEL SUPPLY CENTER

5. FUNDING NUMBERS
C MDA903-90-C-0006
PE 0902198D

6. AUTHOR(S)
Morey M. Henderson

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Logistics Management Institute
6400 Goldsboro Road
Bethesda, MD 20817-5886

8. PERFORMING ORGANIZATION REPORT NUMBER
LMI-PL002RD1

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Director, Energy Policy
OASD(P&L), Room 1D760
Washington, DC 20301

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
A: Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT ***(Maximum 200 words)***

This Functional Description of an Electronic Data Interchange (EDI) system identifies for the Defense Fuel Supply Center prospective EDI projects and the system requirements to be satisfied. The document provides information on system performance requirements, preliminary design considerations and user impacts.

14. SUBJECT TERMS
Electronic Data Interchange, EDI, DoD EDI, ANSI X12, ASC X12, X12, electronic standards, electronic business standards, computer to computer exchange of data, electronic documents, electronic records, procurement automation, paperless environment, AVNET, aviation fuel, Defense Fuels.

15. NUMBER OF PAGES
29

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL