DEPUTY UNDER SECRETARY OF DEFENSE (ACQUISITION REFORM)

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DoD ELECTRONIC COMMERCE (EC)/ ELECTRONIC DATA INTERCHANGE (EDI) IN CONTRACTING REPORT

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HEADLINE: Government Contracts, DOD PLANS TO MAKE 80% OF SMALL PURCHASES THROUGH EL]

BODY:
   Within two years, some 80 percent of Defense Department small
purchases--purchases under $ 25,000--will utilize an electronic data interchange
(EDI) system to effect electronic commerce (EC)--a paperless process for
conducting procurement, DOD Secretary Les Aspin announced Jan. 27.

   The initiative was recommended by a process action team (PAT) created to
assess DOD's current EC-EDI capability in contracting and developed an
implementation plan.

   DOD must rapidly implement EC initiatives and seek process, statutory, and
regulatory changes that will support the objective of implementing meaningful
 acquisition reform, according to the PAT report, DOD Electronic Commerce
Electronic Data Interchange in Contracting Report.

   The report also states that the Section 800 Panel's recommendation on raising
the small purchase threshold from the current $ 25,000 to $ 100,000, coupled
with the need to provide adequate notice of procurement opportunities for small
businesses and ensure competitive procurement, make immediate expansion of EC
capabilities more critical than ever.

   With the development of this EC-EDI procurement system, DOD will
significantly increase the visibility of requirements and requiring activities,
Aspin said in a prepared statement. The automation of data will allow for better
information flow across DOD procurement, logistics and payment offices, he said.
Further, the EDI system will allow for a one-time registration of vendors for
all DOD purchasing offices. This will enhance competitive contracting
opportunities for vendors, particularly small business firms, and improve
productivity, Aspin notes.

   Fully supporting the president's Oct. 26, 1993, government-wide EC program,
DOD has already begun implementing EC-EDI in accordance with the plan. According
to Aspin's announcement, 154 DOD purchasing activities will be capable of making
small purchases using EC-EDI within the first six months. At the end of 1994,
this figure will rise to 220 purchasing activities.Two years from now, 249
purchasing sites, responsible for 80 percent of DOD's small purchases, will
utilize the EC/EDI system.

   Under Secretary for Defense (Acquisition and Technology) John Deutch recently
directed Deputy Under Secretary of Defense for Acquisition Reform Colleen
Preston to "ensure execution of the implementation plan," and authorized the
use of funds available to support the effort. In a memorandum to Preston, Deutch
stated, "With its attendant capability to improve the productivity of the
acquisition workforce by cutting substantially the procurement administrative
lead-time for small purchases, electronic commerce is an absolute necessity in
today's austere budget environment."

   In addition, DOD co-chairs with the General Services Administration an effort
to provide internal studies and data that will develop support for a
government-wide program.

   By building on existing automated systems within DOD, the cost of the
two-year implementation plan will be approximately $ 26.4 million, the PAT
report says. This amount includes funds for the Small Business Administration's

and DOD's outreach program to educate small businesses on how to use the new system.

Highlights of Report

Key components of the EC-EDI system highlighted in the 200-plus page report include:

o Provide vendors, particularly small businesses, through a single point of entry into the DOD system, with: electronic access to notices of DOD-wide purchases, the ability to obtain copies of solicitations electronically, and the ability to electronically submit offers to and receive contract awards from purchasing offices.

o Provide value-added networks (VAN) to exchange EC-EDI transactions with vendors.

o Present a "single face to industry" by providing a common standard in the distribution of EC-EDI actions to DOD's vendors and the information that vendors are required to provide.

o Provide a single central registration of electronic addressing information, trading partner profiles (bidders list registration).

o Utilize the American National Standards Institute (ANSI-X12) as the basis for interchanging business information with vendors and other government elements.

o Recognize and accommodate the operational requirements of business function such as procurement, contract administration, and financial management.

o Maximize the use of standard commercial hardware and software by DOD and its vendors that can also be used by vendors for non-government purposes (e.g., to communicate with commercial entities for making sales and purchases).

o Provide for the maximum use of competitive procurement techniques.

The PAT which developed the EC-EDI report was formed in July 1993 by Preston and tasked with developing a comprehensive plan for implementing an electronic commerce approach for procurement, developing a planning estimate for the required resources, and identifying relevant policy issues related to EC-EDI.

Members of the PAT, which was chaired by the Air Force's Delores "Dee" Smith, included procurement and technical representatives from the military departments, the Defense Logistics Agency, the Defense Information Systems Agency, the Defense Finance and Accounting Service, and other DOD components. Additionally, the Office of Federal Procurement Policy and GSA advised in this effort.

The PAT report can be obtained from BNA PLUS, (800) 452-7773, or from the Government Printing Office. Refer to GPO stock number 008-000-00643-1 .

LANGUAGE: ENGLISH

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Federal Contracts Report
January 17, 1994
TITLE: Acquisition Reform, Bilbray to Hold Hearings Feb.1-2.
HR3586;S1587; HR2238 Hearings; Colleen Preston; Acquisition Reform

Executive Summary

Background

Use of Electronic Commerce (EC)/Electronic Data Interchange (EDI) to support Department of Defense (DoD) procurement processes has been under consideration for some time. A 1988 Deputy Secretary of Defense memo calls for maximum use of EDI, based on 10 years of DoD EDI investigation and experiments. In 1990, Defense Management Review Decision 941 stated, "The strategic goal of DoD's current efforts is to provide the department with the capability to initiate, conduct, and maintain its external business related transactions and internal logistics, contracting, and financial activities without requiring the use of hard copy media."

In January 1993, the DoD Acquisition Law Advisory Panel submitted a report to Congress that concentrated on "changes that would streamline the defense procurement process in the 1990's, when dollars are expected to be fewer, work forces smaller, and superpower security threats less urgent. "Among the hundreds of recommendations contained in the report were several that addressed the increased use of electronic procurement notice and contracting methods. The rapid implementation of EC in the DoD directly supports acquisition reform and the recommendations contained in the Streamlining Defense Acquisition Laws Report, particularly the recommendation to raise the small purchase threshold to a $100,000 simplified acquisition threshold. EC contains the inherent capability to provide adequate electronic notices and will enhance access to DoD procurement information for small businesses and is a vast improvement over the manual system that is currently in use. Therefore, EC and the associated DoD EDI architecture are vital to the reform program and Congressional support of many other acquisition reform initiatives.

On September 7, 1993, the National Performance Review (NPR) recommended that EC/EDI be expanded within the federal acquisition system. One of Vice President Gore's recommendations for procurement specifically calls for establishment of a Government-wide program to use EC for federal acquisition below a specified dollar threshold and for those acquisitions and orders that use simplified acquisition procedures. These documents provide clear evidence that there is support for the expansion of EC/EDI within DoD.

The Honorable Colleen A. Preston, Deputy Under Secretary of Defense (Acquisition Reform) has taken definitive action on these proposals. On July 22, 1993, Mrs. Preston directed the Chairman of the Corporate Information Management (CIM) Procurement Council to establish a Process Action Team (PAT) to assess current contracting capabilities in the DoD EC/EDI infrastructure. Building upon current DoD capabilities, the DoD EC in Contracting PAT was tasked to develop a comprehensive plan for implementing an EC approach for procurement functions consistent with the American National Standards Institute (ANSI) X12 standards, to develop a planning estimate for the resources and schedule required, and to identify relevant policy issues.

The EC in Contracting PAT membership reflected a broad cross section of Military Services and Defense Agencies working on a full-time basis for 60 days. The diversity of the EC in Contracting PAT ensured that the needs and concerns of all DoD components were addressed during the creation of the report. The resultant plan, therefore, represents a comprehensive approach for implementing EC throughout the DoD.

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Objectives

The EC in Contracting PAT's Charter directed that certain actions be performed during the review. These specific taskings became the team's objectives and were assigned to working groups within the EC in Contracting PAT itself. This allowed the working groups to focus on specific objectives during review and site visits. Also, inputs were solicited from both private and public entities based on the EC in Contracting PAT's objectives. All information compiled from research, site visits, and responses to questionnaires was shared with the entire team. The objectives that guided the EC in Contracting PAT were as follows:

- Provide an assessment analysis of the current DoD EC/EDI capability in contracting in order to determine achievable near-term progress.

- Evaluate DoD EC capability to support competitive procurement and improved access and notice to small businesses in support of increasing the simplified acquisition threshold.

- Identify any relevant EC policy issues related to near-term and long-term EC implementation.

- Assess EC/EDI systems architecture (current and future) to include hubs, networks/gateways, Value Added Networks (VANs), etc., to support EC. Identify areas for standardization (e.g., EC/EDI data conventions, VAN certification, vendor registration, etc.). The purpose of this task is to identify likely future developments for which options should be maintained in the implementation of current and available capabilities and systems.

- Identify issues and assess potential areas of risk and uncertainty related to near-term EC.

- Develop a comprehensive implementation plan with specific time-phased recommendations. The plan should identify options, including estimates of resources required to achieve a rapid expansion of EC in contracting within DoD. Additionally, initiatives to publicize and educate Government and Industry on EC contracting activities would be addressed.

- Recommend implementation and deployment of a system that would provide a "single face to industry."

Overview

To facilitate a systemic approach and to divide the labor required to meet the aforementioned goals, the EC in Contracting PAT established working groups covering seven major areas: functional; technical; contracting policy; risk management; DoD and Industry benefits; DoD and Industry education; and implementation. Except in the case of the functional and technical working groups, which combined their findings and recommendations within one chapter, each of the groups represent a chapter of the EC in Contracting PAT's report. The summary of the report contained in the following pages is intended to give the reader an overview of the key findings and recommendations contained in each chapter of the report. Also, a compilation of the major recommendations made by the EC in Contracting PAT is presented for the reader.

Functional/Technical Assessment and Analysis

This chapter discusses the assessment of EC/EDI capabilities to exchange data related to the procurement process as they exist within the DoD and other federal agencies (e.g., General Services Administration (GSA), Small Business Association (SBA)). The assessment reviewed both the functional and technical aspects of the current DoD EC/EDI capabilities in contracting including, but not limited to, Integrated Technical Item Management Procurement System (ITIMP), Standard Automated Contracting System (SACONS-EDI), SAMMS Procurement by Electronic Data Exchange (SPEDE), Government Acquisition Through Electronic Commerce (GATEC), Menu Assisted Data Entry System (MADES), and Automation of Procurement and Accounting Data Entry (APADE), in order to determine achievable near-term upgrades and deployments.

In particular, the EC in Contracting PAT assessed the current capabilities of the EC/EDI infrastructure and systems to support simplified competitive acquisition under $25,000, consistent with the ANSI X12 with improved access, notice, and participation of small businesses. Initially the EC in Contracting PAT found that most DoD components (Navy, Army, Air Force, DLA, DISA, DFAS and DeCA) pursued independent EC/EDI solutions for their automated small purchase procurement systems. A strategic goal of DoD is to present a "single face to industry." Therefore, the EC in Contracting PAT focused on methods to achieve a common standard in the distribution of EC/EDI actions to DoD's trading partners. In addition, the EC in Contracting PAT examined ways to assure that improved notice of pending procurements could be provided to insure participation by small businesses.

In support of the findings of this EC in Contracting PAT, a number of issues required a consensus approach by all members. Without these basic principles to establish the framework for future implementations, deployments, and upgrades, it would have been impossible to sustain a focused DoD solution for the expansion of EC/EDI with Industry in contracting. The following are several of the key consensus items discussed that represent the baseline functional requirements for consideration in the expansion of EC in Contracting throughout DoD:

- DoD must present a "single face to industry."

   This issue was clearly the most important to the EC in Contracting PAT. A "single face to industry" is defined as performance of EC by the Government using EDI in accordance with federal information processing standards and a common set of business practices and operational principles. It must be a solution which allows the vendor to be able to process the transaction to and/or from any DoD activity, minimally subscribe to one VAN to do business with all DoD, and register only once to become a DoD supplier (rather than with each DoD component/activity).

- A single point of entry will be provided by DoD.

   DoD will develop a repository for central registration of electronic addressing information, trading partner agreement information, trading partner profile, and other pertinent supplier information. This central repository will be accessible by all applications which require authorized access to this data. It will not be restricted to procurement system access only. The contractor registration process is intended to replace the Standard Form (SF) 129, Commercial And

Government Entity (CAGE) code applications, and similar local forms information. A capability for use of EDI to collect and update this data will be established, and will include the ANSI X12 838 transaction set, as well as other transactions as needed. This will provide a single point of entry to obtain access to all DoD requirements.

- DoD will use ANSI X12/EDIFACT for administration, commerce, and transport.

- DoD conventions will be in accordance with ANSI X12/EDIFACT for administration, commerce, and transport.

  The development of DoD conventions will require inter-service coordination and a central point of contact within DISA responsible for configuration management, with Procurement CIM sponsorship and Industry involvement. Functional data decisions will be resolved by the appropriate Office of the Secretary of Defense (OSD) sponsor. In order to facilitate the merger and avoid redundant development, every attempt will be made in future development of implementation conventions to select the appropriate standard mandated by the using community.

- Architecture will support all other DoD operational or functional requirements.

  The DoD EC/EDI architecture will recognize and accommodate the operational requirements of these business functions:

  1. Procurement

  2. Contract Administration

  3. Transportation

  4. Supply Management

  5. Financial Management

  6. Maintenance

  7. Engineering

- Use of commercial and Government products.

  The EC infrastructure will be based on approved technical standards that support DoD open systems objectives that include maximum use of Commercial-Off-The-Shelf (COTS) software and reusable Government-Off-The-Shelf (GOTS) software products that have been tested, accepted, and are supportable by the Government. DoD will issue a supported list of COTS and GOTS products. A central repository for reusable GOTS products will be identified.

- Use of VANs.

  The DoD EC/EDI architecture will provide connectivity to public and private VANs to exchange EC/EDI transactions with trading partners external to DoD. This includes use of dedicated lines maintained by individual Trading Partners. VANs may offer bulletin-board services rather than directed delivery of EDI transactions.

To help validate DoD's perspective of what Industry has developed in the area of EC/EDI and what they require to do EC/EDI business with the Government, it was recommended that the EC in Contracting PAT solicit Industry input on their initiatives. A standard questionnaire was provided to key Industry associations representing over 9,500 companies in an attempt to reach the largest possible audience.

Based on the responses received from the VAN community, the VANs will support any DoD EC/EDI procurement initiative that is standards based and underpinned by a single set of policies and procedures on how small purchases are to be processed. This underpinning must include, as a minimum, the use of ANSI X12 standards, standard DoD Implementation Conventions, single point vendor registration, and the use of a DoD technical framework which is standards based and Open Systems Interconnect (OSI) compliant.

Once an understanding of Industry needs was coupled with the functional baseline requirements for Government, the EC in Contracting PAT began to review current capabilities within the Defense Department. Table 1 depicts eleven procurement EC/EDI initiatives that were sponsored by the components for an initial analysis. A site visit was made by the EC in Contracting PAT to each identified initiative.

TABLE 1

EC/EDI INITIATIVE	ACTIVITY
APADE (Automation of Procurement and Accounting Data Entry)	Fleet Industrial Supply Center, Charleston, South Carolina
GATEC (Government Acquisition Through Electronic Commerce)	Aeronautical Systems Center, Air Force Materiel Command, Wright-Patterson AFB, Ohio
ITIMP (Integrated Technical Item Management and Procurement System)	Naval Aviation Supply Office, Philadelphia, Pennsylvania
MADES I and II (Menu Assisted Data Entry System)	Ogden Air Logistics Center, Air Force Materiel Command, Ogden AFB, Utah
SACONS-EDI (Standard Automated Contracting System - EDI)	Tobyhanna Army Depot, Tobyhanna, Pennsylvania
SPEDE I and II (SAMMS Procurement by Electronic Data Exchange)	Defense Industrial Supply Center, Philadelphia, Pennsylvania
DPACS (DLA Pre-Award Contracting System)	Defense Industrial Supply Center, Philadelphia, Pennsylvania
DPSC (Defense Personnel Supply Center)	Defense Personnel Supply Center, Philadelphia, Pennsylvania
EBBS (Electronic Bulletin Board System)	Defense Electronic Supply Center, Dayton, Ohio
POPS (Paperless Order Placement System)	Defense Industrial Supply Center, Philadelphia, Pennsylvania
DAASC (Defense Automatic Addressing System Center)	Defense Automatic Addressing System Center, Dayton, Ohio

Based on the visits to the activities shown in Table 1, it is apparent that DoD has many excellent EC efforts underway. However, several of the EC/EDI efforts presented to the EC in Contracting PAT for analysis, did not meet a baseline set of criteria to be a viable application for expanding within a component. Table 2 represents the consensus of the team as to what baseline factors are needed if an EDI application is to be promulgated to

other sites within the component. If a system received a yes answer to more than three of the questions listed below, it was considered to have the technical and functional capabilities to be successful if implemented at more locations within the component. Using this method, the EC in Contracting PAT was able to maximize the use of allotted time and to select, APADE, GATEC, ITIMP, MADES, SACONS-EDI, SPEDE, and DPACS for an in-depth technical analysis.

TABLE 2   **INITIAL TECHNICAL ASSESSMENT**

	APADE	DESC EBBS	DPACS	BCAS GATEC	ITIMP	ACPS BCAS MADES	SAMMS POPS	SACONS -EDI	SPEDE	SAMMS SPEDE I
HARDWARE AVAILABILITY	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO
CONTRACTS AVAILABILITY	YES	NO	YES	YES	YES	YES	NO	YES	YES	NO
X-12/ EDIFACT (840,843,850)	YES	NO	N/A	YES	YES	YES	NO	YES	YES	NO
DoD CONVENTIONS (DEC 91) OR AFTER	YES	NO	N/A	YES	YES	YES	NO	NO	YES	NO
MODULARITY AIR-GW-DP	YES	NO	N/A	YES	YES	YES	YES	YES	YES	YES
GOV'T SUSTAIN- ABILITY	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES
MULTIPLE TRUSTED 3RD PARTY COMMERCIAL CARRIER	YES	NO	N/A	YES	YES	(1)	YES(2)	YES	YES (2)	NO
COMMERCIAL BASED XLATOR TECHNOLOGY	YES	NO	N/A	NO	YES	NO	NO	YES	YES	NO
RATIO Y:8	8:3	2:8	3:8	5:8	8:8	6:8	3:8	6:8	8:8	2:8

(1) DELIVERY TO VAN HAS BEEN TESTED VIA FILE TRANSFER TO A GATEWAY DISTRIBUTION POINT
(2) DIRECT TO CUSTOMER ALSO
(N/A) SYSTEM SCHEDULED TO BE MODIFIED TO HANDLE EC/EDI

The technical assessments include DoD procurement EDI initiatives, near-term and long-term; other Government/Industry initiatives; and consideration of EDI support to other DoD business areas. The Defense Information Systems Agency (DISA) was responsible for performing the technical assessments of these current initiatives but also analyzed what was needed for full deployment in the near term and migration strategies for longer term technical support needed for a robust DoD technical infrastructure that could support all business areas. To ensure that DISA could adequately perform the technical assessments and analysis, a DISA technical task force was formed. This task force consisted of individuals from the many technical disciplines, such as, standards, architecture, security, telecommunications, etc., needed to assist in the reviews.

There are several items that have very specific and major effects on technical solutions and costs to implement EC/EDI. Table 3 portrays those requirements that have the most significant impact on the applications and technology being used.

TABLE 3   BASELINE FUNCTIONAL REQUIREMENTS FOR EC/EDI

	APADE	DPACS	BCAS GATEC	ITIMP	ACPS BCAS MADES	SACONS EDI	SPEDE
X12 (COTS)	YES	N/A	NO	YES	NO	NO (1)	YES (4)
X12 DOD CONVENTION	YES	N/A	YES	YES	YES	YES	YES
COMMUNICATIONS TO VAN	YES	N/A	YES	YES	NO (3)	YES	YES
FREE OF TECHNICALLY ENFORCED PROCEDURES	YES	N/A	NO (2)	YES	YES	YES	YES
BASELINE TRANSACTION SET (840,843,850)	YES	N/A	YES	YES	YES	YES	YES
FREE OF FUNCTIONALLY ENFORCED PROCEDURES	YES	N/A	YES	YES	YES	YES	YES

(1) SCHEDULED TO USE EDI OCTOBER 93 W/DoD CONVENTIONS
(2) ONE TRANSACTION PER SMTP MESSAGE, ADDRESSING CONTAINED IN
    SUBJECT LINE
(3) DATA IS SENT VIA FTP TO GATEWAY/DISTRIBUTION POINT
(4) SYSTEM WILL BE FULLY OPERATIONAL IN FY94

The following is an explanation of Table 3.

- ANSI X12 Transaction Sets

    Commitment to using the standard ANSI X12 transaction sets, the data element
    attribute specifications, and the format of the documents is critical to the ability
    to transfer data as intended. There are many COTS translator packages
    available today that offer a range of standard capabilities. Most have the ability
    to use multiple releases of the X12 transactions, the ability to use either X12 or
    EDIFACT formats, the ability to have interactive screen development of the
    record mapping of native data elements to the X12 standard transaction set data
    elements, and the ability to be invoked by many standard programming
    methods. The use of COTS software is one of the main tenants of the Technical
    Reference Model, which is the guideline for profiling the DoD goals for open
    systems.

- DoD X12 Conventions

    In order to support a "single face to industry," DoD needs to ensure that each
    activity within the procurement function understands data elements and
    document formats the same way. If non-standard conventions are developed by
    design activities in DoD, the consequences could cause inability to pass data
    that is understood by the intended trading partners. If a COTS translator is used
    with the ability to map data elements from an interactive screen, then adding the
    DoD Implementation Conventions as they are released will not be difficult or
    time consuming. Otherwise, significant effort may be required to make changes
    to the nonstandard conventions. This issue will be a major factor in determining
    the cost of changing the legacy EC/EDI systems to meet the baseline functional
    requirements.

- Communication to VAN protocols

  Generally, the VAN dictates to its trading partners what protocols are acceptable for actually transmitting the ANSI X12 messages. FTP and XMODEM are used as file transfer protocols, but at least one uses SMTP mail messages to transmit X12 transaction sets. The systems, as they are today, must be capable of many methods; but as the systems evolve to the DoD EC/EDI architecture, only the distribution points will be communicating with the VANs. For assessment of the current systems, this was a key aspect. It will not be a major factor in costing the ability of the system to meet the stated minimal functional requirements, because of the establishment of DoD distribution points and the sharing of those costs.

- Technically enforced procedures

  Design activities have developed unique ways of handling the programming necessary to accomplish tasks. In some cases, as technology (hardware and software) has improved, the older methods are ineffective and unnecessary, and in fact, cause problems when trying to expand or proliferate a task. In the EC/EDI world of procurement, the "single face to industry" will be adversely affected if any of the systems require a specific technology or procedure that is not easily exported or implemented on the other systems.

- Baseline ANSI X12 transaction sets used

  Each transaction set has a specific function and usage. The procurement functional activities have concluded that to meet the baseline functional requirements for EC/EDI, the X12.840 (Request for Quote), the X12.843 (Response to Request for Quote), and the X12.850 (Purchase Order), are the baseline document formats that will be used.

- Functionally enforced procedures

  Functionally enforced procedures are those that cause additional expenditures in the technology or alter the "single face to industry."

Evaluations and deployment schedules of selected DoD procurement EDI initiatives are contained in the report, while the implementation plan only focuses on deployment schedules. Since the schedules are representative of the best information available to the applicable components at the time they were submitted to the EC in Contracting PAT, the components retain the flexibility to deploy their EDI capability to their priority locations in variance of the reported data. The intention of the EC in Contracting PAT is for the components to make a good faith effort at achieving deployments in accordance with their submitted schedule.

The following is a list of the EC/EDI procurement capabilities recommended for deployment that will present a "single face to industry:"

- APADE (Automation of Procurement and Accounting Data Entry) - Navy

- ITIMP (Integrated Technical Item Management Procurement Systems) - Navy

- MADES (Menu Assisted Data Entry System) - Air Force

- SACONS-EDI (Standard Automated Contracting System - Electronic Data Interchange) - Army

- SPEDE (SAMMS (Standard Automated Materiel Management Systems) Procurement by Electronic Data Exchange) - DLA Supply Centers

An in-depth analysis, funding, and functional and technical milestones required for DoD deployment of the above EDI contracting capabilities are contained in the report and set forth in the implementation plan. The EC in Contracting PAT estimates that the total deployment cost for the above capabilities is $26,444,316 during the two year plan.

Contracting Policy

In the past five years, some organizations expanded their automated processes by experimenting with EC methods for Request For Quotations (RFQs), purchase orders, and delivery orders. These methods were designed and are operating under existing regulatory guidance in Federal Acquisition Regulation (FAR)/Defense Federal Acquisition Regulations Supplement (DFARS) and other supplemental regulations and procedures.

As the development and use of EC/EDI gain acceptance in the industrial sector, the demand for more technologically advanced Government procurement processes increases. Using the current DoD EC/EDI projects as a baseline, DoD must rapidly expand the capabilities to all its contracting offices. In doing so, we must formally recognize this new, enhanced method of business in our procurement regulations. In addition, certain procedures that are currently accomplished manually via a paper process, (e.g., contractor registration, Trading Partner Agreements (TPAs), contractor performance, data collection, etc.) must be redesigned to maximize use of today's scarce resources through use of EDI and centralized management wherever feasible and practicable.

Initially, the contracting policy working group conducted extensive review and analysis of the following source documents:

- FAR Case 91-104 - Electronic Contracting

- FAR Case 91-46 - Storage of Contracting Files

- Defense Acquisition Regulation (DAR) Case 89-316 - Acquisition of Commercial Items

- FAR/DFARS Parts 16 - 52

- Streamlining Defense Acquisition Laws Report (Section 800)

- Logistics Management Institute (LMI) Reports

- Corporate Information Management Procurement Council/Functional Requirements Managers Electronic Commerce Conference Comments

After review of these documents and based on deliberations among the EC in Contracting PAT members concerning current policy, several relevant issues were identified for further analysis. The resultant recommendations by the EC in Contracting PAT can be categorized under two areas: regulatory and procedural coverage for EC/EDI and a DoD standard, automated, centralized process.

1. Regulatory and procedural coverage for EC/EDI.

   - Place electronic methods on a par with paper methods.

     This requires minor changes to the FAR and DFARS.

   - Require widest dissemination of competitive electronic solicitations.

     FAR 13.106(b)(3) states that the maximum practicable competition for small purchases ordinarily can be obtained without soliciting quotes from sources outside the trade area in which the purchasing office is located. This coverage considers the burden associated with the paper process actually performed by buyers. Each additional firm contacted during the solicitation process increases the total administrative costs of that acquisition by a fixed amount.

     Contrast this with an acquisition in the EDI environment: The cost of soliciting potential offerors is the same for reaching one as it is for soliciting additional sources over a larger geographical area. This efficiency carries over to the offer abstracting process, as EDI makes automated quote abstracts practical. The EDI process is also more effective in other areas, for example, increased competition usually results in decreased costs to the Government.

   - Authorize brand name purchase descriptions without product substitution for actions under $2,500.

     FAR 10.004, "Selecting specifications or descriptions for use, "currently states that ". . . generally the minimum acceptable purchase description is the identification of a requirement by the use of a brand name followed by the words 'or equal'." Further, the FAR requires that the technique should only be used when it is not feasible to provide either an adequate specification or a more detailed description by the required delivery date. Instead, inspection and analysis will be used to verify that items offered on an "or equal" basis meet the Government's minimum requirement. The acquisition process must be interrupted every time an "or equal" item is offered to meet a "brand name or equal" requirement. This creates inefficiencies in the EC/EDI process. This issue was raised during the 1993 Procurement CIM Council EC Conference and EC in Contracting PAT interviews at DoD activities currently using EC/EDI. The CIM conference report stated that specific policy was required to allow restriction of competition to brand name or part numbered items for small purchase actions.

     To correct the current situation, we propose two courses of action. First, allow acquisitions under $2,500 to be acquired by brand name only when it is not feasible to provide either an adequate specification or a more detailed description by the required delivery date. Substitutions will not be accepted

or evaluated. Since the coverage at FAR 10.004(b)(2) precludes the identification of a requirement by brand name only, unless followed with the words "or equal," regardless of the dollar value, a change would be required to reflect the proposed limitation. The basis for limiting the use of brand name descriptions is linked directly with current coverage at FAR 13.106(a)(1) which establishes limitations for purchases without securing competitive quotations. Recognizing that the current limitation is stated at "no more than 10 percent of the small purchase threshold," and raising the small purchase threshold would create an even greater impact on the intent of this recommendation. The modified coverage should clearly state a specific dollar threshold for this method of purchasing. Further, the FAR recognizes that the application of brand name descriptions does not provide for full and open competition, regardless of the number of sources solicited. Appropriate use of brand name descriptions will apply only in cases where the requirement stated for "brand name or equal" would otherwise be appropriate.

2. Create a DoD standard, automated, centralized process.

- Trading Partner Agreement (TPA)

    A single standard DoD TPA is required to standardize the terms and conditions of all TPA's established between DoD and its trading partners. The purpose of a DoD TPA is to ensure that DoD and its EC/EDI trading partner(s) agree on the general procedures and policies to be followed when using EDI for transmitting and receiving business documents, including procurement-related transactions.

- Contractor registration

    Currently, each EC/EDI project in DoD has a required registration process where vendors provide basic information prior to transacting business. The registration information is used for different purposes, (e.g., to update individual Automated Information System (AIS) vendor databases, establish unique identifier codes, update the bidder's mailing list files, and initiate the CAGE code requests (if necessary)). Maintenance of individual vendor databases within DoD is time-consuming and costly. Additionally, individual contracting offices within DoD continue to maintain local hard-copy bidders mailing lists.

- Electronic small purchase master solicitation

    FAR Subpart 52.102 requires that specific provisions and clauses be provided in full text in solicitations. This subpart also recognizes that flexibility in this policy may be necessary by allowing, under certain conditions, the incorporation of provisions and clauses by reference. In today's environment, where DoD components utilize automated information systems to retrieve and transcribe full text data to a paper format, the above requirements are easily met. However, in an EDI environment where business documents, such as RFQs and purchase orders are transmitted electronically between computers, the transmission of voluminous amounts of full text data reduces the efficiency and cost savings gained through the use of EDI technology.

A DoD EC/EDI master solicitation could be established for each type of contract described in FAR 52.3, Contract Matrix. Although such a document would not be a master solicitation in the classic sense (i.e., developed for a specific commodity), it could be tailored to reflect each broad category of acquisition; for instance, small purchase and fixed price supply (large purchases). Use of a master solicitation as opposed to a clause data base, could increase the comfort level of contracting personnel, by linking the above described data base concept with one that is currently used for "paper" transactions. While the benefits of both approaches appear to be equal for small purchase applications, master solicitations are more advantageous for large purchase actions due to the greater complexity, scope of requirements, and number of clauses, provisions, certifications and representations. The EC in Contracting PAT, therefore, recommends use of a master solicitation for both small and large purchases. A strawman master solicitation has been developed and will be provided under separate cover to Director of Defense Procurement (DDP) for final development and approval.

Representations and certifications will also be provided in full text in the master solicitation. Offerors will supply "fill-in" information only in each offer in the reference number blocks of the appropriate EDI transaction set. Only one representation and one certification is required in all small purchase actions, small business status and Walsh-Healey. The 800 panel has proposed raising the threshold for Walsh-Healey to $100,000. If that recommendation is adopted, Walsh-Healey will no longer apply to small purchases and only one representation will apply to small purchases; small business status. The size status of each offeror is important to the contracting officer, since this information determines which offerors are eligible for awards under acquisitions set aside for small businesses. Thus, it is vital that an offeror's business size status be furnished with each offer. The reference number block of the EDI transaction set for RFQ's can easily accommodate representation of the offeror's size status.

- Contractor identification code

  Several schemes currently exist for coded identification of contractors in DoD Automated Information Systems (AIS) and on various DoD forms (e.g., DD 1155, DD 350). Examples of such identification codes are the Contractor Establishment Code (CEC), Tax Identification Number (TIN), and the Contractor And Government Entity (CAGE) code. The existence of multiple identification codes creates inefficiencies in contracting data bases and requires multiple cross-reference files. In addition, the use of a code versus a full text name and address would speed EC by reducing transmission overhead while still providing the same benefit to an AIS. This issue was identified as a potential business process improvement at the Procurement CIM Council's Functional Requirements Managers Electronic Commerce Conference in February 1993.

  A code should be used to transmit the contractor's name and address in EC rather than full text. This concept can be used in lieu of full text information without degrading access to the required data. DoD should designate a single contractor identification code for all procurement AISs with EDI capability. However, a cross reference to other required codes would be necessary due to various requirements to identify the contractor (e.g., contract administration, payment, and reporting). This concept should be included in the development of the DoD EC/EDI integrated processing system.

Although the EC in Contracting PAT's analysis primarily focused on contracting policy for small purchases, we also recommended changes to large purchase procedures to allow for the use of EC/EDI as this area is phased into the system in the future. Although the emphasis on implementing EC/EDI for small purchases as a target of opportunity is greater, we must be prepared to capture additional efficiencies in the large purchase environment. For example, significant savings can be realized just by improving the communication process, (e.g., electronic Commerce Business Daily (CBD) announcements, video teleconferencing for pre-proposal conferences, debriefings, various procurement and technical discussions; as well as electronic proposal submissions; and electronic mail). By promoting increased efficiency in the total procurement process, the best use of scarce resources within DoD can be realized.

Risk Management

DoD has emphasized the rapid expansion of EDI as an accepted United States business technology for participating in today's global market. EDI holds great promise for improving the quality and efficiency of defense procurement. However, this technology will not be implemented in a risk-free environment. DoD must ensure that full consideration is given to the risk issues inherent in the use of computers and telecommunications to accomplish traditional paper-based administrative functions.

The EC in Contracting PAT used a two-part process for risk management. This consisted of risk assessment and control. Risk Assessment consists of the following three steps:

- Identification of risks based on input from site visits, and Industry and Government responses. Identified risks were organized into functional, technical and program areas.

- Analysis of risks to estimate an Annual Loss Expectancy (ALE). The ALE is a factor of impact of a risk occurring and the expected frequency of occurrence.

- Risks were prioritized based on the ALE.

Risk control was used to organize the risk handling techniques. These techniques focused on risk avoidance, control, assumption, and transfer. Risk Monitoring will be continued throughout the six-month, one-year and two-year development periods to ensure successful implementation.

The EC in Contracting PAT believes that the best resolution of identified risks is to map the specific functional, technical, program and transaction set risks to the appropriate solution provided.

Implementation of mechanisms to eliminate or reduce identified risks will be monitored throughout the six-month, one-year, and two-year development periods. During this period the success of risk handling techniques will be evaluated and if necessary, more stringent controls initiated. Revision and update of this Risk Management Plan will be accomplished as necessary.

EDI can improve the quality and efficiency of defense procurement. However there are a number of risks which must be managed in order to achieve EDI benefits without unacceptable risks. The use of EDI technology also introduces new risks that can adversely affect the confidentiality and integrity of data and the continuity of contracting operations. In the risk management plan these risks are identified, assessed in terms of their impact, prioritized and linked to resolution techniques.

The EC in contracting functional, technical and program risks were organized into the following seven risk categories.

- Unauthorized access/disclosure of data

- Unauthorized modification or destruction of data

- Sender/receiver repudiation of transactions

- Lack of system availability

- Incomplete business area interface

- Lack of a "single face to industry"

- System costs/migration/acceptance

Each of the identified risks was mapped to these categories and was then analyzed, as depicted on the following chart.

RISK ASSESSMENTS

| RISK | IMPACT RATING (D) | FREQUENCY RATING (P) | ANNUAL LOSS ESTIMATE (D + P) | | | | | | |
| | | | Low | | | Medium | | High | |
			$300 OR LESS 6	$3K 7	$30K 8	$300K 9	$3M 10	$30M 11	$300M 12
1. UNAUTHORIZED ACCESS/DISCLOSURE OF DATA.									
A. UNAUTHORIZED ACCESS TO CONTRACTOR QUOTE DATA	3	2	X						
2. UNAUTHORIZED MODIFICATION OR DESTRUCTION OF DATA									
A. SECURITY (VIRUSES)	6	3				X			
B. DATA INTEGRITY	5	4				X			
3. SENDER/RECEIVER REPUDIATION OF TRANSACTIONS									
A. RECORDS RETENTION	2	8					X		
B. ARCHIVE	5	4				X			
C. ELECTRONIC SIGNATURES	3	3	X						
4. LACK OF SYSTEM AVAILABILITY									
A. COMMUNICATIONS INFRASTRUCTURE	6	3				X			
B. COOP	6	4					X		
C. WAR FIGHTER SUPPORT	4	4			X				
5. INCOMPLETE BUSINESS AREA INTERFACE									
A. TRANSACTION SYNTAX STANDARDS/ INFORMATION REUSE	2	8					X		
B. DATA STANDARDS/DATA RE-USE	2	8					X		
C. INTERFACE WITH OTHER BUSINESS AREAS	4	6					X		
D. INTERNAL DISTRIBUTION	4	5				X			
6. LACK OF A SINGLE FACE TO INDUSTRY									
A. NOTICE TO INDUSTRY	2	8					X		
B. USE OF BULLETIN BOARDS	1	7			X				
C. COMPONENT IMPLEMENTATION	6	3				X			
D. SINGLE POINT OF ENTRY	7	3					X		
E. CENTRAL CONTRACTOR REGISTRATION	3	6				X			
F. NATIONAL OR REGIONAL VISIBILITY	7	3					X		
G. VAN LICENSE AGREEMENT	4	3		X					
H. DIFFERENT FUNCTIONAL/ TECHNICAL SOLUTIONS	6	4					X		
I. DOD STANDARDS AVAILABILITY	6	4					X		
7. SYSTEM COSTS/MIGRATION/ ACCEPTANCE									
A. INTERNAL EDUCATIONAL REQUIREMENT	3	7					X		
B. BEST VALUE	3	7					X		
C. ORGANIZATIONAL STRUCTURE/ CHANGES	4	6					X		
D. EDI PREFERENCE	2	8					X		
E. PRODUCT SUBSTITUTIONS	2	8					X		
F. USER ACCEPTANCE	2	7				X			
G. INCREASE IN QUOTE EVALUATION TIME	3	7					X		
H. EDI EVOLUTION	5	4				X			
I. MANAGEMENT, AUTHORITY, & RESOURCES	7	3					X		
J. SOFTWARE DEVELOPMENT COSTS	5	6						X	
L. GOVERNMENT DEPENDENCY IN PROPRIETARY INDUSTRY SOLUTIONS	6	4					X		
M. IMPACT OF/ON OTHER GOVERNMENT PROGRAMS	6	4					X		
N. RE-ENGINEERING BUSINESS PRACTICES	4	5				X			

The risk control or risk handling techniques are organized into ten categories as follows:

RISK CONTROL

RISK	RISK MANAGEMENT TECHNIQUE	RESPONSIBILITY	SCHEDULE
RECORDS RETENTION	POLICY REVIEWS - 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT AND DISA	12 MTH
UNAUTHORIZED ACCESS TO CONTRACTOR QUOTE DATA	CONFIDENTIALITY 4.7.1.A, (1) ACCESS CONTROLS,(2) DATA ENCRYPTION	DISA	6 MTH
INTERNAL EDUCATIONAL REQUIREMENTS	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DIRECTOR, DEFENSE PROCUREMENT AND DOD COMPONENTS	12 MTH
BEST VALUE	QUALITY VENDOR PROFILES	DIRECTOR, DEFENSE PROCUREMENT	12 MTH
ORGANIZATIONAL STRUCTURE CHANGES	BUSINESS IMPROVEMENT/ PROCEDURAL CHANGES 4.7.1K	DOD COMPONENTS	24 MTH
EDI PREFERENCE	EDI USER EDUCATION/ TRAINING 4.7.1.G, POLICY REVIEWS 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT	6 MTH
PRODUCT SUBSTITUTIONS	POLICY REVIEWS - 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT	6 MTH
USER ACCEPTANCE	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DOD COMPONENTS	12 MTH
NOTICE TO INDUSTRY	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DOD COMPONENTS, DISA	12 MTH
INCREASE IN QUOTE EVALUATION TIME	ACCEPT RISK	DOD COMPONENTS	12 MTH
USE OF BULLETIN BOARDS	2 YEAR PHASE OUT	DISA AND DOD COMPONENTS	6 MTH
ARCHIVE	CONTINGENCY PLANNING 4.7.1.E	DISA	12 MTH
SECURITY (VIRUSES)	VIRUS PROTECTION SOFTWARE 4.7.1.E, ACCESS CONTROLS 4.7.1.A (1)	DISA	6 MTH
TRANSACTION SYNTAX STANDARDS INFORMATION REUSE	DATA AND TRANSACTION SET STANDARDIZATION 4.7.1.F, DATA & TRANSACTION SET STANDARDIZATION,4.7.1.H	DISA	12 MTH
DATA STANDARDS DATA RE-USES	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	6 MTH
COMMUNICATIONS INFRASTRUCTURE	CONFIGURATION MANAGEMENT 4.7.1.H; CONTINGENCY PLANNING 4.7.1.E	DISA	12 MTH
COOP	CONTINGENCY PLANNING	DISA	12 MTH
EDI EVOLUTION	DATE STANDARDIZATION 4.7.1.F CONFIGURATION MANAGEMENT 4.7.1.H , TRANSACTION SET STANDARDIZATION. POLICY REVIEW 4.7.1.J	DDP, DISA	24 MTH
WAR FIGHTER SUPPORT	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	24 MTH
MANAGEMENT AUTHORITY & RESOURCES	PROGRAM MANAGEMENT (FUNCTIONAL & TECHNICAL)	DUSD (A&T), DISA	6 MTH
COMPONENT IMPLEMENTATION	PROGRAM STANDARDIZATION 4.7.1.F, CONFIGURATION MANAGEMENT 4.7.1.H	DOD COMPONENTS, DISA	12 MTH
SINGLE POINT OF ENTRY	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	6 MTH
CENTRAL CONTRACTOR REGISTRATION	OPTIONAL SERVICE FOR DISTRIBUTION POINT, DLSC, OR MEGA CENTER SHOULD BE CONSIDERED	DOD COMPONENTS, DIRECTOR, DEFENSE PROCUREMENT	12 MTH
NATIONAL OR REGIONAL VISIBILITY	PLANNED FUNCTION OF THE DOD DISTRIBUTION POINT TO PROVIDE CAPABILITY TO TRANSMIT NATIONALLY OR REGIONALLY	DISA	12 MTH
ELECTRONIC SIGNATURES	ACCESS CONTROLS 4.7.1.A, (1)SMART CARDS MESSAGE INTEGRITY 4.7.1.B, (2)CRYPTOGRAPHIC TECHNIQUES	DISA, NSA, NIST, AND DIRECTOR, DEFENSE PROCUREMENT	12 MTH
DATA INTEGRITY	MESSAGE TO INTEGRITY 4.7.1.B, (1) IMBEDDED REFERENCES, (2) MESSAGE REPETITION, (3)INTERNAL MESSAGE VERIFICATION, (4)CRYPTOGRAPHIC TECHNIQUES	DISA	6 MTH
INTERFACE WITH OTHER BUSINESS AREAS	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	12 MTH
VAN LICENSEE AGREEMENTS	CENTRALIZED MANAGEMENT (DISA) or VAN AGREEMENTS WITH COMPONENT REPRESENTATION 4.7.1.H	DISA, DOD COMPONENT	6 MTH
INTERNAL DISTRIBUTION	CONFIGURATION MANAGEMENT 4.7.1.H	DISA, DOD COMPONENT	6 MTH
SOFTWARE DEVELOPMENT LOSSES	CONFIGURATION MANAGEMENT 4.7.1.H, DATA STANDARDIZATION 4.7.1.F	DISA	12 MTH
PROPRIETARY SOLUTION	CONFIGURATION MANAGEMENT 4.7.1.H, STANDARD SOFTWARE 4.7.1.F	DISA	6 MTH
DIFFERENT FUNCTIONAL/ TECHNICAL SOLUTIONS	CONFIGURATION MANAGEMENT 4.7.1.H, STANDARDS SOFTWARE 4.7.1.F	DISA	6 MTH
DOD STANDARDS AVAILABILITY	DATA STANDARDIZATION 4.7.1F	DISA, DOD COMPONENTS	6-24 MTH
IMPACT OF/ON OTHER GOVERNMENT PROGRAMS	CONFIGURATION MANAGEMENT 4.7.1N	DUSD (A&T)	6 MTH
RE-ENGINEERING BUSINESS PRACTICES	PROCESS/PROCEDURAL CHANGES 4.7.1K	DOD COMPONENTS, DIRECTOR, DEFENSE PROCUREMENT	6-24 MTH

The responsible organization, Procurement CIM, DISA, or implementing DoD component will monitor accomplishment of each of the recommended risk handling techniques. These techniques will be assessed during implementation and updated by the responsible organization as needed.

Each of the 37 risks identified by the EC in Contracting PAT, can be adequately managed during the implementation time frames. Existing Industry and Government techniques can be applied to provide the full range on needed controls. These EDI practices along with program management, configuration management and education constitute the techniques needed to adequately resolve the identified risks.

DoD and Industry Benefits

The EC in Contracting PAT developed a comprehensive plan containing specific time-phased recommendations, options, and actions including estimates of required resources. The plan's purpose is to achieve the most rapid implementation of EC within DoD. The plan addresses significant issues prioritized by the estimated cost to resolve them and specific initiatives to publicize and educate Government and Industry on EC contracting activities; and provides six month, one- and two-year execution as directed by DUSD(AR). The plan offers benefits to both Government and Industry. The DoD procurement community, including its trading partners, face declining DoD budgets, reductions in manpower, and shrinking business bases. Survival in this challenging environment requires re-thinking traditional procurement methods with emphasis on reduced inventories, and increased operational efficiency and effectiveness.

EDI's inherent benefits are well documented. Therefore, rather than duplicate the results of previous studies, the EC in Contracting PAT performed an integrated assessment of the specific benefits that DoD will realize from implementing EC/EDI. These benefits for both DoD and Industry were identified and categorized in this report under mutual and Government benefits, and mutual reengineering opportunities. The categories and the applicable benefits are as follows:

- Mutual Benefits

    1. Significantly increases visibility of requirements and requiring activities.

        Such visibility will expand the trading partner's market from two perspectives; both in accessibility to a larger volume of items and access to more DoD purchasing offices. Increased visibility of requirements should increase the trading partners' opportunities to market their goods and services to the Federal Government. The visibility of the Government small purchase requirements will expand exponentially for the trading partner as the number of the Government buying offices transitioning to EDI increases. This allows the DoD trading partner greater opportunities to quote and compete. Also, the vendor will now have the opportunity to see the results of the preceding procurement of the item because the Government will be electronically posting the award results of all its EDI solicitations. This information will allow the DoD trading partners to compare and analyze their quotes to the contractor winning the award, thus significantly improving their knowledge of their competitors and their prices. This greater market visibility and new analysis will improve the DoD trading partner ability to adjust to a declining DoD business base.

2. Single point registration.

   Currently, the DoD trading partner's opportunity to be solicited by the Government buyer is dependent on the DoD's trading partner's registration at each individual Government buying office. This registration places the DoD trading partner on that office's vendor list and is exclusive of all other Government buying offices' vendor lists. The deployment of EDI will establish a single point registration that will allow the Government trading partner to register one time for all Government buying offices.

3. Electronic payment processing.

   EDI's automation of data required to support the payment process will allow for better information flow across the Government procurement and logistics functions to the payment office. The automation of this data will greatly increase the sorting and compiling capabilities within the payment office. In addition to the payment cycle time savings within the payment office, the trading partner will benefit from reduced mailing time of the pay related documents. EDI's simple departure from the paper based payment process will increase the ease and speed with which payment data can be handled.

* Government Benefits

   1. Greater buyer productivity.

   Historically the buyer has been inundated with clerical functions associated with the processing of Request for Quotes (RFQs). This redundant repetitive operation has been compounded over time due to the increases in the regulatory requirements of documentation associated with RFQs and Purchase Orders (POs). Further impact to the contracting community has been exacerbated by the reduction in personnel within DoD, particularly the clerical sector of the workforce, which historically performed these duties for the buyers and contracting officers. Savings in processing times will be realized in a more efficient execution of RFQs, responses back from the Contractor and subsequent POs. This electronic transmission of these documents will eliminate many of the repetitive and redundant clerical entries such as a significant reduction in reproduction, mailing, handling, telephone contacts, and repetitive data entry to legacy systems. With this capability, the buyer will be able to process more RFQs, in an efficient manner and with higher quality, thereby allowing time for the more complex decision process required by the buyer. The contract writing system's ability to collect RFQs and automatically abstract the received quotes for the buyer will additionally enhance the buyers productivity, as well as provide proper analysis based upon contractor performance, and quality items procured for the Government.

   2. More complete picture of requirements to Industry.

   The visibility of the Government small purchase requirements will expand exponentially for the trading partner as the number of the Government buying offices transition to EDI. This allows the DoD trading partner greater opportunities to quote and compete.

3. Lower item prices.

   Through the expansion of awareness of Government requirements to contractors, historically the present initiatives have indicated a reduction in item prices to the Government. This is probable when the competitive items are basically advertised to all potential offerors through EC/EDI versus the present process which is primarily within the local area of the base installation. In addition, there will be new business opportunities for all, local area contractors will have access to all DoD requirements, and contractors not collocated with an installation will have the same information. It is projected that there will be an initial reduction in competitive item prices in some stock classes, and it is probable that this reduction will level off after a period of implementation. The last purchase price of the item will be available for the contractor's review prior to the submission of a RFQ. This will circumvent the quoting on items in which the contractor is not competitive. Additional opportunities will be afforded to the contractors to expand their product lines on required items that historically have limited quotes received, or no quotes received at all.

4. Reduced lead times.

   A reduction in lead-time has been experienced through the utilization of EC/EDI in contracting through the component's existing initiatives. This is primarily attributed to the fact that the requirement to process the RFQ through an administrative area, then through the postal system to the contractor has been eliminated. The availability of the buyer's execution of the transmission of the RFQ from the workstation from one to one, one to many, or one to all, is at the touch of the keyboard. In addition, the contractor receives the RFQ immediately, if they were on the original source list, or a contractor may request the solicitation, via the computer, without expending additional resources. The execution of the DoD EC in Contracting implementation plan will provide this improved process to more sites and will further reduce the administrative lead times associated with the processing of RFQs. In addition, it is speculated that upon the completion of the two year implementation plan, the period of time the solicitation is required to be open for quotes could be substantially reduced.

5. Reduced inventories.

   Our present systems generate requirements from the using organization, and due to the elongated processing times, often require the using organization to request procurements that will provide a substantial inventory of the item. Warehousing of these items until they are requisitioned out of stock is very expensive. As we move into a full implementation of EC/EDI in contracting, with the reduced administrative lead-times, we can anticipate a lesser need for large inventories. As Contracting Officers establish contractual instruments for repetitive required items, and provide the inter-connectivity to their customers, an additional reduction in lead-time will be experienced, as well as reduced inventories. Dependent upon the availability of the item, a "Just In Time" procurement will facilitate the user, eliminating the need for an inventory.

- Mutual reengineering opportunities

  1. Reduced administrative workload and the use of multi-use databases.

     A generic small purchase of a COTS item routinely requires a six-page Government file (often duplicated across various Government functional offices for the requirement) to document the purchase and support payment of the transaction. This multiplied by the almost 12 million purchases and delivery orders made by the DoD in FY92 adds up to over 100,000 reams of paper. Normal distribution of these actions consumes an additional 500,000 reams of paper. EDI will automate this collection process and provide for data bases that can be shared by the separate functional offices. Electronic storage of this data will also facilitate less expensive archiving, retrieval, and audit and analysis of the small purchase data.

  2. Automated linkage from DoD acquisition systems to DoD trading partner systems.

     From the trading partners perspective, the automation of the Government purchase order provides an opportunity to interface directly with the trading partners' other internal automated systems that support the order fulfillment process. This can reduce the administrative burden associated with invoicing, payment, transportation, and restocking. Depending on the sophistication of the vendors material requirement planning system, EDI may even support an automated interface. Such interfaces enhance accurate reporting of sales/orders to the company's warehouse or factory floor.

  3. Electronic ordering and bar coding.

     The use of electronic cataloging allows the internal customer the opportunity to interface with the trading partner during the small purchase process without the direct involvement of the purchasing personnel. The EC in Contracting PAT observed examples of electronic cataloging currently in operation by the Government. The Naval Air Warfare Center Weapons Division, China Lake, California and GSA both provided briefings and demonstrations on operational use of electronic cataloging that allow end user ordering of small purchase items without the imposition of the contracting buyer for each small purchase. Both operations are successfully conducted with few, if any, technical problems. EDI will facilitate the use of these two associated technologies and the benefits that accrue from them.

Measurements of EDI implementation recommended by the EC in Contracting PAT focus on macro process improvements that impact every DoD component. Initially, the team explored the possible use of more than 50 measures to capture both the impact of the technology deployment and its associated cost savings, as well as the depth of this new technology's employment in the procurement process. The EC in Contracting PAT eliminated most of these measures for the following reasons.

First, the decision to deploy and invest will have already been made. That decision is based upon a substantial experience base, both in public and private sector, that EDI, its peripheral processes and opportunities, has conclusively proven to merit the investment provided normal reasoning is used in its application. This makes the measurement of the savings redundant in proving, once again, that the application of this technology saves money. Second, regardless of the findings, the manager cannot manage sunk costs which is what the implementation and new equipment costs represent once EDI is implemented. Third, many of the current measures used by the procurement managers

will provide insight to the impact of EDI on buyer productivity and procurement lead time; therefore the recommendation of new measures is unnecessary. Finally, the procurement workload continues to increase. The addition of new measures should be kept to the absolute minimum and only in areas where current automated collection techniques can be used.

Additional key measures required to determine the extent of EC/EDI implementation are as follows:

- percentage of total actions - EDI;

- percentage of RFQs receiving no responses;

- percentage of total purchase dollars - EDI; and

- number of active EDI trading partners.

As discussed, analysis performed by the EC in Contracting PAT showed that EDI will increase the efficiencies and effectiveness of the procurement process. Improvements will increase, over time, as procurement processes are re-engineered and more contractors utilize this method of contracting.

DoD and Industry Education

Education of Government and Industry is an essential ingredient in the implementation of EC in contracting in the DoD. Timely implementation of high quality education optimizes the benefits realized by all participants. Various Government, Industry, and private resources will be used to accomplish education objectives. These include VAN services, formal training programs, trade associations, SBA, and other Government education and procurement assets.

Industry has been leading the Government in EC for the last 10 years, but the Government has gained experience over the past 3-5 years with EC in DoD contracting initiatives. The lessons learned from this experience have been substantiated by data calls and meetings with interested parties. This Chapter is based on these sources of input.

It is the consensus of the EC in Contracting PAT that the DoD EC program manager should provide educational support for implementation of EC in contracting by: awarding a contract to develop educational materials and conduct orientation conferences, ensuring each component participates in educational events, entering into an interagency agreement with the Small Business Administration to provide liaison with the business community, and ensuring that the Defense Acquisition University includes EC issues in its curriculum.

Implementation Plan

EDI provides a medium for conducting business transactions with private Industry and supporting administrative processes within the Department of Defense. It is most effective when moving large volumes of data. The best opportunities for implementing EDI in the procurement function are for high volume actions with consistent data sets. Therefore, the implementation plan contains initial implementation of EDI in support of small purchases. The EC in Contracting PAT estimates that 80 percent of current DoD small purchase actions can be accomplished through current EDI technologies and methods in the two year plan.

Centralized management, systems development, and maintenance are essential elements of successful program execution. Accordingly, the EC in Contracting PAT recommends that appropriate DoD organizations be requested to designate specific activities to support the implementation plan.

The total cost estimate for deploying recommended EDI contracting applications is $26,444,000 during the next two years, approximately half of which is for infrastructure and management that will also support functions beyond contracting.

MAJOR RECOMMENDATIONS

Many recommendations are contained throughout the EC in Contracting PAT's report. The following list represents what the EC in Contracting PAT believes to be the most important:

- DUSD(AR) approve and publish this report.

- OUSD(A) approve the deployments of current DoD EC/EDI procurement initiatives as recommended in this implementation plan.

- OUSD(A) approve the necessary funding to support all requirements in accordance with the implementation plan.

- C^3I ensure that all DISA milestones identified in the implementation plan are accomplished according to the milestones.

- OUSD(A) designate a central functional coordinator to direct the execution of the implementation plan.

- DISA provide all programmed technical support as required by the implementation plan.

- Utilize existing Defense Acquisition University, Small Business Administration, and Procurement Technical Assistance programs as conduits for EC/EDI education.

- Provide EDI vendors with required full text clauses via DoD master solicitation.

- Assign a DoD functional program manager to execute the implementation plan.

- The assigned DoD program manager should create a standard DoD Trading Partner Agreement (TPA) that will be managed by a central activity.

- The assigned DoD program manager should establish a centrally managed DoD standard electronic registration process for EC/EDI trading partners.

- DDP should revise FAR to state that actions valued under $2,500 may be purchased on a brand-name only basis.

- DDP should revise the FAR to require widest dissemination of competitive electronic solicitations.

- DDP should publish all EC/EDI related FAR cases as interim rules.

Conclusion

The work of this DoD In Contracting PAT represents a best effort to provide accurate assessments of current EC DoD contracting capabilities and to set forth a comprehensive plan for implementing, within six months, an EC contracting approach that provides a "single face to industry." The EC in Contracting PAT realized from the beginning that this was a formidable task. The task is complex because of the number

of variables that must be considered when developing an implementation plan for synchronized deployment to the Air Force, Army, Navy, Marines, and Defense Agencies. There is no question that the information provided to the EC in Contracting PAT by the services and agencies was the most current information available at the time. However, the EC/EDI environment is one of constant change. Therefore, the implementation schedules depicted in this report represent the intention of the components to make a good faith effort at achieving deployments in accordance with their submitted schedules.

On the basis of the research and analysis conducted by the DoD In Contracting PAT, it is evident that the time for instituting proactive measures that allow the DoD to reap the full benefits inherent in the EC/EDI process is here. It is the desire of the EC in Contracting PAT that the recommendations contained in this report will be acted upon swiftly since the EC/EDI environment provides an excellent opportunity for acquisition reform and realization of substantial benefits for DoD and Industry.

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VOLUME 1

Foreword

The Department of Defense (DoD) must rapidly implement Electronic Commerce (EC) initiatives and seek process, statutory, and regulation changes that will support the objective of implementing meaningful acquisition reform. The DoD Acquisition Law Advisory (Section 800) Panel's recommendations on raising the small purchase threshold to $100,000, coupled with the need to provide adequate notice of procurement opportunities for small businesses and ensure competitive procurement make immediate expansion of EC capabilities more critical than ever.

The Deputy Under Secretary of Defense for Acquisition Reform established an integrated DoD Process Action Team (PAT) consisting of representatives from the Military Departments, the Defense Logistics Agency and other DoD elements under the Chairman of the Corporate Information Management Procurement Council as a first step in this effort. In addition, representatives from Government organizations outside DoD (e.g., Office of Federal Procurement Policy and the General Services Administration) participated in this effort. This DoD EC in Contracting PAT was tasked to assess the Department's current EC capability in contracting and determine near-term progress that is achievable by building on current EDI initiatives. In particular, it was directed to: assess the current capabilities of the EC/EDI infrastructure and systems; develop a comprehensive plan for implementing an EC approach consistent with the American National Standards Institute (ANSI X12) standards to support simplified acquisition under $25,000 within DoD in the next six months; develop a planning estimate for both the resources and schedule for this approach; identify any relevant policy issues; and emphasize the use of commercial software while promoting competition through the use of multiple Value Added Networks (VANs).

Rapid enhancement of EC capability within the DoD directly supports acquisition reform and the recommendations of the DoD Acquisition Law Advisory Panel, known as the Section 800 panel, which issued its report in January 1993. One of the Section 800 Panel's recommendations was to raise the small purchase threshold from $25,000 to a simplified acquisition threshold of $100,000. This would be particularly valuable to the Department as it would permit DoD to accomplish the vast majority of its procurement actions using simplified procedures rather than the more complex contracting process necessary for major acquisitions. If we are to raise the small purchase threshold, however, we must assure that adequate notice of pending procurement actions will be provided to contractors that sell to DoD. Through EC's capability to provide electronic notice of pending procurements, small businesses will have greater accessibility to DoD procurement information.

Acknowledgments

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VOLUME 1

1.0 INTRODUCTION

VOLUME 1

1.0 INTRODUCTION

1.1 GENERAL

This report assesses the current capabilities of the Electronic Commerce (EC)/ Electronic Data Interchange (EDI) infrastructure that exist today in the Department of Defense (DoD) and sets forth a comprehensive plan for initial implementation within six months of an EC approach for contracting and procurement functions, a planning estimate for both the resources and schedule required, and an identification of relevant policy issues. Specific recommendations are made in order for the DoD to achieve the rapid implementation of EC.

1.2 BACKGROUND

For many years, the DoD has advocated the use of EDI technology to improve its operations and the services provided to its customers. A 1988 Deputy Secretary of Defense memo, addressed to the military services and agencies, solicited maximum use of EDI, based on ten years of DoD EDI experiences. In 1990, Defense Management Review Decision (DMRD) 941 stated:

> The strategic goal of DoD's current efforts is to provide the department with the capability to initiate, conduct, and maintain its external business related transactions and internal logistics, contracting, and financial activities without requiring the use of hard copy media.

To implement meaningful acquisition reform, DoD must rapidly implement EC initiatives and seek statutory and regulatory changes that support these improvements. The DoD's Advisory Panel on Streamlining and Codifying Acquisition Law's (Section 800) recommendations on creating a simplified acquisition threshold, coupled with the need to provide adequate notice for small businesses to ensure competitive acquisition, makes immediate expansion of EC capabilities through standard EDI approaches more critical than ever.

On July 22, 1993, The Deputy Under Secretary of Defense for Acquisition Reform (DUSD(AR)) directed the chairman of the Corporate Information Management (CIM) Procurement Council to form an integrated decision/process action team. The team's purpose was to immediately assess the Department's current EC capability in contracting and to develop a comprehensive plan for the implementation of EDI, or paperless procurement systems, for the procurement of simplified purchases within six months.

1.3 OBJECTIVES

Task objectives were established for the DoD EC in Contracting Process Action Team (PAT) in its charter. The EC in Contracting PAT used these objectives, not only as goals for the entire team, but assigned them individually to working groups within the EC in Contracting PAT itself. This allowed the working groups to focus on specific goals during

their reviews and site visits. Also, input was sought from both private and public entities interested in EC in the Government. All information compiled from research, site visits, and responses to questionnaires was shared with the entire team. The following represents a summary of the DoD EC in Contracting PAT objectives:

- Provide an assessment analysis of the current DoD EC/EDI capability in contracting in order to determine achievable near-term progress.

- Evaluate DoD EC capability to support competitive procurement and improved access and notice to small businesses in support of increasing the simplified acquisition threshold.

- Identify any relevant EC policy issues related to near-term and long-term EC implementation.

- Assess EC/EDI systems architecture (current and future) to include hubs, networks/gateways, Value Added Networks (VANs), etc., to support EC. Identify areas for standardization (e.g., EC/EDI data conventions, VAN certification, vendor registration, etc.). The purpose of this task is to identify likely future developments for which options should be maintained in the implementation of current and available capabilities and systems.

- Identify issues and assess potential areas of risk and uncertainty related to near-term EC.

- Develop a comprehensive implementation plan with specific time-phased recommendations. The plan should identify options, including estimates of resources required to achieve a rapid expansion of EC in Contracting within DoD. Additionally, initiatives to publicize and educate Government and Industry on EC contracting activities should be addressed.

1.4 OVERVIEW OF CONCLUSIONS AND RECOMMENDATIONS

Findings of the EC in Contracting PAT are reflected throughout this report. Recommendations have been made for deployment of selected DoD procurement initiatives based on a functional and technical assessment of each EC/EDI initiative. Also, recommendations have been made to reduce any barriers and assist DoD in successful execution of the EC in Contracting PAT's proposed implementation plan in the areas of policy, risk management, and education. The principal conclusions reached in each of these areas were:

- **Functional EC/EDI Initiatives:** Current EC/EDI initiatives can support near term efforts and should be used as a baseline for future DoD standard systems.

- **Technical Assessments and Analysis:** Although the legacy systems assessed during the EC in Contracting PAT adequately support DoD procurement in the near term; migration toward a standard DoD system is required to reap the full benefits afforded by EC/EDI.

- **Policy Issues:** Current regulations do not preclude the procurement community from doing business electronically. However, we must recognize the EC/EDI methodology and provide for flexibility in our procurement processes. Pending Federal Acquisition Regulation (FAR) cases, as well as cases created during the EC/EDI PAT process, will support successful implementation of EC/EDI.

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- **Risk Management:** EC/EDI can improve the quality and efficiency of defense procurement. However, there are a number of risks that must be managed to achieve EC/EDI benefits without unacceptable risks, particularly in the following areas: confidentiality of data, integrity of data and the continuity of contracting operations.

- **Government/Industry Benefits:** The EC in Contracting PAT review determined that EC/EDI offers a significant increase in the efficiencies and effectiveness of the procurement process. We believe that the initial benefits realized will grow as the procurement process is reengineered to take full advantage of the inherent strengths of EC/EDI and the number of contractors participating in the process increases.

- **Education of Industry and Government:** The DoD EC program manager should provide educational support for implementation of EC in Contracting by: awarding a contract to develop educational materials and conduct orientation conferences; ensuring each component participates in educational events; entering into an interagency agreement with the Small Business Administration (SBA) to provide liaison with the business community; and ensuring that the Defense Acquisition University (DAU) includes EC issues in the curriculum.

1.5 IMPLEMENTATION, BUDGET AND EXECUTION PLANS

EDI provides a medium for conducting business transactions with private Industry and supporting administrative processes within the Department of Defense. It is most effective when moving large volumes of data. The best opportunities for implementing EDI in the procurement function are for high volume actions with consistent data sets. Therefore, the implementation plan contains initial implementation of EDI in support of small purchases. We estimate that 80 percent of current DoD small purchase actions can be accomplished through current EDI technologies and methods.

Centralized management, systems development, and maintenance are essential elements of successful program execution. Accordingly, the EC in Contracting PAT recommends that appropriate DoD organizations be requested to designate specific activities to support the implementation plan.

The EC in Contracting PAT estimates that the total cost for deploying recommended EDI contracting applications is $26,444,000 during the next two years.

1.6 CONCLUSION

The work of this EC in Contracting PAT represents a best effort to provide accurate assessments of current EC DoD contracting capabilities and sets forth a comprehensive plan for implementing, within six months, an EC contracting approach that provides a "single face to industry." The EC in Contracting PAT realized from the beginning that this was a formidable task. The task is complex because of the number of variables that must be considered when developing an implementation plan for synchronized deployment to the Air Force, Army, Navy, Marines, and Defense Agencies. There is no question that the information provided to the EC in Contracting PAT by the services and agencies was the most current information available at the time. However, the EC/EDI environment is one of constant change. Therefore, the implementation schedules depicted in this report represent the intention of the components to make a reasonably good faith effort at achieving deployments on their submitted schedules.

On the basis of the research and analysis conducted by the EC in Contracting PAT, it is evident that the time for instituting proactive measures that allow the DoD to reap the full benefits inherent in the EC/EDI process is here. It is the hope of the EC in Contracting PAT that the recommendations contained in this report will be acted upon swiftly since the EC/EDI environment provides an excellent opportunity for acquisition reform and realization of substantial benefits.

2.0 FUNCTIONAL/TECHNICAL ASSESSMENTS AND ANALYSIS

2.0 FUNCTIONAL/TECHNICAL ASSESSMENTS AND ANALYSIS

2.1 INTRODUCTION

This Chapter represents the functional and technical assessments and analysis of all issues pertaining to the Department of Defense (DoD) Electronic Commerce (EC) in Contracting Process Action Team (PAT) objectives. These assessments include DoD procurement Electronic Data Interchange (EDI) initiatives, near-term and long-term, other Government/Industry initiatives, and consideration of EDI support to other DoD business areas. The functional assessments were performed by representatives from the DoD components. The Defense Information Systems Agency (DISA) was responsible for performing technical assessments of these current initiatives, but also analyzed what was needed for full near-term deployment and migration strategies for longer term technical support needed for a DoD technical infrastructure that could support all business areas.

2.1.1 BACKGROUND

Many EC/EDI initiatives have been underway in the DoD procurement area for a number of years. Business cases prepared for DoD have established the economic advantages of conducting EDI business. Yet, these many initiatives have developed independently with differing solutions to our trading partners. As a result, DoD did not achieve a common EDI standard even within one business area, including procurement.

Defense Management Review Decision (DMRD) 941, the DoD EC/EDI Program, had established principles and objectives to achieve a "single face to industry" solution, however, the progress has been slow since few senior managers have sponsored DoD strategic uses of EC/EDI. Recently the Corporate Information Management (CIM) Procurement Council has made major strides in correcting this situation. DoD began the CIM initiative in 1989 to standardize business processes and information systems across the department. The Director of Defense Procurement chartered the CIM Procurement Council to plan, develop, coordinate, and recommend improved procurement practices; and to oversee the development of automation to support these practices.

Until recently, the functional and technical communities responsible for these initiatives have developed solutions independently and reacted to each other's efforts rather than through the collective responsibilities outlined in traditional life cycle management. Through the sponsorship of the Department of the Under Secretary of Defense (Acquisition Reform) (DUSD(AR)) many of the previous shortcomings are being overcome through the formation of this EC in Contracting PAT, which includes high level business area sponsorship, appropriate functional representation, and technical representation to ensure common solutions can be achieved.

The rapid implementation of EC in the DoD directly supports acquisition reform and several recommendations of the Streamlining Defense Acquisition Laws Report, particularly, the recommendation to raise the small purchase threshold to a $100,000 simplified acquisition threshold. EC contains the inherent capability to provide adequate electronic notices and can enhance access to DoD procurement information for small businesses. Therefore, EC and the associated DoD EDI architecture are vital to the reform program and Congressional support of many other initiatives.

Presently most of the DoD participants (Army, Air Force, Navy, Defense Logistics Agency (DLA), DISA, Defense Commissary Agency (DeCA) and Defense Finance and Accounting Service (DFAS)) have pursued EC/EDI solutions for their automated procurement systems independently in the small purchase area. In order to proceed as quickly and as prudently as possible, with solutions that would allow all activities to address the business community with commonalty, we assessed the Department's current capability in electronic contracting to determine what near-term progress could be achieved in bringing each system's EC/EDI capability to a minimum baseline of operation. In particular, we assessed the current capabilities of the EC/EDI infrastructure and systems to support simplified competitive acquisition under $25,000, consistent with the American National Standards Institute (ANSI X12) with improved access, notice, and participation of small businesses.

The DoD EC in Contracting PAT Charter included DISA participation as a primary member charged with ensuring that technical solutions to meet the functional objectives could be achieved and made good business sense.

The primary objective of the EC in Contracting PAT was to provide for the expansion of electronic commerce in DoD procurement through component sponsored EDI initiatives.

2.1.2 APPROACH

The DoD EC in Contracting PAT used the following approach to arrive at the results presented in this chapter:

- Obtained DoD consensus on functional requirements affecting DISA technical infrastructure support.

- Assessed existing procurement initiatives' functional and technical processes.

- Compared current procurement EDI initiatives to baseline functional requirements.

- Identified any changes/enhancements needed to current initiatives to include all costs and milestones.

- Identified costs/milestones for full deployment of each sponsored procurement EDI system that are functionally recommended for deployment.

- Identified additional functional/technical support needs (current deficiencies).

- Identified risks/assessments.

2.1.3 ASSUMPTIONS

The following represent the major assumptions made during the functional/technical assessments of all initiatives reviewed:

- Assess only the EC/EDI capabilities in contracting and not the merits of the basic automated procurement system with which it may operate.

- Assess only the EC/EDI capabilities that exist today or are imminently available, so as to equally evaluate the support required to enhance, conform, and/or deploy the capability.

- Assess the capability relative to the conventions, mapping, architecture, transactions, standards, and commercial off-the-shelf software and hardware principles agreed to by the members of the EC in Contracting PAT where applicable.

- The EC in Contracting PAT will sponsor deployments of procurement EDI initiatives for activities that process greater than 10,000 transactions of $25,000 or less annually.

- Base Realignment And Closing (BRAC) actions which impact activities scheduled for deployment will be reconciled by each component.

- Approval of all recommendations for deployment.

- Approval of all funding needed to establish additional technical infrastructure in support of deployment.

- No new major organizational restructuring of the support infrastructure will occur during the phases covered by this report.

2.1.4 DoD EC/EDI INTEGRATION PROCESS DESCRIPTIONS

Throughout this chapter, references are made to technical processes while describing current EDI initiatives or target technical support. The following is a summary of the descriptions of those technical processes. Note that these descriptions are of the technical integration process for distribution of EC transactions through EDI and do not reflect a DoD EC/EDI architecture.

The following chart represents the basic EC/EDI integration process

DOD EC/EDI INTEGRATION PROCESS

EDI ENABLING TECHNOLOGY
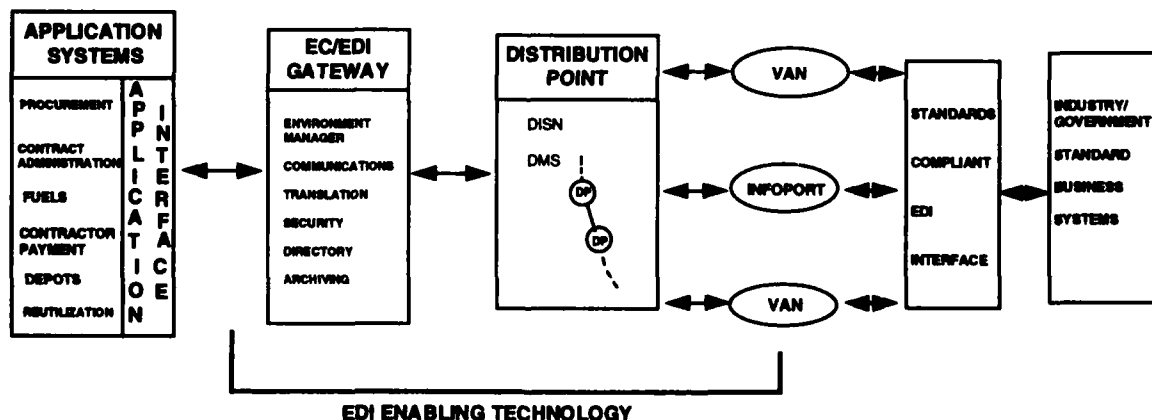
The major objective in this integration process is that our DoD electronic transactions are received by our trading partners in a similar manner, regardless of project/service, and are understandable. This means that different Automated Information System's (AIS's) using wholly dissimilar technologies, using different enabling technology to package the

transactions, can transmit through diverse communication means to arrive at the final Government Distribution Points where the transactions are issued in exactly the same manner to our customers. Therefore, the issue is not that every process must be identical, but that the process "looks" the same to our customers.

A major goal of implementing EDI in DoD is to develop and install a communication and computing infrastructure composed of standard support services and facilities based on standards and principles of open systems. The infrastructure must provide a means of interchanging standard EDI data at a low cost and with a minimum impact on existing automated systems.

Major components of the EC/EDI integration process are as follows:

APPLICATION SYSTEMS - Represents the legacy AIS currently used by the DoD functional business areas to meet their automation needs. In our architecture, we denote that the components remain responsible for their functional requirements for each appropriate AIS. While we can adopt a front-end enabling technology to assist in accomplishing EC/EDI for a particular business function, the true benefits of EC will be realized through the functional business reengineering of their business practices and the resulting changes to their AISs. This is a long term issue that has been the objective of each CIM established in DoD.

APPLICATION INTERFACE - Represents the bridge between the application systems and the EC/EDI gateway functions. The automated business applications contain the data elements necessary for creating EDI transactions. Therefore, software is available and hosted on the gateway that is able to retrieve the data from the application system. While the software to accomplish this interface may reside on the gateway, the actual control and use of these capabilities remains with the application business function.

EC/EDI GATEWAY - Represents a front-end process to the AIS platform. The Gateway concept allows us to obtain an EC/EDI capability in the near-term with those business AIS's that have resident in their system the appropriate data needed for transmission of standard ANSI X12 transaction sets.

The Gateways are designed to consist of modules, such as:

- Environment Manager Module: Provides the EDI system administrator with an interface to the system. It routes data to the application programs, EDI translator, security, and communications modules. It also logs all audit information pertaining to inbound and outbound EDI data. Until an AIS is reengineered to maintain full electronic archives, it will be expected that archiving can be maintained by the Gateway. The Gateway will also be developed for a security trusted environment (C2 for the hardware, operating systems and for all software products used).

- The Communications Module: Provides connectivity with data recipients through the DoD network and licensed EDI Value Added Networks (VANs). The communications module supports unattended operation and error recovery. Data compression may be initiated for efficient EDI transmission. Communication management reports are provided, such as the number of records transmitted and received from each destination. This module will also support use of the X.500 standard, directory services, and meet all other requirements of the Defense Messaging System (DMS).

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- The EDI Translation Module: Provides the ability to change application data format to ANSI X12 standard data format and vice versa. Multiple versions and releases of ANSI X12 standards must be supported simultaneously. This module translates application data to the desired EDI format, validates all data to ensure compliance with ANSI X12 standards, and provides the environment manager module with audit information.

- The Security Module: Provides encryption, key management, and authentication. Under the control of the environment manager module, the security module encrypts/decrypts files or records and generates digital signatures. During decryption, it automatically detects message authentication codes and digital signatures and reports on their validity to the environment manager.

CORPORATE TELECOMMUNICATIONS - The increase in DoD's electronic commerce means less paper to process but places significant increases on the transmission of electronic transactions through our corporate telecommunications networks. The Defense Information Systems Network (DISN) being established by DISA has a major role in the control, movement, and security of our electronic business. Through the DMS project, approved by the Information Technology Policy Board (ITPB) the standards for message handling systems, security, and network access are being instituted. Since the DISN will connect all major DoD processing points where our EC/EDI Gateways will be located to the Government Distribution Point locations, we have been closely monitoring their requirements. The DISN will have a professional network monitoring capability with a restart and recovery capability; essential when DoD's business is being distributed through electronic transactions. Further, the DMS objectives include a secure network on which non-sensitive, sensitive, and classified business can coexist.

GOVERNMENT DISTRIBUTION POINTS (GDPs) - This philosophy allows for the orderly collection from multiple gateways of electronic transactions for distribution to other Government activities or VANs for issue to the Government's intended trading partner(s). DoD will need to distribute transactions in an electronic state to all organizations, external and internal to DoD, that have need for the information. Therefore, DISA will establish multiple GDPs with this mission. The GDPs that connect to VANs will be called Distribution Hubs to differentiate them. There will need to be more than one Distribution Hub for redundancy and continuity of operations (backup contingency) for the vital mission of distributing DoD's daily business.

VALUE ADDED NETWORKS - VANs are in the business of providing distribution of electronic transactions to a customer base spread internationally. Including VANs in the DoD integration process will ensure that the distribution process is designed and implemented consistent with existing commercial VAN support capabilities. This will assist our trading partners, desiring to do electronic business with DoD, in performing our needed electronic distribution of transactions.

TRADING PARTNER CORPORATE PROCESSES - The EC/EDI integration process depicts our trading partners and their corporate automated processes notionally, but does not advocate setting mandated hardware or software solutions as long as the transactions to/from these trading partners are compatible with DoD.

2.2 BASELINE FUNCTIONAL EC/EDI REQUIREMENTS

In support of the findings of this PAT, a number of issues required a consensus approach by all members. Without these basic principles to establish the framework for future implementations, deployments, and upgrades, it would have been impossible to sustain a focused DoD solution for the expansion of EC/EDI with Industry in contracting. The following is a list of the consensus items and explanations. These represent the baseline functional requirements for considerations of expanding EC in Contracting throughout DoD.

2.2.1 ELECTRONIC COMMERCE

EC is defined as the conduct of administration, finance, logistics, procurement, and transportation between the Government and private Industry using an integrated automated information environment to interchange business transactions.

2.2.2 ELECTRONIC DATA INTERCHANGE

EDI is defined as the computer-to-computer electronic transfer of business transaction information in a public standard format between trading partners.

2.2.3 SINGLE FACE TO INDUSTRY

A "single face to industry" is defined as performance of EC by the Government using EDI in accordance with federal information processing standards and a common set of business practices and operational principles. Federal implementation of EDI is depicted in Federal Information Process Standards Publication (FIPS PUB) 161 and DoD Implementation Conventions. FIPS PUB 161 specifies the use of ANSI X12 and/or EDI for Administration, Commerce, and Transport (EDIFACT) for EDI conducted by the Federal Government. The "single face to industry" must be a solution which allows the vendor to be able to process the transaction to and/or from any DoD activity, minimally subscribe to one VAN to do business with all DoD, and register only once to become a DoD supplier (rather than with each DoD component/activity).

2.2.4 CENTRALIZED TRADING PARTNER INFORMATION

DoD will develop a repository for central registration of electronic addressing information, trading partner agreement information, trading partner profile, and other pertinent supplier information. This central repository will be accessible by all applications which require authorized access to this data. It will not be restricted to procurement system access only. The contractor registration process is intended to replace the Standard Form (SF) 129, Commercial And Government Entity (CAGE) code applications, and similar local forms information. A capability for use of EDI to collect and update this data will be established, and will include the ANSI X12 838 transaction set as well as other transactions as needed.

2.2.5 ACCREDITED NATIONAL STANDARDS INSTITUTE X12

Consistent with FIPS PUB 161, DoD has mandated the use of ANSI X12 transaction sets and EDIFACT messages in all DoD EDI with Industry and other Government activities. For an undetermined period, beyond the impending ANSI X12 and EDIFACT harmonization, the use of either standard format will be accommodated.

2.2.6 DoD CONVENTIONS FOR ANSI X12

Implementation conventions are required to allow each functional community to define the requirements of data to be exchanged in the standard EDI format. Configuration management is required to ensure compatibility to the ANSI X12/EDIFACT standards and of transition of multiple versions as supported by current technology. The development of DoD conventions will require inter-service coordination and a central point of contact within DISA responsible for configuration management, with CIM sponsorship and Industry involvement. Functional data decisions will be resolved by the appropriate Office of the Secretary of Defense (OSD) sponsor. In order to facilitate the merger and avoid redundant development, every attempt will be made in future development of implementation conventions to select the appropriate standard mandated by the user community.

2.2.7 MASTER TRADING PARTNER AGREEMENT TRADING FOR ELECTRONIC COMMERCE

The Trading Partner Agreement (TPA) is a standard DoD guideline that will be used to establish procedures among trading partners for the exchange of EDI data. Components of the TPA include, but are not limited to:

(1) Agreement by "both" parties to use EDI;

(2) EDI standards and DoD implementation convention version;

(3) EDI processing cycle times; and

(4) Use and level of functional acknowledgment.

2.2.8 COMPETITIVE SMALL PURCHASE SOLICITATIONS (ONE-TO-ALL)

The DoD EC/EDI technical architecture will ensure that all interested suppliers, regardless of size or location, can have equal access to all solicitations. Some procurements may require restricted distribution.

2.2.9 NONCOMPETITIVE SMALL PURCHASE SOLICITATIONS (ONE-TO-ONE)

The EC/EDI architecture will support transmission of EDI transactions to a specified trading partner as determined by the procurement application.

2.2.10 RESTRICTED COMPETITIVE SMALL PURCHASE SOLICITATIONS (ONE-TO-FEW)

The EC/EDI architecture will support transmission of EDI transactions to specified trading partners as determined by the procurement application.

2.2.11 UNITED NATIONS NORTH AMERICAN INFOPORT

The DoD's "single face to industry" philosophy will be reflected in a single face to the international community through the United Nation's North American Information Port (InfoPort) which will use advanced information networks and service to facilitate the expansion and increase the efficiency of international trade.

2.2.12 USE OF COMMERCIAL AND GOVERNMENT PRODUCTS

The EC infrastructure will be based on approved technical standards that support DoD open systems objectives that include maximum use of Commercial-Off-The-Shelf (COTS) products and reusable Government-Off-The-Shelf (GOTS) software that has been tested, accepted, and is supportable by the Government. DoD will issue a list of supported COTS and GOTS products. A central repository for reusable GOTS products will be identified.

2.2.13 MULTI-AGENCY ACQUISITION VEHICLES

DoD will establish multi-agency contracts for acquisition of EC/EDI capability. Until multi-agency contracts are available, existing contract vehicles should be expanded to include greater EC/EDI capability. Where multi-agency contracts exist for EC/EDI, DoD should make maximum use of them. It is important that multi-agency contract vehicles are put into place and available as soon as possible. The majority of EDI hardware and software is acquired early in the implementation process and multi-agency contracts will decrease that acquisition lead time.

2.2.14 EC/EDI ARCHITECTURE

The DoD EC/EDI architecture will recognize and accommodate the operational requirements of these business functions:

- Procurement
- Contract Administration
- Transportation
- Supply Management
- Financial Management
- Maintenance
- Engineering

2.2.15 GATEWAY PROCESSES FOR ELECTRONIC DATA INTERCHANGE

The EC/EDI Gateway represents a front-end process to the AIS platforms. The Gateway concept allows us to obtain an EC/EDI capability in the near-term with those business AISs that have resident in their system the appropriate data needed for transmission of standard ANSI X12 transaction sets. Gateways can provide many services, examples of some of these modular services are:

File Transfer Protocol (FTP) services	EDI translation software
Message handling services	Compression software
Directory services	Binary transaction software
Archival services	Security software encryption
Environment Manager software	Digital signatures

2.2.16 ELECTRONIC DATA INTERCHANGE DISTRIBUTION, ROUTING AND RECEIPT PROCESS

The module which accomplishes this function (1) controls data flow (inbound and outbound) between the translator and the communication's module by parceling data to configured destinations and (2) stores data for scheduled delivery, or forwards data for immediate delivery based on priority. Alternative solutions to accomplish EDI transaction distribution and routing are being evaluated.

2.2.17 VALUE ADDED NETWORKS

The DoD EC/EDI architecture will provide connectivity to public and private VANs to exchange EC/EDI transactions with trading partners external to DoD. This includes use of dedicated line(s) maintained by individual Trading Partners. VANs may offer bulletin-board services rather than directed delivery of EDI transactions.

2.2.18 VALUE ADDED NETWORK SERVICE LICENSE AGREEMENT

The DoD agreement will establish the terms and conditions with VANs who qualify to carry EDI transactions between DoD and its external trading partners. This is a no cost agreement. This means that DoD will not pay VANs for exchanging transactions with its contractors and VANs will not pay DoD for receiving public transactions (e.g., public Request for Quotations (RFQs) and award summaries sent to all participating VANs). After the agreement is finalized and signed by interested firms, DISA plans to begin work on considering fee based alternatives to it. If found acceptable by DoD, these changes may be incorporated in a revised agreement for the second year of operations. In addition to the technical scope of work which identifies DoD's technical requirements, the agreement will also contain a number of addendum which will describe the functional approach for each of DoD's business areas. At the outset, only one addendum will accompany the DoD VAN License Agreement. Addendum A will describe DoD's approach to EC for small and simplified purchases.

2.2.19 SUPPORT OF MULTIPLE DoD IMPLEMENTATION CONVENTIONS

The DoD EC/EDI architecture will support current, plus the previous two, DoD implementation convention releases, which encompass multiple ANSI X12, and future EDIFACT, version/releases. New Implementation Conventions (ICs) will support older versions of ICs.

2.2.20 SECURITY

EDI security requirements need to be equal to current, non-EDI security requirements and may provide greater security as appropriate. EC/EDI business transactions will be protected by the appropriate security procedures and mechanisms, including data encryption. An approved uniform security standard for encryption and authentication is required for Government EDI. In order to justify an equivalent security level for EDI, penalties for tampering with electronically transmitted data must equate to what is currently in place within the non-EDI environment. Safeguards need to be built throughout the system.

2.2.21 DEPARTMENT OF DEFENSE INFORMATION INFRASTRUCTURE

The EC/EDI architecture will make maximum use of existing and emerging components of the DoD Information Infrastructure (e.g., DISN, DMS).

2.2.22 ARCHIVING EDI TRANSACTIONS

The retention of ANSI X12/EDIFACT transactions may occur at the application level. Retention is a requirement to ensure end-to-end validity and recovery of accurate transactions. Archiving of ANSI X12/EDIFACT transactions must be done at the gateway to ensure recoverability in case of hardware or software problems. The use of EDI does not change application program archiving requirements. Gateway and application archiving are not done for the same purposes.

2.3 TECHNICAL IMPACTS OF BASELINE FUNCTIONAL REQUIREMENTS

Based on the consensus of functional management requirements for baseline EC/EDI processes, there are impacts to the resultant technical infrastructure. These functional requirements were considered in all evaluations of current initiatives and consideration of all DISA support needs.

The 22 EC/EDI functional consensus items provided a baseline for the technical evaluations of all procurement EDI initiatives that are discussed in this chapter. In previous evaluations of EDI systems, there were no clear agreed to principles to use as a guideline when conducting system assessments. This was a major accomplishment of the functional assessment representatives on the DoD EC in Contracting PAT and provided significant guidance to the technical assessment representatives. The baseline requirements provided the basic solutions to achieving a "single face to industry."

2.4 DoD PROCUREMENT FUNCTIONAL/TECHNICAL ASSESSMENTS

2.4.1 INITIAL OVERALL CONSIDERATIONS

Between the dates of August 2 to August 11, 1993, the EC in Contracting PAT visited many different sites that use EC/EDI applications to support their procurement functions. Each of these systems has been proposed by its respective DoD component or service as an example of EDI capabilities for procurement.

2.4.1.1 SPEDE (SAMMS Procurement by Electronic Data Exchange)

> **Procurement System:** SAMMS (Standard Automated Materiel Management System)
> **Location:** DISC (Defense Industrial Supply Center), Philadelphia, Pennsylvania
> **Briefings:** There were briefings given on the DLA Pre-Award Contracting System (DPACS), SPEDE II in DPACS, SPEDE I, and DPACS EDI future. Currently, SPEDE II is the only EDI in DPACS.
> **Surveys:** We received technical responses from DLA Systems Automation Center (DSAC), DISC, Defense General Supply Center (DGSC), and Defense Construction Supply Center (DCSC).
> **Demos:** There was no demo given on SPEDE, but a demo was given on DPACS.
> **Buyers:** Buyers were present at the briefing for discussion purposes.

2.4.1.2 POPS (Paperless Ordering Placement System)

> **Procurement System:** SAMMS
> **Location:** DISC, Philadelphia, Pennsylvania
> **Briefings:** There was a briefing given on POPS. POPS was established in 1982. Some POPS vendors include 3M Company, Eastman Kodak, and GE. We received technical responses from Defense Electronic Supply Center (DESC), DCSC, and DGSC.
> **Surveys:** We received technical responses from DSAC, DISC, DGSC, and DCSC.
> **Demos:** There was no demo given on POPS.
> **Buyers:** During the presentations, buyers were available to answer questions about the system.

2.4.1.3 ITIMP (Integrated Technical Item Management Procurement System)

Procurement System: ITIMP
Location: Aviation Supply Office (ASO), Philadelphia, Pennsylvania
Briefings: There were briefings on ITIMP, EDI Business Goals, and Stock Market Method of Contracting. The Navy Aviation Supply Office is the Navy Inventory Control Point (ICP) that has sole responsibility for the acquisition of supplies needed to support all Navy and Marine aircraft. The AIS used by the Navy is ITIMP.
Surveys: We received a technical response from ASO.
Demos: A demonstration on ITIMP was given during the briefing. We visited the computer operations center and viewed the hardware and software involved in the operations.
Buyers: We visited buyers in the workplace and observed transactions in process.

2.4.1.4 APADE (Automation of Procurement and Accounting Data Entry)

Procurement System: APADE
Location: FISC (Fleet Industrial Supply Center), Charleston, South Carolina
Briefings: A briefing was given on the FISC mission, its customer profile, supply activity, and APADE. FISC is the third largest supply complex in the Navy with the broadest regional support, including Central and South America, and aircraft carriers at sea.
Surveys: We received technical responses from FISC Charleston.
Demos: APADE in procurement was demonstrated on an overhead projector. The demo highlighted Requisition Input/Update and Pre-Award, especially in solicitations.
Buyers: Buyers were present at the briefing to answer questions about the system's ease of use and accuracy.

2.4.1.5 EBBS (Electronic Bulletin Board System)

Procurement System: DESC Phase II
Location: DESC, Dayton, Ohio
Briefings: There was a briefing given on EBBS. This briefing included EBBS features, future enhancements, and contractor feedback. EBBS is a commercial bulletin board package that facilitates about 17 percent of all contracting activities for DESC.
Surveys: The EC in Contracting PAT sent no technical survey for response.
Demos: A demonstration on EBBS was given on an overhead projector during the briefing.
Buyers: There were buyers present during the demonstration to answer questions. The EC in Contracting PAT was also allowed to visit buyers' workstations and observe the buyers in their work environment.

2.4.1.6 SACONS-EDI (Standard Automated Contracting System - EDI)

Procurement System: SAACONS (Standard Army Automated Contracting System)
Location: Tobyhanna Army Depot, Tobyhanna, Pennsylvania
Briefings: Two briefings were presented on SACONS-EDI. One addressed SACONS-EDI and the twelve steps to electronic bidding. The second briefing discussed the interface between the SACONS-EDI application and the Army Standard Depot System (SDS). The gateway at CACI will be moving to Fort Lee, Virginia by October 1993.
Surveys: We received a technical response from the program office.
Demos: We were given a demonstration of QuickBid, the CACI software package required so that the vendor can receive, process, and transmit electronic business transactions.
Buyers: We were invited to operations and witnessed a few actual awards being made. There were also buyers at the briefing who gave their opinions of the system and answered questions.

2.4.1.7 GATEC (Government Acquisition Through Electronic Commerce)

Procurement System: BCAS (Base Contracting Automated System)
Location: Wright-Patterson Contracting Center (WPCC), WPAFB, Ohio
Briefings: There was a briefing given on GATEC. This briefing included the mission of WPCC, the GATEC process flow, education, and development and export costs.
Surveys: We received a technical response from the program office (WPCC).
Demos: A buyer gave us a demonstration on GATEC, which included scanning different screens and making an actual award.
Buyers: A few buyers were invited to the briefing. They shared their individual views on GATEC, and answered questions from the EC in Contracting PAT.

2.4.1.8 MADES I and II (Menu Assisted Data Entry System)

Procurement System: BCAS or Automated Contracting Preparation System (ACPS)
Location: DISA Headquarters at DITPRO (Defense Information Technology Procurement Office)
Briefings: There were briefings given on capabilities and functionality of MADES I and MADES II. MADES was developed at Hill AFB, located in Ogden, UT. MADES II is currently in test. MADES II is installed but not operational at 103 out of a possible 211 sites. MADES I resides on ACPS, and MADES II resides on BCAS.
Surveys: We received a technical response from the program office.
Demos: A demonstration award was performed with the MADES I application.
Buyers: Buyers were not available.

2.4.1.9 DPACS (DLA Pre-Award Contracting System)

Procurement System: SAMMS
Location: DISC, Philadelphia, Pennsylvania
Briefings: A briefing was given on DPACS, followed by a demonstration.
Currently, there is no EC tie-in to DPACS to handle the EC re-solicitation of
failed workload. DPACS is the current Procurement CIM Council migration
system and a briefing was provided on the future of EDI in DPACS.
Surveys: The EC in Contracting PAT sent no technical survey for response.
Demos: We were able to observe a demo of awards being made while a
manager talked through the demo.
Buyers: One of the buyers performed the demonstration. They also answered
questions on the system.

2.4.1.10 DPSC (Defense Personnel Supply Center)

Procurement System: SAMMS
Location: DPSC, Philadelphia, Pennsylvania
Briefings: We were provided a briefing on DPSC business strategies and
reinvention of Government, and then given examples of EC in medical,
subsistence, and clothing and textiles initiatives.
Surveys: The EC in Contracting PAT received a technical survey on SPEDE.
Demos: We toured the Business Counseling Center. This is a refined vendor
education center with the capability to conduct vendor conferences. We were
given a demo of vendor education.
Buyers: Buyers were not available.

2.4.1.11 DAASC (Defense Automatic Addressing System Center)

Procurement System: None
Location: DAASC, Dayton, Ohio
Briefings: A briefing was given on the DAASC mission, DAASC milestones and
architecture, and the DAASC operations. The Modernization of Defense
Logistics Standard Systems (MODELS) and its objectives were also discussed.
We were presented information about the VAN connectivity projects for SPEDE.
Surveys: The EC in Contracting PAT did not send a technical survey for
response.
Demos: No demonstration of the DAASC capability was shown.
Buyers: N/A

2.4.1.12 INITIAL ASSESSMENTS

Based upon the visits shown above DoD has many excellent EC efforts underway.
However, many that we visited did not meet a baseline set of criteria to be a viable
application for expanding within a component. Table 3A represents the consensus of the
team as to what baseline factors are needed if an EDI application is to be deployed to
other sites within the component. If a system received a yes answer to more than three
of the questions listed below, it was considered to have the technical and functional
capabilities to be successful if implemented at more locations within the component.
Using this method, we were able to maximize the use of allotted time and to select,
APADE, GATEC, ITIMP, MADES, SACONS-EDI, SPEDE, and DPACS (because it is a
CIM migration system) for an in-depth assessments and analysis.

TABLE 3A   **INITIAL ASSESSMENT**

	APADE	DESC EBBS	DFACS	BCAS GATEC	ITIMP	ACPS BCAS MADES	SAMMS POPS	SACONS -EDI	SPEDE	SAMMS SPEDE I
HARDWARE AVAILABILITY	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO
CONTRACTS AVAILABILITY	YES	NO	YES	YES	YES	YES	NO	YES	YES	NO
ANSI X12/ EDIFACT (840,843,850)	YES	NO	N/A	YES	YES	YES	NO	YES	YES	NO
DOD CONVENTIONS (DEC 91) OR AFTER	YES	NO	N/A	YES	YES	YES	NO	NO	YES	NO
MODULARITY AIS-GW-DP	YES	NO	N/A	YES	YES	YES	YES	YES	YES	YES
GOV'T SUSTAIN-ABILITY	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES
MULTIPLE TRUSTED 3RD PARTY COMMERCIAL CARRIER	YES	NO	N/A	YES	YES	(1)	YES(2)	YES	YES (2)	NO
COMMERCIAL BASED XLATOR TECHNOLOGY	YES	NO	N/A	NO	YES	NO	NO	YES	YES	NO
RATIO Y:8	8:8	2:8	3:8	5:8	8:8	6:8	3:8	6:8	8:8	2:8

(1) DELIVERY TO VAN HAS BEEN TESTED VIA FILE TRANSFER TO A GATEWAY DISTRIBUTION POINT
(2) DIRECT TO CUSTOMER ALSO
(N/A) SYSTEM SCHEDULED TO BE MODIFIED TO HANDLE EC/EDI

The following is an explanation of the rows on Table 3A.

2.4.1.12.1 HARDWARE AVAILABILITY

"Are the hardware and software that the EDI application runs on available commercially and still supported by the manufacturer?" The purpose of this question is to sort out the viability of hardware and software if the system were to be implemented at more sites. This is not attempting to answer the question of Technical Reference Model compliance, but of system availability.

2.4.1.12.2 CONTRACT AVAILABILITY

"Are the contracts for hardware and software, (and licenses for maintenance of them) that the EDI application runs on, available and open to all the potential sites for procurement EDI within that component?" The purpose of this question is to ascertain whether others may use the hardware and software.

2.4.1.12.3 ANSI X12/EDIFACT BASELINE TRANSACTION SETS

"Does the EDI application use ANSI X12 version 2003 or newer standard transaction set formats including the baseline set of transactions, ANSI X12.840, ANSI X12.843, and ANSI X12.850?" The purpose of this question is to ascertain what EDI standard is being used, if any, and what transaction set is being used.

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2.4.1.12.4 DoD CONVENTIONS

"Does the EDI application use the December 91 DoD conventions that are based on ANSI X12 version 2003 or newer?" The purpose of this question is to ascertain whether or not the DoD Conventions are used.

2.4.1.12.5 MODULARITY

"Is the EDI application modular? Can the application, the gateway, and the distribution point functions be run on different hardware and software?" The purpose of this question is to ascertain whether the software is designed so that additional tasks can be added easily, or existing tasks in any of the above functions be taken out and relocated to coincide with another functional task.

2.4.1.12.6 GOVERNMENT SUSTAINABILITY

"Does the Government have the skills and knowledge to perform the system administration, application maintenance, and application design functions?" The purpose of this question is to ascertain whether the Government can maintain the system if any contractor being used is terminated for any reason.

2.4.1.12.7 MULTIPLE TRUSTED THIRD PARTY CARRIERS

"Does the EDI application currently use multiple VANs for distribution of transactions to vendors?" The purpose of this question is to help determine the degree of alignment of the EDI application to the proposed DoD EC/EDI process flow.

2.4.1.12.8 COMMERCIAL BASED TECHNOLOGY

"Does the EDI application use a COTS translator or other commercial products?" The purpose of this question is to find out the extent the system uses commercial based technology.

2.4.2 COMPARISONS TO BASELINE FUNCTIONAL REQUIREMENTS

The functional requirements for doing EC/EDI within DoD procurement have been explained with the consensus items that were coordinated with the services and agencies. These 22 items are the principles by which every participant has a common ground from which to build their understanding of the EC/EDI requirements in DoD. The statements, comments, and coordination by the services and agencies are in section 2.3. Each of these principles has an effect on the technology and its deployment to satisfy the EC/EDI requirements of DoD. The gateway and distribution point processes are very critical when a "single face to industry" is the goal. It must be clearly understood, however, that the technology changes are the least problematic of changes required to the procurement activities. The addition of transaction sets causes buyer and vendor procedures to vary, and will effect lead time and turn around time for requests and awards. Training and education must begin at all echelons of procurement and application design activities to ensure that change can be implemented. There are several items that have very specific and major effects on technical solutions and costs to implement EC/EDI. Table 4A portrays those requirements that have the most significant impact on the applications and technology being used.

TABLE 4A   BASELINE FUNCTIONAL REQUIREMENTS FOR EC/EDI

	APADE	DPACS	BCAS GATEC	ITIMP	ACPS BCAS MADES	SACONS EDI	SPEDE
ANSI X12 (COTS)	YES	N/A	NO	YES	NO	NO (1)	YES (4)
ANSI X12 DoD CONVENTION	YES	N/A	YES	YES	YES	YES	YES
COMM TO VAN	YES	N/A	YES	YES	NO (3)	YES	YES
FREE OF TECHNICALLY ENFORCED PROCEDURES	YES	N/A	NO (2)	YES	YES	YES	YES
BASELINE TRANSACTION SET (840,843,850)	YES	N/A	YES	YES	YES	YES	YES
FREE OF FUNCTIONALLY ENFORCED PROCEDURES	YES	N/A	YES	YES	YES	YES	YES

(1) SCHEDULED TO USE 'ABC' EDI S/W OCT 93 W/DoD CONVENTIONS
(2) ONE TRANSACTION PER SMTP MESSAGE, ADDRESSING CONTAINED IN SUBJECT LINE
(3) DATA IS SENT VIA FTP TO GATEWAY/DISTRIBUTION POINT
(4) SYSTEM WILL BE FULLY OPERATIONAL IN FY94

The following is an explanation of the rows on Table 4A.

2.4.2.1 ANSI X12 TRANSACTION SETS

Commitment to using the standard ANSI X12 transaction sets, the data element attribute specifications, and the format of the documents is critical to the ability to transfer data as intended. There are many COTS translator packages available today that offer a range of standard capabilities. Most have the ability to use multiple releases of the ANSI X12 transactions, the ability to use either ANSI X12 or EDIFACT formats, the ability to have interactive screen development of the record mapping of native data elements to the ANSI X12 standard transaction set data elements, and the ability to be invoked by many standard programming methods. The use of COTS software is one of the main tenants of the Technical Reference Model, which is the guideline for profiling the DoD goals for open systems. Design activities, both contractor and Government, have developed translators that work well, but have introduced factors that cause errors if not duplicated or done in proper sequence. If some of this software were to be exported to another design activity, the code may conflict with existing code and cause catastrophic errors to occur. This issue will be a factor in determining the cost of changing the legacy EC/EDI systems to meet the baseline functional requirements. APADE, ITIMP and SPEDE already use COTS translators. MADES does not use a translator but outputs directly into standard ANSI X12 format from the application itself. SACONS-EDI is implementing changes that include adding COTS translation software to the package, GATEC uses a translator developed for that system, and DPACS has no EDI capability.

2.4.2.2 DoD ANSI X12 CONVENTIONS

In order to support a "single face to industry," DoD needs to ensure that each activity within the procurement function understands data elements and document formats the same way. If non-standard conventions are developed by design activities in DoD, the consequences could cause inability to pass data that is understood by the intended trading partners. Otherwise, significant effort may be required for changes to a non-standard convention. This issue will be a major factor in determining the cost of changing the legacy EC/EDI systems to meet the baseline functional requirements. APADE, ITIMP, MADES and SPEDE already use the December 91 DoD Conventions. SACONS-EDI is implementing changes that include adding the DoD Implementation Conventions to their system. DPACS does not provide EDI services, and GATEC uses Draft April 93 DoD Conventions.

2.4.2.3 COMMUNICATION TO VAN PROTOCOLS

Generally, the VAN dictates to its trading partners what protocols are acceptable for actually transmitting the ANSI X12 messages. As can be seen from the table, some use asynchronous and others bisynchronous connections. FTP and XMODEM are used as file transfer protocols, but at least one uses SMTP mail messages to transmit ANSI X12 transaction sets. The systems, as they are today, must be capable of many methods, but as the systems migrate to the DoD EC/EDI architecture, only the distribution points will be communicating with the VANs. For assessment of the current systems this was a key aspect, but it will not be a major factor in costing the ability of the system to meet the stated minimal functional requirements because of the establishment of DoD distribution points and the sharing of those costs.

2.4.2.4 TECHNICALLY ENFORCED PROCEDURES

Design activities, for various reasons, have developed unique ways of handling the programming necessary to accomplish tasks. In some cases, as technology (hardware and software) has improved, the older methods are ineffective and unnecessary, and in fact, cause problems when trying to expand or proliferate a task. In the EC/EDI world of procurement, the "single face to industry" will be adversely affected if any of the systems require a specific technology or procedure that is not easily exported or implemented on the other systems. The only instance of technically enforced procedures are those that are used with the GATEC system for distribution of transactions. This is described more fully in the technical analysis section of GATEC.

2.4.2.5 BASELINE ANSI X12 TRANSACTION SETS USED

Each transaction set has a specific function and usage. The procurement functional activities have concluded that to meet the baseline functional requirements for EC/EDI, the ANSI X12.840 (RFQ), the ANSI X12.843 (Response to RFQ), and the ANSI X12.850 (Purchase Order), are the baseline document formats that need to be used. If a COTS translator is used, it is a simple task technically to add transaction sets, but as they are added, the procurement activities and vendors must be ready to use them. The baseline set of transactions are currently being used by APADE, GATEC, MADES, SPEDE, and SACONS-EDI. ITIMP is currently testing the ANSI X12.840, and ANSI X12.843 transactions and they will be implemented in early FY94. DPACS has no ANSI X12 capability.

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2.4.2.6 FUNCTIONALLY ENFORCED PROCEDURES

In order to maintain the "single face to industry," standard procedures and methods should be used across the department as transaction sets are added. For instance, if there is a single point for registration of all vendors, the data usage must be available and understood by all. Functionally enforced procedures are those that cause additional expenditures in the technology or alter the "single face to industry." However, in some of the legacy EC/EDI systems, the technical response to functional requirements has resulted in the software being placed in the same application where the distribution to Industry is taking place. In these cases, the procedures are not necessarily wrong, it just provides Industry with another set of guidelines and processes that are non-standard across DoD. However, these cases did not cause any current differences being noticed by our trading partners for the systems we reviewed.

2.4.3 DETAILED ASSESSMENTS OF SELECTED DoD PROCUREMENT EDI INITIATIVES

The evaluations and deployment schedules depicted in this section represent the best available information at t' . time it was submitted by the components. The components retain the flexibility to deploy their EDI capability to their priority locations in variance of the reported data. The intention is to make a reasonably good faith effort at achieving deployments on the submitted schedule.

2.4.3.1 APADE (Automation of Procurement and Accounting Data Entry

The Fleet Industrial Support Center (FISC) has responsibility for purchasing materials, supplies, and services in support of ships home ported in Charleston, industrial activities and support commands. In addition, FISC Charleston provides procurement support for Naval Activities in Central America, South America, and Antarctica. The AIS that supports the procurement function is APADE, and the Central Design Activity (CDA) for APADE is Fleet Material Support Office (FMSO) Mechanicsburg, PA.

FISC Charleston is the lead site for EC/EDI capabilities being integrated in APADE. Twenty-five Navy procurement activities will implement APADE EC/EDI in FY94. APADE implementation of EC/EDI reflects the Navy's commitment to several key criteria:

1) All software and hardware used will be OSI compliant;

2) EC/EDI will not be directly tied to AISs;

3) EDI translators will be shared by Navy sites to maximize software, hardware, and resource investments; and

4) GOTS/COTS EDI solutions consistent with Industry practices and the ANSI X12 standards.

During prototype, FISC Charleston utilized translation and distribution services at ASO, Philadelphia. APADE has dial-out connectivity to four VANs (Easylink, Ordernet, Harbinger, and GEIS). For APADE EDI operations, FISC Charleston will use the co-located regional translation gateway with EDI configuration similar to that currently at ASO. All 25 APADE activities will use one of the twelve Navy regional translation gateways.

2.4.3.1.1 DESCRIPTION OF CURRENT SYSTEM

The EDI module of this system is integral to the primary procurement AIS application, also identified as APADE. The buyer uses the same software and hardware to produce the purchase transaction regardless of the transmission mode. APADE is a United States Navy system that functions as a small and large purchase, contract writing, action tracking, and management reporting system for operational base and regional contracting offices. APADE was designed in four phases as a full-capacity contracting system. Phase I of APADE developed small purchase (DD Form 1155), contract action tracking, the monthly report of transactions $25,000 or less (DD Form 1057), and Uniform Automated Data Processing System (UADPS) interface. Phase II provides better system interfaces, workload tracking, automated referrals, and the Military Standard Contract Abstract Procedure (MILSCAP). Phase III offers delivery orders and limited solicitation processing. Phase IV offers automated requirements inputs, bidder's mailing lists, Requests For Proposals (RFPs)/Invitation For Bids (IFBs), large dollar purchase formatting, DD Form 350, and contract close-out/archival. APADE currently exists at 25 sites.

APADE, as observed, has the capability to process the following ANSI X12 EDI transactions:

    840 - Request for Quotation
    843 - Response to Request for Quotation
    850 - Purchase Order

Presently the system screens purchase requests against existing contractual instruments with the system p1ᴜᵖᵤ￦ng a delivery order, where a vehicle exists, for buyer review and award. The remaining purchase requests are screened by the buyer for use in the EC process. There is no automated module to create RFQs from the purchase requests or generate awards from EC RFQ responses without buyer action. The RFQs and awards are buyer generated using routine procurement AIS procedures.

RFQs can be addressed to specific contractors to restrict distribution of actions that utilize a Qualified Products List (QPL) or to a sole sources vendor. AIS programs that create output for electronic transmission are organically developed by FMSO, while the actual network software that communicates the data through the gateway is COTS.

The capability has been employed for buying supplies and it allows for a flexible solicitation period. The Procurement Action Lead Time (PALT) experienced by EC buyers on their EC buys is seven days as compared with nine for non-EC buys.

2.4.3.1.2 SYSTEM INFORMATION FLOW (ARCHITECTURE)

Figure 1A depicts the existing EDI application and how it fits into the overall DoD EC/EDI process flow. It shows the software and hardware platforms and their corresponding functional responsibilities. There is no depiction of transaction flow intended in this figure. It is a notional representation that shows which platform provides the functionality required in the DoD EC/EDI integration process. Figure 1B describes in more detail, the flow of transactions through the system.

APADE

FIGURE 1A

DoD EC/EDI PROCESS FLOW
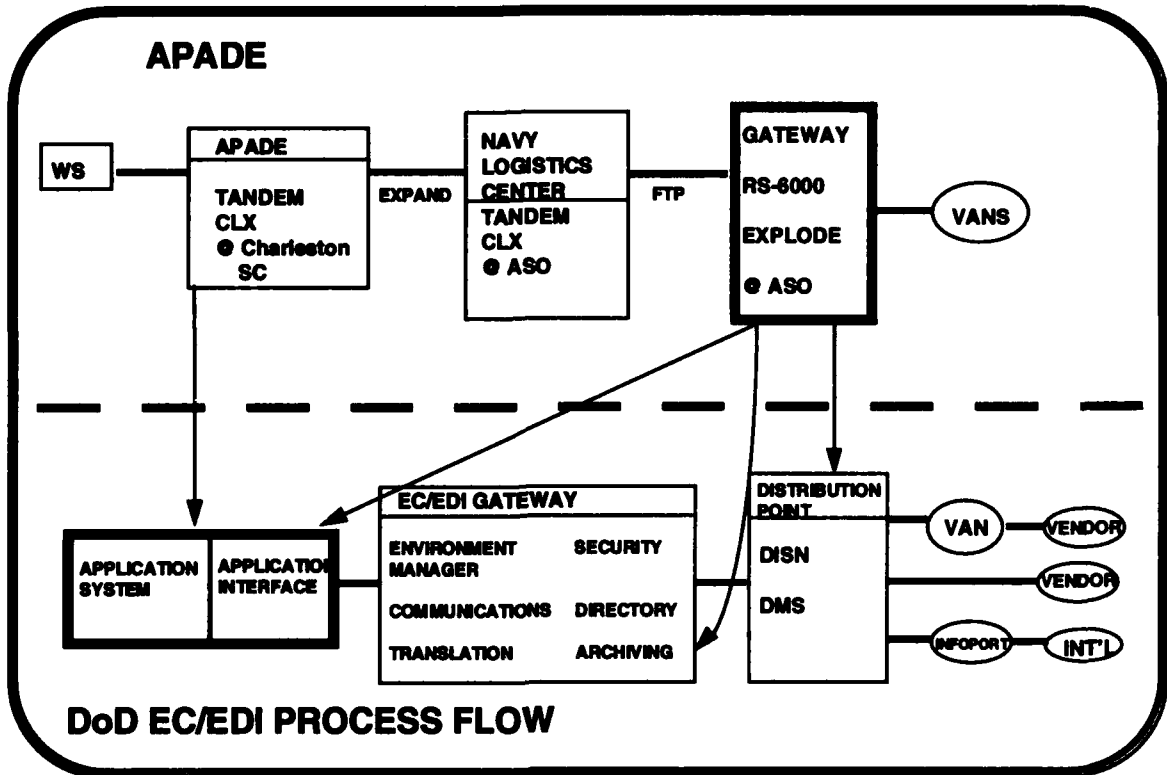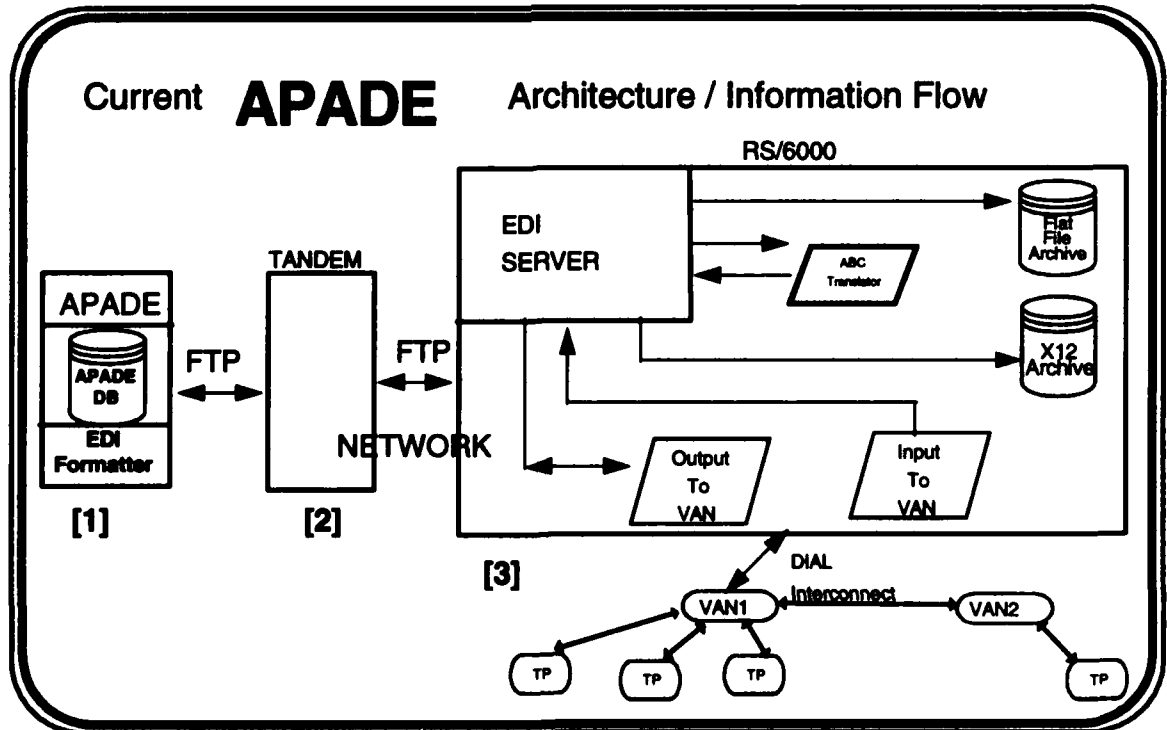
FIGURE 1B

2.4.3.1.3 APPLICATION TO GATEWAY

The data originates in the APADE database on the Charleston main frame (TANDEM) [1], where it is passed through a file formatter program to create a pre-translation flat file. This formatter program is the interface bridge between APADE and the EC/EDI translation software. The flat file is transferred to the ASO Tandem-CLX [2] via a COTS software product called Network Data Mover (NDM). The flat file then goes through a second interface bridge program (EXPLODE), which looks at the addresses found at the top of the file and makes a copy of the transaction set for each of the addresses. From the ASO Tandem the flat file is transferred to the IBM RS/6000 and it [3] checks a defined input directory every fifteen minutes to see if there is EDI data to be processed. The EDI transaction sets are moved to the RS/6000 (Gateway/Distribution Point Processor) via FTP.

2.4.3.1.4 GATEWAY TO DISTRIBUTION POINT PROCESS

The gateway function of translating data to/from the ANSI X12 (version 2003) standards and the distribution point function of "storing and forwarding" to VANs are processed on the same hardware/software platform (RS/6000).

The Navy APADE sites will use one of twelve regional translation gateways. Ten of the 12 gateways are currently operational. The 12 are:

FISC Puget Sound, Washington	NSWC Crane, Indiana
NAWC WD China Lake, California	ASO Philadelphia, Pennsylvania
FISC San Diego, California	SPCC Mechanicsburg, Pennsylvania
FISC Pearl Harbor, Hawaii	FISC Norfolk, Virginia
NSD Yokosuka Japan	MCAS Cherry Point, North Carolina
FISC Charleston, South Carolina	FISC Pensacola, Florida

After the EDI data is sent via FTP to the RS/6000, the data is placed into a sub-directory. A data manager operating within the American Business Computer (ABC) EDI-Server software product checks the sub-directory every two minutes for data to be translated. When a file is detected, a script command is called to invoke the translation of the "EXPLODE" flat file into the ANSI X12 standard format. After the data is translated, it is moved to another sub-directory for transmission to a VAN.

2.4.3.1.5 DISTRIBUTION POINT TO VANs PROCESS

The VAN transmission step can be scheduled or automatic and depends upon the needs of the customer. A communication script within the ABC Inc. software, the translated file to a VAN. Transmission to a VAN occurs via dial-up modem at 4800 BPS. A 3780 hardware/software package is used to convert asynchronous to Binary Synchronous (BSC) protocol, which provides extensive error checking to ensure error-free transmission and reception of data files. Electronic mailboxes are used by the VANs to place and pick up data files. E-mail is not provided between the Navy buyers and the vendors.

2.4.3.1.6 EMPIRICAL DATA

	EDI ONLY	NON-EDI ONLY	TOTAL
NUMBER OF BUYERS	7	10	17
NUMBER OF TRADING PARTNERS	2	1998	2000
NUMBER OF SITES	PROTOTYPE	25	25

	TOTAL ACTIONS	EDI ACTIONS	NON-EDI ACTIONS	TOTAL DOLLARS
FISC OTHER	4629	185	4444	$56,300
FISC PIERSIDE	1755	70	1685	$12,100
TOTAL FISC	6384	255	6129	$68,400

These numbers were taken from the FISC DD1057s submitted for the months of April, May, and June 1993. The EC transactions total four percent of the total transactions. The total FISC actions and dollars are the sum of the FISC Pierside transactions and the FISC Other transactions.

The above tables represent FISC Charleston numbers only. From a procurement action perspective, the Navy has indicated that Charleston is an average sized center.

Recurring Costs

The only significant recurring costs are for software maintenance and integration services associated with the RS/6000. The 25 APADE sites will share the costs of gateways with other functional areas besides procurement and all other Navy and USMC sites. The annual recurring costs for a typical Navy gateway site are: software $19,428, manpower $20,496, or $40,000 per gateway and $480,000 for the twelve Navy gateways.

2.4.3.1.7 EVALUATION AGAINST BASELINE FUNCTIONAL REQUIREMENTS

The baseline functional requirements for EC/EDI were already discussed in section 2.2, and the technical implications of functional decisions were discussed in section 2.4.2. The primary issues of concern are (1) use of ANSI X12 transaction sets, (2) use of DoD conventions that are standard and are agreed upon throughout DoD, (3) elimination of procedures that are uniquely enforced functionally or technically, and (4) use of the baseline set of transactions, X12.840, X12.843, and X12.850.

ANSI X12 COTS	DoD CONVENTIONS	Comm TO VAN	FREE OF TECHNICALLY ENFORCED PROCEDURES	BASELINE TRANSACTION SETS (840, 843, 850)	FREE OF FUNCTIONALLY ENFORCED PROCEDURES
Yes	Yes	Yes	Yes	Yes	Yes

APADE meets the baseline functional requirements.

2.4.3.1.8 COST/MILESTONES FOR REQUIRED BASELINE CHANGES

APADE does not require modification to meet baseline requirements.

2.4.3.1.9 COST/MILESTONES FOR FULL DEPLOYMENT

The deployment of APADE could be accomplished without additional hardware and software at APADE sites. The flat file formatter runs on existing hardware. The flat file could be sent to the Gateway/Distribution Point at ASO, Philadelphia for ANSI X12 formatting and delivery to VANs. Additional dial up costs will be incurred for the increased traffic to the VANs.

Approximately $1,000 per site is needed to deploy APADE. Because APADE with EC/EDI capability will run on the TANDEM equipment already in the field, and the gateways are operational, there is very little cost associated with deployment of APADE with EC/EDI. This $1,000 includes technical training and electronic distribution of the software release. There are 25 sites to deploy at a cost of $25,000. Deployment is scheduled to be completed in eight months.

APADE Deployment Schedule

DEPLOY ORDER	ACTIVITY	CITY	DEPLOY DATE	COST
1	TRF KING'S BAY	KINGS BAY GA	MONTH 1	$1,000
2	FISC CHARLESTON	CHARLESTON SC	MONTH 1	$1,000
3	MCAS CHERRY POINT	CHERRY POINT NC	MONTH 1	$1,000
4	FISC NORFOLK	NORFOLK VA	MONTH 2	$1,000
5	FISC NEWPORT DET	NEWPORT VA	MONTH 2	$1,000
6	NSY NORFOLK	NORFOLK VA	MONTH 2	$1,000
7	NTSC ORLANDO	ORLANDO FL	MONTH 3	$1,000
8	FISC PENSACOLA	PENSACOLA FL	MONTH 3	$1,000
9	FISC JACKSONVILLE	JACKSONVILLE FL	MONTH 3	$1,000
10	MRCC/FISC SAN DIEGO	SAN DIEGO CA	MONTH 4	$1,000
11	NAWC AD CHINA LAKE	CHINA LAKE CA	MONTH 4	$1,000
12	FISC OAKLAND	OAKLAND CA	MONTH 4	$1,000
13	NSY MARE ISLAND	MARE ISLAND CA	MONTH 4	$1,000
14	NAS POINT MUGU	POINT MUGU CA	MONTH 4	$1,000
15	FISC PEARL HARBOR	PEARL HARBOR HI	MONTH 5	$1,000
16	NSY PEARL HARBOR	PEARL HARBOR HI	MONTH 5	$1,000
17	FISC YOKOSUKA	YOKOSUKA JAPAN	MONTH 5	$1,000
18	FISC PUGET SOUND	PUGET SOUND WA	MONTH 6	$1,000
19	NSY PORTSMOUTH	PORTSMOUTH VA	MONTH 7	$1,000
20	NAEC LAKEHURST	LAKEHURST NJ	MONTH 7	$1,000
21	SUB BASE NEW LONDON	NEW LONDON RI	MONTH 7	$1,000
22	NRCC WASHINGTON	WASHINGTON DC	MONTH 8	$1,000
23	NAWC AD PAX RIVER	PAXTUXENT RIVER MD	MONTH 8	$1,000
24	NRCC PHILADELPHIA	PHILADELPHIA PA	MONTH 8	$1,000
25	NSY PHILADELPHIA	PHILADELPHIA PA	MONTH 8	$1,000

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL COST
NUMBER OF SITES	18	7	0	25
COST PER SITE	$1,000	$1,000	0	$1,000
TOTAL COST	$18,000	$7,000	0	$25,000

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2.4.3.1.10 OTHER ISSUES

The Navy EC/EDI Implementation Strategy calls for installation of twelve gateways (RS/6000) to support the Navy sites. EC/EDI data will be transmitted via DISN facilities to the nearest gateway. The gateways contain an ANSI X12 translator with communications capabilities to activate 32 ports.

The decision on distribution points for the Navy is pending. Currently, the ASO RISC6000 acts as the distribution point. As the number of transactions increases, the strategy for distribution points will have to be revisited.

2.4.3.1.11 TECHNICAL ASSESSMENT SUMMARY

The EC/EDI support for APADE is ready to deploy.

The system meets the baseline requirements to support the procurements business area with the 840, 843, and 850 transaction sets.

The Navy has installed twelve gateway processing systems, which will support the 25 APADE sites and the three ITIMP sites. These gateways can also be used by other DoD systems.

The gateways have ABC Translators and ABC EDI-Server software which support ANSI X12 version 2003. DoD EC/EDI Implementation Conventions dated December 91 are used as the basis of exchange with the Navy vendors.

2.4.3.2 GATEC (Government Acquisition through Electronic Commerce)

GATEC currently handles 65 percent of the small purchase commodity workload at Aeronautical Systems Center, at Wright Patterson AFB, Ohio, the only installed site. The system is designed to reduce procurement lead-time, increase competition resulting in lower item costs, and improve buyer efficiency. Vendors gain access to more Government requirements and have greater opportunities to compete for business. The pilot has been operational since October 1992, and has logged over 541,000 transactions. The system currently has the capability to process ANSI X12 EDI transactions.

2.4.3.2.1 DESCRIPTION OF CURRENT SYSTEM

The EDI module of this system is not integral to the primary procurement AIS, but stands alone as a system which interoperates with BCAS. The buyer utilizes a different hardware/software configuration to complete transmissions electronically than they do for conventional purchase transactions. BCAS is an on-line Air Force mini-computer system located at each base contracting office worldwide. It produces abstracts, written solicitations, purchase and delivery orders, basic agreements and contracts. As currently configured, GATEC interfaces with the BCAS to allow buyers to solicit and award small purchase commodity requirements electronically.

GATEC uses EDI to send RFQs (840) to vendors, receive quotes from vendors (843), and to transmit awards (850) and award summary information (836) back to vendors. The flow of information goes from BCAS through the GATEC application for translation

return routing is reversed. At award, pertinent information (award summary) is posted on the VANs for public information. All actions are generated by a buyer, using GATEC procedures. The buyer has the flexibility to modify solicitation periods or address an RFQ to specific contractors for restricted actions (e.g., QPL and sole source items.)

GATEC, as observed, has the capability to process the following ANSI X12 EDI transactions:

836 - Contract Award
838 - Trading Partner Profile
840 - Request for Quotation
843 - Response to Request for Quotation
850 - Purchase Order
997 - Functional Acknowledgment

Presently the buyer screens purchase requests in GATEC for use in the EC process, as there is no automated procurement system screening capability to select buys that could be solicited/awarded through EC means. The RFQs and awards are buyer generated using the routine AIS procedures. RFQs are posted for nation-wide visibility on multiple VANs allowing for nation-wide dissemination.

One unique principle of GATEC is it provides for multiple VANs through a Distribution Point (DP) operated by Lawrence Livermore National Laboratories (LLNL). Duplication or deployment of this methodology must involve the use of LLNL since the AF does not currently have an in-house capability to support this project.

The PALT experienced by EC buyers on their EC buys is eleven days as compared with 22 days for the non-EC buys. Due to the reduction in buyer interface, it is estimated that an EC buyer can process up to 16 EC actions per day as compared to 6 non-EC buys.

2.4.3.2.2 SYSTEM INFORMATION FLOW (ARCHITECTURE)

Figure 2A depicts the existing EDI application and how it fits into the overall DoD EC/EDI process flow. It shows the software and hardware platforms and their corresponding functional responsibilities. There is no depiction of transaction flow intended in this figure. It is a notional representation that shows which platform provides the functionality required in the DoD EC/EDI integration process. Figure 2B depicts, in more detail, the flow through the system.

The BCAS application runs on a Wang VS-8460 minicomputer running Wang operating system. This application interfaces with the Base Supply System. Figure 2A and the following discussion detail the flow of system information.

BCAS/GATEC

BUYER TERM

BCAS WANG OS VS-8460

LLNL D.P.

G.S.T. P.E.M RETIX X.400 UNIFY RDBMS UNIX SUN/SPARC

X.400/SMTP/UUCP

6 VANS

BUYER PC DOS

LAN TCP/IP SMTP

DDN/INTERNET/DIAL

FTP TCP/IP/SMTP

DDN/INTERNET/DIAL

1/200 ONE SITE

EDI GATEWAY UNIX/SUN SPARC G.S.T/ORACLE/P.E.M

EC/EDI GATEWAY

DISTRIBUTION POINT

APPLICATION SYSTEM

APPLICATION INTERFACE

ENVIRONMENT MANAGER

DIRECTORY

DISN

VAN

VENDOR

COMMUNICATIONS

ARCHIVING

DMS

VENDOR

TRANSLATION

INFOPORT

INT'L

DoD EC/EDI PROCESS FLOW

FIGURE 2A

Current **GATEC** Architecture / Information Flow

Gateway

Distribution Point

X12 Archive

GST Translator

UNIX Sendmail Utility

DDN/Internet

SMTP

UNIX Sendmail Utility

Traffic Archiving

ORACLE

Store & Forward

Flat File Archive

Input File BCAS

VAN Connection

[2]

[3]

VAN7

VAN2

VAN1

Procurement File

BCAS

TP

TP

TP 2

TP 1

[1]

TP 3

FIGURE 2B

2.4.3.2.3 APPLICATION TO GATEWAY

Gateway hardware consists of a pair of Sun SPARCstations (a 10/20 and a 10/30). However, a single Sun SPARCstation (a 10/20) is used for testing and is completely functional as an EC/EDI Gateway. Requisition data is downloaded from BCAS [1] to the EC/EDI Gateway [2] on a pre-set schedule operator manual intervention. The data to be downloaded is first converted on the Wang from the Wang-specific indexed format files into consecutive format files so they may be copied to the Gateway system using the FTP utility. The data is downloaded over a LAN that interconnects the Wang to the Gateway. Data that has been downloaded to the gateway is entered into an ORACLE relational database. The buyer then accesses this data via an interactive mouse-driven display on a standard Personal Computer (PC), and may elect to modify the data before issuing a RFQ which is electronically sent to the distribution point [3]. Data is automatically uploaded (Gateway to Application) using a User Agent software process written in Gateway script via an interactive TELNET session over the same LAN. The upload process mimics the data entry actions of a user entering the award data. This software automatically navigates the award screens of BCAS and enters the data into the correct fields. The gateway receives SMTP packages from the distribution point, containing quotes (843) and textual messages (864), which are unwrapped and translated from ANSI X12 and placed into the database for later review by the buyer. The buyer interactively reviews all quotes electronically and makes a selection, then that information is formatted and uploaded to the BCAS. If the BCAS accepts the data, then the GATEC system updates the database and issues an 850 (Purchase Order) addressed to the winning vendor and an 836 (Award Summary) addressed to "public" for the distribution point to process.

2.4.3.2.4 GATEWAY TO DISTRIBUTION POINT PROCESS

The Distribution Point (HUB) performs the process of storing, re-addressing, and forwarding transactions both ways: from the EC/EDI Gateway to the VANs as well as from the VANs to the EC/EDI Gateway. The HUB is currently located at LLNL, although it could be located at any location that had the necessary VAN connectivity and Internet connection. Data is exchanged between the gateway and the HUB (and vice versa) via DDN/Internet using the Simple Mail Transfer Protocol (SMTP) mail standard (RFC 821) and Interface software. The buyer's RFQ is translated into an ANSI X12 RFQ (840) at the Gateway. It is then placed into an SMTP envelope, addressed to "public" at the HUB, and processed by the Gateway's UNIX sendmail utility. The HUB keeps a copy of every transaction that passes through it in either direction, allowing a reconstruction of history for either audit purposes or in case of catastrophic failure and loss of data at an EDI Gateway site.

2.4.3.2.5 DISTRIBUTION POINT TO VANs PROCESS

The HUB operates on a Sun SPARCstation Model 10/XX and a pair of 486 PCs, and with the Interactive UNIX Operating System. It uses RETIX X.400 software for enveloping, Unify RDBMS for maintaining a database of vendor registrations, and the Government Standard Translator (GST) for performing the translation of the 838 transaction. For transactions addressed to "Public", the HUB receives a single SMTP transaction containing the ANSI X12 interchange (such as the RFQ or an award summary to be publicly posted) from the EC/EDI Gateway and generates multiple SMTP transactions for each VAN by referring to a local table of VANs. The HUB will only allow SMTP transactions received from a registered EC/EDI Gateway to be passed to VANs. The HUB also contains the registration software which allows a vendor to electronically register via ANSI X12.838 transaction set. A single registration is sufficient to allow the vendor to receive RFQs and submit quotes to the GATEC based EC/EDI Gateway.

Seven VANs have been tested and qualified, and five are currently doing business with the GATEC system. The data exchange with each VAN may use either SMTP, X.400 or Unix to Unix Copy (UUCP) format. The HUB has physical connections to VANs using dedicated lines (X.25 line rated at 50Mb/sec), Internet (10Mb/sec), and dial-up modem (9.6 KB/sec).

2.4.3.2.6 EMPIRICAL DATA

WPAFB Operation, Commodity Small Purchases Only

	EDI ONLY	NON-EDI ONLY	TOTAL
ACTIONS PER MONTH *	1,900	1,900	3,800
DOLLARS PER MONTH *	$700K	$2M	$2,700,000
NUMBER OF BUYERS	5	9	16
NUMBER OF TRADING PARTNERS	338***	**	**
NUMBER OF SITES	1	0	1

* Average for four months (May - August 93)
** 3500 active, 13000 total
*** One VAN, General Electric has an additional 1300 trading partners that are slowly being given access to GATEC. Should be on line by mid-October 1993.

GATEC currently runs only at the Aeronautical Systems Center. The estimated number of transactions and their estimated dollar value is based upon an average for WPCC for four months in FY93. GATEC requires one administrator/systems operator at the gateway location, two programmers maintaining and four programmers developing software. The Air Force has indicated that all development for GATEC will be complete in November 93. Gateway operations are planned to be transferred to the Systems Support Center at Gunter AFB, Alabama.

2.4.3.2.7 EVALUATION AGAINST BASELINE FUNCTIONAL REQUIREMENTS

The baseline functional requirements for EC/EDI were discussed in section 3.3.2, and the technical implications of functional decisions were discussed in section 3.3.1. The primary issues of concern are (1) use of ANSI X12 transaction sets, (2) use of DoD conventions that are standard and are agreed upon throughout DoD, (3) elimination of procedures that are uniquely enforced functionally or technically, and (4) use of the baseline set of transactions, X12.840, X12.843, and X12.850.

ANSI X12 COTS	DoD CONVENTIONS	Comm TO VAN	FREE OF TECHNICALLY ENFORCED PROCEDURES	BASELINE TRANSACTION SETS (840, 843, 850)	FREE OF FUNCTIONALLY ENFORCED PROCEDURES
No	Yes	Yes	No	Yes	Yes

GATEC does conform to ANSI X12 (version 3010) translation procedures and draft DoD Conventions, dated April 93. GATEC has implemented several procedures in handling EC/EDI:

1) Each Transaction Set is wrapped in a SMTP communications envelope. The limit of one transaction set per envelope is due to the maximum length restrictions of the SMTP transmission.

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2) The subject line of the SMTP envelope is constructed from the contents of the transaction set, e.g., transaction set identifier, originating site address RFQ number and line item number.

3) One X12.836 (addressed to "public") Notification of Award, is sent to the GATEC HUB, where the transaction set is copied and sent to each VAN attached to the GATEC Hub. The VANs have the responsibility to provide the 836 information to all interested vendors; some VANs put the information on a bulletin board, and other VANs send a copy of the 836 directly to each vendor.

4) Vendor registration is processed by the GATEC Hub, in conjunction with facilities mutually agreed to by the VANs providing GATEC connectivity. The X12.838, Vendor Profile, is used by the vendors to register with GATEC. The Vendor Registration data base is downloaded to the GATEC processing site.

5) The network used between the GATEC site and the GATEC Hub is Internet using SMTP (RFC 821).

6) Connectivity to the VANs is either SMTP via Transmission Control Protocol/ Internet Protocol (TCP/IP) or X.400 via X.25.

2.4.3.2.8 COST/MILESTONES FOR BASELINE CHANGES

See Other Issues Section 2.4.3.2.10.

2.4.3.2.9 COST/MILESTONES FOR FULL DEPLOYMENT

See Other Issues Section 2.4.3.2.10.

2.4.3.2.10 OTHER ISSUES

During the course of the evaluation of service EC/EDI systems, the Air Force decided against the parallel development and deployment of both GATEC and MADES. They recommended a course which would combine the best aspects of each system, and evolve them as the EDI capability for the Air Force BCAS system.

2.4.3.2.11 TECHNICAL ASSESSMENT SUMMARY

GATEC meets the baseline transaction set requirement for the procurement business area, the 840, 843, and 850. GATEC uses the ANSI X12 version 3010 and draft DoD Conventions dated April 93.

2.4.3.3 ITIMP (Integrated Technical Item Management Procurement Systems)

The Naval Aviation Supply Office (ASO) is the Navy ICP that has sole responsibility for the acquisition of replenishment spare parts and services to support all Navy and Marine Aircraft. The wholesale procurement application system used by ASO to perform this mission is the Navy's ITIMP. In order to implement transmission of procurement data among computers in the Navy and vendors in private Industry, an EC/EDI interface was added to ITIMP; by the ITIMP CDA at FMSO Mechanicsburg, Pennsylvania.

ITIMP has dial-out connectivity to four VANs (Easylink, Ordernet, Harbinger and GEIS). There are currently 65 Trading Partners testing ITIMP. EC/EDI traffic is transmitted twice a week. Additionally, synopsis and award data is automatically extracted from the

ITIMP database and transmitted electronically to the Commerce Business Daily (CBD) each work day. The same system, ITIMP, is also in test at the Navy Ships Parts Control Center (SPCC) in Mechanicsburg, Pennsylvania.

2.4.3.3.1 DESCRIPTION OF CURRENT SYSTEM

The EDI module of this system is integral to the primary procurement AIS also identified as ITIMP. The buyer uses the same software and hardware to produce the purchase transaction regardless of transmission media. ITIMP is an operational Navy system that is menu driven and provides the user with a complete system for the creation, update, printing and retrieval of small and large purchase documents. The user is able to tailor specific areas to each purchase, while the system takes care of selecting clauses and other data on the specific parameters of the purchase. The system will use that data to create solicitation and award documents that are complete and ready for mailing. ITIMP, as an AIS, requires minimal user interface and, based on the data provided by the activity, will automatically validate the data to ensure the document is complete and current. ITIMP is located at the three ICPs within the Navy and Marine Corps.

ITIMP, as observed, has the capability to process the following ANSI X12 EDI transactions:

    850 - Purchase Order
    997 - Functional Acknowledgment

Presently, the system screens purchase requests for existing contractual instruments and, where applicable, generates a delivery order to the vendor without any buyer intervention. This capability is identified in ITIMP as FATE-TURBO. No other EDI award capability is available at this time.

RFQs and Responses to RFQs (840, 843) will be posted for nation-wide visibility, when implemented in 1994, through the use of a single VAN (AT&T Easylink) and "point to point" with limited partners, while the actual network software that communicates the data through the gateway is COTS. AIS programs that create output for electronic transmissions are organically developed by FMSO.

The EC capability has been employed for supply transactions initiated in the ITIMP item management module.

2.4.3.3.2 SYSTEM INFORMATION FLOW (ARCHITECTURE)

Figure 3A depicts the existing EDI application and how it fits into the overall DoD EC/EDI process flow. It shows the software and hardware platforms and their corresponding functional responsibilities. There is no depiction of transaction flow intended, it is a notional representation, that shows which platform provides the functionality required in the DoD EC/EDI integration process. Figure 3B describes, in more detail, the flow of transactions through the system.

ITIMP

DoD EC/EDI PROCESS FLOW

FIGURE 3A

Current **ITIMP** Architecture / Information Flow

GATEWAY

FIGURE 3B

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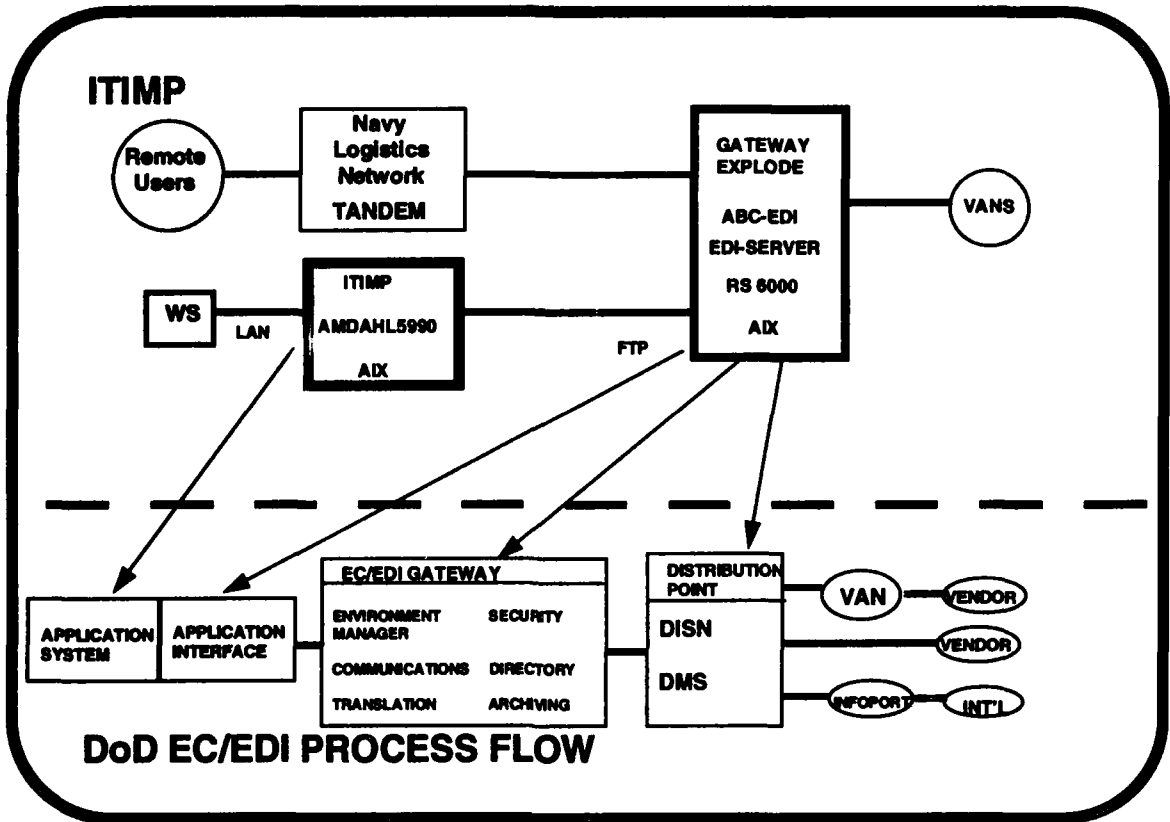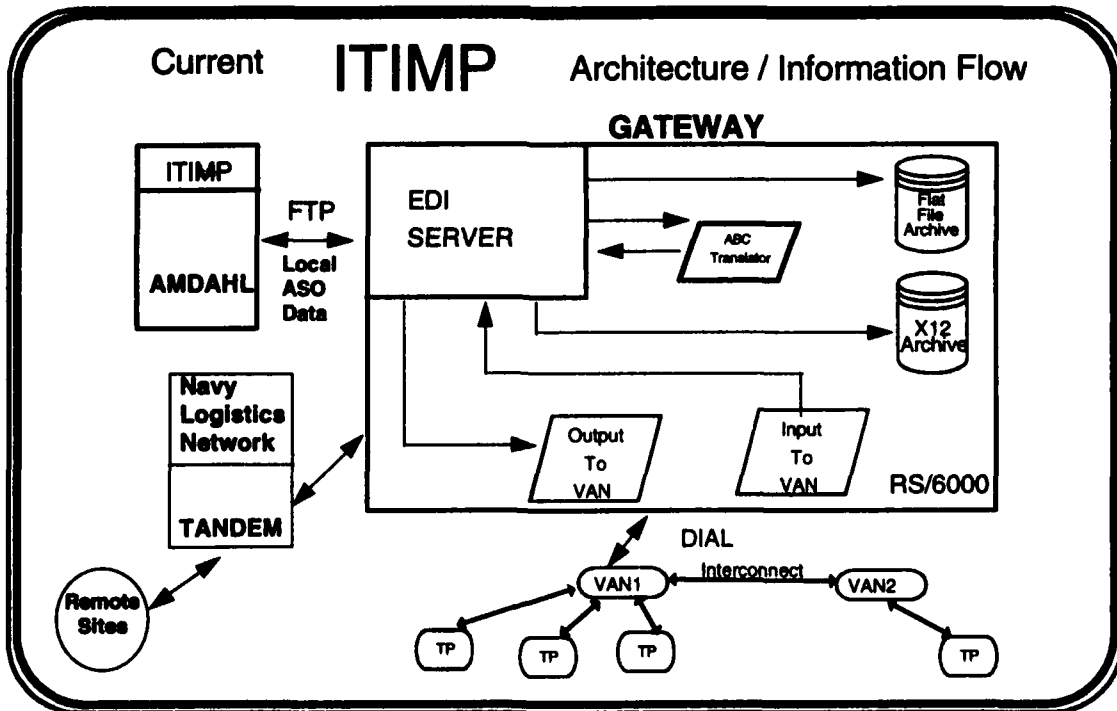
2.4.3.3.3 APPLICATION TO GATEWAY

The data originates in the ITIMP database on the main frame (AMDAHL-5990), where it is passed through a file formatter program to create a pre-translation flat file. This formatter program is the interface bridge between ITIMP and the EC/EDI translation software. The flat file is transferred to the Tandem-CLX via a COTS software product called Network Data Mover (NDM). The flat file then goes through a second interface bridge program (EXPLODE), which looks at the addresses found at the top of the file and makes a copy of the transaction set for each of the addresses. The Tandem checks a defined input directory every fifteen minutes to see if there is EDI data to be processed. The EDI transaction sets are moved to the RS/6000 (Gateway/Distribution Point Processor) via FTP.

2.4.3.3.4 GATEWAY TO DISTRIBUTION POINT PROCESS

The gateway function of translating data to/from the ANSI X12 standards (version 2003), using DoD Conventions dated December 1991, and the distribution point function of "storing and forwarding" to VANs are processed on the same hardware/ software platform (RS/6000). The gateway located at ASO is one of twelve regional EDI gateways, each with the same suite of software and hardware.

After the EDI data is sent via FTP to the RS/6000, the data is placed into a sub-directory. A data manager, operating within the ABC EDI-Server software product, checks the sub-directory every two minutes for data to be translated. When a file is detected, a script command is called to invoke the translation of the "EXPLODE" flat file into the ANSI X12 standard format. After the data is translated, it is moved to another sub-directory for transmission to a VAN.

2.4.3.3.5 DISTRIBUTION POINT TO VANs PROCESS

The VAN transmission step can be scheduled or automatic and depends upon the needs of the customer. A communication script within the ABC software transmits the translated file to a VAN. Transmission to a VAN occurs via dial-up modem at 4800 BPS. A 3780 harc ware/software package is used to convert asynchronous to BSC protocol, which provides extensive error checking to ensure error-free transmission and reception of data files Electronic mailboxes are used by the VANs to place and pick up data files. E-mail is not provided between the Navy buyers and the vendors.

2.4.3.3.6 EMPIRICAL DATA

	EDI ONLY	NON-EDI ONLY	TOTAL
NUMBER ACTIONS PER MONTH	0	6202	6202
DOLLARS PER MONTH	0	$406,400,000	$406,400,000
NUMBER OF BUYERS	0	240	240
NUMBER OF TRADING PARTNERS	0	65	65
NUMBER OF SITES	PROTOTYPE	2	3

Recurring Cost

The only significant recurring costs are for software maintenance and integration services associated with the RISC 6000. The three ITIMP sites will share the costs of gateways with other functional areas. The annual recurring costs for a typical Navy gateway site are: software $19,428 , resource costs of $20,496, or approximately total costs of $40,000 per gateway. The total costs for all twel proposed Navy gateways would be $480,000.

2.4.3.3.7 EVALUATION AGAINST BASELINE FUNCTIONAL REQUIREMENTS

The baseline functional requirements for EC/EDI were discussed in section 2.2, and the technical implications of functional decisions were discussed in section 2.4.1. The primary issues of concern are (1) use of ANSI X12 transaction sets (version 2003 or most recent), (2) use of DoD implementation convention (December 1991), (3) eliminating procedures that are uniquely enforced functionally or technically, and (4) use of the baseline set of transactions, ANSI X12.840, ANSI X12.843, and ANSI X12.850. From the information gathered from site visits, technical surveys, interviews, and phone conversations.

ITIMP as tested will meet the baseline requirements and will be fully operational in August 1994.

ANSI X12 COTS	DoD CONVENTIONS	Comm TO VAN	FREE OF TECHNICALLY ENFORCED PROCEDURES	BASELINE TRANSACTION SETS (840, 843, 850)	FREE OF FUNCTIONALLY ENFORCED PROCEDURES
Yes	Yes	Yes	Yes	Yes ·	Yes

2.4.3.3.8 COST/MILESTONES FOR BASELINE CHANGES

ITIMP does not require modification to meet baseline requirements.

2.4.3.3.9 COST/MILESTONES FOR FULL DEPLOYMENT

The deployment of ITIMP could be accomplished without additional hardware and software at ITIMP sites. The flat file formatter runs on existing hardware. The flat file could be sent to the Gateway/Distribution Point at ASO, Philadelphia for ANSI X12 formatting and delivery to VANs. Additional dial up costs will be incurred for the increased traffic to the VANs. There are three sites to implement, at the cost of $1,000 per site. Total cost of $3,000 and completion in eight months.

ITIMP Deployment Schedule

DEPLOY ORDER	ACTIVITY	CITY	DEPLOY DATE	COST
1	ASO PHILADELPHIA	PHILADELPHIA, PA	MONTH 8	$1,000
2	SPCC MECHANICSBERG	MECHANICSBERG, PA	MONTH 8	$1,000
3	MCLB ALBANY	ALBANY, GA	MONTH 8	$1,000
3				$3,000

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTALS
NUMBER OF SITES	0	3	0	3
COST PER SITE	$1,000	$1,000	0	$1,000
TOTAL COST	$0	$3,000	0	$3,000

2.4.3.3.10 OTHER ISSUES

The Navy EC/EDI Implementation Strategy calls for installation of twelve reciprocal gateways (RS/6000) to support Navy sites. EC/EDI data will be transmitted via DISN facilities to the nearest gateway. The gateway contains an ANSI X12 translator with communications capabilities to activate 32 ports.

The RS/6000 at ASO is used as the gateway and the distribution point. The distribution point function could be separated and migrated to a DoD Distribution HUB location.

2.4.3.3.11 TECHNICAL ASSESSMENT SUMMARY

ITIMP like APADE should be implemented at the appropriate Navy sites.

2.4.3.4 MADES (Menu Assisted Data Entry System)

The Menu Assisted Data Entry System (MADES) is the solicitation and contract preparation portion of the Air Force procurement AIS, ACPS or BCAS. There are two different versions of MADES. Additionally, there is a client/server graphical buyer interface concept for this EC/EDI capability that will be discussed in this section.

- MADES I, interfaces to ACPS

- MADES II, interfaces to BCAS

- Air Force EDI II, will be a client/server system with a graphical user interface for EC/EDI capability

MADES I transfers transaction sets via FTP to a Gateway and in turn to a Distribution Point. ANSI X12 formatting is an integral part of MADES I. MADES I is installed at the Air Force ACPS sites, but the procedure for creating an ANSI X12 data file has not been activated. An operating procedure must be developed to address the handling of data from the Air Force to its customers via an EC/EDI Gateway/Distribution Point.

The EC/EDI capability is being ported to MADES II for interface to BCAS, and is scheduled to be tested in October 1993. Operating procedures must be modified to handle MADES II data via the EC/EDI Gateway/Distribution Point.

2.4.3.4.1 DESCRIPTION OF CURRENT SYSTEM

The EDI module of this system would be integral to primary AIS, although it is presently not operational with any. The buyer would use the same software and hardware to produce the purchase transactions regardless of the transmission media. The operational Air Force AIS's are ACPS and BCAS. The document preparation portion of MADES does operate at a number of sites at this time but can not transmit data electronically.

ACPS is a contract-writing, DD Form 350 preparation and pre-award action tracking system for central supply contracting that exists at all five ACPs in the Air Force. It consists of several subsystems: (1) MADES preparation of contractual documents from stock number, part number, descriptions, and delivery data which automatically passes from the acquisition and due-in system; (2) Manufacturer database containing contractor-related data such as names/addresses, CAGE codes, size codes, Dunn and Bradstreet Number (DUNS) and debarred/suspended status; (3) Automated Bidders List; (4) Automated Synopsis generation and transmission to the Commerce Business Daily (CBD); and (5) the Federal Acquisition Regulation (FAR) "on-line." As a by-product of awards, ACPS generates manpower data and is capable of generating MILSCAP transactions. BCAS as an AIS is summarized under GATEC (see subsection 2.2.2).

MADES is designed to be capable of processing the following ANSI X12 EDI transactions:

> 836 - Contract Award
> 838 - Trading Partner Profile
> 840 - Request for Quotation
> 843 - Response to Request for Quotation
> 850 - Purchase Order
> 864 - Text message
> 997 - Functional Acknowledgment

Presently the RFQs are buyer generated using routine AIS procedures as there is no automated RFQ capability. The subsequent awards are buyer generated also using routine AIS procedures. There is no capability for generating awards resulting from EC responses without buyer intervention.

RFQs will be posted for nation-wide visibility through a capability that provides for multiple VANs. RFQs can be addressed to specific contractors to restrict distribution of actions that utilize a QPL or to a sole source vendor. This design allows for the use of COTS software.

The EC capability can be employed when buying either supplies or services and allows for a flexible solicitation period.

2.4.3.4.2 SYSTEM INFORMATION FLOW (ARCHITECTURE)

Figure 4A depicts the existing EDI application and how it fits into the overall DoD EC/EDI process flow. It shows the software and hardware platforms and their corresponding functional responsibilities. There is no depiction of transaction flow intended in this figure, it is a notional representation that shows which platform provides the functionality required in the DoD EC/EDI integration process. Figure 4B shows the systems flow.
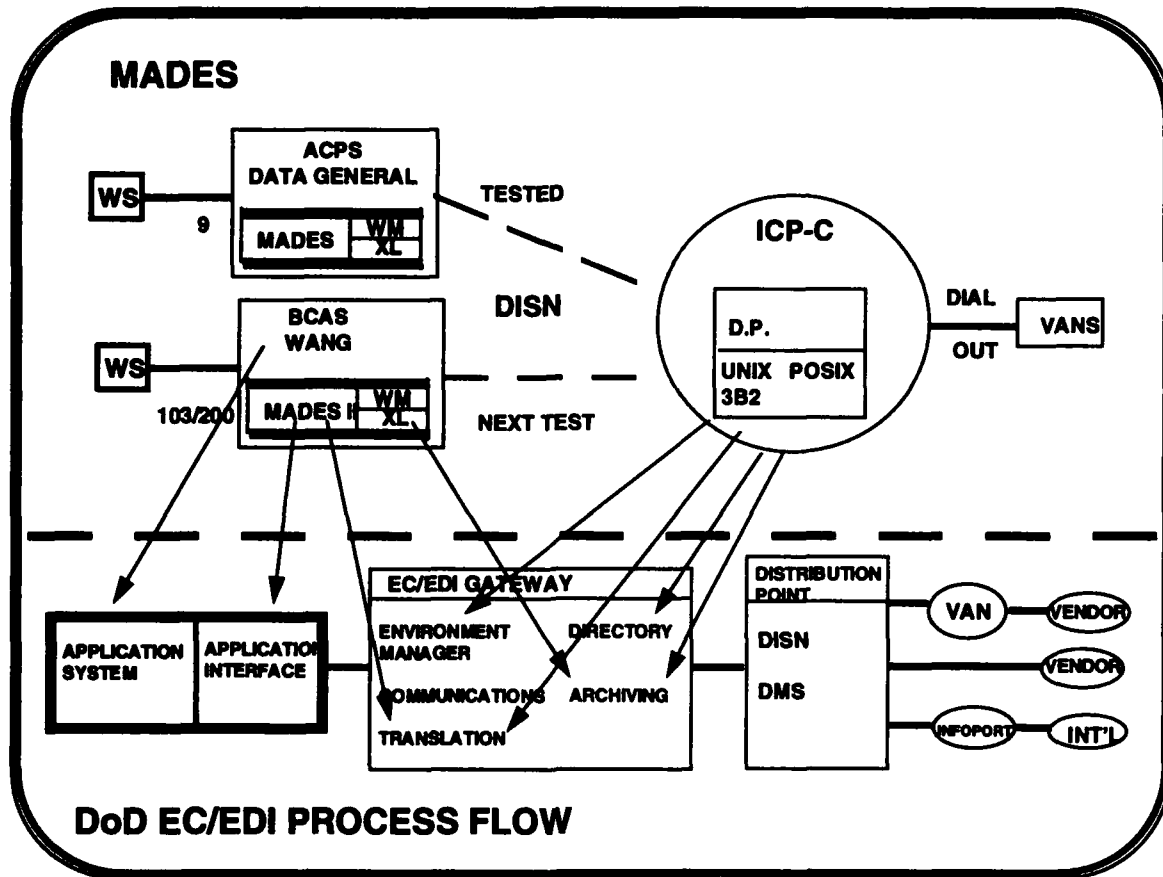
FIGURE 4A
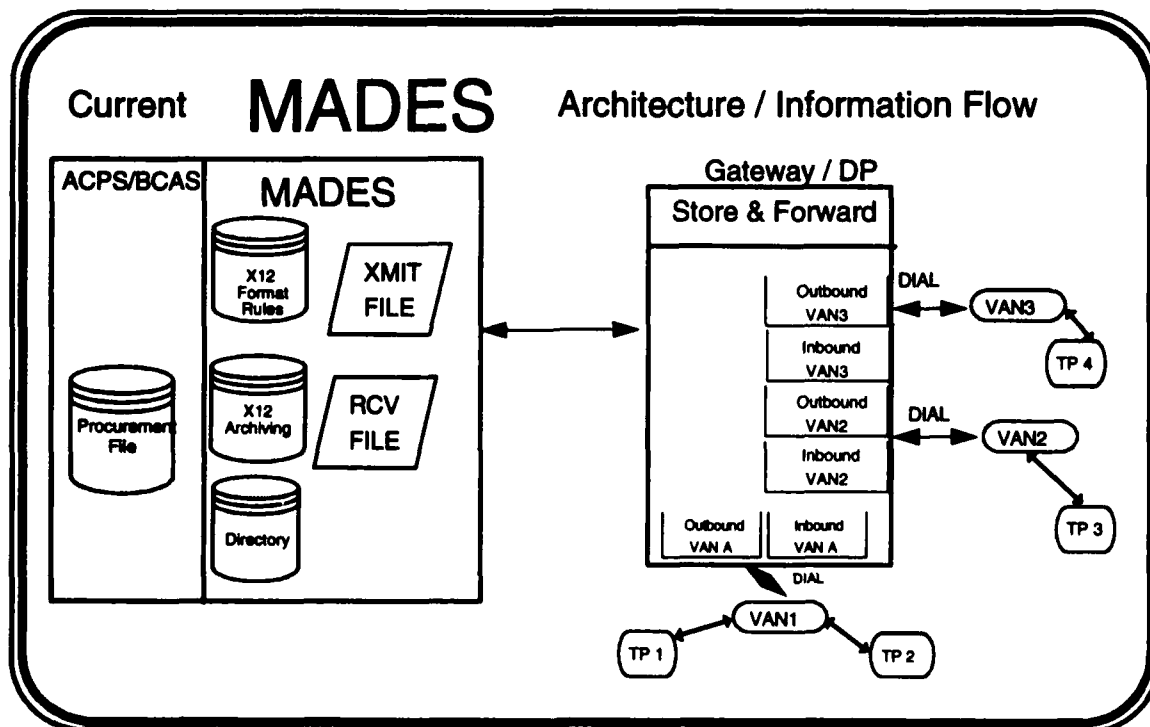
FIGURE 4B

2.4.3.4.3 APPLICATION TO GATEWAY

The data originates in the Air Force procurement system (ACPS/BCAS), and MADES uses this data along with information entered by the buyer. The EC/EDI data will be exchanged with the Gateway using FTP across the DDN (Defense Data Network). MADES I runs on a Data General (ACPS), and MADES II executes on a WANG system (BCAS).

2.4.3.4.4 GATEWAY TO DISTRIBUTION POINT PROCESS

Data is transferred via the DISN to the gateway. The Air Force is developing a gateway processor which is scheduled to be operational in early FY94.

A gateway/distribution point at Columbus, Ohio has been used in testing MADES transaction sets.

2.4.3.4.5 GATEWAY/DISTRIBUTION POINT TO VANs PROCESS

Connectivity to VANs is via dial-up binary synchronous protocol.

2.4.3.4.6 EMPIRICAL DATA

MADES EC/EDI and MADES II EC/EDI are not yet operational, therefore, there are no EC/EDI related figures available.

2.4.3.4.7 EVALUATION AGAINST BASELINE FUNCTIONAL REQUIREMENTS

The baseline functional requirements for EC/EDI were discussed in section 2.2.2 above, and the technical implications of functional decisions were discussed in section 2.2.1. The primary issues of concern are (1) use of ANSI X12 VERSION 2003 transaction sets, (2) use of DoD conventions (December 91) that are standard and are agreed upon throughout DoD, (3) elimination of procedures that are uniquely enforced functionally or technically, and (4) use of the baseline set of transactions, ANSI X12.840, ANSI X12.843, and ANSI X12.850. From the information gathered from site visits, technical surveys, interviews, and phone conversations, the following disparities exist between MADES and the EC/EDI requirements.

ANSI X12 COTS	DoD CONVENTIONS	Comm TO VAN	FREE OF TECHNICALLY ENFORCED PROCEDURES	BASELINE TRANSACTION SETS (840, 843, 850)	FREE OF FUNCTIONALLY ENFORCED PROCEDURES
No	Yes	No	Yes	Yes	Yes

MADES and MADES II have the capability to process ANSI X12.850, 840, and 843. These systems will be activated in FY94.

2.4.3.4.8 COSTS/MILESTONES FOR REQUIRED BASELINE CHANGES

MADES and MADES II, as prototyped, will meet the baseline requirements.

2.4.3.4.9 COSTS/MILESTONES FOR FULL DEPLOYMENT

2.4.3.4.9.1 MADES I/AUTOMATED CONTRACTING PREPARATION SYSTEM

Connectivity and operational issues with the Air Force Gateway at Gunter AFB, Alabama and the DISA Gateway/Distribution Point at Columbus, Ohio are the only potential impediments to making the system operational by month three. There are no additional costs for hardware or software at the five current MADES/ACPS processing sites. Management and buyer education has been completed, hence, the EC/EDI capability in MADES/ACPS could be implemented as soon as the Gateway/Distribution Point is established.

MADES I DEPLOYMENT

DEPLOY ORDER	ACTIVITY	CITY	DEPLOY DATE	COST
1	WARNER ROBBINS ALC	MARIETTA, GA	MONTH 3	$2,000
2	SAN ANTONIO ALC	SAN ANTONIO TX	MONTH 3	$2,000
3	TINKER ALC	OKLAHOMA CITY OK	MONTH 4	$2,000
4	SACRAMENTO ALC	SACRAMENTO CA	MONTH 4	$2,000
5	OGDEN ALC	OGDEN UT	MONTH 4	$2,000
			TOTAL	$10,000

2.4.3.4.9.2 MADES II/BASE CONTRACTING AUTOMATED SYSTEM

The EC/EDI capability of MADES has not yet been completed on the WANG platform for establishment of EC/EDI capability in MADES II/BCAS. An estimated 6 man-months must be invested in completing MADES II EC/EDI on the WANG platform. Testing the delivery of data to and from MADES II/BCAS will be via an Air Force Gateway to a DISA Distribution Point, and testing will begin in November 93. Availability of a Gateway/DP is required by second quarter FY94. The cost per site is estimated at $7,000, this includes $2,000 for technical training and TDY, as well as $5,000 for SCSI disk controller for the WANG to allow expanded usage. Scheduled deployment is for the 93 sites that process more than 10,000 actions per year. These sites will cost $651,000. Further, DISA expects that by Phase III the Air Force will need to establish another regional gateway site for a total cost of $300,000. After the deployment to the 93 sites there are an additional 118 sites that process less than 10,000 actions that are potential candidates for MADES II EC/EDI capability, at an optional cost of $826,000. Deployment will require two people for two to three days for each site and be completed by Month 16. The Air Force has indicated that a regional type deployment is the desired method, the following table indicates approximate order of site implementation.

MADES II Deployment Schedule

DEPLOY ORDER	ACTIVITY	CITY	DEPLOY DATE	COST
1	POPE AFB	FAYETTEVILLE, NC	MONTH 5	$7,000
2	SEYMOR JOHNSON AFB	GOLDSBORO, SC	MONTH 5	$7,000
3	MCB CAMP LEJEUNE	JACKSONVILLE, NC	MONTH 5	$7,000
4	CHARLESTON AFB	CHARLESTON, SC	MONTH 5	$7,000
5	9TH AF SHAW AFB	SUMTER, SC	MONTH 5	$7,000
6	SHAW AFB	SUMTER, SC	MONTH 5	$7,000
7	MCB PARRIS ISLAND	BEAUFORT, SC	MONTH 5	$7,000
8	MAXWELL AFB	MONTGOMERY, AL	MONTH 5	$7,000
9	PATRICK AFB	COCOA BEACH, FL	MONTH 6	$7,000

10	HOMESTEAD AFB	HOMESTEAD, FL	MONTH 6	$7,000
11	HURLBURT FIELD	FORT WALTON BEACH, FL	MONTH 6	$7,000
12	TYNDALL AFB	PANAMA CITY, FL	MONTH 6	$7,000
13	MCDILL AFB	TAMPA, FL	MONTH 6	$7,000
14	AFDTC EGLIN AFB	VALPARAISO, FL	MONTH 6	$7,000
15	WARNER ROBINS AFB	WARNER ROBINS, GA	MONTH 6	$7,000
16	MOODY AFB	VALDOSTA, GA	MONTH 6	$7,000
17	MCLOGB ALBANY	ALBANY, GA	MONTH 7	$7,000
18	ENGLAND AFB	ALEXANDRIA, LA	MONTH 7	$7,000
19	BARKSDALE AFB	BOSSIER CITY, LA	MONTH 7	$7,000
20	MARCORRESFOR NO	NEW ORLEANS, LA	MONTH 7	$7,000
21	KESSLER AFB	BILOXI, MS	MONTH 7	$7,000
22	LANGLEY AFB	HAMPTON, VA	MONTH 7	$7,000
23	MCB QUANTICO	QUANTICO, VA	MONTH 7	$7,000
24	MC HEADQUARTERS	ARLINGTON, VA	MONTH 7	$7,000
25	EAKER AFB	BLYTHEVILLE, AR	MONTH 8	$7,000
26	LITTLE ROCK AFB	LITTLE ROCK, AR	MONTH 8	$7,000
27	LUKE AFB	LITCHFIELD PARK, AZ	MONTH 8	$7,000
28	DAVIS-MONTHAN AFB	TUCSON, AZ	MONTH 8	$7,000
29	HOLLOMAN AFB	ALAMOGORDO, NM	MONTH 8	$7,000
30	KIRTLAND AFB	ALBUQUERQUE, NM	MONTH 8	$7,000
31	CANNON AFB	CLOVIS, NM	MONTH 8	$7,000
32	ALTUS AFB	ALTUS, OK	MONTH 8	$7,000
33	TINKER AFB	OKLAHOMA CITY, OK	MONTH 9	$7,000
34	DYESS AFB	ABILENE, KS	MONTH 9	$7,000
35	BERGSTROM AFB	AUSTIN, TX	MONTH 9	$7,000
36	CARSWELL AFB	FORT WORTH, TX	MONTH 9	$7,000
37	GOODFELLOW AFB	SAN ANGELO, TX	MONTH 9	$7,000
38	HSC BROOKS AFB	SAN ANTONIO, TX	MONTH 9	$7,000
39	KELLY AFB	SAN ANTONIO, TX	MONTH 9	$7,000
40	LACKLAND AFB	SAN ANTONIO, TX	MONTH 9	$7,000
41	RANDOLPH AFB	SAN ANTONIO, TX	MONTH 10	$7,000
42	SHEPARD AFB	WICHITA FALLS, TX	MONTH 10	$7,000
43	TRAVIS AFB	FAIRFIELD, CA	MONTH 10	$7,000
44	AFFTC EDWARDS AFB	LANCASTER, CA	MONTH 10	$7,000
45	VANDENBERG AFB	LOMPOC, CA	MONTH 10	$7,000
46	BEALE AFB	MARYSVILLE, CA	MONTH 10	$7,000
47	22 CONS MARCH AFB	RIVERSIDE, CA	MONTH 10	$7,000
48	AREFW MARCH AFB	RIVERSIDE, CA	MONTH 10	$7,000
49	MCCLELLAN AFB	SACRAMENTO, CA	MONTH 11	$7,000
50	NORTON AFB	SAN BERNARDINO, CA	MONTH 11	$7,000
51	GEORGE AFB	VICTORVILLE, CA	MONTH 11	$7,000
52	MCAGCC	29 PALMS, CA	MONTH 11	$7,000
53	MCLOGB BARSTOW	BARSTOW, CA	MONTH 11	$7,000
54	MCB CAMP PENDELTON	CAMP PENDELTON, CA	MONTH 11	$7,000
55	HICKAM AFB	HONOLULU, HI	MONTH 11	$7,000
56	NELLIS AFB	LAS VEGAS, NV	MONTH 11	$7,000
57	F.E. WARREN AFB	CHEYENNE, WY	MONTH 12	$7,000
58	PETERSON AFB	COLORADO SPRINGS, CO	MONTH 12	$7,000

59	USAF ACADEMY	COLORADO SPRINGS, CO	MONTH 12	$7,000
60	LOWRY AFB	DENVER, CO	MONTH 12	$7,000
61	MOUNTAIN HOME AFB	MOUNTAIN HOME, ID	MONTH 12	$7,000
62	SCOTT AFB	BELLEVILLE, IL	MONTH 12	$7,000
63	MCCONNELL AFB	WICHITA, IL	MONTH 12	$7,000
64	WHITEMAN AFB	KNOB NOSTER, MO	MONTH 12	$7,000
65	MALMSTROM AFB	GREAT FALLS, MT	MONTH 13	$7,000
66	GRAND FORKS AFB	GRAND FORKS, ND	MONTH 13	$7,000
67	MINOT AFB	MINOT, ND	MONTH 13	$7,000
68	OFFUTT AFB	OMAHA, NE	MONTH 13	$7,000
69	WPCC WRIGHT-PATTERSON AFB	FAIRBORN, OH	MONTH 13	$7,000
70	ELLSWORTH AFB	RAPID CITY, SD	MONTH 13	$7,000
71	FAIRCHILD AFB	SPOKANE, WA	MONTH 13	$7,000
72	MCCHORD AFB	TACOMA, WA	MONTH 13	$7,000
73	ANDREWS AFB	WASHINGTON, DC	MONTH 14	$7,000
74	K.I. SAWYER AFB	GWINN, MI	MONTH 14	$7,000
75	PLATTSBURG AFB	MORRISVILLE, NY	MONTH 14	$7,000
76	DOVER AFB	DOVER, DE	MONTH 14	$7,000
77	HANSCOM AFB	BEDFORD, MA	MONTH 14	$7,000
78	LORING AFB	LIMESTONE, ME	MONTH 14	$7,000
79	MCGUIRE AFB	WRIGHTSTOWN, NJ	MONTH 14	$7,000
80	GRIFFISS AFB	ROME, NY	MONTH 14	$7,000
81	ELMENDORF AFB	ANCHORAGE, AK	MONTH 15	$7,000
82	ANDERSON AFB	GUAM	MONTH 15	$7,000
83	MISAWA AB	MISAWA, JAPAN	MONTH 15	$7,000
84	YOKOTA AB	TOKYO, JAPAN	MONTH 15	$7,000
85	KADENA AB	OKINAWA, JAPAN	MONTH 15	$7,000
86	BITBURG AB	BITBURG, GERMANY	MONTH 15	$7,000
87	RAMSTEIN AB	RAMSTEIN, GERMANY	MONTH 15	$7,000
88	AVIANO AB	APO, ITALY	MONTH 15	$7,000
89	HOWARD AFB	PANAMA	MONTH 16	$7,000
90	RAF BENTWATERS	BENTWATERS, ENG	MONTH 16	$7,000
91	DET4, 7000CONS	FELLWELL, ENG	MONTH 16	$7,000
92	RAF UPPER HEYFORD	UPPER HEYFORD, ENG	MONTH 16	$7,000
93	RAF UPWOOD	UPWOOD, ENG	MONTH 16	$7,000

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL COST
NUMBER OF SITES	16	48	29	93
COST PER SITE	$7,000	$7,000	$7,000	$7,000
TOTAL COST	$113,000	$336,000	$202,000	$651,000

2.4.3.4.10 OTHER ISSUES

Critical to beginning deployment of MADES II is the establishment of a gateway and distribution point, since they have no provision for direct connectivity to VANs.

2.4.3.4.11 TECHNICAL ASSESSMENT SUMMARY

MADES and MADES II meets the baseline requirement to support the procurement business area, except for the connectivity to VANs.

MADES I has conducted a test with a gateway and distribution point.

MADES II is in the process of establishing a test with an AF gateway site and a DoD Distribution Hub.

2.4.3.5 SACONS-EDI (Standard Automated Contracting System-Electronic Data Interchange)

SACONS-EDI is a system that provides EDI capability for Army contracting activities using Standard Army Automated Contracting Systc (SAACONS). SAACONS supports 260 installation contracting offices worldwide. It is comprised of three functional modules: contracting, small purchases, and requisition entry. The user of SAACONS can receive and review requirements, prepare and print complete solicitation, contract, and modification documents, review regulatory guidance, traces receipts, and close out contracts. SACONS-EDI adds the ability for the buyer to electronically send RFQs to receive quotes, and to make awards (purchase orders). The SAACONS system itself provides standard procurement reports such as the DD350 and the DD1057 and allows preparation and editing on-line. This process allows the vendor to browse and search for RFQs in the GE Electronic Bid Board associated with the General Electric Information Service (GEIS) connected at the distribution point. The vendors must have a software package at their site called QuickBid PC (TM) from CACI Inc., that is a software package which allows vendors to receive, process, and transmit electronic business transactions. This software is run on an IBM compatible PC. SAACONS exports an ASCII file from the database that is transferred via modem to the gateway using UUCP or DDN communication software. The site data files are directly input into the SACONS-EDI Gateway software which responds without manual intervention to manage the data and provide process control services. These services include priority routing, scheduling, auditing, error control, management reports, retranslating, retransmission, and archiving.

2.4.3.5.1 DESCRIPTION OF CURRENT SYSTEMS

The EDI module of this system is integral to the primary procurement AIS also identified as SAACONS and SACONS-Federal. The buyer uses the same software and hardware to produce the purchase transaction regardless of transmission media. SAACONS is an Army system that provides a total management information system package to the installation's contracting offices. SACONS with EDI capability exists at approximately 36 sites. SACONS-Federal is a COTS package sold by CACI-Federal Inc. , that has additional features marketed to other DoD and Federal agencies. It contains two additional modules, a Customer Module and an Invoicing Module. The Customer Module allows requisitioners to create on-line requisition packages, obtain funds and other approvals and pass th equirement for automatic buyer assignment. The Invoice Module tracks vendor invoi..,s against contract line items and records amounts certified for payment.

SACONS-Federal also contains two functional enhancements, on-line review and approval and automatic milestone management. The on-line review and approval feature allows routing of all contract documents with associated supporting documentation for review, comment and/or approval throughout the procurement activity

and other offices connected to the system. The automatic milestone feature is used primarily in large contracting activity. The system creates a suggested milestone event list and forecasts a time line for completion of each event. The plan is automatically updated as events actually occur.

Because SACONS-Federal is offered throughout the Federal Government, it contains additional output forms (all SF forms) and has available all supplements to the FAR on-line. Some of its features such as contract numbering are more flexible to accommodate the practices of all Federal Agencies. SACONS-Federal exists at 24 Navy and 7 Marine Corps sites.

SACONS-EDI, as observed, has the capability to process the following ANSI X12 EDI transactions:

836 - Contract Award
840 - Request for Quotation
843 - Response to Request for Quotation
850 - Purchase Order

Presently the buyers screen purchase requests in SAACONS for use in the EC process, as there is no automated procurement system screening capability to select buys that can be solicited/awarded through EC means. The RFQs and awards are buyer generated using routine procurement AIS procedures. Additionally, there is no capability for awards to be generated without buyer action.

RFQs are posted for nation-wide visibility through the exclusive use of a single VAN (GEIS). RFQs can be addressed to specific contractors to restrict distribution of actions that utilize a QPL or to a sole source vendor. It requires the use of a proprietary software by the contractor ("Quick Bid" by CACI).

The capability can be employed when buying either supplies or services and allows for a flexible solicitation period. To date, the PALT experienced by EC buyers on their EC buys is 6 to 16 days as compared to 38 days for non-EC buys. Due to the reduction in buyer interface, it is estimated that an EC buyer can process up to 20 EC actions per day as compared to six non-EC buys.

2.4.3.5.2 SYSTEM INFORMATION FLOW (ARCHITECTURE)

Figure 5A describes the existing EDI application and how it fits into the overall DoD EC/EDI process flow. It shows the software and hardware platforms and their corresponding functional responsibilities. There is no depiction of transaction flow intended in the figure, it is a notional representation that shows which platform provides the functionality required in the DoD EC/EDI integration process. Figure 5B describes in more detail, the flow of transactions through the system.

SACONS-EDI

DoD EC/EDI PROCESS FLOW

FIGURE 5A

Current **SACONS-EDI** Architecture/Information Flow
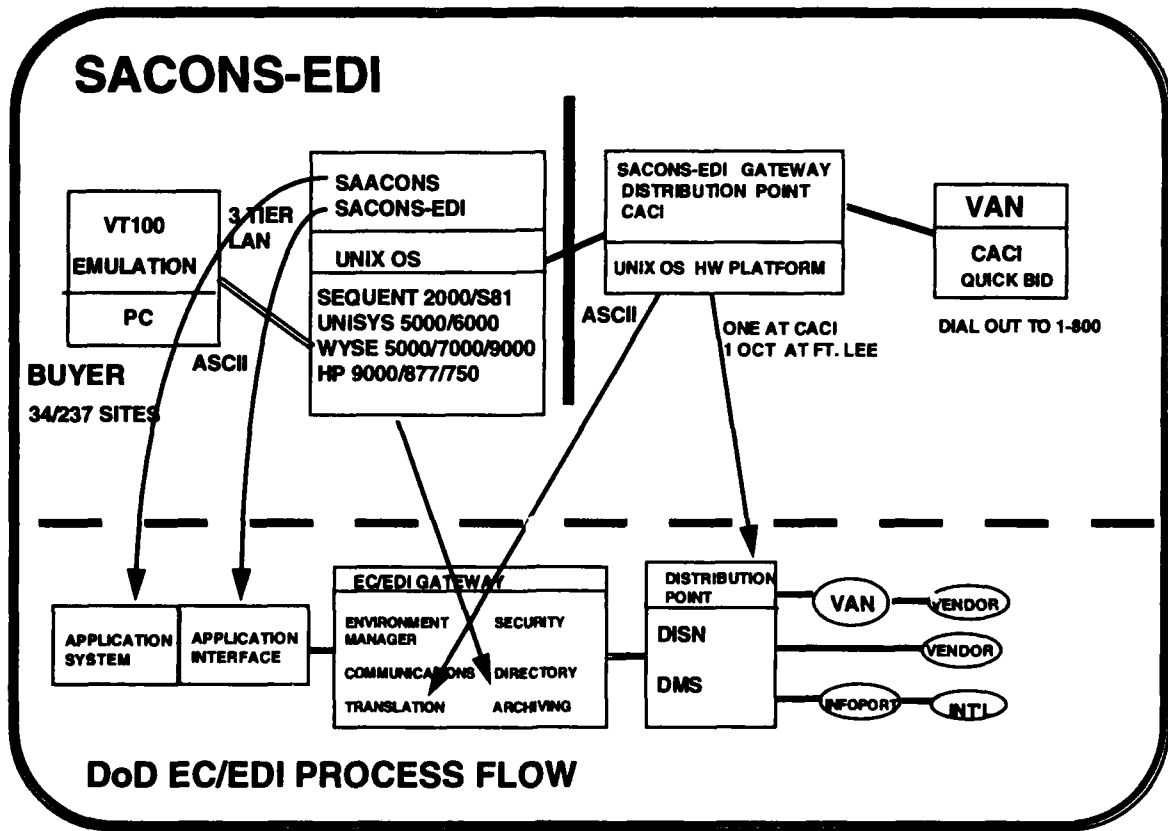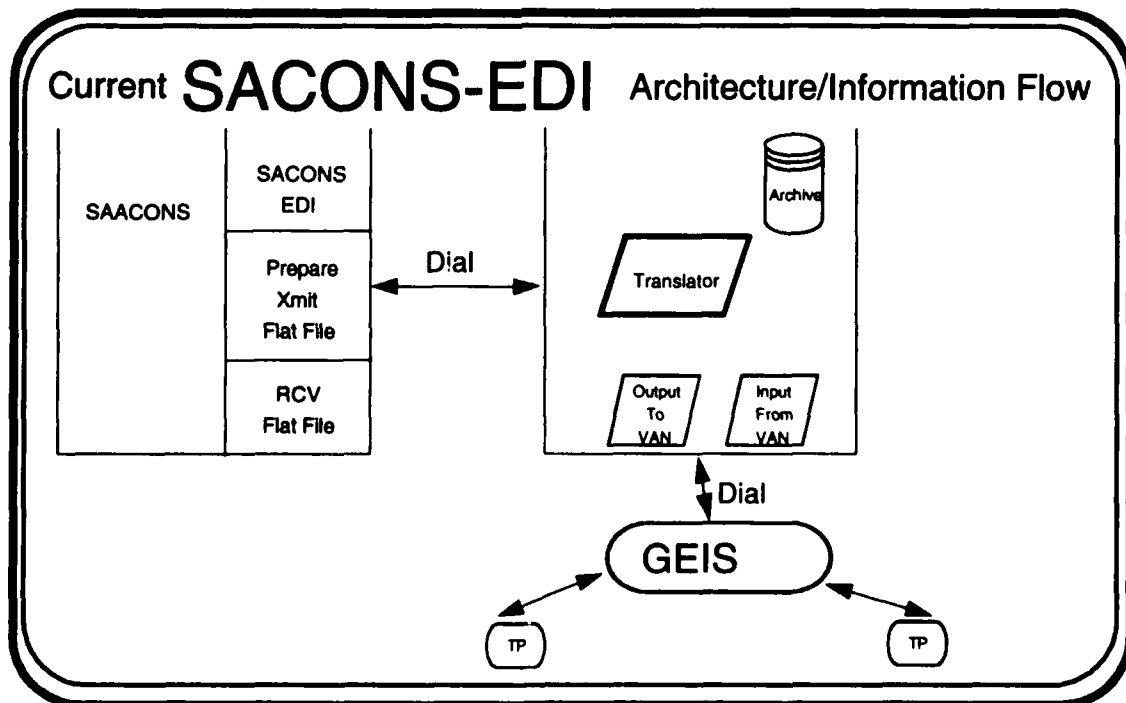
FIGURE 5B

2.4.3.5.3 APPLICATION TO GATEWAY

The system runs on INTEL 310/320 microcomputers, UNISYS 5000/80/95 and 6000 series minicomputers, WYSE 6000/7040/9000i, HP 9000/877 super minis, and is certified for use on AT&T 3B2 and IBM RISC 6000. User interface to application is supported on dumb terminals and personal computers using VT100/220 emulation. The application software is written in Progress 4GL with UNIX scripts for UNIX system operations. The software is modularized and compliant with ANSI X12 version 2003, and DoD conventions dated December 91. Buyers issue electronic RFQs from SAACONS. The SAACONS host transmits the site's RFQs to the Gateway Processor (GP), located at CACI, Inc. in Arlington, Virginia. This transmission is done via SACONS-EDI. The GP responds with acknowledgment that the transactions were received. On bid closing date, the SAACONS host downloads the bid information from the GP, using SACONS-EDI. Next the buyer selects the winning bidder and generates the purchase order transaction, using SAACONS. The SAACONS host transmits Purchase Orders and Notice of Award to the GP using SACONS-EDI. The GP responds with acknowledgment that the transactions were received. The GP translates the purchase orders to ANSI X12 format.

2.4.3.5.4 GATEWAY TO DISTRIBUTION POINT PROCESS

The process flow of the system follows the path depicted in figure 5B. Physically however, the gateway processes and the distribution point processes reside on the same platform called the GP. The GP translates RFQs to ANSI X12 format.

2.4.3.5.5 DISTRIBUTION POINT TO VANs PROCESS

The GP translates RFQs to ANSI X12 format and transmits transactions to the Electronic Bid Board. The bidder connects to the Genie Electronic Bid Board, and selects and downloads RFQs (840) using QuickBid PC (TM). The bidder enters the quote information, which completes a Response to Request for Quotation (843) which is transmitted to the Electronic Bid Board using QuickBid PC. As each bid is received, it is downloaded to the GP. GP transmits the Purchase Order (850) to EDI Express and Award Notice (836) to the Electronic Bid Board. The winning bidder downloads the Purchase Order from the Electronic Bid Board using QuickBid PC. Unsuccessful bidders download the Award Notice from the Electronic Bid Board.

2.4.3.5.6 EMPIRICAL DATA

	EDI	NON-EDI	TOTAL
NUMBER ACTIONS PER MONTH	279	650	929
DOLLARS PER MONTH	N/A	N/A	$1,682,741
NUMBER OF BUYERS	30	N/A	
NUMBER OF TRADING PARTNERS	1,230	N/A	17,000
NUMBER OF SITES	36	201	237

The actions per month is an average number of the total actions over a three month period in FY93 at Tobyhanna Army Depot. Approximately 30 percent of those actions were EDI. The dollars per month are an average of the same three month period. There are over 17,000 vendors in the database which includes all 34 sites, and there is duplication across sites. Overall, there are 1,230 separate trading partners using EDI at all current SACONS-EDI sites. The SACONS-EDI software is licensed for 260 sites. Of those, only 237 are considered candidates for SACONS-EDI by the Army.

Recurring costs of operations for a year per gateway site:

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL COST
HARDWARE	$5,000	$5,000	$50,000	$60,000
SOFTWARE	$20,000	$20,000	$40,000	$80,000
MANPOWER	$150,000	$150,000	$450,000	$750,000
TELECOMM	$6,000	$6,000	$12,000	$24,000
TOTAL COST	$181,000	$181,000	$552,000	$914,000

The $300K manpower cost is for six people including a site administrator, two gateway administrators, and the developers. After the first year, the movement from prototype to full-scale operation will involve upgrades in processor boards, manpower increases, and software maintenance that will result in increased recurring costs.

Cost of SACONS-EDI for the vendor on GEIS (includes Quick Bid PC (TM), EBB, and EDI Express).

- $100.00 initial fee for unlimited use
- $60.00 monthly maintenance fee
- no phone line or byte charges

Transaction sets used are:

840 - Request for Quotes
843 - Quote Response
850 - Purchase Order (by any small purchase method)
836 - Award Information Summary

2.4.3.5.7 EVALUATION AGAINST BASELINE FUNCTIONAL REQUIREMENTS

The baseline functional requirements for EC/EDI were discussed in section 2.2.2 above, and the technical implications of functional decisions were discussed in section 2.2.1. The primary issues of concern are (1) use of ANSI X12 transaction sets, (2) use of DoD conventions that are standard and are agreed upon throughout DoD, (3) elimination of procedures that are uniquely enforced functionally or technically, and (4) use of the baseline set of transactions, ANSI X12.840, ANSI X12.843, and ANSI X12.850.

ANSI X12 COTS	DoD CONVENTIONS	Comm TO VAN	FREE OF TECHNICALLY ENFORCED PROCEDURES	BASELINE TRANSACTION SETS (840, 843, 850)	FREE OF FUNCTIONALLY ENFORCED PROCEDURES
No (10/93)	Yes	Yes	Yes	Yes	Yes

In October 1993, SACONS-EDI is scheduled to switch to ABC EDI translation software, incorporate the DoD conventions, and to move the gateway from CACI to Fort Lee, Virginia. Buyers that use the SACONS-EDI system are not governed by any functionally or technically enforced procedures. SACONS-EDI supports the baseline transaction sets (840, 843, 850).

2.4.3.5.8 COSTS/MILESTONES FOR BASELINE CHANGES

SACONS-EDI has the initial generating capability of ANSI X12 COTS translator, and standard DoD Conventions planned for (IOC) October 93. Funding and scheduling for additional changes to meet the baseline are not necessary.

2.4.3.5.9 COSTS/MILESTONES FOR FULL DEPLOYMENT

The planned near-term hardware and software changes convert proprietary SAACONS ED' ` lligent Gateway Processor (IGP) software to ABC EDI-Server (COTS), ABC Translator, and DoD conventions as described above. The Army will move the gateway functions, currently performed at their contractor's facility to Fort Lee, Virginia by October 93. The gateway at Fort Lee will transmit SACONS-EDI transactions to a Government distribution point. It is expected that the Army will need to establish another gateway location by Phase III at a total cost of $300,000. The long term planned changes for SACONS-EDI are to incorporate the results of the EDI pilot into the basic SAACONS application, rather than as an attached module to simplify operations. SACONS-EDI plans to add Network capability, electronic signature, receipt of bids/proposals, security measures and VANs through use of a gateway and distribution point.

The Army estimated cost for deployment $2,000 for installation and systems training. There is no cost expected for hardware or software at the sites, because the platforms already exist at 237 sites. Implementation plans depend upon the establishment of distribution points for DoD. Scheduled deployment is for the 77 sites that process more than 10,000 actions per year. These sites will cost $154,000. However, there are an additional 160 sites that process less than 10,000 actions that are potential candidates for SACONS-EDI, at an optional cost of $320,000. Deployment will require two people for two to three days for each site and be completed by Month eight

The Army preferred schedule would follow a regional deployment scheme based upon the scheduling of regional vendor conferences.

SACONS-EDI Deployment Schedule

Deploy Order	Activity	City	Depoy Date	Cost
1	Fort McClellan	Anniston, AL	Month 2	$2,000
2	COE Dist. Mobile	Mobile, AL	Month 2	$2,000
3	USPFO Alabama	Montgomery, AL	Month 2	$2,000
4	Fort McPherson	Atlanta, GA	Month 2	$2,000
5	COE Dist New Orleans	New Orleans, LA	Month 2	$2,000
6	USPFO Louisiana	New Orleans, LA	Month 2	$2,000
7	Fort Polk	Fort Polk, LA	Month 2	$2,000
8	USPFO Mississippi	Jackson, MS	Month 2	$2,000
9	COE Dist Vicksburg	Vicksburg, MS	Month 2	$2,000
10	COE Waterways Station	Vicksburg, MS	Month 2	$2,000
11	COE Dist Wilmington	Wilmington, DE	Month 2	$2,000
12	Fort Jackson	Columbia, MO	Month 2	$2,000
13	Belvoir RDE Center	Fort Belvoir, VA	Month 2	$2,000
14	Fort Eustis	Newport News, VA	Month 2	$2,000
15	Fort Lee	Petersburg, VA	Month 2	$2,000

16	CoE Dist Little Rock	Little Rock, AR	Month 3	$2,000
17	USPFO Arkansas	Little Rock, AR	Month 3	$2,000
18	Fort Chaffee	Fort Chaffee, AR	Month 3	$2,000
19	Bluegrass Army Depot	Lexington, KY	Month 3	$2,000
20	CoE Dist Louisville	Louisville, KY	Month 3	$2,000
21	McAlester Ammo Plant	McAlester, OK	Month 3	$2,000
22	CoE Dist Tulsa	Tulsa, OK	Month 3	$2,000
23	CoE Dist Nashville	Nashville, TN	Month 3	$2,000
24	USPFO Tennessee	Nashville, TN	Month 3	$2,000
25	USPFO Texas	Austin, TX	Month 3	$2,000
26	Fort Bliss	El Paso, TX	Month 3	$2,000
27	CoE Dist Fort Worth	Fort Worth, TX	Month 3	$2,000
28	Fort Sam Houston	San Antonio, TX	Month 3	$2,000
29	CoE Dist Huntington	Huntington, WV	Month 3	$2,000
30	Sierra Army Depot	Herlong, CA	Month 4	$2,000
31	CoE Dist Sacramento	Sacramento, CA	Month 4	$2,000
32	USPFO California	San Luis Obispo, CA	Month 4	$2,000
33	DDR West	Herlong, CA	Month 4	$2,000
34	Fort Shafter	Honolulu, HI	Month 4	$2,000
35	Korea Cont. Agency	Seoul, KOREA	Month 4	$6,000
36	USPFO Missouri	Jefferson City, MO	Month 4	$2,000
37	USA Aviation-Troop Cmd	St Louis, MO	Month 4	$2,000
38	CoE Dist St Louis	St Louis, MO	Month 4	$2,000
39	Fort Leonard Wood	Leonard Wood, MO	Month 4	$2,000
40	CoE Dist Portland	Portland, OR	Month 4	$2,000
41	USPFO Oregon	Salem, OR	Month 4	$2,000
42	Tooele Army Depot	Tooele, UT	Month 4	$2,000
43	USPFO Iowa	Johnston, IA	Month 5	$2,000
44	CoE Dist Rock Island	Rock Island, IL	Month 5	$2,000
45	Rock Island Arsenal	Rock Island, IL	Month 5	$2,000
46	USPFO Illinois	Springfield, IL	Month 5	$2,000
47	Fort Benjamin Harrison	Indianapolis, IN	Month 5	$2,000
48	USPFO Kansas	Topeka, KS	Month 5	$2,000
49	USPFO Michigan	Lansing, MI	Month 5	$2,000
50	USPFO Minnesota	Little Falls, MN	Month 5	$2,000
51	CoE Dist Omaha	Omaha, NE	Month 5	$2,000
52	USPFO Ohio	Columbus, OH	Month 5	$2,000
53	USPFO Washington	Tacoma, WA	Month 5	$2,000
54	CoE Dist Walla Walla	Walla Walla, WA	Month 5	$2,000
55	USPFO Wisconsin	Camp Douglas, WI	Month 5	$2,000
56	Fort McCoy	Fort McCoy, WI	Month 5	$2,000
57	DSSW	Washington, DC	Month 6	$2,000
58	CoE Div New England	Waltham, MA	Month 6	$2,000
59	Fort Devens	Ayers, MA	Month 6	$2,000
60	Aberdeen Proving Ground	Aberdeen, MD	Month 6	$2,000
61	Fort Detrick	Frederick, MD	Month 6	$2,000
62	Fort Meade	Fort Meade, MD	Month 6	$2,000
63	USA Comm-Elec Cmd	Fort Monmouth, NJ	Month 6	$2,000
64	USPFO New York	Latham, NY	Month 6	$2,000
65	Fort Drum	Watertown, NY	Month 6	$2,000

66	USMA	West Point, NY	Month 6	$2,000
67	USPFO Pennsylvania	Annville, PA	Month 6	$2,000
68	CoE Dist Pittsburg	Pittsburg, PA	Month 6	$2,000
69	DDR East	Harrisburg, PA	Month 6	$2,000
70	Fort Richardson	Fort Richardson, AK	Month 7	$2,000
71	RCO Benelux	Brussels, BE	Month 8	$2,000
72	RCO Frankfurt	Frankfurt, GE	Month 8	$2,000
73	RCO Fuerth	Fuerth, GE	Month 8	$2,000
74	RCO Grafenwoehr	Grafenwoehr, GE	Month 8	$2,000
75	RCO Seckenheim	Seckenheim, GE	Month 8	$2,000
76	Fort Ord	Monterey, CA	Month 8	$2,000
77	Fort Sheridan	Chicago, IL	Month 8	$2,000

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL
Number of Sites	69	8	0	77
Cost per Site	$2,000	$2,000	0	$2,000
TOTAL COST	$138,000	$16,000	0	$154,000

2.4.3.5.10 OTHER ISSUES

As SACONS-EDI deploys, the question of gateway telecommunications sizing becomes an issue, currently all sites must go through a single gateway. There are no plans to add additional gateways. However, regional gateways and distribution points will fit into the DoD architecture.

This plan depends upon the availability of a DoD distribution point and a centrally responsible organization for vendor conferences. However, the Army can continue to add sites until the DoD distribution point is established.

This plan also depends on the availability of information systems experts within the Army that have the knowledge and skills to maintain SACONS-EDI. The Army is currently planning to bring control and operation of the gateway, along with applications expertise, to Fort Lee, Virginia.

2.4.3.5.11 TECHNIC _ ASSESSMENT SUMMARY

In October 1993, the Army will implement three important changes to meet the outlined DoD EC/EDI target Architecture. The system will begin use of an ANSI X12 translation package, the gateway will have moved from CACI Inc. to Fort Lee, and DoD conventions will be used. After implementation of these changes, SACONS-EDI will meet all target baseline requirements and will be a technically viable ErI system.

2.4.3.6 SPEDE (SAMMS Procurement by Electronic Data Exchange)

SPEDE is a small purchase EDI subsystem of the contracting system of the Standard Automated Materiel Management Systems (SAMMS). Purchase requests are generated in SAMMS from requirements originated by military customers or the item managers and are downloaded to SPEDE for purchase. Requests for quotations are sent to vendors. The vendors respond by using Government developed software. The award is transmitted to the vendor, who responds with shipment and invoice information, all

electronically. There are essentially four versions of the basic SPEDE system that run at the DLA Supply Centers; Defense Personnel Supply Centers (DPSC), Defense Industrial Supply Center (DISC), Defense Construction Supply Center (DCSC), Defense General Supply Center (DGSC), and Defense Electronics Supply Center (DESC). SPEDE I in conjunction with SAMMS Automated Small Purchase System 1 (SASPS 1) performs awards of small purchase under $2,500 against Basic Purchase Agreements (BPA). The DPSC Clothing and Textile section runs SPEDE 1 in conjunction with an in-house developed system that does the equivalent of the SASPS 1 program at the other centers. SPEDE Medical, also located at DPSC, accomplishes orders from BPAs as well as competitive orders under $25,000. SPEDE II runs in conjunction with SASPS II, at DISC, to award competitive contracts against RFQs for amounts under $25,000 for purchasing of steel for DoD use.

The proprietary SPEDE system directly connects to the suppliers, via dial out modem, every evening to drop transactions and pick up responses. The conversion of SPEDE to ANSI X12 is in process. Testing began at the DPSC Medical section with one trading partner, one VAN, using a COTS ANSI X12 translator and the DoD ANSI X12 conventions. The ANSI X12 transaction sets tested were the 840, 843, 836, 850, 856, 860, and 865. The Medical test was done in conjunction with a contractor developed bisynchronous communication product test using the AT&T 3B2 6000G. DPSC Clothing and Textiles also tested using the same scenario. The DLA hardware centers are now in the process of transition. DISC is currently testing with several trading partners. The DISC testing is being done with DAASC in Dayton, Ohio acting as Distribution Point. Transactions are currently being sent from a GOULD 9050 through DAASC to three VANs where the trading partners are able to access those envelopes addressed to them. The ANSI X12 transactions being tested are the 840, 843, 850 and 856. The process used at DISC is being deployed to the other hardware centers.

2.4.3.6.1 DESCRIPTION OF CURRENT SYSTEM

The EDI module of this system is not integral to the primary AIS. The three variations assessed are procurement niche systems integrated with the DLA's SAMMS. Various DLA activities use SPEDE to procure items in specific federal supply classes.

SPEDE I - This system screens purchase requests, not exceeding $2,500, against an existing BPA source list generating a BPA call, without buyer intervention, where a BPA exists. If there is no BPA source for this item, the system then screens the purchase request through SPEDE II, if applicable. If SPEDE II is inapplicable, the purchase request processes through the Defense Logistics Agency Pre Award Contracting System (DPACS) for an award.

SPEDE - (MEDICAL) - This system operates similar to SPEDE I with the exception that it is not limited to $2,500. It will process actions of $25,000 or less. Additionally, it uniquely screens purchase requests against BPA source lists generating three BPA calls without buyer intervention. Each vendor confirms their price within five days of receipt of the BPA call. The lowest BPA call is retained for award, while the others are canceled.

SPEDE II - Under this variation, the SAMMS system screens purchase requests through SPEDE I initially. If the purchase request is not awarded through SPEDE I, SPEDE II selects up to three contractors, on a rotating basis, from the commodity source list to receive an RFQ. The RFQ responses are processed in DPACS for an award. Purchase requests are not automatically directed to RFQs in SPEDE II.

SPEDE, as observed, only has the ability to process the following ANSI X12 EDI transactions in SPEDE - Medical plus clothing and textiles variation.

    836 - Contract Award
    840 - Request for Quotation
    843 - Response to Request for Quotation
    850 - Purchase Order
    856 - Ship Notice/Manifest
    860 - Purchase Order Change Request
    865 - Purchase Order Change Acknowledgment
    997 - Functional Acknowledgment

SPEDE I requires the use of Government furnished software by the contractor and provides for point-to-point connectivity only for supply transactions processed through SAMMS which are valued below the $2,500 competition threshold.

SPEDE II requires the use of Government furnished software by the contractor and provides for point to point connectivity for supply transactions, valued at less than $25,000 and processed through SAMMS. This system can address RFQs to specific contractors for actions restricted to utilizing a QPL or to a sole source vendor. The system has a flexible solicitation period, which is usually limited to five days.

2.4.3.6.2 SYSTEM INFORMATION FLOW (ARCHITECTURE)

Figure 6A describes the existing EDI application and how it fits into the overall DoD EC/EDI process flow. It shows the software and hardware platforms and their corresponding functional responsibilities. There is no depiction of transaction flow intended in this figure, it is a notional representation that shows which platform provides the functionality required in the DoD EC/EDI integration process. SPEDE is a modular system that operates in a Local Area Network (LAN) environment at each site. SAMMS itself runs on an AMDAHL mainframe running the MVS operating system. Figure 6B describes in more detail the flow of transactions through the system.

SPEDE

SAMMS
MVS
AMDAHL

9050/3B2

INX
ABC
COMM
IGP
GOU'.D
3E
UNIX

DAASC

DP

DEC VAX

GOULD 9050/NP1

WS

SPEDE
GOULD
UNIX

VANS

FTP

DIAL OUT

VENDOR

EC/EDI GATEWAY

ENVIRONMENT MANAGER

SECURITY

APPLICATION SYSTEM

APPLICATION INTERFACE

COMMUNICATIONS

DIRECTORY

TRANSLATION

ARCHIVING

DISTRIBUTION POINT

DISN

DMS

VAN — **VENDOR**

VENDOR

INFOPORT — **INT'L**

DoD EC/EDI PROCESS FLOW

FIGURE 6A

Current SPEDE Architecture / Information Flow

AT&T 3B2

DEC / VAX

AMDAHL

GOULD

GATEWAY

Distribution Point

XLATOR

Flat File Archiving

SPEDE

Traffic Archiving

FTP

FTP

FTP

SAMMS

XTRACT

X12 Archiving

Directory

| Out Bound | In Bound | | Out Bound | In Bound |

VAN A

VAN B

TP   **TP**

TP

FIGURE 6B

2.4.3.6.3 APPLICATION TO GATEWAY.

The buyers (up to 15 per site) use IBM compatible PCs (VT-100 emulation) which are connected to LANs. Their PCs provide access to the SPEDE application, which interfaces to SAMMS, where contracting actions are generated. The mid-tier computer is an Encore 9050, or an NP 1 running the UNIX operating system depending on site configuration. At locations where SAMMS runs, communication between SAMMS and SPEDE uses FTP over TCP/IP on a LAN or via RCP and RJE IBM protocols. In situations where SAMMS is accessed remotely, DDN/DCN is the media instead of the LAN. The translator running in the SPEDE system is proprietary as are the conventions used. Neither ANSI X12 formats nor DoD conventions are used.

2.4.3.6.4 GATEWAY TO DISTRIBUTION POINT PROCESS

The environment manager used on the gateway is called INX. INX was developed at DLA Systems Automation Center (DSAC) and is available to all of the Federal Government. The INformation eXchange system is a general purpose, reusable information management system that provides applications with a standard interface to commonly-used Government or COTS products. INX is a bridging tool that provides interfaces to existing systems. The system is written in Ada and has been ported to six different platforms running Interactive UNIX. INX uses a DLA developed directory service that will transition to X.500 directory service when it is available on the hardware platforms that INX supports. The directory system provides information about applications and their files, that includes; staging and routing information for EDI translation, executing the translator and sending the file to the distribution point. INX directs the translation and delivery of the file back to the SPEDE application. It provides a call to execute SPEDE when ANSI X12 transactions are sent back from VANs and distribution points. INX provides an interactive screen or an ASCII text file interface for updating routing information.

2.4.3.6.5 DISTRIBUTION POINT TO VANs PROCESS

Every evening the gateway at the inventory control point dials the trading partners, downloads new transactions and uploads responses. The vendors in the program currently number about 700. As the number of vendors and transactions increase, the window of time required for the gateway to make the phone calls is increasing. The vendors are required to use the DLA developed software for translation or develop their own since the transactions are not standard. The vendors must leave their PC powered up at night or risk missing the information that is distributed from SPEDE overnight. The redesigned SPEDE that is being tested will utilize a COTS translator, DoD Conventions for ANSI X12 Standards, and a Distribution Point with access to multiple VANs.

2.4.3.6.6 EMPIRICAL DATA

	EDI	NON-EDI	TOTAL
NUMBER ACTIONS PER MONTH	19,798	52,778	72,576
DOLLARS PER MONTH			
NUMBER OF BUYERS	< 5%	95%	100%
NUMBER OF TRADING PARTNERS	700	-----	50,000
NUMBER OF SITES	5	5	5

The primary functional office responsible for SPEDE, provided summary data about numbers of transactions per site by month for June 92 through May 92. The numbers shown are for all SPEDE locations averaged over those 12 months. The number of buyers was not provided for all sites. Out of 590 procurement professionals, only 17

(two percent) use EDI at DISC. Out of 334 procurement professionals at DGSC, only 11 use EDI (three percent). From the data received, 27 percent of the actions at all five sites are accomplished using EDI, while less than 5 percent of the procurement staff was classified as EC/EDI buyers. Each site maintains its own list and very little cross checking is done. The DLA SPEDE design center estimates that the FY93 trading partners will increase to over 1100 by FY96, and that the 1.5 million transactions will increase to over 2.0 million by FY96.

Recurring Costs

According to information provided by some of the SPEDE sites, recurring costs are estimated as follows for each operating site:

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL COST
HARDWARE	$4,500	$4,500	$9,000	$18,000
SOFTWARE	0	0	0	0
MANPOWER*	$150,000	$150,000	$300,000	$600,000
TELECOMM	$8,000	$8,000	$16,000	$32,000
TOTAL COST	$162,500	$162,500	$325,000	$650,000

*Manpower is based on $95,000 for one Full-Time Equivalent for a year

Operating costs for the DLA distribution point at DAASC in Dayton, Ohio are estimated at $120,000 per year.

2.4.3.6.7 EVALUATION AGAINST BASELINE FUNCTIONAL REQUIREMENTS

The baseline functional requirements for EC/EDI were discussed in section 2.2, and the technical implications of functional decisions were discussed in section 2.4.1. The primary issues of concern are (1) use of ANSI X12 transaction sets, (2) use of DoD conventions that are standard and are agreed upon throughout DoD, (3) elimination of procedures that are uniquely enforced functionally or technically, and (4) use of the baseline set of transactions, ANSI X12.840, ANSI X12.843, and ANSI X12.850.

ANSI X12 COTS	DoD CONVENTIONS	Comm TO VAN	FREE OF TECHNICALLY ENFORCED PROCEDURES	BASELINE TRANSACTION SETS (840, 843, 850)	FREE OF FUNCTIONALLY ENFORCED PROCEDURES
Yes (FY94)	Yes	Yes	Yes	Yes	Yes

The SPEDE design activity is in the middle of testing a new version, which includes ANSI X12, that will replace SPEDE I, SPEDE II, and SPEDE MED. DISC and DPSC Medical have tested this new system, and DCSC is soon to be tested (October 93). This new version will bring SPEDE to the baseline requirements listed above

2.4.3.6.8 COSTS/MILESTONES FOR BASELINE CHANGES

The conversion of SPEDE has already begun and will carry over into FY94. The application interface development is complete. Estimated cost of testing VAN connections and converting to the DoD Implementation conventions for the ANSI X12.840, ANSI X12.843, ANSI X12.850, and ANSI X12.856 transaction sets with 700

vendors is $830,000 of FY94 funds. These funds are for seven CDA staff for a year. DLA will need $79,000 for CDA assistance with implementation. Plans are to have all the sites (DGSC, DESC, DISC, DCSC) complete by second quarter FY94. The DLA distribution Point will be at DAASC in Dayton, Ohio. The support requirement for the distribution point is $120,000 per fiscal ye. .r.

In summary, completion in FY94 of DLA plans to include a distribution point and have the five hardware centers fully capable of EC/EDI as the requirements are described, is $31,600.

2.4.3.6.9 COSTS/MILESTONES FOR FULL DEPLOYMENT

Deployment plans for SPEDE are included above because the plan is already being implemented. In some of the responses, however, indication of a plan to host SPEDE onto an HP 9000 was discussed. No costs or milestones for that plan are available.

SPEDE Deployment Schedule

DEPLOY ORDER	ACTIVITY	CITY	DEPLOY DATE	COST
1	DPSC (MED)	PHILADELPHIA PA	DONE	0
2	DISC	PHILADELPHIA PA	DONE	0
3	DCSC	COLUMBUS OH	DONE	0
4	DESC	DAYTON OH	MONTH 1	$15,800
5	DGSC	RICHMOND VA	MONTH 2	$15,800
			TOTAL	$31,600

2.4.3.6.10 OTHER ISSUES

Currently, SPEDE is being tested at a DLA site (DISC) using VAN connectivity at DAASC, Dayton, Ohio. DAASC is providing this service as a prototype Distribution Point.

2.4.3.6.11 TECHNICAL ASSESSMENT SUMMARY

The SPEDE version that supports ANSI X12 (version 3010) and connects to VANs has been implemented at DPSC and DISC.

The system meets the baseline requirements to support the procurement business area with the 840, 843, and 850 transaction sets.

SPEDE is scheduled to be deployed to two more DLA sites by December 93.

There are approximately 700 vendors on-line via dial communications. The conversion of these vendors to ANSI X12 and the use of VANs is projected to take several months with January 94 as the target date.

2.4.4 DPACS (DLA Pre-Award Contracting System)

2.4.4.1 DESCRIPTION OF SYSTEM

DPACS is a DLA operational system supporting pre-award processing of small and large purchases. DPACS automates manual processes for DLA small and large purchases. A representation of DPACS capabilities and flow is provided in figure 7A. As can be seen, it provides the procurement specialist with many capabilities.

DPACS Total System
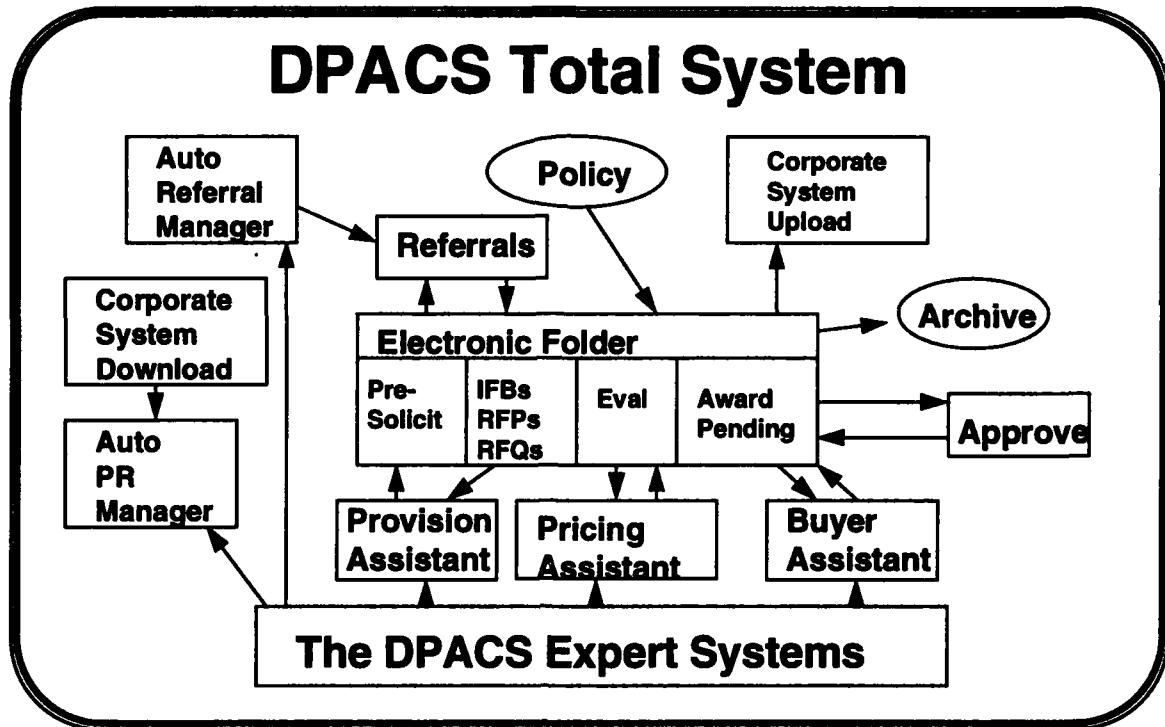
FIGURE 7A

DPACS is an application module that uses the distributed function view of the client/server model of computing. Within DLA, DPACS runs in a heterogeneous environment, with processing spread across three external tiers. Corporate level processing is performed on IBM 30XX series or equivalent mainframes, business level processing on GOULD NP1 super mini computers, and personal tier processing on Zenith 80286 and Everex/UniSys 80386 micro-computers. DPACS data resides on the corporate and business level tiers, with the majority of the data sorted in a UNIFY RDBMS on the mini-computer. Data is exchanged between the tiers by a series of transaction processors (client/server pairs) operating over an ethernet local area network. Telecommunications are controlled by Sun MicroSystems NFS and PC NFS running TCP/IP protocols.

Pre-procurement support data is downloaded from the SAMMS during daily or weekly batch processing. Support data is extracted from a number of sources, including the Active Purchase Request File, and the DLSC Combined Address File. However, DPACS is not dependent on SAMMS (or another materiel management support system) and can run in a stand-alone mode. To run DPACS stand-alone, data must be captured from another source or input manually. DSAC is modifying DPACS to utilize data passed from BOSS, BCAS, and PPSS. Additionally, DLA buyers are utilizing DPACS to process MIPRs, local purchase, Indefinite Quantity, and walk-thru (emergency) requirements which are not generated from SAMMS.

Functionally, DPACS provides the DLA buyer with a full range of workstation capabilities to evaluate Purchase Requests, prepare mailing list and solicitations, evaluate bids/offers and make contract awards. DPACS provides on-line access to all required clauses and DoD acquisition regulations, including the FAR, DFARs, and FIRMR, as well as a complete vendor module.

DPACS contains an integrated word processor, as well as other PC-based tools, that are used to prepare all supporting documents needed for the contract folder. It also has the capability to import any ASCII word processing documents. DPACS uses the electronic folder concept to support all ICP users within DLA. When the user requests data, the personal tier client software makes a service request to the business level server software. A series of servers retrieve information from the data base, package it as an electronic folder, and send it to the client workstation. During folder processing, updates are sent to the business level data base via a Transaction Processor.

2.4.4.2 MIGRATION SELECTION FOR PROCUREMENT

Based upon studies done through December 1992 and the recommendation of the Procurement CIM Council, DPACS was chosen as a DoD Migration system by the Director of Defense Procurement. The methods used and inputs to the decision are documented in briefing charts and documentation available from the DoD Procurement Corporate Information Management Office. In general, the functional decisions were based on surveys and interviews that evaluated nine systems on the ability of the system to perform procurement and contract administration. The strengths of DPACS were listed as:

1) Flexible functional architecture that allows coverage of most contract types and uses intelligent clause selection;

2) Includes small purchases, A & E, construction, and 8(A) type contracts;

3) Can change contract type and PR at award and uses pricing models;

4) *Provides milestone plans, source selection plans, purchase history, and workload management;* and

5) Interactive word processing ties documents to actions.

The technical decisions were based on site visits and a cost and capacity analysis model. In addition, an assessment of the technical architecture was made, that included an assessment of the system against the requirements for open systems described in the Technical Reference Model. DPACS scored consistently high in each of the above areas and was specifically cited for having the following strengths:

1) Readily convertible to POSIX;

2) "C" language convertible to Ada;

3) Standard Query Language (SQL) data base; and

4) Flexible configuration capabilities.

2.4.4.3 EDI ISSUES

DPACS currently awards RFQ procurements solicited by SPEDE II. The next DPACS software update, scheduled for December 1993, will include the capability to issue ANSI X12.840 Request for Quotes, to receive and process ANSI X12.843 Response to Request for Quotes, and process ANSI X12.850 awards. Subsequent releases will include 855, 856, 860, 865 and other transactions required to apply EDI capabilities to large purchase actions.

DPACS has no current EDI capability which could be evaluated against the baseline set of functional requirements. The baseline functional requirements for EC/EDI were discussed in section 2.2.2 and the technical implications of functional decisions were discussed in section 2.2.1. The primary issues of concern are (1) use of ANSI X12 transaction sets, (2) use of DoD conventions that are standard and are agreed upon throughout DoD, (3) elimination of procedures that are uniquely enforced functionally or technically, and (4) use of the baseline set of transactions, ANSI X12.840, ANSI X12.843, and ANSI X12.850.

A proposal was provided to the Procurement CIM Council in August 93 that indicated the effort involved to bring EDI to DPACS. This project will provide the procurement migration system with a state-of-the-art EDI capability, satisfying joint functional requirements. The funding requested for DPACS-EC is depicted below:

	FY 94	FY 95
APPLICATION INTERFACE DEVELOPMENT	250,000	580,000
CONVERSION	100,000	100,000
FIELD IMPLEMENTATION EXPENSES (FIVE SITES)	200,000	50,000
CDA IMPLEMENT EXPENSES	10,000	10,000
TDY CDA	15,000	10,000
CONTRACTOR SUPPORT FOR CDA	721,216	---------
TOTAL	1,296,216	750,000

Project Total: $2,046,216

Application Interface development includes CDA development of user software for interfacing with DPACS, and improvements to DPACS to maintain EDI records longer to attain a paperless environment.

Conversion includes expenses related to testing the new DoD Conventions being developed by the Procurement CIM. This includes improvements to 840, 843, and 850 to transmit large purchase information. All current LMI developed conventions and those that must be developed will be addressed.

Field implementation expenses include CDA assistance in developing test transactions and updating the site gateway at each DLA center. It includes training for systems operation and procurement users. The CDA will provide on-site and telephone assistance for testing and implementing changes and interfaces to DPACS.

CDA implementation expenses include new development and expansion of current transaction sets to support large purchases.

TDY by CDA includes assistance to sites in implementing changes to DPACS.

Contractor support for CDA includes support in developing the interface from DPACS to the site gateway and support to transmit technical information to vendors using CALS technology.

In addition to these costs, there will be support costs required at the distribution point. DLA has estimated $120,000 per year for FY94 and FY95. That cost however, must be shared by all the DLA activities that use DAASC as the distribution point.

The only indication of schedule for changes and deployment is that these costs include FY95 funds, therefore fully operational status could be as late as September 1995.

2.5 INPUT FROM OTHER DoD/ GOVERNMENT INITIATIVES

2.5.1 DEFENSE FINANCE AND ACCOUNTING SERVICE

In 1988, the Deputy Secretary of Defense directed that components of the DoD use EDI to the fullest extent possible when processing business transactions. Since that time, DFAS has adopted EDI as a corporate strategy to improve the level of service and reduce the cost of financial operations. As one of its initiatives, DFAS has developed an EDI plan for the contract payment process. This plan will be capable of supporting payments associated with the Deputy Under Secretary of Defense for Acquisition Reform's EDI initiative for small procurements.

This section provides a general agency overview and outlines the operational concepts and implementation strategies for EC/EDI in support of the contract administration/payment process.

AGENCY OVERVIEW

DFAS serves as the accounting firm for the DoD. It was activated on January 15, 1991, to improve the overall effectiveness of DoD financial management through the consolidation, standardization, and integration of finance and accounting procedures, operations, and systems. In achieving its mission, DFAS develops, coordinates and implements DoD-wide finance and accounting plans, programs, and procedures. Finally, DFAS is responsible for identifying and implementing finance and accounting requirements, systems and functions for all appropriated and non-appropriated funds; working capital, revolving and trust fund activities-including security assistance.

The organization has approximately 27,000 employees. Headquarters is located in Arlington, Virginia, and five major finance and accounting centers located at:

- DFAS - Cleveland Center, Cleveland, Ohio

- DFAS - Columbus Center, Columbus, Ohio

- DFAS - Denver Center, Denver, Colorado

- DFAS - Indianapolis Center, Indianapolis, Indiana

- DFAS - Kansas City Center, Kansas City, Missouri

Approximately 300 Defense Accounting Offices situated on DoD installations nationwide report to the five centers. A small European liaison office has also been established with a second liaison office planned for the Pacific region.

The Agency's customers number in the millions. DFAS provides pay services to approximately 2.7 million Military members, nearly 2 million retirees and annuitants, and 250 thousand DoD civilians. In addition, the Agency pays an estimated 5 million contractor invoices each year and provides millions of family members, businesses and other organizations with allotments from their pay.

Managers at all levels throughout DoD receive, from DFAS, the accounting support and financial management information essential for the ability to manage effectively. Hundreds of Federal, state and local Government Agencies rely on DFAS management to implement a multitude of regulations and to collect and disburse funds. Foreign governments depend on DFAS to account for their security assistance purchases.

The DFAS strategic plan's objective is to identify, modify as needed, and implement standard migratory finance and accounting systems throughout DoD by 1997. At the same time, DFAS is developing strategies for consolidating DoD finance and accounting resources at a limited number of sites. Ultimately, this process will result in each major DFAS site operating on standardized and consolidated finance and accounting systems.

CURRENT OPERATIONS

In 1990, the Logistics Management Institute (LMI) developed a business case for EC in DoD. This study revealed that as much as 40 percent of the savings from implementing EDI in DoD will come from finance and accounting activities. At the same time, it was identified that 60 percent of the savings for the finance community could be captured by implementing EDI for local vendor payments made by post, camps, bases, and stations to support their operations and maintenance functions.

Today, approximately 400 installations nationwide process contract payments. Although there are hundreds of DFAS paying offices, the Columbus Center is primarily responsible for contract payments made in DoD. Two automated applications are predominately used to fulfill these payment functions. They are the Mechanization of Contract Administration Services (MOCAS) system which supports the Contract Administration Services (CAS) Payment Directorates in processing and paying contract invoices, and the SAMMS which aids the Stock Fund Accounting Directorate in the management, processing, and contract payment of the DLA Stock Fund.

A significant number of DFAS installations process operation and maintenance payments. Currently, there is no standard automated system available to assist in this payment process. DFAS recognizes the enormous EDI opportunity the current decentralized process presents.

The control, documentation, entitlement determination and preparation of payments for DoD installation level commercial contracts are labor intensive processes. More than 45 million local vendor payment documents (payment vouchers, invoices, receiving reports, and contract actions) are processed annually, using numerous systems. To consolidate this process, DFAS will select a currently fielded finance and accounting system, and enhance it to support the migratory accounting system implementation. Once a standard *system is adopted and the centralized operational concept is implemented, the number* of paying installations for these types of contracts will be drastically reduced. The Agency expects to make a system selection during the first quarter of FY94 and anticipates initial operating capability twelve months after the date of system selection.

DFAS EDI IMPLEMENTATION

DFAS has been involved with EDI for contract payments since the mid-1991. Concept became reality in mid-May 1993, with the implementation of commercial invoices for the SAMMS application. Initial operating capability for the MOCAS application for commercial invoices is anticipated during the first quarter of FY94. The commercial invoice application is only the first of many EDI applications that DFAS will use to conduct its business electronically. As a next step, DFAS has coordinated with other DoD activities to implement electronic invoicing for the form DD 250 used as an invoice and for progress payments.

The Agency expects to use the following ANSI X12 standards:

810 - Invoice
820 - Payment/Remittance Advice
824 - Application Advice
850 - Purchase Order
856 - Shipment Notice/Manifest
860 - Purchase Order Change
997 - Functional Acknowledgment

Additional transaction sets may be identified for use at a later date. It should be noted that each of the standards, listed above, have also been identified for use by the procurement community. It is imperative that the timing for implementation of transaction sets be coordinated across all functional areas.

The following schedule for implementation is envisioned for DFAS. During the development stage, regulatory and procedural changes are addressed, trading partners are selected, data elements are identified, and data conventions are developed, In addition, data flows, technical requirements and testing parameters are determined.

The testing stage entails testing the connectivity to the VAN, to processing systems and to trading partners. This stage also includes testing the translator, telecommunications, and functional testing on the application system, if necessary.

APPLICATION	EDI DEVELOPMENT STAGE	TESTING STAGE	INITIAL OPERATING CAPABILITY (IOC)
COMMERCIAL INVOICES MOCAS SAMMS O & M	 COMPLETE COMPLETE BEGIN 1ST QTR 94	 1ST QTR FY94 COMPLETE TBD	 2ND QTR FY94 3RD QTR 93 TBD
PAYMENT/ REMITTANCE ADVICE	TBD	TBD	TBD
PROGRESS PAYMENTS	IN PROGRESS	4TH QTR FY94	4TH QTR FY94
SOURCE DD 250/ SHIP NOTICE	IN PROGRESS	4TH QTR FY94	4TH QTR FY94
PUBLIC VOUCHER	IN PROGRESS	TBD	TBD
APPLICATION ADVICE	IN PROGRESS	2ND QTR FY94	3RD QTR FY94
FUNCTIONAL ACKNOWLEDGMENT	COMPLETE	COMPLETE	3RD QTR FY93

These time frames are subject to change and are dependent upon many variables. Factors that may affect these dates include, but are not limited to, DoD convention configuration, management and control, efforts of internal trading partners (Defense Contract Management Command (DCMC), Defense Contract Audit Agency (DCAA), procurement, etc.), support by the technical service providers (Defense Information Systems Office (DISO) and DLA Systems Automation Center (DSAC)), and external trading partner capabilities.

The ability of DFAS to handle purchase orders and purchase order changes by EDI is a long range goal. It is recognized that the implementation of these two transactions is a priority for the procurement community. It is DFAS's intent to be as supportive as possible in assisting other functional areas to meet their EDI implementation needs/schedules as they relate to finance and accounting.

ANOTHER DFAS EDI INITIATIVE

DFAS has another EDI initiative that warrants mention - the transportation program. The DoD pays over $4 billion per year to Industry for transporting freight and Military Services' personal property. The largest EDI transportation effort focuses on the DFAS - Indianapolis Center (DFAS-IN) which pays transportation services for approximately 3 million shipments per year. The program also requires coordinated systems development efforts by DoD Military Services and Agency Shipping Activities, the Military Transportation Management Command (MTMC), and General Services Administration.

DFAS-IN is developing the Defense Transportation Payment System (DTRS) to automate the payment process. DTRS will be capable of receiving electronic invoices from Industry using the following ANSI X12 transactions sets:

        110 - Air Freight Invoice
        210 - Motor Carrier Freight Invoice
        213 - Request for Shipment Information
        214 - Request for Shipment Information Status
        410 - Rail Carrier Freight Invoice
        858 - Shipping Information
        859 - Generic Freight Invoice
        820 - Payment/Remittance Advice
        997 - Functional Acknowledgment

DTRS is planned for implementation in January 1994 for freight shipments and October 1994 for personal property shipments.

SUMMATION:

Through the use of modern technology and a re-engineering of current business practices, DFAS's goal is to eliminate duplicative and unnecessary procedures and transform DFAS management and operations into a performance-oriented business which benefits internal trading partners, external trading partners, and the Agency. Given a full understanding of this technology, it is reasonable to believe that DFAS can most effectively achieve this goal through successful implementation of EC.

DFAS has been working for the last two years on development of a standards based, open systems architecture for the implementation of EDI technology. The DFAS-Columbus Center has been designated as the pilot site for initial implementation efforts, beginning with the commercial invoice, and expanding with solutions to progress payments, DD-250, public vouchers, reject reporting, and enhanced Electronic Funds Transfer (EFT) capability. DFAS has closely followed the guidance and direction of the DoD corporate strategy for EC/EDI which has led to the development of a flexible, standards-based design which identifies DFAS as one of the lead components for EDI implementation.

SUMMARY OF ARCHITECTURE:

By utilizing the DoD EDI Architecture model, DFAS has been able to develop its enabling technology design consistent with the objectives of the DoD corporate strategy for EDI. DFAS has been one of the earlier supporters of COTS tools and solutions. The Agency has supported a strict adherence to the ANSI X12 standards and the DoD conventions, and conformance to a flexible, commercial products based platform to support its implementation efforts.

The outline of the architecture will include a discussion of the overall design, the tools in use, a summary of the process flow and the integration of future EDI initiatives into that existing design.

```
┌─────────────────┐   ┌─────────────────┐
│   Application   │   │     EC/EDI      │
│     Systems     │   │     Gateway     │
├─────────────────┤   ├─────────────────┤
│                 │   │ Environmental Manager  ┌──────────────┐  ┌──────────┐
│                 │   │ INX                    │ Distribution │  │   VANs   │  ┌───────────┐
│     MOCAS       │<->│ Translation:       <-> │    Points    │<>├──────────┤<>│ TRADING   │
│                 │   │ ABC /Excel             ├──────────────┤  │   GEIS   │  │ PARTNERS  │
│     SAMMS       │   │                        │     IPCC     │  │          │  └───────────┘
│                 │   │ Security/Encryption:   └──────────────┘  └──────────┘
│                 │   │ None at this time
│                 │   │
│                 │   │ Directory Services:
│                 │   │ INX                    FIG. 1 - DFAS Techncial Architecture
│                 │   │
│                 │   │ Communications:
└─────────────────┘   │ BSC; w/CLEO Board
                      └─────────────────┘
```
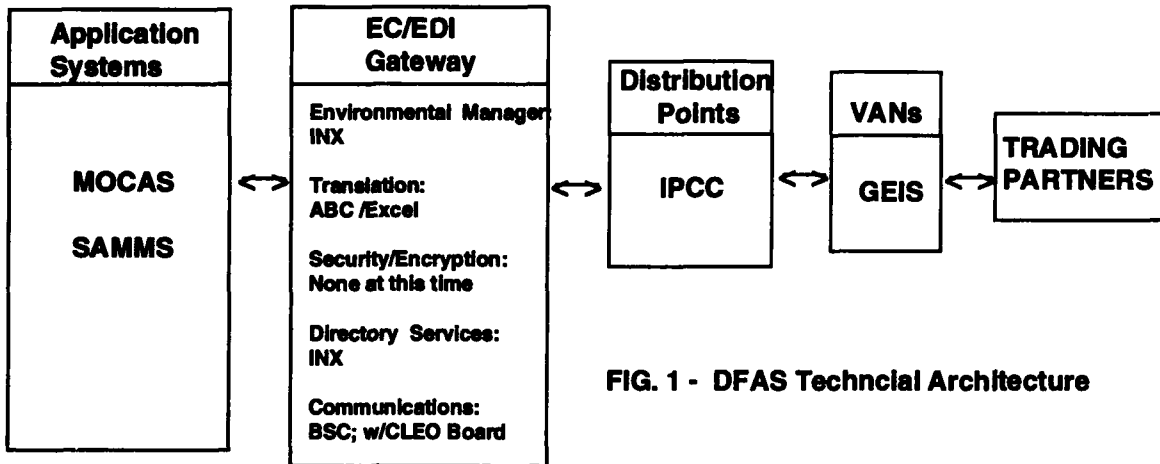
FIG. 1 - DFAS Techncial Architecture

APPLICATIONS:

The DFAS EDI initiatives are piloted out of the DFAS-CO Center. The current EDI initiatives utilize MOCAS and SAMMS as their supporting applications. Both applications are supported by the DLA Systems Automation Center, Columbus, Ohio. The current operational site for MOCAS is the IPA-C, with SAMMS operations located at IPA-Richmond.

In addition to these primary applications, DFAS has assumed responsibility for an Acquisition Management Information System (AMIS) Progress Payment project being worked out of the Defense Accounting Office in Albuquerque, New Mexico. This has been a limited pilot (four vendors) since the workload for the AMIS application is scheduled for transfer to MOCAS in the near future. A somewhat different solution for Progress Payments is being developed for the MOCAS application.

GATEWAY:

DFAS has designed the Gateway around the use of Commercial and Government available software tools, allowing for scalability as processing is added through increased volume and new projects. Use of Open Systems Interconnect (OSI) tools allows DFAS to utilize the most effective tools for each process and allows for addition or replacement of individual pieces without disruption of gateway processes. The gateway is currently operated from a dedicated 3B2, maintained at IPA-C.

Environmental Manager: The Environmental Manager (EM) serves as a "traffic cop," moving data and transactions through the various service agents and processing steps. The EM calls for services, stages and schedules, logs and redirects traffic into and out of the specific application for processing. The DFAS Gateway utilizes the INX (Information Exchange System) as its EM. INX is a GOTS (DLA) developed tool, endorsed is by ITPB as the preferred EM tool.

Translation: The translation software which converts the application data into a standard EDI format must be robust, capable of supporting ANSI X12, and ultimately EDIFACT, and be commercially available. The ABC software was selected and provided the necessary capabilities. DFAS is using ANSI X12 exclusively at this time in conjunction with approved DoD implementation conventions for those transaction sets.

Security/Encryption: Based on initial security and sensitivity studies performed by DFAS, it was determined that the current EDI processes are "low" risk and do not require additional security precautions such as encryption. There will be a future need for enhanced security, using encryption and digital signature techniques. The products which will be used are not currently identified, but will be based on the National Institute of Standards and Technology (NIST) compliance and commercially availability.

Directory Services: The current directory services are a service provided by the INX tool. As a part of its EM function it utilizes an X.500 like directory which is used in the Gateway processing. The directory services will be migrating to a fully X.500 based directory design once it is fully defined, likely utilizing a redesigned INX-based directory.

Archiving: The archiving at the Gateway is to assure an official record is available for audit and recovery purposes. Because of the low initial volumes, the archive is done directly on the production 3B2, and backed up by tape each 30 days. DFAS is already well into an optical storage pilot which will replace the drive/tape back-up methodology. DFAS-CO has a separate initiative underway to utilize optical storage/imaging technology which would be incorporated at a future date.

Communications: Currently IPA-C is serving as the Distribution Point between DFAS and the commercial VAN provider (GEIS). IPA-C has placed the communications software for VAN communications on the same production 3B2 used by the Gateway. The communication to the VAN is provided through use of BSC scripts, using CLEO boards on the 3B2. Once migration to a DoD DP is completed, the communications role of the Gateway will shift to a simple file transfer to and from the DP.

DISTRIBUTION POINT:

As discussed in the Gateway/Communications section, DFAS is utilizing a local IPA-C/VAN connection, with migration to a DoD Distribution Point planned for the future. Use of a DoD DP will offer broader VAN connectivity and will eliminate the cost of replicating the same capability at the Gateway level.

PROCESS FLOWS:

1)Commercial Invoices: This initiative utilizes the ANSI X12 810 Transaction set in conjunction with the DoD Convention for Commercial Invoices, and the ANSI X12 997 Functional Acknowledgment. Both MOCAS and SAMMS process commercial invoices. An outline of the current process flow is shown below:
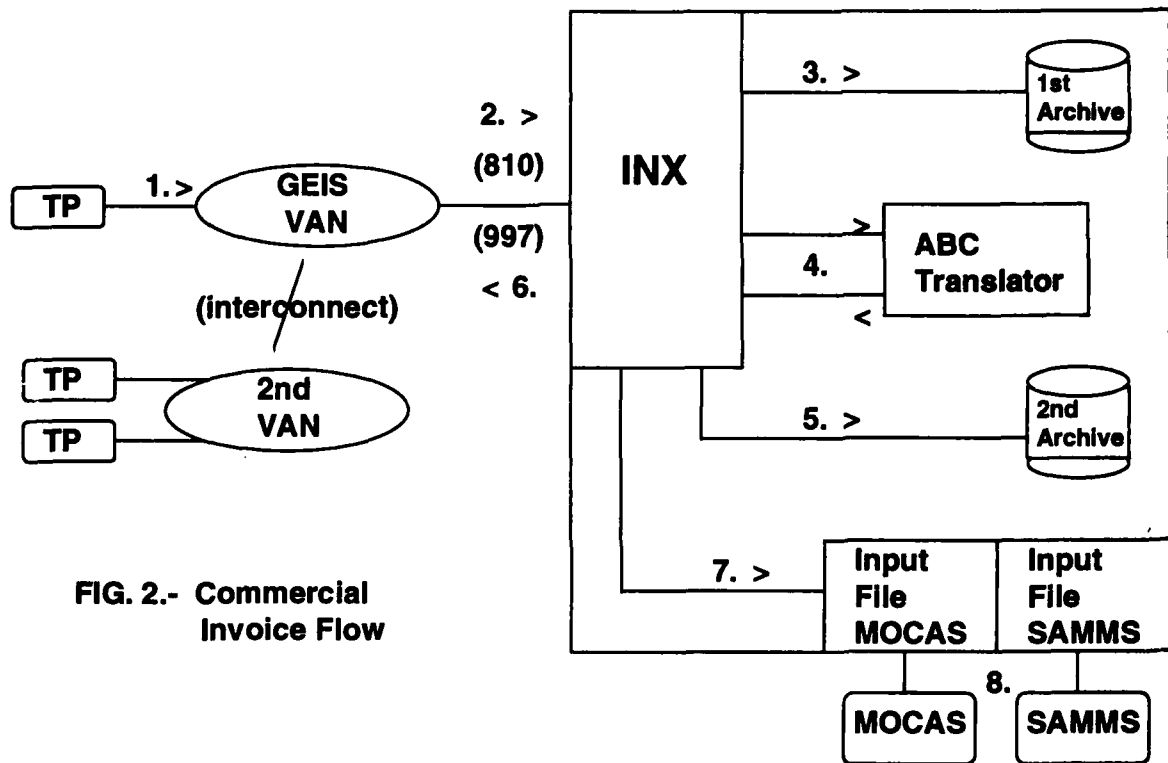
FIG. 2.- Commercial
Invoice Flow

Process:

1) Trading Partner, using a commercial VAN, transmits the 810 to DFAS mailbox at the GEIS VAN (the IPA-C/DFAS VAN connection).
2) EM at the Gateway retrieves the transaction from the GEIS VAN.
3) EM performs first archive of the original transaction.
4) EM sends transaction for translation and retrieves.
5) EM archives translated version of the transmission to the region/commodity archive.
6) Functional Acknowledgment (997) generated by the translator, which EM picks up and transmits to the GEIS VAN for delivery to the Trading Partner (TP).
7) EM sends application ready transaction to appropriate application input.
8) Application picks up file, transaction processed.

2) Progress Payments (AMIS Pilot only):

This Progress Payment pilot utilizes the ANSI X12 810 Transaction set in conjunction with the DoD Convention for Progress Payment, the 997 Functional Acknowledgment, and the 824 Application Advice. This pilot is limited to use with the AMIS application, and will be phased to a MOCAS Progress Payment solution. The flow for the Progress Payment/AMIS pilot project is shared for informational purposes only. (See fig 3).
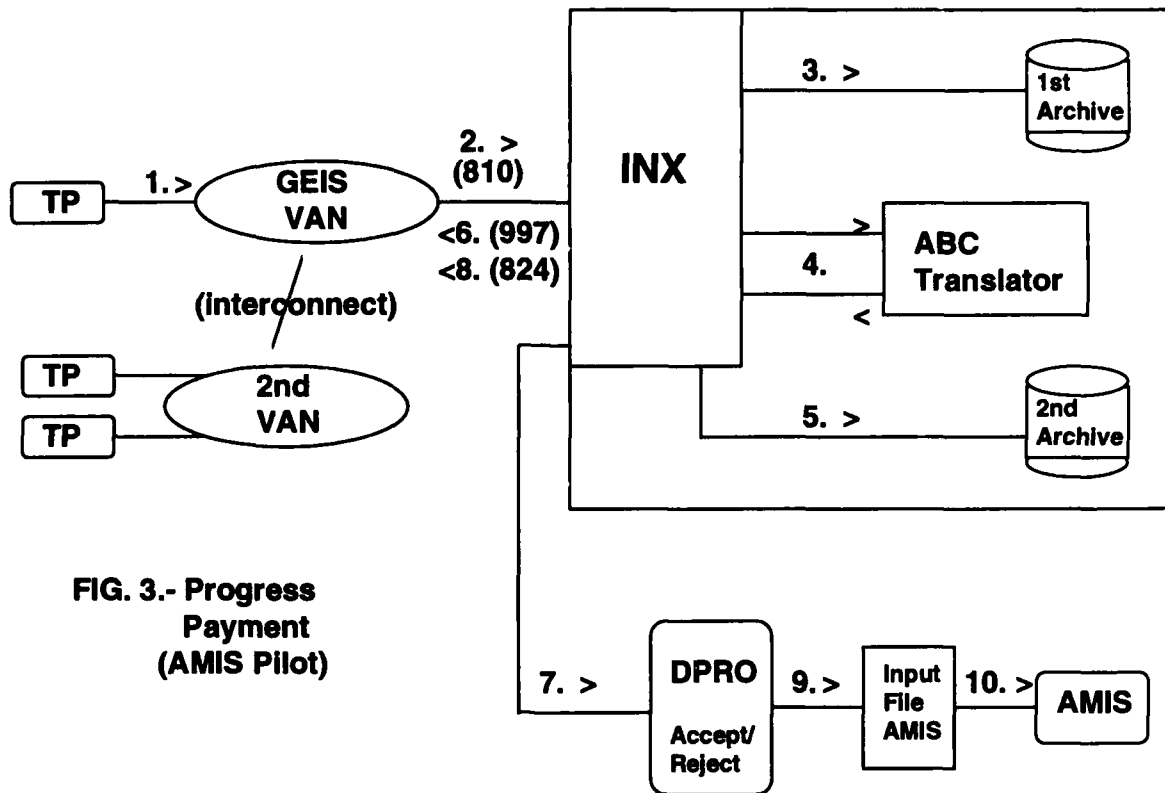
FIG. 3.- Progress Payment (AMIS Pilot)

Process:

1) Trading Partner, using a commercial VAN, transmits the 810 to DFAS mailbox at the GEIS VAN (the IPA-C/DFAS VAN connection).
2) Environmental Manager at the Gateway retrieves the transaction from the GEIS VAN.
3) Environmental Manager performs first archive of the original transaction.
4) EM sends original transaction for translation and retrieves it back from the translator.
5) EM archives translated version of the transmission in the second archive.
6) Functional Acknowledgment (997) generated by the translator, which EM picks up and transmits to the GEIS VAN for delivery to TP.
7) EM sends translated transaction to a server in Albuquerque which stages the Progress Payment for acceptance/rejection by the Defense Plant Representative Office (DPRO).
8) DPRO returns an Application Advice (824) through the Gateway notifying the TP of acceptance or rejection by the DPRO.
9) Accepted 810s are sent to application (AMIS) for processing.
10) Application picks up file, transaction processed.

FUTURE INITIATIVES:

DFAS has several EDI initiatives under development. Because DFAS has committed to a generic, commercial products based solution the immediate payoffs to DFAS are substantial. Use of a flexible design allows DFAS to implement EDI as opportunities present themselves; each new addition and enhancement expands from the current baseline services, eliminating extensive re-engineering and project unique technical solutions.

Initial planning for implementation of the Progress Payment (for MOCAS), DD-250, and Public Voucher will all utilize the existing Gateway and communications solution already in place for the commercial invoice. This same solution will be utilized to provide reject and application advice information to the trading partners. Systems change requests to SAMMS and MOCAS to expand their EFT capability will enhance the potential use of the 820, Remittance Advice to vendors, using the same baseline solutions used by these earlier implementations. As volume increases, the solution developed today contains the ability to scale upwards as the demands increase. Use of standards based solutions assure that the solution of today is still manageable, easily maintained, and minimizes the impact to both DoD and the trading partner.

Technological enhancements include piloting of X.400 Communications software for use by the Gateway; that work is currently underway with the assistance of IPA-C and DLA Systems Automation Center. Also, the use of imaging/optical storage technology to support archive and retrieval at the Gateway is well underway. DFAS is evaluating the use of NIST compliant solutions to digital signature/authentication issues, including use of Smart Card technology. It is planned the VAN communications will be transitioned to a DoD Distribution Point compliant with the DoD EDI Architecture. With these enhancements, the DFAS EDI design will be in full alignment with all the major requirements of the DoD direction and will be a model of how to successfully implement EDI technology.

2.5.2 DEFENSE COMMISSARY AGENCY

In 1989 the Jones Commission recommended that the commissary system, which consisted of stores operated independently by the Military Services, be combined into a centrally managed organization. The DoD created the Defense Commissary Agency (DeCA) on May 15, 1990. DeCA reports directly to the Deputy Undersecretary of Defense (Personnel and Readiness). The Jones Commission report identified the use of EDI as a primary means of providing significant operating cost savings and supporting the consolidation of over 47 various business and financial systems. Since its genesis, DeCA has utilized EDI technology as a foundation to support a corporate EC strategy to improve customer service, reduce operating costs, and streamline the more than 13 million orders placed electronically with commercial food suppliers annually.

This section describes the organization, mission, procedures and workload of DeCA that have a direct impact on the procurement process and their more than 6,500 commercial suppliers of resale grocery merchandise. Additionally, it outlines the operational concepts and implementation strategies that DeCA will employ to exploit the EDI enabling technology as a standard foundation in its strategy.

AGENCY OVERVIEW

DeCA is responsible for operating over 360 DoD commissaries worldwide that employ more than 22,000 people. Activated on October 1, 1991, DeCA continues to provide authorized patrons with a commissary privilege that began in 1867 and that surveys consistently place at the top of service members' most valued non-pay benefits, along with medical care. Savings realized by commissary customers amount to more than twice the appropriated cost of running the system and supports the Agency's Mission to ensure Military readiness and retention of quality personnel by providing a non-pay benefit which enhances quality of life. Commissary customers pay a five percent surcharge that provides funds for commissary construction, maintenance and operating supplies. These costs are thus absorbed by the patrons and are borne at no expense to the Government and positively contribute to the overall socio-economic impact of DoD.

DeCA has its headquarters at Fort Lee, Virginia, which provides localized management and support to commissaries worldwide through seven regional offices located at:

Northeast Region, Fort Meade, Maryland

Central Region, Little Creek Naval Amphibious Base, Norfolk, Virginia

Southern Region, Maxwell AFB, Alabama

Midwest Region, Kelly AFB, Texas

Southwest Region, Marine Corps Air Station, El Toro, California

Northwest/Pacific Region, Fort Lewis, Washington

European Region, Kapaun Air Station, Germany

In addition, the Agency also operates ten small district offices to enhance management support of facilities in large regions. Two service centers perform accounting, bill-paying and formal contracting functions: the East Service Center, Fort Lee, Virginia, and the West Service Center, Kelly AFB, Texas.

Sales to these patrons are approximately $6 billion annually at cost, and employs proven commercial retail practices and business systems to process more than 21 million business documents and transactions annually.

DeCA completed a pilot implementation of EDI Invoicing in February 1993 and has processed in excess of $100 million in paperless invoices. In excess of 11 million call orders are electronically transmitted to commercial grocery suppliers annually. Initiatives are underway to expand the use of EDI ordering for both resale and non-resale products and to implement EDI support for over 540,000 resale items and file maintenance transactions annually.

Upon its activation, DeCA assumed responsibility for a number of standard and proprietary EDI systems supporting the ordering of resale grocery merchandise. DeCA immediately began the definition and design of standards-based EDI systems to support its more than 21 million annual business transactions. DeCA has followed the guidance and direction of the DoD corporate strategy for EC/EDI and has been an active participant in DoD and Industry standards activities to ensure that development and integration of DeCA EDI capabilities is flexible, interoperable, portable and supportive of both Industry and Government data requirements.

DeCA operates a central voucher examination system (SAVES) that processes receipts electronically submitted from all stores and invoices from over 6,500 commercial suppliers. SAVES electronically transmits disbursing data to DFAS each night. DeCA also operates seven region-based business systems that process resale receipts, orders, item pricing and item maintenance and two service center-based SACONS-D contracting

systems used to award and administer formal resale, supply, equipment and service contracts on behalf of all operating locations. A summary of annual key business transaction volumes is as follows:

TRANSACTION	ANNUAL VOLUME	EDI STATUS
COMMERCIAL INVOICE	2,700,000	ANSI X12 INITIATED FEBRUARY 1993
COMMERCIAL PAYMENTS	1,800,000	FTP TO DFAS---EFT IN DESIGN
ITEM & PRICE CHANGES	648,000	ANSI X12 DEVELOPMENT IN-PROGRESS
CALL ORDER--FREQUENT DELIVERY	11,000,000	ELECTRONIC WITH INDUSTRY FORMAT
CALL ORDER--ALL OTHERS	2,375,000	LIMITED UCS--DEVELOPING ANSI X12
PRODUCT RECEIPTS	2,700,000	DECA INTERNAL FORMAT
FORMAL CONTRACT ACTIONS	31,000	SACONS-EDI IN PILOT STAGE

SUMMARY OF ARCHITECTURE

DeCA is charged to operate similar to a commercial retail grocery chain as is practicable. COTS software is employed to the maximum extent possible to achieve this goal. The leading position of the retail Industry in the development and integration of EDI technology and business strategies and the DoD EC/EDI Architecture model provide DeCA with a solid foundation to implement its Electronic Commerce program upon. DeCA supports the Federal adoption of the ANSI X12 standards and continually works with trading partners, Industry associations and standards organizations to achieve the DoD goal of "single face to industry." In cases such as the Frequent Delivery Call Order where an ANSI X12 transaction does not currently exist, DeCA is working closely with its supplier community to design and implement one.

APPLICATIONS

In the DeCA Business Case For Electronic Data Interchange, five major business areas were identified that have potential for significant improvement through the use of standard EDI enabling technology and EC business practices. EDI enabling technology has been brought to bear in many of these business areas as follows:

1) Formal Contracts

The contracts that DeCA issues are divided into two categories: resale(for patron purchase) and non-resale (items that support store operation such as construction, supplies, etc.). DeCA establishes Blanket Delivery Order (BDO) and BPA type contracts for resale purchases by individual store locations. DeCA utilizes the SACONS-D system to support these formal contracts and has initiated a pilot EDI implementation using the SACONS EDI software.

2) Call Orders

DeCA places more than 13 million call orders annually against the BDO and BPA contracts it establishes. In excess of 11 million of these orders are placed electronically using a handheld scanner and microcomputer. A jointly developed Industry/DeCA proprietary record format has been in use for more than three years. Limitations of the handheld scanner technology require that careful evaluation of conversion to the ANSI X12 standard be undertaken. DeCA is currently evaluating the use of the recently adopted ANSI X12 894 (Delivery/Return Base Record) and 895 (Delivery/Return Acknowledgment) transaction sets and will either adopt the use of these transactions or submit a new transaction set to the standards committee.

Call orders are also created by the regional DeCA Interim Business System (DIBS) for warehoused resale items. These orders are processed in one of two methods: Printed and given to the company sales representative, or transmitted to the business system gateway translator at DeCA Headquarters and converted to an EDI Purchase Order. DeCA currently has 79 trading partners on EDI Purchase Orders (UCS 875/876). DeCA will convert these transactions to the ANSI X12 standard as they are adopted and will be expanding the implementation as staffing permits.

3) Contract Item Pricing/Maintenance

DeCA is in the process of implementing the capability to receive and process the more than 600,000 price quote sheets and item maintenance actions that it receives each year from its commercial suppliers of resale merchandise. The capability is being implemented on the Business System Gateway at DeCA Headquarters and will feed this time-sensitive data to each of the DeCA Regional DIBS locations. The ANSI X12 878, Product Authorization/Deauthorization; 879, Price Change; 888, Item Maintenance; and 889, Promotion Announcement transaction sets will be utilized.
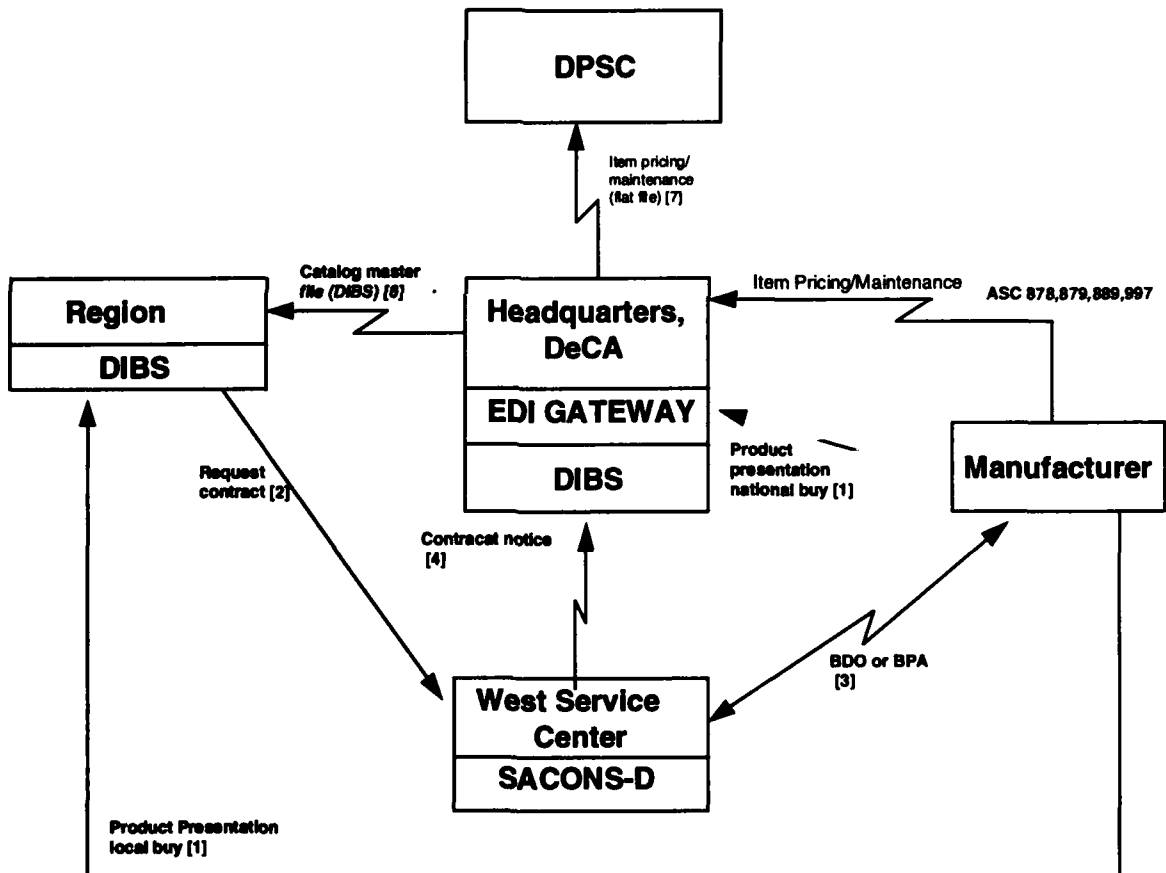
4) Commercial Invoices

DeCA implemented a pilot EDI Invoicing project in January 1993 using the Financial Systems Gateway. Upon successful completion of the acceptance testing and certification, the system was declared operational on February 2, 1993 and since has processed in excess of $101 million paperless invoices into the DeCA Standard

Automated Voucher Examination System (SAVES). DeCA closely coordinates the use of the DoD Convention for the 810, Commercial Invoice with DFAS and adheres to its guidance on this implementation. The 824, Application Advice and 997, Functional Acknowledgment transaction sets are integral parts of this system.
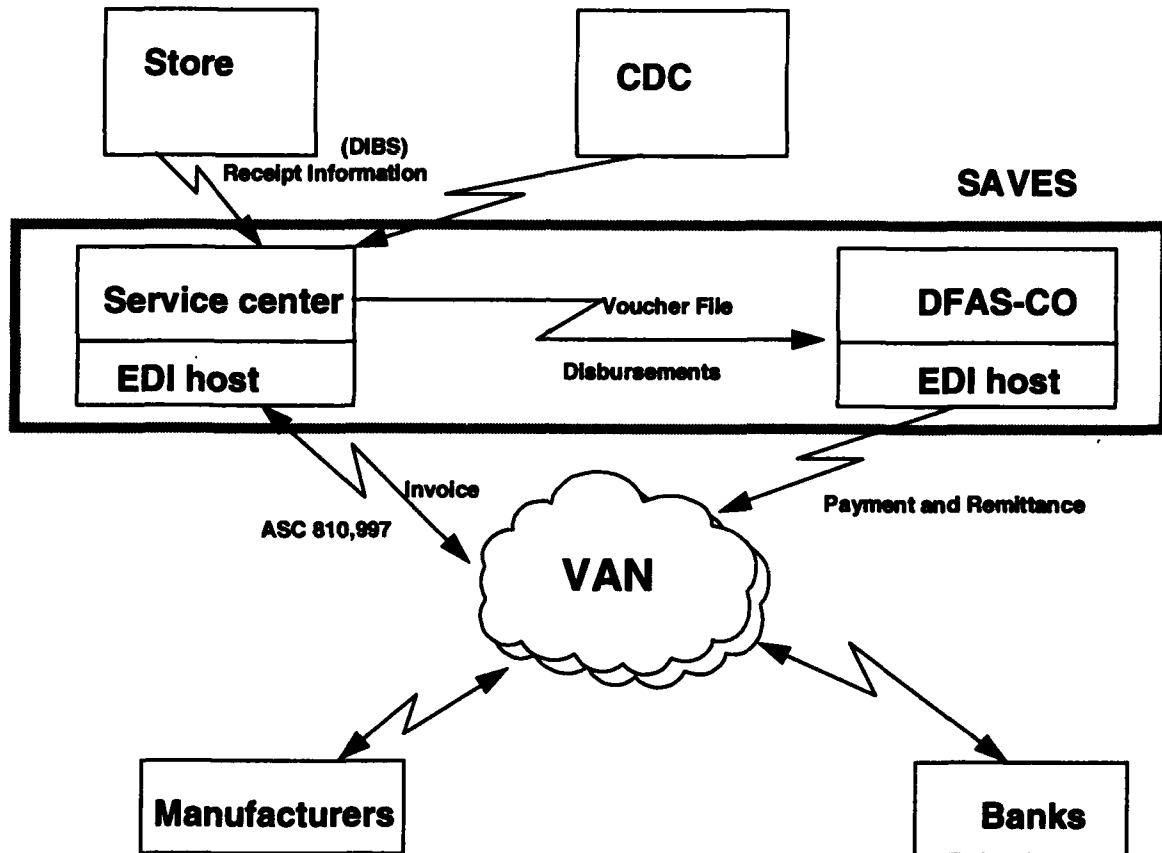
5) Overseas Store Support

DeCA supports its overseas stores using centrally located DIBS sites. All European and Mediterranean stores are supported by a DeCa Interim Business System (DIBS) central site in Kapaun, Germany. The majority of resale merchandise is ordered from US manufacturers using MILSTRIP requisitions submitted through DPSC. Central DIBS sites are also located in Korea, Japan, Guam, and Okinawa supporting stores in those countries. DeCA is designing the conversion of these unique MILSTRIP requisitions to utilize the same resale product ordering mechanisms as all other DIBS locations. Product call orders will be generated by DIBS and transmitted to the Business System Gateway for translation to standard ANSI X12 format, the same as is done for CONUS DIBS sites today. These product orders will then be transmitted to DeCA's commercial suppliers using the appropriate Distribution Point. DeCA will evaluate the cost feasibility of using any future InfoPort locations in close proximity to existing operating sites.

GATEWAYS:

DeCA is operating two gateway systems in support of Financial Systems and Business Systems. Each gateway system is utilizing a COTS translator that supports ANSI X12, EDIFACT, and UCS transaction standards. Both gateway systems support binary-

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synchronous, asynchronous, and TCP/IP communications over dial-up and dedicated network connections. The business system gateway supports all EDI requirements of DeCA's headquarters and regional business systems.

PROCESS FLOWS

DeCA is rapidly reducing the number of unique systems that it maintains from the high point of 47 separate systems that existed when DeCA was activated. As DeCA streamlines and standardizes these systems, its EDI enabling technology will evolve to support point-of-sale based replenishment in a quick response mode, a completely automated evaluated receipts system and an advance ship notice based receiving system. This target architecture is depicted below.
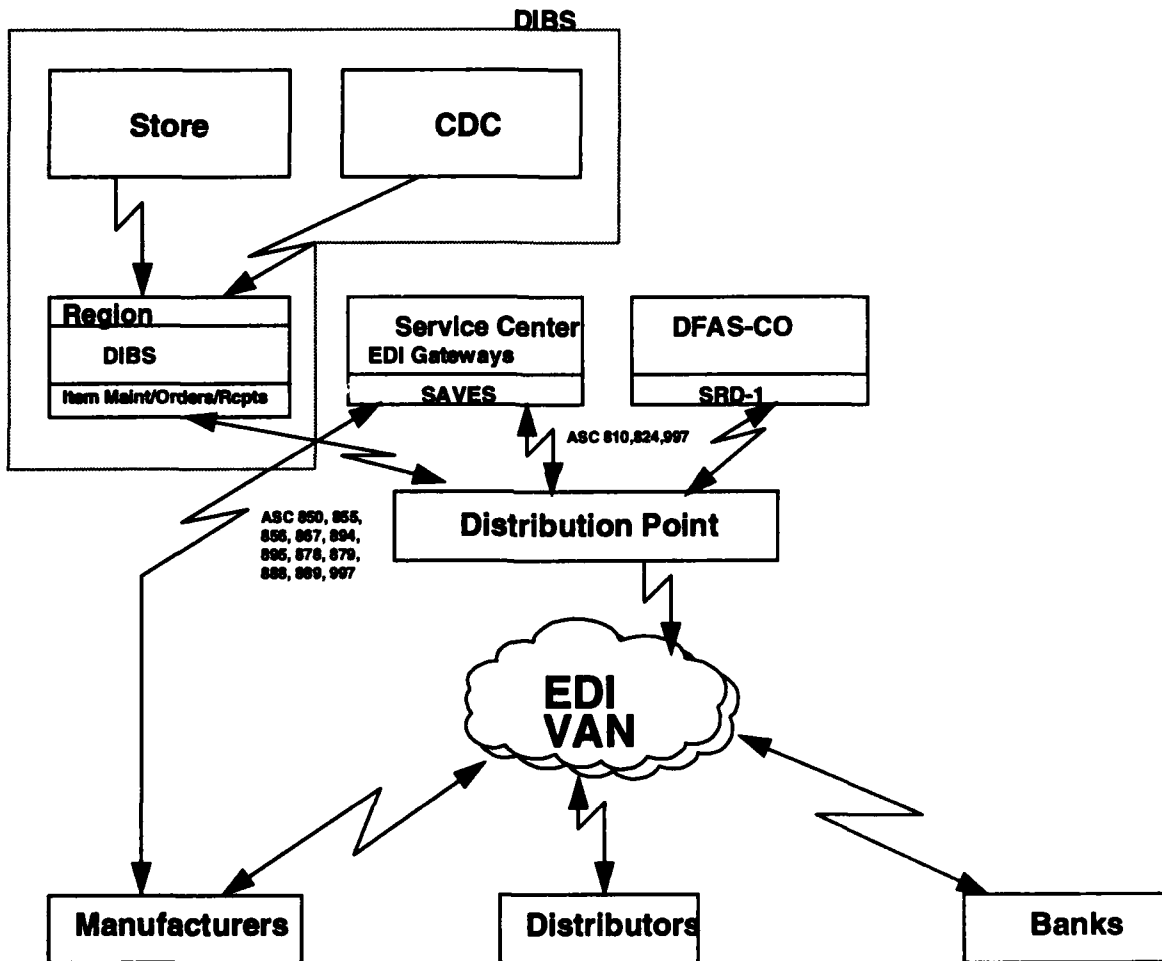
EC EXPANSION EFFORTS

DeCA is pursuing efforts to implement and support electronic funds transfer, document imaging and retrieval, quick response replenishment, and point-of-sale based automated ordering. DeCA is also working with Industry to convert existing proprietary EDI transactions to ANSI X12 standard transaction formats.

2.5.3 SMALL PROCUREMENT ELECTRONIC DATA INTERCHANGE

The Naval Air Warfare Center Weapons Division at China Lake, California provided documentation on the Small Procurement Electronic Data Interchange (SPEDI) system for review by the EC/EDI Process Action Team. This report is a summary of the Technical Review.

The SPEDI system is a process change in the way small procurement items are approved for purchase, contracted for, tracked, delivered, and paid. The approach is to; (1) write one large contract for a commodity instead of many small purchase orders, (2) automate the entire process with bar coding and EDI concepts/technology as the drivers, and (3) turn controlled ordering authority over to the customer that requires the product. The commodities presently under contract are office supplies, software, Automated Data Processing (ADP) peripheral supplies, and electrical test/measurement equipment.

One of the biggest inhibitors to date has been the requirement to use the supply system first when ordering this type of material. The cost is not always cheaper than ordering locally and the customer must usually wait longer for an item, if stock levels are not maintained on base. The cost to order an item by conventional small purchase method cost Naval Air Warfare Center (NAWC) $178, where as the SPEDI costs were only $86 in FY91.

One of the primary concepts of the SPEDI system is the implementation of bar coding to control the packaging and delivery by the vendor, as well as the receiving, invoicing, tracking and payment by the Government. When an electronic order is received by the local vendor, their PC also prints a bar code label identifying the order number, requiring activity, etc. This data matches the data stored at the base activity when the order was transmitted. The vendor affixes the label to the product and delivers it to the receiving base. Through the use of hand held scanners the item is received and delivered to the customer. The customer's identity badge is read to confirm delivery. At time of delivery, the installation system generates an invoice on behalf of the vendor and this is processed for payment. Security of the processes is maintained from the point that the vendor affixes the label, to customer receipt through the scanners, reading every identity badge each time a transfer of custody takes place. The portable scanners are uploaded to the main data system daily.

The SPEDI program began as a Total Quality Management effort to improve productivity through out the Center by expediting the procurement of materials, supplies, and services costing $25,000 or less. SPEDI is an integrated system for ordering, receiving, and invoicing repetitive off-the-shelf type hardware items. The major goals of the SPEDI design were to redesign the business processes, then use automation to its maximum extent to make the acquisition process as efficient as possible.

The SPEDI program is currently using a proprietary format of EDI. Development of the conversion to ANSI X12 is scheduled for early FY94.

Process Flow:

SPEDI Phase I allows customers to search an on-line catalog of locally stocked and system contract items. Requisitions for stock items are electronically transmitted to the center warehouse where orders are filled and items delivered. Requisitions for contracted items are electronically transmitted directly to the vendors. A bar code label is generated at vendor location and affixed to container prior to delivery. Bar codes are scanned at the receiving point to update inventory data base.

VENDOR

COMMODITY

PAYMENT

ORDER

ACCOUNTING

COMMODITY

COMPTROLLER

RECEIVING

YES

YES

YES

AUTHORIZED

YES

SPEDI
COMMODITY

NO

NO

STOCK

NO

NO
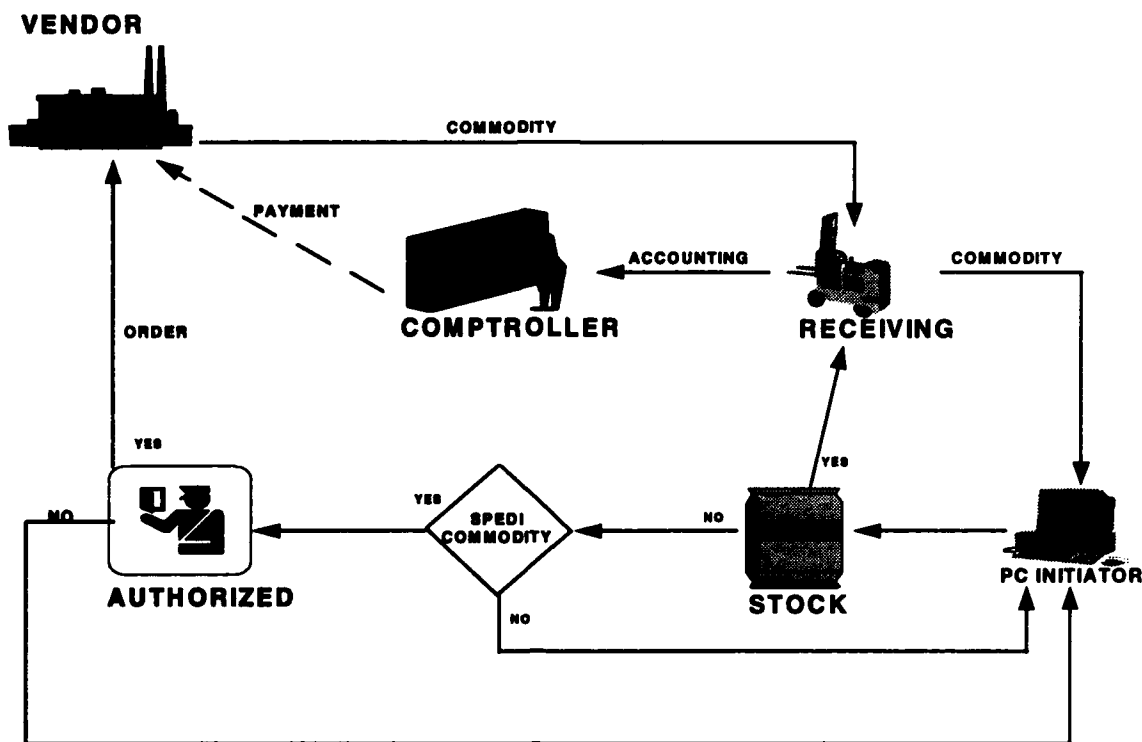
PC INITIATOR

Phase I Requisition Flow Process

Phase II has not yet been implemented at China Lake. However, it is defined in the following process.

The initiator will create an electronic requisition. If it is not an approved requisition for the initiator, the system will place it in suspense and provide instruction on how to get approval. When approval is made, it will be electronically forwarded for technical review. Either a hard copy will be printed at this time or data will be passed to the APADE system.

Technical Data:

SPEDI currently runs on a VAX 6620 in a client server environment. Customers have access via the local area network. Vendors have either a dedicated line access or dial-up capability from their PC. File transfers are made using ProComm, Kermit, or Ingres software and TCP/IP, DECNET, or AppleTalk protocol.

Data is currently transmitted in a proprietary format, however, the plan is to utilize the ABC Excel Translator, housed on a RS6000 in the near future. Data security and privacy is provided by Defender software Captive Accounts. Vendors are required to have a IBM compatible PC, modem, dedicated data line, and a laser printer with Bartender software (converts ASCII data to Bar Code label).
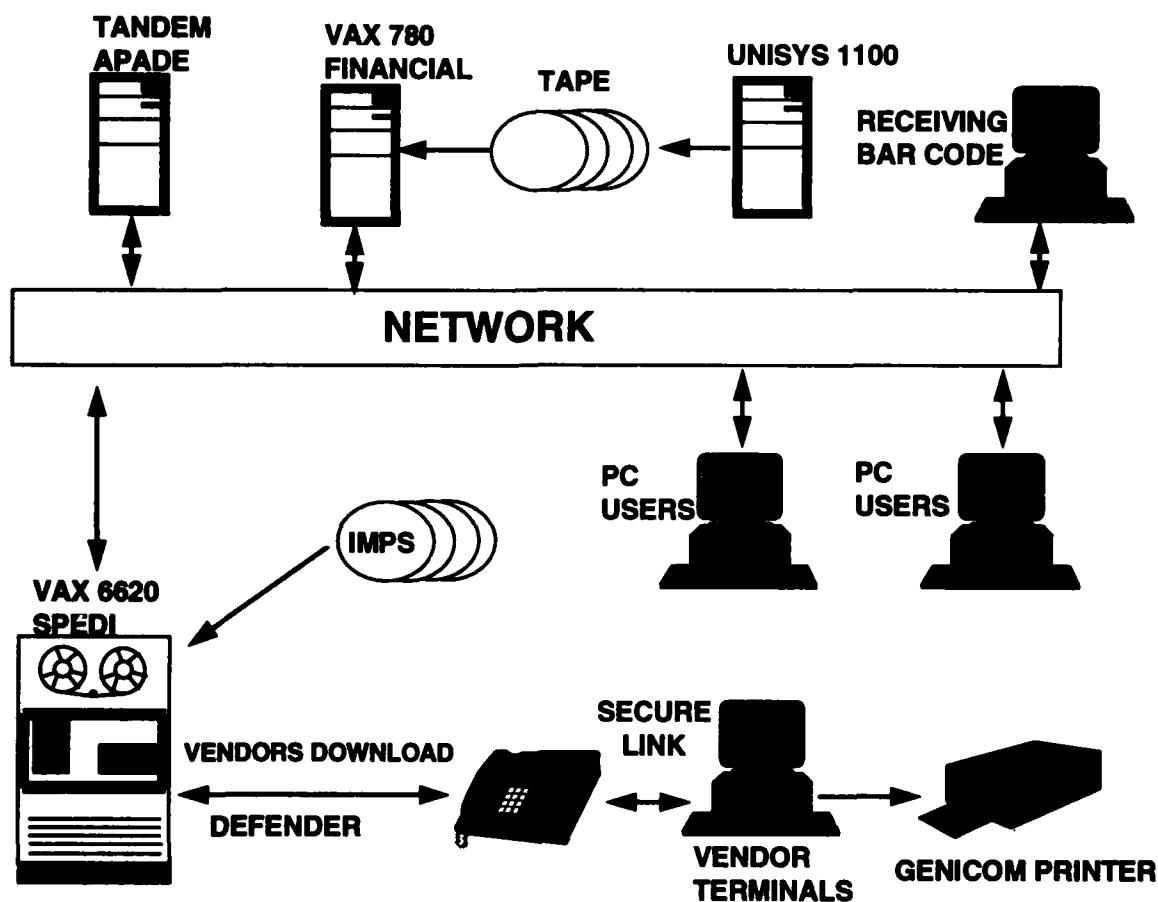
2.4.4 ELECTRONIC COMMERCE IN DEFENSE COMMERCIAL COMMUNICATIONS OFFICE

DISA Acquisition Bulletin Board System (DABBS) was introduced as a means of contracting for telecommunications equipment and services. Defense Commercial Communications Office (DECCO) made Information Technology Acquisition Bulletin Board (ITABBS) available to its Government customers and contractors to provide users with an on-line catalog of currently available PC and component products which DECCO can acquire. The International Switched Voice System (ISVS) is an interactive system, available to DECCO customers, allowing for input of requirements.

The BBS systems have been designed to reduce the time required to accomplish telecommunication service acquisition and allow customers/contractors direct access to all DECCO telecommunication requirements. Without the use of the bulletin boards, support for the buyers to accomplish the copying, enveloping, creation of mailing labels, and mailing for each RFP and amendment issued, is extensive. The bidder's list for each RFP consists of approximately 200 vendors. The average RFP is at least one inch thick and approximately ten amendments are issued prior to the proposal due date. Additional workload for the buyers is manual assembly and maintenance of the bidder's list, report generation, and preparation of all documentation.

As the bulletin board processes become more popular to customers and contractors alike, the automation releases personnel from manual tasks and allows them to be productive in more significant areas of the buying process.

Through conferences, DECCO communicates to its contractors as to the availability of EC to conduct business. They have participated in the annual Telecommunications Certification Office (TCO) conferences, attendees are primarily Government with a mixture of Industry representatives. They also hold the Forecast to Industry Day annually which reveals in detail DECCO's current and future procurements, processes, and automation initiatives. This conference has over 150 companies in attendance each year.

BENEFITS AND FUTURE CONSIDERATIONS

DECCO now processes over 4,500 requirements each month using DABBS. RFPs, which average between 300 to 500 paper pages and are provided to over 100 companies, can now be viewed by those companies on-line. The cost of manual labor, reproduction, and postage have been eliminated by using DABBS.

A recent study, done by an independent contractor, shows a reduction of 25 percent in processing time, a 60 percent reduction in paper consumption and a 1.2 million dollar cost avoidance by using the bulletin board. Turn-around time for processing of customer telecommunications requests has been reduced from 8-13 days to 2-3 days. Due to the increased number of vendors participating, the number of quotes received per requirement has increased by 75 percent.

An effort is currently underway to place small purchases on DABBS.

Commodities and services in the amount of $7,000,000 have been procured during FY93 using the ITABBS. The average lead-time for delivering the requested service to the customer from receipt of requirement has been 72 days. Small businesses have won 98 percent of all awards made using the ITABBS.

In response to the data call made by the EC in Contracting PAT to the DoD entities, DECCO provided documents defining the steps they have taken to move under the EC umbrella. DITPRO initiated EC at DECCO in 1989 with the introduction of DABBS. The expansion continued in 1992 with the introduction of Information Technology Acquisition Bulletin Board System (ITABBS). In addition, DECCO has also developed the ISVS, also a bulletin board, for its customers. Although these systems fall within the defined lines of EC, DECCO does not currently use EDI for transfer of data. The current bulletin board systems are housed on two different platforms. A consolidation effort is underway to reduce support to a single platform. DECCO intends to continue its efforts in EC and is considering the use of EDI to accomplish their goals.

PROCESS FLOW

Requirements for equipment and services are received either on tape or input directly into the ISVS system by DECCO customers. Requests are uploaded to the IBM host and posted by service category and service area. The TRAUTO application creates the Telecommunication Request (TR) and updates the Telecommunication Service Requests (TSR) Tracking database. DECCO uses the TSR Tracking System as a tool for information tracking from receipt of requirement through the life of the contract. Status information is provided to customers electronically via the system. A text file is then delivered to the appropriate Contracting Officer (KO). The KO may edit the TR on-line, then post the results to the TSR tracking database and the DABBS. A printed copy of the TR may also be requested by the KO.

Vendors dial into DABBS; scan TSRs, Request for Proposals (RFPs) and RFQs; mark the ones of interest to them and download to their system. The vendor is able to electronically submit proposals and correspondence to the DABBS. In June 1993, DECCO upgraded DABBS to provide the capability to place entire RFPs on the system. The RFPs include all text, graphics, and contractual documents that would be provided in a paper document. It also provides the capability to receive Statements of Work (SOWs) from customers.
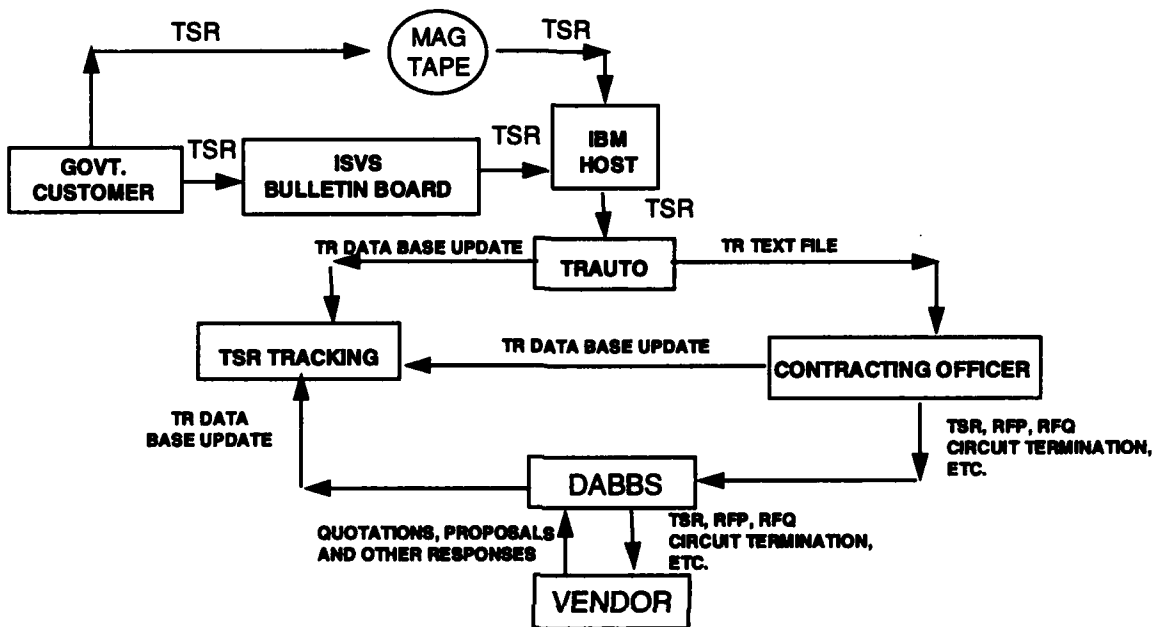
The ITABBS catalog contains detailed profiles on available information system commodities all of which comply with the technical standards, architectural standards and inter-operability requirements of the DoD. The catalog is continuously updated to provide customers state-of-the-art technology at current market prices. Authorized customers access the purchase request menu of ITABBS and submit their request. These purchase requests are converted into RFPs and RFQs for vendors by contracting personnel. Vendors who have executed Basic Ordering Agreements with DECCO may submit quotations in response to RFPs and RFQs via ITABBS. Quotes are evaluated by the contracting officer, awards and declination notices are posted electronically.
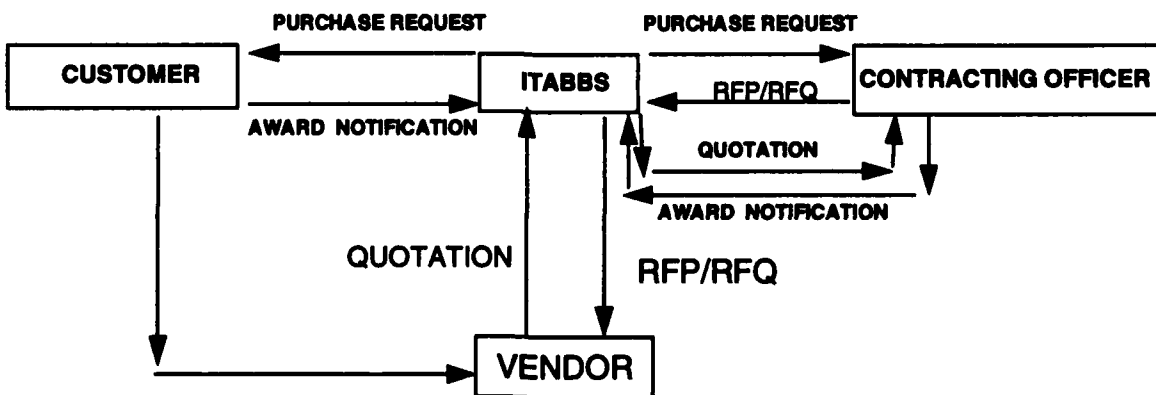
SYSTEM CONFIGURATION

DABBS and ISVS reside on 486 IBM Compatible PCs running MS-DOS version 5.0. DECCO is using COTS software, Wild Cat Bulletin Board and various DITPRO developed applications to support the systems. ITABBS is housed on a Sun workstation comprised of Sun Sparc station 2s running Solaris 2.0 with COTS software, TeamMate Bulletin Board.

Access to the DECCO Bulletin Board Systems is via dial up modem using YMODEM, XMODEM, ZMODEM or Kermit protocols. The bulletin boards are available 24 hours a day, seven days a week for customer and vendor accessibility. DABBS and ITABBS provide mailboxes for private communications between DECCO and its users. Although the bulletin boards are primarily open systems, DECCO takes every precaution to ensure only authorized users access the systems. Acquisition schedules, conference agendas, pre-award information, and information of general interest on acquisition policy and procedures are also posted on DABBS. DECCO provides a help desk during business hours five days a week for resolution of technical problems.

2.5.5 POP-D CONTRACTOR REGISTRATION MODULE

The contractor registration module automated the Standard Form 129 (Bidders List Application) and the Department of Defense Form 2051 (CAGE Code). The Paperless Order Placement (POPS-D) module was developed using the concept of taking an Integrated Computer-aided Manufacturing Definition Language (IDEF) activity, using Object Oriented (OO) methodology, Computer Aided Software Engineering (CASE) tools and programming to produce a stand alone module. The module is a self contained software application that fulfills the target system requirements for a given IDEF activity. The contractor registration module is designed to automate contractor registration. It provides contractors the capability to enter information directly onto a PC.

EC/EDI CAPABILITY

The contractor registration module is the Air Force EC/EDI initiative of POPS-D System located at Gunter AFB, Alabama. Initially, the contractor registers through the VAN in accordance with the TPA. The VAN sends that transaction set to a DP through the gateway to be loaded into the contractor registration module. The transaction set is then held there in a database. The transaction set is simultaneously sent out through the gateway to the DP and to the Defense Logistics Service Center (DLSC). DLSC assigns the CAGE code and that data is returned to the contractor registration module. This transaction set also updates the legacy procurement AIS. The only ANSI X12 EDI transaction set used to date is Trading Partner Profile-838.

The Base Level Systems Modernization (BLSM) - Contracting office at Maxwell AFB., Alabama, Gunter Annex, provided information on the Contractor Registration Module (CR) project in response to the data call by the Electronic Commerce Process Action Team. The project began as a proof-of-concept for use of object-oriented methodology, case tools, and Ada programming language. The project has been very successful and scheduling for deployment and enhancements is underway.

Contractor Registration Module is not utilizing EDI for the exchange of data at this time. Members of the team are working to accommodate the use of the ANSI X12 838 Vendor Registration transaction set.

Process Flow:

Contractors wishing to register for a CAGE Code currently must sign on to the Contractor Registration and fill in information. The application is automatic in that information is sent electronically via communication between requesting activity and DLSC where requests are processed. This application replaces the Standard Form 129, Bidders Mailing List and the DD Form 2051, CAGE Code Request.

This project took advantage of the IDEF model, object oriented information engineering methodology, and the DMRD directives in producing a flexible, highly responsive, customized procurement module. Compatible software modules using standard development Computer Aided Software Engineering (CASE) tools, Graphical User Interfaces (GUI) adhering to X-Windows standard, and portable software that comply with Open Systems Integration (OSI) standards.

Technical Data:

Contractor Registration Module is housed on a 486 PC running SCO UNIX. The project began as a proof-of-concept for CASE tools and did not involve EC/EDI. At this time the project team is designing additional modules which would provide an EDI link to the system. This would allow contractors to send ANSI X12 838 transactions in order to register for a CAGE Code. Also, a future enhancement includes the identification of debarred or suspended contractors immediately upon receipt of newly assigned CAGE codes by inquiring the automated debarment list.

2.5.6 DEFENSE ELECTRONIC/CONTINUOUS ACQUISITION AND LIFE-CYCLE SUPPORT

The Continuous Acquisition and Life-Cycle Support (CALS) program is a DoD and Industry strategy to enable the integration of digital technical data in standard form for weapon system acquisition, design, manufacture, and support. The CALS standards enable DoD and Industry to exchange data in digital form and facilitate electronic access to technical information. EDI transaction sets are used to transmit the CALS formatted technical information. One of the goals of the CALS standard is to enable DoD organizations to present a single-face to Industry for electronic transmission of technical data.

The technical data in support of weapon systems acquisitions can consist of engineering data, technical orders or Military standards (MIL-STD), and specifications. The Defense Electronic/Continuous Acquisition and Life-Cycle Support (DE/CALS) project will transmit this information in accordance with MIL-STD-1840(A/B), Automated Interchange of Technical Information and MIL-R-28002, Raster Graphics in binary format.

The DE/CALS project is a procurement EDI initiative for contracting in an ICP environment. ICP applications accomplish contracting actions for spare parts in support of major weapon system. These items are primarily manufactured in accordance with engineering/technical data.

The initial business applications targeted by the DE/CALS project are acquisitions in support of the ICP with estimates of procurements under $25,000, competitive, requiring technical data in support of these RFQs (e.g., engineering data, technical orders or Military standards, and specifications.)

In advance of the buy activity, the requirements' computer systems send projected buys of ICP items to J090A, the Acquisition Screening system. Requirements personnel use the Acquisition Screening system to select items of projected buys and determine their competitive method of acquisition in preparation for actual procurement. This screening may also be triggered by a Purchase Request (PR) to procure the item. As part of the screening, an Engineering Data List (EDL) is developed identifying the technical data needed to manufacture the item. The EDL is also used by Engineering Data Computer Assisted Retrieval System (EDCARS) technicians within the Air Force to establish an electronic version of the technical data in EDCARS for items where buy activity is expected.

Based on buy requirements and buy notices from item managers, the J023 and J041 computer systems, together with manual sources generate a PR to acquire the items. These PRs initiate ICP activities in procurement organizations to solicit vendors to bid on the items.

Solicitations are developed for EC/EDI distribution using existing automated systems. Requirements organizations use the Acquisition Screening system to produce the EDL, procurement sends a technical data request to EDCARS to produce CALS technical data, and then uses ACPS to produce the RFQ. The engineering data list, CALS technical data, and the RFQ are transmitted to the DE/CALS EC/EDI Manager using FTP. The EC/EDI Manager assembles the RFQ, EDL and CALS technical data into electronic solicitations, translates them into ANSI X12 transaction sets and sends them out to a DoD EDI distribution point. From there, they will be routed through VANs to the trading partners. Trading partners who want to bid, return their quotes electronically through DE/CALS EC/EDI to ACPS where they will be reviewed by the buyer. The buyer will select the winning quote, prepare a Purchase Order and send it via DE/CALS EC/EDI to the designated trading partner. Procurement forwards contract award information from ACPS through other automated systems to Congress and the Defense Contract Administration Office. DE/CALS also will provide on-line information to procurement for status and review of their EC/EDI solicitation activities.

FUNCTIONAL EC/EDI CAPABILITIES

Each of the business transactions in the acquisition process are generated in various existing electronic-based systems. The DE/CALS project will develop a comprehensive EC/EDI environment to integrate the EC business activity from each of the existing systems. DE/CALS will translate EC business information into ANSI X12 transaction sets and provide the capability to communicate through EDI with trading partners both within the Government and between Government and Industry.

The DE/CALS effort will provide for multiple existing system's electronic transmissions outbound through the EDI process, as well as return transmissions into automatic database updates in the existing systems. DE/CALS will integrate the EC/EDI activities of existing systems currently known in the Air Force as ACPS, EDCARS, and J090A.

ACPS (Automated Contract Preparation System): The contract writing system used within the Air Force Materiel Command (AFMC) is called ACPS and hosted on a Data General MV9500. This system is accessed via LANs by the user (contract negotiators, officers, administrators) to create contractual documents (RFQs, POs, contracts, modifications, etc.). This system also is used to create abstracts of offers received from contractors as well as many other business processes for the contracting community.

EDCARS (Engineering Data Computer Assisted Retrieval System): The data repository of engineering/technical specifications used with AFMC is EDCARS. EDCARS is hosted on an IBM 4381. This system is used to retrieve and reproduce engineering/technical data on aperture cards with 35mm fiche. EDCARS also has the capability to generate CALS compliant format of the engineering/technical data though this is not the current business process.

J090A (Acquisition Screening System): J090A is a product of Logistics Modernization Systems (LMS) project that interfaces acquisition requirements information with the procurement business operations. J090A is hosted on an IBM 3090 main frame. One of the products of this system used by the contracting community is the EDL. The EDL is a listing of all applicable specifications to the item being procured. The EDL is a paper format that is distributed to EDCARS for manual input for the generation of the technical data package (aperture cards). The information from the EDL is included in the text RFQ or in the paper process attached to the RFQ so as to notify potential contractors of applicable engineering/technical specifications.

DE/CALS, Phase I initiative will utilize the following EDI transaction sets.

- 824 - Application Advice
- 840 - Request for Quotation
- 841 - Specifications/Technical Information
- 843 - Response to Request for Quotation
- 850 - Purchase Order
- 855 - Purchase Order Acknowledgment
- 864 - Text Message
- 997 - Functional Acknowledgment

Sacramento Air Logistics Center (SM-ALC), McClellan Air Force Base, provided documentation on the DE/CALS project in response to the data call by the Electronic Commerce Process Action Team. The DE/CALS project is being designed and developed in conjunction with the work being done in the CALS effort. CALS is a DoD and Industry strategy to enable the integration of digital technical data in standard form for weapon system acquisition, design, manufacture and support. The CALS standards enable DoD and Industry to exchange data in digital form and facilitate electronic access to technical information. The ANSI X12.841, Specification/Technical/ Engineering Information transaction set is used to transmit the CALS formatted technical information. DE/CALS Phase 1 initiative will utilize additional transaction sets to send and receive RFQ, Response to RFQ, PO, and PO Acknowledgment data.

The main objective of DE/CALS is to effectively incorporate EC/EDI into the acquisition process for Inventory Control Point (ICP) applications requiring engineering technical data. It will integrate the EC/EDI activities of existing systems currently known as the ACPS, the Engineering Data Computer Assisted Retrieval System (EDCARS), and the Acquisition Screening System (J090A). The system will be designed, in a non-intrusive way, to minimize changes required of these systems.

Process Flow:

DE/CALS is being implemented in two automated environments, an EC Manager and an EDI Manager. These environments provide automated support for special functions needed to send and receive EDI transactions.

The EC Manager supports in-house EC for the ICP buys. The existing computer applications interface with the EC Manager using standard TCP/IP FTP and SMTP E-mail. Interfaces are controlled by programs run under the UNIX 'CRON' utility. 'CRON' runs continuously in the background and executes system functions or applications at specified times without manual intervention. Manual and/or tape procedures are used to back up the data. The EC Manager also provides a staging area where the RFQ, CALS Technical Data and EDL, and other data, are gathered, compared, reviewed and matched in preparation for assembly into Pre-EDI packages acceptable by a standard EDI translator. Inbound data is disassembled and put in local formats in preparation for reading into existing systems. System users have on-line viewing capability via a common PC-based Graphical User Interface (GUI). Security is provided to protect sensitive data.

The EDI Manager provides ANSI X12 translation and store and forward of transactions flowing between EC Managers and the DoD DP. Several EC Managers may be sending transactions to the EDI Manager. Transactions, both inbound and outbound are archived before and after translation. This provides an audit trail of all EDI activity. Archived data is available for on-line view as with the EC Manager. Outbound transactions are forwarded to the DP via the Defense Data Network (DDN) where they are routed to the appropriate VANs. Inbound transactions are sent to the appropriate EC Manager to be forwarded to an existing system.

Technical Data:

EDCARS, the data repository of engineering/technical specifications, is housed on an IBM 4381. ACPS, hosted on a Data General MV9500, is the Air Force Materiel Command (AFMC) contract writing system. J090A, a product of the Logistics Modernization Systems, interfaces acquisition requirements information with the procurement business operations. J090A is operating on an IBM 3090 main frame. For the proto-type the EC and EDI Managers run on a AT&T 3B2 with a UNIX operating system.

Minimum hardware and software requirements have been identified and are anticipated to evolve with Industry improvements. It is anticipated that this effort will utilize available hardware and software as much as possible. SM-ALC currently has a few 486 personal computers with 2.1 Microsoft Windows in place. For DE/CALS Phase 1, it is planned that the EC and EDI Managers will run on a UNIX based platform using Write Only Read Mostly (WORM) Archiving technology and COTS Translation Software. Additional PCs with PC Network File Services (PC/NFS) software, Communication hardware and software and Graphics Display Software will need to be acquired. Although most of the required software is available COTS or GOTS, some application software will be developed for the EC/EDI managers.

DE/CALS has taken a design approach which will accommodate other functional activities moving toward EC/EDI in the future. A reduction in overall cost to this migration will be provided by utilizing the base EDI Manager. A single translation package and a single point of communication to the DP will be cost effective and will eliminate undesired hardware and software dependencies between functional users. Each functional user would provide and support their own staging resource, the EC Manager, and feed transactions to the base EDI Manager.

2.5.7 AIR FORCE PILOT BAR CODING SYSTEM

In response to a data call of EC/EDI projects within DoD, Los Angeles Air Force Base, California has provided information on the Asset Tracking Pilot system they are developing. This report summarizes the Technical Information relating to the project. Although the project is in its infancy, the documentation provided to the Electronic Commerce in Contracting PAT shows that the ground work is stable and should provide a strong backbone to the complete project.

The thrust of the Asset Tracking Pilot is not to automate manual processes but to put in place the necessary systems, capabilities, and procedures that will enable improvement of the fundamental way in which information is exchanged. The major goal of the pilot is to interface the bar code system, base financial/purchasing system and the private sector vendors and to utilize the EC/EDI standards which are in place.

EDI & BAR CODING OVERVIEW
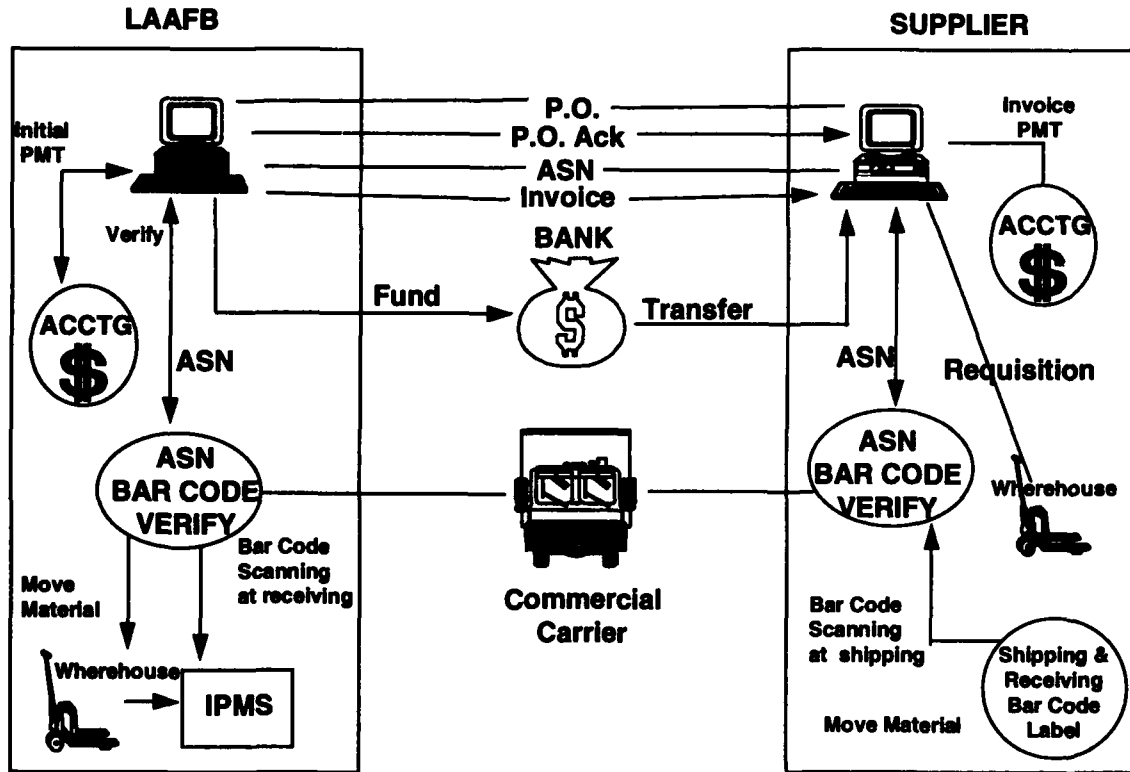
Process Flow:

In Phase 1, equipment is assigned a bar code tracking label which has been printed locally. Information about the equipment is sent to the Accounts Receivable EDI system (when EDI processing is in place). The equipment is placed in temporary storage and the item label and bin label are scanned by a portable bar code reader. When the equipment is ready for pickup by the receiving organization, related bar code are scanned adjusting the warehouse inventory. When the equipment is installed by the receiving organization, a new label containing part identity, serial number, and building/room number is created by a local bar code printer. This label will be scanned and the data will be sent to the inventory data base. The proposed method and procedure of the flow may change slightly as the pilot team learns of other possibilities.

Future development will be to add the EDI portion of the Project. This will allow the Purchase Orders to be sent to the supplier, the Acknowledgment and Invoice to be returned electronically. Procurement and Financial systems will be updated automatically and the Payment sent electronically to the bank. This complete process will, among other benefits, lower inventory costs, reduce errors and improve on time receivable payments.

Technical Data:

Phase 1 requires a 486 PC running DOS with Windows to act as host computer for the scanned data. Software required for the host includes the user interface integrated with the data base. Additional hardware is a printer and hand-held terminals to collect on-floor data.

HOST INVENTORY SYSTEM

ORACLE
D-BASE

PC-IPMS

LASER
SCANNER

TRACKER

COMMUNICATION
DOC

386/486 PC

BAR CODE
PRINTER

BATCH
DOWN LOAD

REPORT PRINTER
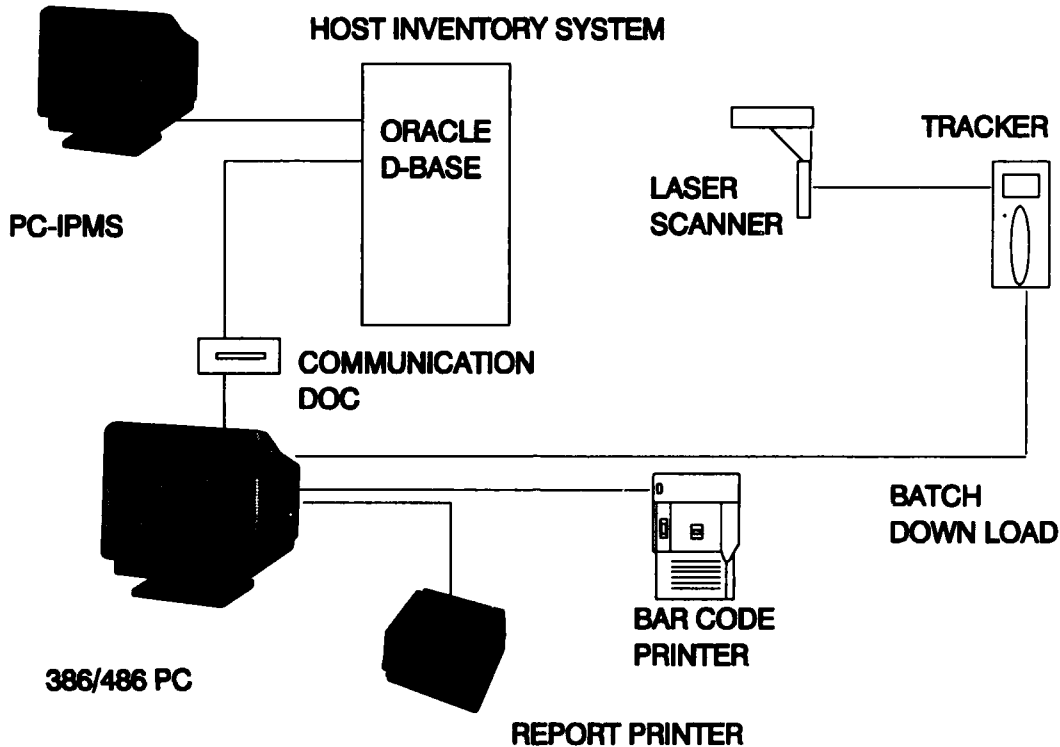
Phase 2 requirements are for an ASCII to ANSI X12 Translator and an Information Manager. The Information Manager will provide automatic movement of files, background execution of processes and an interface for the various applications affected.

2.5.8 UNITED NATIONS INFOPORT

In August 1992, the United Nations Conference on Trade and Development (UNCTAD) identified its first Trade Point Centers as a part of a global project called the Trade Efficiency Initiative. Subsequently called "InfoPorts," UNCTAD identified twenty-one worldwide sites to participate in the pilot initiative. Columbus, Ohio, was selected as the North American site. Additional sites were named in Europe (one site), South America (six sites), Asia (nine sites), and Africa (four sites) to serve as pilots or to begin initial preparation pending development and approval of an InfoPort model.

ASIA
Beijing, China
Shanghai, China
Grangzou, China
Manila, Philippines
Bangkok, Thailand
Jakarta, Indonesia
Singapore, Singapore
New Delhi, India
Dhaka, Bangladesh

AFRICA
Cairo, Egypt
Tunis, Tunisia
Algiers, Algeria
Casablanca, Morocco

NORTH AMERICA
Columbus, Ohio

SOUTH AMERICA
Cartagena, Columbia
Bogota, Columbia
Guayaquil, Ecuador
Lima, Peru
Santa Fe, Argentina
Rosario, Argentina

EUROPE
Lisbon, Portugal

The mission of the North American InfoPort is to facilitate the expansion and increase the efficiency of international trade using advanced information networks, services, and techniques. It will seek to establish an environment, particularly for small and medium sized businesses, that will facilitate and create strong trade linkages, promote international business awareness, and establish new and improved systems for conducting international trade. It has been determined that promotion of EDI will serve as the cornerstone to the successful achievement of this mission.

The overall objectives of the InfoPort are to:

1) Make international trade transactions more efficient by simplifying and standardizing them;

2) Make current and prospective international traders more effective by providing them with access to advanced information technologies, networks and support training;

3) Promote new information partnerships between international traders through the creation of electronic information links and through the addition of new international trade participants;

4) Increase the awareness of existing and would-be international traders to new trading techniques and opportunities offered by advances in technology and attendant international standards;

5) Develop the North American InfoPort to serve as the "model" among the twenty one participants in the Trade Efficiency Initiative.

CONCEPT OF OPERATIONS

While the InfoPort is still in the process of completing specifics, a number of mission areas are already defined and committed. There has been extensive activity over the last several months to identify and build a baseline of services and technical capabilities which will serve as a foundation for the pilot effort and, from which, new and enhanced services could evolve.

InfoPort does not plan to directly compete with the existing VAN networks. The InfoPort, however, will be a participating node on the EDI Network which has been identified as the backbone to the Information Highway Initiative. InfoPort plans to use this Industry built/supported network to access business data and provide a communications link to other open networks.

InfoPort will be providing these primary services and functions:

- Interconnectivity: InfoPort has been working closely with the VAN community to develop a central interconnectivity point. These negotiations would establish the InfoPort as a Virtual Network interface to the many VANs currently forced to provide their own redundant interconnections. Use of a common interconnect point would eliminate the need for VANs to support this overhead function, and would provide InfoPort with a network access point for communication with subscribed InfoPort members. In turn for their support, the VANs will be among the "endorsed" InfoPort providers.

- Standards support and transition assistance: They will be supporting EDIFACT, ANSI X12, and the harmonization effort between the two standards. They may supply translation services or ANSI X12/EDIFACT conversion services if a market is determined to exist.

- Directory Services: Includes X.500 Directory at a domestic and international level, certificate information, international code listings, regional listings, and public key information. They will not be maintaining these listings, but will rather be able to secure them from their repository sites as a third-party service.

- Trusted Third Party Services: By their very sponsorship by the UN, the InfoPort becomes an obvious provider of trusted third party services, assuring confidentiality and integrity of data being sent and received by the respective business parties.

- International Communications: The basic mission of the InfoPort is to provide the mechanism by which international business communications could be created. By having interconnect capability with multiple international VANs and with the system of InfoPorts throughout the world, it should become much simpler to provide network communications to any worldwide location.

- Services to Vendors: Another basic mission of the InfoPort is to provide
  assistance to the new EC user. Through membership and user fees, the
  InfoPort will generate its revenue; in turn it will serve as a "third-party" product
  information provider. Vendors of EC/EDI software, hardware, and services will
  register with the InfoPort who will provide a listing of "endorsed" providers. The
  vendors providing technical assistance to the InfoPort, the InfoPort providing a
  marketing mechanism for the vendors and information services to the Trading
  Partners, and the Trading Partners providing funding to the InfoPort through
  service fees.

- Business Data/Reports/Information/Opportunities: InfoPort plans to provide
  business information to subscribers, encouraging involvement in an electronic
  business environment, providing new opportunities, especially for the small and
  medium sized businesses.

The DoD interface and involvement with InfoPort will depend upon our evaluation of
services provided and cost benefit analysis. It is very likely that the interconnectivity
capability of the InfoPort will greatly enhance DoD's ability to communicate in the
commercial world at an international level, especially through use of the United Nations
North American InfoPort as a third-party service. As the interconnectivity of the InfoPort
becomes more robust, its role as a Virtual Network may provide DoD an opportunity to
move toward a more effective method of commercial VAN communications. By utilizing
the strength of the existing DoD networks it could prove more effective for DoD to
become its own VAN using the interconnectivity capability of the InfoPort in place of
multi-VAN connections directly to DoD sites.

DISA will look at utilizing the InfoPort for Directory and Code/Standards services,
especially those maintained on an international level. The code listings for EDIFACT
messages are maintained at the regional level, multiple X.500 directories will be
maintained, and public key information will be maintained by multiple administrators.
Utilization of a third-party provider will greatly improve DoD's ability to maintain our
information base with a reduced overhead cost.

2.5.9 DEFENSE AUTOMATIC ADDRESSING SYSTEM CENTER

Defense Automatic Addressing System Center (DAASC) was tasked by DLA with
development of a communications exchange system for routing/handling of SPEDE
transactions between DLA Supply Center (DSC) and their private sector trading partners.
This effort was designated the DLA Transaction Distribution Network (DTDN), and could
now serve as one of the pilot projects for implementation of the DoD site gateways and
DPs.

As an initial solution, the DTDN had taken advantage of an existing public interconnect
agreement (e.g., Mailbag) between several of the major commercial VANs. Use of
existing interconnects provided an interface at DAASC for routing EDI transactions
between DLA site gateways and their private sector trading partners. The transactions
were translated to ANSI X12 format at each DoD site gateway before transmission to
DAASC for distribution to the VANs. It was projected that, during the first full year of
operation, the various DSCs could have transmitted over 1.5 million ANSI X12
transactions, via the DTDN. The DTDN process at DAASC has been successfully
integrated into the DAASC DP processing functions and is no longer referred to as a
separate entity/process. Direct connections have now been established to multiple
VANs and production transactions are being exchanged between DSCs and their
vendors.

2.5.10 DEFENSE ELECTRONICS SUPPLY CENTER - ELECTRONIC BID BOARD

The EDI module of this system is not integral to the primary AIS, but stands alone and intercepts the print stream from the small purchase Phase II system. The EC/EDI capability interfaces with DPACS. For buyer/customer interface a different hardware/software configuration is utilized to complete transmission electronically than for conventional purchase transactions.

This Electronic Bid Board (EBB) initiative does not process ANSI X12 EDI transactions, although the Defense Electronics Supply Center (DESC) states it can be formatted into any EDI transaction set. It adheres to XBase standards with standard dBase file structures. DESC supplies no software or hardware to the contractors, who actually dial DESC's system and their computers act as "dumb" terminals operating DESC's software. It is primarily a point to point connectivity that can handle 16 simultaneous users. EBB actually posts automated small purchase RFQs for two Electronics Federal Supply Classes (FSCs), for up to 15 days, for "on-line" quotes by participating vendors. Responses are automatically loaded into the DPACS database for processing a non-EDI processed award.

2.5.11 DEFENSE GENERAL SUPPLY CENTER - PAPERLESS ORDER PLACEMENT SYSTEM

The EDI module of this system is not integral to the primary procurement AIS, but is a procurement system integrated with SAMMS. The system screens purchase requests against previously awarded Indefinite Delivery Type Contracts (IDTCs). To facilitate this methodology, items are first reviewed by commodity group and/or type for use in the POPS. Solicitations are issued for candidate items and responses are not evaluated as to whether the contractor wants to use POPS, as some provide negative responses to system participation with their quotes. If agreed to, the low bidder will be awarded an IDTC of one basic year with four options and Government software will be furnished to the contractor GOTS. The contractor will be placed on the POPS system, within 30 days, so the activity can start issuing delivery orders against the IDTC. Some examples of POPS IDTCs:

Contractor	Products on Contract
3M Company	Safety/Rescue Equipment
	Rubber/Plastic materials
	Electrical Hardware
Eastman Kodak	Photographic Supplies
Eveready Battery	Batteries
General Electric	Electric Lamps
Philips Lighting	Electric Lamps
Xerox	Chemical Supplies

POPS, as observed, has the capability to process the following ANSI X12 EDI transactions:

- 810 - Invoice
- 850 - Purchase Order
- 997 - Functional Acknowledgment

Presently, POPS screens purchase requests against existing IDTC listings. If a match is found, the system generates an 850 transaction to the vendor without any buyer intervention. If no match is found on a POPS IDTC, then the purchase request is processed by the buyer utilizing routine procurement AIS procedures for award.

The transaction sets may be transmitted to a vendor in a number of different configurations; (a) mainframe to mainframe, (b) mainframe to a VAN (GEIS), to vendor who uses EDIA developed software, (c) personal computer to VAN (Harbinger), to personal computer, where the vendor pays the VAN costs or (d) personal computer to personal computer. Telecommunications occur daily to ensure a timely flow of supply transactions generated through SAMMS.

2.5.12 NAVAL SURFACE WEAPONS CENTER, CRANE, INDIANA - ILSMIS-AAM

Crane Division has an Automated Acquisition Module (AAM) within the Integrated Logistics Support Management Information System (ILSMIS) Division wide computer network. Electronic requisitions are entered by the Requiring Technical Activities (RTA) via AAM. These are electronically reviewed for automated data processing and hazardous material approval then routed through technical screening before being automatically assigned to the appropriate purchasing agent. The purchasing agent has the capability to prepare the RFQ within the computer system with the RFQ number being automatically assigned by the system. At time of award, the purchase order number is automatically assigned and the purchase order is prepared within the computer system. Tracking of the electronic requisition is maintained within the ILSMIS system which allows both the Supply Directorate to review status as well as the RTA. Data is automatically compiled for reports required by the Supply Directorate and the Deputy for Small Business. ILSMIS has the following features:

- Cradle to grave material management from original request to final delivery;

- Inquiry capability to determine the availability of material in inventory;

- On-line creation of requisitions including reviews and approvals;

- Inquiry capability for up to date status of requisitions/procurement request;

- Inquiry status for commitments and obligations against funds;

- Audit trails for all requisitions and resulting procurements.

ILSMIS is a menu driven system which has controlled access. It currently resides on the Honeywell DPS-8 series computer but is scheduled to be moved to a Sun system by June of 1994. Within ILSMIS, AAM features include:

- Monitoring of workloads and Procurement Administrative Lead Time;

- Maintenance of historical data, vendor performance, and mandatory reports information;

- Automatic preparation of procurement documents including but not limited to; RFP, RFQs, POs, Delivery Orders, Blanket Purchase Agreements, BPAs, Basic Ordering Agreements (BAs), Solicitation Amendments, and Contract Modifications.

EC/EDI CAPABILITIES

The Crane Division EDI Procurement Program is designed to function within the AAM portion of ILSMIS. The following transactions will be utilized in Phase I:

840 - Request for Quotation
843 - Response to Request for Quotation
850 - Purchase Order
997 - Functional Acknowledgment

Requisitions will be reviewed on the small purchase agent's monitor and a decision made whether to procure via EDI or traditional methods. If EDI, the RFQ is automatically created from the information on the requisition. The buyer has the ability to select optional clauses as necessary, adjust the required delivery date, delivery terms, etc. The RFQ will then be transmitted to multiple VANs to be distributed by Federal Supply Classification. Responses to the RFQ are displayed on the buyer's monitor, abstracted from low to high bidders with exceptions being flagged. The buyer will review the abstract and any exceptions, indicate on the monitor the successful bidder and the PO is automatically created within the system. The PO is then forwarded to the appropriate vendor. Functional Agreements are generated and reviewed as necessary. Since ILSMIS is a complete system, receiving will also be acknowledged via the computer. No paper will be generated from the creation of the requisition by the RTA through the receipt of the requirement.

2.5.13 ARMY COMMUNICATION ELECTRONICS COMMAND, FORT MONMOUTH, NEW JERSEY - ELECTRONIC BULLETIN BOARD SYSTEMS

Currently, Fort Monmouth has several active Electronic Bulletin Board Systems (EBBS) most of which contain one to two solicitations (RFPs), which support high dollar end item buys. The Command is not engaged in EC for small purchases.

Another Army EBBS system based at Picatinny Arsenal, SAACONS-EDI, has been implemented from the DoD SAACONS model. Based on system statistics from November 19, 1992 to July 23, 1993 it has processed:

1,058 Solicitations using EDI procedures
4,247 Responses from Quick Bids
547 Awards made to EDI Vendors
1,230 Number of vendors subscribing to Quick Bids
Cost of SAACONS-EDI: $100.00 initial fee (unlimited use)
$ 60.00 monthly maintenance fee (no phone line or data charges)

Fort Monmouth Facility/ADP Branch personnel currently utilize the DoD SAACONS model architecture but are not attached to a VAN. In early FY94, the SAACONS-EDI capability will be installed at this command.

This system was a good pilot project study by DoD. Because EDI can be a standard environment, the Communication Electronics Command (CECOM) believes the Army should have a standard contract with which to procure any necessary EDI hardware/software. The EDI environment also needs to move towards concepts and procedures that are often involved in the Government type of procurement process.

Fort Monmouth Command EBBS (High Dollar Value System) is the project that CECOM plans to make into the EDI environment. The project is segmented into three phases: Phase I, the current process of several independent EBBS; Phase II, to include the issue and receipt of quotes and proposals; and Phase III, to include engineering drawings and electronic signatures. Phase II implementation will be executed in the first quarter FY94. There are areas within the EDI environment that do not provide protection for a system of this type. Basically, the program environment still needs to evaluate the following:

- Information that needs to be safe guarded by encryption (bid/proposal process).

- EDI standards need to develop an inexpensive, high compression graphical interchange.

- Provide protective means of Electronic Signatures.

The Fort Monmouth Command EBBS is currently based on Phase II hardware/software configuration. As stated above, this initiative is moving towards the EDI environment but at this time, they cannot conceivably project the cost estimates that are required.

2.5.14 SMALL BUSINESS ADMINISTRATION - PROCUREMENT AUTOMATED SOURCE SYSTEM

Procurement Automated Source System (PASS) was originally mandated by Congress in 1977. Implemented in 1978, it now maintains solicitation mailing list data on more than 240,000 small businesses. More than 950 procurement officials of Federal Agencies and large prime contractors are authorized to access the system via computer terminals equipped with modems.

On an annual basis, each firm is requested to update their data and re-certify their status as to size and ownership characteristics. Failure to respond to the second request for this information results in the record being deleted from the data base.

The Small Business Administration's (SBA) initiative with respect to EDI is to upgrade PASS to serve as a comprehensive vendor registration database of firms both small and "other than small" and to include, minimally, company capabilities, ownership characteristics, performance history, electronic address and vendor payment information.

2.5.15 GENERAL SERVICES ADMINISTRATION-FEDERAL SUPPLY SERVICE 19

The GSA, Federal Supply Service (FSS) EDI program electronically sends FSS-19 Procurement POs, POs Changes, and other business documents between FSS and their vendor trading partners utilizing the ANSI X12 standard. FSS has 70 trading partners receiving 8 to 10,000 transactions per month. These documents are now in production:

      850 - Purchase Order
      860 - Purchase Order Change Request

GSA is now testing:

      810 - Invoice
      820 - Payment Order/Remittance Advice
      840 - Request for Quotation
      843 - Response to Request for Quotation
      870 - Order Status Report

The EDI program at the General Services Association (GSA) on FSS has been in existence since 1985, with FSS originally covering all expenses for the vendor trading partners. In 1988, a contract for software and network services was awarded to GEIS. At that time, the EDI program went into production phase with vendors sharing the cost. In December 1991, a new network services contract was awarded to US Sprint and is currently being used by the EDI program. The system currently uses Eadi Plus by Unisys and Telink translation software. POs and changes are currently created on the Unisys A-17 by the Procurement Module of the FSS-19 Supply System. They are downloaded to a separate file for mapping/translation and then transmitted electronically.

2.6 INPUT FROM INDUSTRY

2.6.1 BACKGROUND

The EC in Contracting PAT, while assessing the Department's current and near term EC capability in contracting, felt that input from the private sector vendors was an important element of their charter. A questionnaire was submitted to the EDI Association to be disbursed to a sampling of Industry who are currently using EDI. The questionnaire was both functional and technical in content. In the development of a comprehensive plan for EC/EDI in DoD, the EC in Contracting PAT strongly believed that the overall effort required input from the VAN community. Accordingly, a technical questionnaire was submitted to several VANs through the EDI Association. A summarization of the responses received are outlined in the succeeding paragraphs.

The clearest method of displaying the information received from Industry is to provide the question put to them and highlight answers representative of their responses and concerns. The Industry associations surveyed included:

- Information Technology Associations of America

- American Subcontractor Association

- Council of Defense and Space Industry Associations

2.6.2 RESPONSES TO SURVEYS - VENDORS

TOPIC: How many vendors by industrial base are using EDI (e.g., medical supply)?

SUMMATION: The survey participants indicated numbers of EDI capable suppliers from 2 to 800, depending on various factors dictating their EC/EDI participation. The number of Trading Partner variables exist because of management interest, knowledge about the EDI "tool," resources (usually personnel) available to pursue EDI implementation, or lack thereof. It seems that the Industries that are most heavily involved and enthusiastic about EDI implementation know that it requires; (1) management support, (2) a plan, (3) knowledge of the components required to successfully implement EC/EDI, (e.g., analyzing business processes, reengineering business processes when necessary, knowledge of and participation in adhering to EDI standards and conventions), (4) willingness to change the culture, (5) knowledge of EC/EDI benefits, and (6) patience to nurture the entire process since it involves company resources, telecommunications interfaces, EDI technology expertise, trading partner interaction, and education. In some instances, EDI implementation was abandoned due to lack of supplier motivation and readiness, technical support problems, and cost effectiveness.

TOPIC: Provide examples of telecommunications delivery methods that have been utilized in transmitting transactions to your trading partners (e.g., such as direct delivery or the use of VANs) and the approach.

SUMMATION: Most of the respondents use VANs, albeit to different degrees depending on where they are in the EC/EDI implementation process. Some use VANs in addition to proprietary links, direct dial, and Internet. Each of the participants recommended using VANs to transmit their EDI business. Some specifically noted that they had few, if any, technical difficulties as their reason for employing VAN connectivity. At least one company mentioned that VANs provide more access to EDI capable partners, as well as reducing implementation activity, and consequently promotes more business. The range of delivery methods varied somewhat based on the application, whether utilizing VANs or direct connect.

TOPIC: Describe how you measure success (e.g., metrics).

SUMMATION: One company, who has just started implementing EDI, measures their success if the transaction reaches its destination. More experienced EDI users cited cost reductions (e.g., fewer personnel, less paper and postage costs), increase in business opportunities, faster processing time cycles, or increased data accuracy. Often customer satisfaction was the first priority. One company noted that after becoming EDI proficient, it is easier to bring on new trading partners. Another considered meeting its customer EDI requirements the measurement of success, while another determined success as having full application integration. There was only one response received that indicated EDI was attempted, but has not been successful. No other data was received to indicate why some level of success was not attained. The metrics utilized in Industry capitalize on the ability to do more with less. Industry has the same basic tenant that the Government has in these days of austere budgets, they are looking for various methods of accomplishing Mission objectives with less resources.

TOPIC: What has prevented you from reaching your EDI goals (e.g., problems faced)?

SUMMATION: Challenges that slow the progress of meeting EDI goals are: keeping up with ever-changing EDI standards, integrating current internal systems, motivating the culture changes, lack of education and training availability, shortage of information technology resources, inexperienced trading partners, and or shortage of EDI trading partners. Not so different from what the Federal Government is experiencing in its EDI implementation effort. Overall, the challenges do not seem to deter most companies from pursuing electronic transmission of business information. Up to now, EDI has been utilized by a large number in the private sector. However, the use of EDI across the private sector suffers from the same shortcomings that have been prevalent in the Government; the lack of standards.

TOPIC: What issues concerning technical support and hardware/software compatibility between you and your trading partners have been encountered?

SUMMATION: Most of the Industry EDI users stated that the VAN services eliminated their hardware/software compatibility issues and that is precisely why they use VANs. Technical support and hardware/software compatibility issues were best summed up by a company who said, "Given proper resources with a proper EDI depth of understanding to integrate applications, accomplishing EDI capability is relatively simple." The companies who are more seasoned in the EDI arena and are transmitting large volumes of data to many trading partners are well attuned to the importance of using up-to-date Standards versions/releases and conventions.

TOPIC: What concerns or issues have you encountered regarding the costs associated with transmission of data to and from your trading partners and/or your VAN?

SUMMATION: The majority of responses received from the large business sector indicated that this was a portion of their cost/benefit analysis conducted, and that the cost was not a major concern. One response indicated that the cost associated with the VANs was less than using the Postal Service. Some of the responses received revealed that there is a tendency to believe that the cost is too expensive when compared to the value received. Cost concerns and issues seem to be reduced in direct proportion to the increase in the sophistication and knowledge of the particular EDI user.

TOPIC: What Government regulatory impediments exists, which if removed, would facilitate EC implementation and potentially lead to significant cost savings?

SUMMATION: A review of the responses provided, overwhelmingly indicated that the requirements to transmit redundant data (e.g., clauses, terms and conditions, etc.) were considered impediments because they increased the cost of doing business with the Government. The requirement for a signature on the documents transmitted by the Government were also considered to be an impediment. The responses received dealt heavily with the regulation requirements to have some sort of paper based audit trail and signature requirement. Overall, the regulations do not reflect the capability to conduct business utilizing up to date technology.

TOPIC: What transactions do you and your vendors use (e.g., 840, 843, etc.)?

SUMMATION: A list of transaction sets used by the particular companies who chose to answer the EC in Contracting PAT questionnaire is detailed below. Industry as a whole is ready to accept the EDI transaction sets that the Procurement AIS's can utilize to date. Industry, from the responses received, has far more capability than most of the Government procurement systems at this time.

- 110 - Air Freight Details and Invoice
- 140 - Product Registration
- 141 - Product Services Claim Response
- 143 - Product Services Notification
- 147 - Report of Injury or Illness
- 214 - Motor Carrier Shipment Status Message
- 805 - Contract Pricing Response
- 810 - Invoice
- 811 - Consolidated Service Invoice/Statement
- 820 - Payment Order/Remittance Advice
- 824 - Application Advice
- 830 - Planning Schedule with Release Capability
- 831 - Application Control Totals
- 832 - Price/Sales Catalog
- 839 - Project Cost Reporting
- 840 - Request for Quotation
- 841 - Specifications/Technical Information
- 843 - Response to Request for Quotation
- 848 - Material Safety Data Sheet
- 850 - Purchase Order
- 855 - Purchase Order Acknowledgment
- 856 - Ship Notice/Manifest

860 - Purchase Order Change Request - Buyer Initiated
861 - Receiving Advice/Acceptance Certificate
862 - Shipping Schedule
864 - Text Message
865 - Purchase Order Change Acknowledgment Request - Seller Initiated
866 - Production Sequence
867 - Product Transfer and Resale Report
869 - Order Status Inquiry
980 - Functional Group Totals
996 - File Transfer
997 - Functional Acknowledgment
870   Order Status Report

TOPIC: Have you recognized changes needed to "commercial" transaction sets to be useful for Government use?

SUMMATION: For the most part, Industry has utilized a set of standards that enable them to conduct business with their respective Trading Partners. When more business is conducted with the Government via EDI there may be a change necessitated. At this time since most of the responses indicated that ANSI X12 is being utilized, the changes would be minimal if any. Since most of the responses to the survey indicated that they are currently using ANSI X12 standards, there were no changes necessary.

TOPIC: Do you have Implementation Conventions (ICs) and if so what are your configuration management practices?

SUMMATION: Most of the responses from the large businesses indicate that they have developed IC Guidelines. Small businesses indicate that they conform to their respective Trading Partners IC based on their business application. While overall, the large business community enjoys success in their EDI endeavors, and have the required resources for Configuration Management (CM), the small business community does not have adequate resources to commit to their EDI applications, and as a result is slower in their implementation processes when compared to the large business community. One company considers their EDI efforts a complete failure; they also have no conventions in place. This is an education issue. Industry implementation conventions and CM practices analysis revealed that the more EDI oriented and involved companies are, the more adherence is paid to implementation conventions and configuration management practices.

TOPIC: What EDI standard do you use (e.g., ANSI X12, EDIFACT, both)?

SUMMATION: One of the uses for EDIFACT is international business, and some are using Industry standards in conjunction with ANSI X12. The majority of companies who are not fully ANSI X12 compliant clearly state that they are working diligently to migrate to ANSI X12 or EDIFACT if they are not already there. All of the companies who answered the DoD questionnaire realize that in order to attract more Trading Partners, the use of ANSI X12 or EDIFACT standards is required.

TOPIC: If you use only ANSI X12 now, does your group now or in the future intend to migrate to EDIFACT? If so, when?

SUMMATION: Dependent upon the business area, there were differing responses to this survey question. Some of the responses from Industry indicate that EDIFACT transactions are being accomplished in their international markets. While with small business, the overall consensus is that they are not involved with international business

making migration to EDIFACT unnecessary at this time. If, however, ANSI X12 migrates to EDIFACT, they have indicated a willingness to follow suit. The feeling of the industrial community is that they will become compliant with EDIFACT standards when the requirement exists. Some are not clear that EDIFACT will be a reality in the near future. Therefore, they do not see a need to become compliant at this time.

TOPIC: What body of documentation do you use to control your EDI systems?

SUMMATION: Most of the respondents to the survey have indicated a great reliance on ANSI X12 and utilize this for their control of EDI transactions. Internally, most of their respective businesses have established committees to issue and review policy. EDI policy and documentation controls receive a wide range of approaches in the business community. As with standards and conventions compliance, the companies who are most EDI involved and successful are the companies whose policies and documentation controls are in place. They communicate with the secretariats of ANSI X12 and the Pan American EDIFACT Board (PAEB).

TOPIC: What training did you receive and what education did you provide to your trading partners?

SUMMATION: Only one company of the twelve who responded received formal EDI training in 1985. This particular company trains their trading partners on a project-by-project basis. Enthusiasm to be EDI capable is the determining factor that drives the successful Industry trading partners to seek EDI information assiduously. They rely heavily on ANSI X12 and the PAEB activities to increase their knowledge. In addition, those companies that utilize VANs are able to obtain their initial training from the VAN as one of the "values" that VANs "add" to the business concern. If formal EDI training is not available to every company, the most successful companies seek out any existing information to help them get EDI capable. They develop user's groups, attend conferences and Trading Partner seminars, and personally interview companies who have successfully implemented EDI in the conduct of their business.

TOPIC: What do you see as the contemporary security issues, to include physical, telecommunications, signature, and non-repudiation, that may also be impediments to EDI?

SUMMATION: Most of the responses indicated that these types of issues were being addressed in the TPAs that have been negotiated to date. Other responses indicated that the level of security now employed was sufficient with regard to passwords. Some respondents are concerned about high dollar quote package information being secure. Some are concerned about inadequate VAN-to-VAN connectivity. While security is a big concern in relation to procurement sensitive documentation, most responses dealt with encryption capabilities, and the lack of any prior legal issues arising out of the use of EDI.

TOPIC: What are the risks associated with migrating to EDI from a paper-based environment?

SUMMATION: The respondents indicated that the major risk concerns are reliable interconnection services, no hard copy audit trail, hardware failure and possible data loss, and mapping process errors. Most said that if all checks and balances are in place, the risks of migrating to EDI are minimal. In this area the responses were varied, ranging from hardware/software failure, training, lack of an EDI implementation plan, etc. When implementing EDI, there is a need to address the risks and the associated control mechanisms that can be put in place to for avoidance.

TOPIC: Summarize business practices or processes changed and associated benefits (e.g., cost, resources, etc.).

SUMMATION: Industry overwhelmingly indicated that prior to implementing EDI a review must be made of the business processes. Other suggestions to Government to facilitate faster and more efficient EDI efforts include: (1) Improve the technology to transmit graphics, charts and spreadsheets more effectively; (2) Provide adequate records retention and electronic signature validation; (3) Abide by standards and not by "unique" experience; and (4) Address purchasing system review requirements, audit requirements original documents identification issues during the development of your EDI implementation. Most notable was increase in efficiency, which impacted in the area of manpower saving, and reduction in inventories.

2.6.3 RESPONSES TO SURVEYS - VALUE ADDED NETWORKS

For the EC in Contracting PAT to develop a comprehensive plan within 60 days, we strongly believed that the overall effort required input from the VAN Community. A standard questionnaire was provided to the VAN Industry through the EDI Association. The succeeding paragraphs summarize the input provided by the VAN Industry as it relates to each of the topic areas.

TOPIC: ANSI X12 standards and corresponding conventions.

SUMMATION: There is a total agreement among VANs that DoD must develop, implement and maintain management control over a standard set of ICs in order for its EC initiative to be successful.

TOPIC: Technical Standards (e.g., ANSI X.4000, X.435, etc.), including mailbag to the control of interconnects.

SUMMATION: There is agreement among the VANs to support whatever standards the DoD chooses to use.

TOPIC: Security Issues.

SUMMATION: Responding VANs generally believe the DoD should use the encryption capabilities defined as part of the ANSI X12 standard and that security should not be designed to build in any methods which are not already present in the current paper method of doing business.

TOPIC: Hardware and Software Issues.

SUMMATION: One absolute - that any Gateway Hub MUST have the ability to communicate with PC's.

TOPIC: Interoperability Issues.

SUMMATION: Simple Mail Transfer Protocol (SMTP), Transmission Control Protocol/Internet Protocol (TCP/IP), and Multi-Media Internet Message Exchange (MIME) should be added to the DoD list of protocols and standards.

TOPIC: Training Issues.

SUMMATION: DoD should implement the simplest training case to include some highly non-technical talk about how vendors will get started in EDI. The DoD should not be responsible for training the business community on any of the systems which may come about.

TOPIC: DoD Distribution Point Issues (Single Vs. Multiple).

SUMMATION: The consensus among VANs on this issue is that a single DP is probably the best in that it will keep everything to a single standard. Multiple distribution points have serious problems with synchronizing the databases at each site that would enable the routing of transactions between trading partners.

TOPIC: Cost Issues.

SUMMATION: The VANs generally agree that a no-cost reciprocal agreement for public transactions is the way to go. However, pure one-to-one business transactions should be viewed as such with the appropriate cost incurred by both parties.

TOPIC: Small Business Marketing Issues.

SUMMATION: The DoD must commit itself to informing their business trading partners what DoD plans are and the requirements to remain a DoD partner. The VANs can effectively market a service to those people who know and understand the direction of DoD.

TOPIC: Any other issues from your experience that may assist us in our tasks.

SUMMATION: The DoD needs a single point of vendor registration, a single set of policies and procedures on how quotes will be processed, a standard addressing scheme for sites, VANs and vendors, and a test suite to be used by both the VANs and DoD sites. It is also critical that DoD ensure that any VAN participating in the Multi-VAN arrangement shall not have sole access to any public Government information. There must be a level playing field for all VAN participants.

2.6.4 CONCLUSIONS ON RESPONSES

CONCLUSIONS FROM VENDOR RESPONSES

All the respondents use VANs, albeit to differing degrees, depending on the stage of development they are in. Some use VANs in addition to proprietary links, direct dial, and Internet. They recommend the use of VANs for several reasons including the reduction of implementation activity required to bring up trading partners. They also suggest that VANs provide more access to EDI capable partners, and consequently promote more business.

Technical support and hardware/software compatibility issues were best summed up by a company whose response was, "Given proper resources with a proper EDI depth of understanding to integrate applications, accomplishing EDI capability is relatively simple." Most of the Industry EDI users stated that the VAN services eliminated their hardware/software compatibility issues. Also, the use of up-to-date standards versions/releases and implementation conventions are of great importance.

Most of the surveyed companies agreed that the cost of using EDI is less than the cost of processing paper and using the Postal System to deliver it. One company suggested that some Small Businesses feel they are too small to negotiate favorably with the VANs. This is a problem that is a small part of a larger issue, which is the need for training in the Small Business Community.

The magnitude and depth of EC in Contracting issues raised by Industry is most astounding when compared with the focus taken by the DoD EC in Contracting PAT in this report. It can be convincingly argued that two relatively independent bodies of business are aligned on the issues at hand and the solutions required. Clearly all parties are anxious to evolve in the EC/EDI arena with all levels of business and in all facets. One can see a concern for equalizing the advantages to the Small Disadvantage Businesses (SDB) up to the large international business partner. Key to accomplishing this scope of integration are the issues raised about consistency of standard transactions conventions, policies, clauses and partnering agreements. Some industries foresee re-engineering of processes (IDEF, ISO 9000) when bringing up EDI to ensure the non-value added is eliminated by all participants. It is also imperative that comprehensive training and education takes place concurrent with expansion of capabilities.

There is agreement between Government and Industry that the savings in manpower and paper may be minor when compared with the savings to be realized in reduced cycle time, inventory level reductions, return on investment, reduced capital investment, improved cash flow and quality. Risk analysis seems minimal when balanced against the magnitude and weight of "cutting edge" business practices. We are all willing to invest in savings while right sizing our Industry. No single issue can overcome the beneficial impact of this initiative on Government and its supporting Industry.

CONCLUSIONS FROM VAN RESPONSES

Based on the responses received from the VAN community, the VANs will support any DoD EC/EDI procurement initiative that is standard's based and underpinned by a single set of policies and procedures on how small purchases are to be processed. This underpinning must include, as a minimum, the use of ANSI X12 standards, standard DoD Implementation Conventions, single point vendor registration, and the use of a standard DoD technical framework which is standards based and OSI compliant.

There was complete agreement among the VANs surveyed that DoD must develop, implement and maintain management control over a standard set of Implementation Conventions in order for the EC/EDI initiative to be successful. If the DoD conventions are not followed or if individual entities are allowed to make changes, DoD will have created a chaotic system which would not be beneficial to either DoD or the private sector.

The VANs agreed to support the technical standards (i.e. ANSI X.400, X.435, etc.), to include ANSI X12.56 Interconnect Mailbag Control Structure standard and any additional standards the DoD chooses to support.

It was requested that DoD add SMTP, TCP/IP, and MIME to the list of file transfer protocols and standards. It was also noted that the system design should not be hardware dependent.

The VANs responded in favor of a single logical DP through which the DoD would forward EDI transmissions. The DP concept could provide centralized control over standards, a single registration point for vendors, and a centralized testing of vendors, VANs and EDI software. Multiple DPs would pose significant problems synchronizing the databases at each site which enable the routing of transactions between trading partners.

The responses show agreement in part for the "no cost VAN agreement," however, the level of success would increase if the DoD took responsibility for a portion of the cost. The cost of one-to-one transactions should be shared by both parties while the cost of the one-to-many transactions should not be a DoD responsibility.

The VANs do not believe there will be a security problem as long as DoD security measures are based on the evolving standards. They do wish to remind DoD that security should not be designed to build in any methods which are not already present in current paper method of doing business. Each additional security measure and safeguard increases the cost of doing business.

Responses and comments made regarding Small Businesses and training issues overlap. The VANs all agree that the DoD needs to make its EDI goals known to the public and to provide the private sector with a central location from which additional information may be requested. Some suggestions are: an 800 telephone help line, low level, non-technical, public training sessions and endorsement of qualified VANs. Marketing should be left up to the VANs.

The main requirement suggested to DoD by the VANs is a "level playing field" for all VAN participants. A single point of vendor registration, a single set of policies and procedures, a standard addressing scheme, and a test suite to be used by DoD, the VANs and vendors are paramount to DoD success. It is also critical that DoD ensure that any VAN participating shall not have sole access to any public Government information.

2.6.5 ON-SITE VISIT RJ REYNOLDS

To engage in first hand discussion with Industry on their efforts in EC/EDI, the DoD EC in Contracting PAT representatives met with RJ Reynolds personnel in Greensboro, North Carolina. Mr. Jim Pitt, Manager of Information Control, and the lead for electronic commerce within RJ Reynolds, presented the company's experiences to the EC in Contracting PAT. The presentations covered:

- An overview of RJ Reynolds EDI purchasing

- A brief history of implementation

- Trading partner agreements

- Transaction conventions and standards

- Changes in quality of supplies/services

- Vendor education

- Impacts on small business suppliers

The following are a variety of comments and issues addressed by the RJ Reynolds representatives during the presentation. RJ Reynolds is encouraged by the DoD EC in Contracting charter after so many starts with Government attempts at EC/EDI implementations. The key is to do things in a standard way where everyone knows the rules, does not allow unique solutions, and employs an approach based on standards that is usable with all internal/external trading partners.

When they first became committed to electronic commerce in 1987, RJ Reynolds called in their lawyers and auditors to review their intentions. RJ Reynolds' position was that they were not changing business practices, as feared by the lawyers and auditors, but changing from a paper based process to electronic commerce. While implementing electronic commerce with its suppliers, RJ Reynolds changed from a price based to lowest cost philosophy. The lowest costs to the organization as a whole, not just based on the cost of the initial buy.

RJ Reynolds does not perform extra security precautions for electronic transactions since they feel an EC/EDI system is more secure than one that is paper-based. They do not desire to use encryption techniques as it calls greater attention to these transactions.

RJ Reynolds has 1800 trading partners with 60,000 purchase orders annually. In March 1993, they had achieved 100 percent electronic transactions with all trading partners. They had to make a special effort in working with the last five percent of their suppliers that still processed transactions with RJ Reynolds manually. They had determined that it was costing the Company $840,000 to maintain a manual capability for the remaining five percent of their non-electronic trading partners. RJ Reynolds invested $40,000 to assist these companies in becoming EC capable. As a result, RJ Reynolds has been able to maintain 100 percent electronic commerce with all trading partners. RJ Reynolds reached these decisions through analysis of their manual-based processes costing $98.00 per transaction, while their actual expenses for the same process is $.93 for each electronic transaction.

RJ Reynolds uses British Telecom (BT) as their VAN (Distribution Hub) to send and receive electronic transactions. BT interconnects to other VANs as needed. RJ Reynolds used to use dial-up telephone connections with BT but have gone to a leased line. The dial-up was very slow and they have increased transmission speeds by eight times greater via the leased line. RJ Reynolds arranges to send and receive EDI transactions 11 times every weekday and twice Saturday through their VAN. To empower their workforce they have decentralized the input, they place their EC applications close to the buyers to initiate their EDI directly. The Management Information System (MIS) Department has centralized the collection of EDI transactions for storage and routing between their trading partners..

In summary, RJ Reynolds re-emphasized that standardization is the most important thing for Industry, Government, and the National use of EC/EDI. They feel we need to maximize the quantities of data and limit the passing of text which presently defeats the benefits of EDI.

2.7 CURRENT CONFIGURATION MANAGEMENT ISSUES

2.7.1 CONFIGURATION MANAGEMENT OF HARDWARE/SOFTWARE

The standard technical EC/EDI integration process does not depict a technical architecture which currently sanctions individual products as preferences for use, but rather identifies common functions. The assignment of DISA to

provide centralized technical support for EC/EDI will aid in a transition to a common configuration management of hardware/software tools. The transition towards a single common suite of supported software will occur when it makes good business sense to do so.

2.7.2 DoD EDI STANDARDS

2.7.2.1 FEDERAL INFORMATION PROCESSING STANDARDS (FIPS) 161

DoD EDI Standards will be adopted in accordance with those adopted by the Federal Government via FIPS PUB 161. FIPS PUB 161 adopts two families of information syntax standards and one computer networking standard. The two syntax standards are the ANSI X12 for domestic information exchanges and United Nations Electronic Data Interchange For Administration, Commerce and Transport (hereafter called EDIFACT) for international information exchanges.

The computer networking standard adopted is the Government Open Systems Interconnection Profile (GOSIP) defined in FIPS PUB 146. FIPS PUB 146 specifies a set of OSI protocols for computer networking that are intended for acquisition and use by Federal agencies. The use of those protocols to transmit EDI documents is a planned addition to GOSIP requirements and will be included in a future version of the GOSIP standard.

FIPS PUB 161 does not mandate the implementation of EDI systems within the Federal Government; rather it requires the use of ANSI X12 or EDIFACT and GOSIP, subject to certain conditions, when Federal departments or agencies implement EDI systems.

2.7.2.2 ANSI ACCREDITED STANDARDS COMMITTEE X12

Although a number of industry-specific syntax standards for the electronic exchange of business information exist, X12 accredited by ANSI, is generally recognized as the North American EDI standard and is well supported in a number of Pacific Rim nations. Most industry-specific standards have committed to aligning themselves with ANSI X12. Federal Agencies using industry-specific standards on 30 September 1991 may continue to do so for five years from that date. Industry specific standards may be used beyond five years only if no equivalent ANSI X12 (or EDIFACT) standard is approved by 30 September 1995. ANSI X12 consists of a number of underlying standards and addresses a wide range of business requirements. Since most EDI information exchanges are domestic and ANSI X12 is more mature than EDIFACT, ANSI X12 is the primary EDI syntax for the DoD. ANSI X12 is managed by a number of functionally oriented sub-committees. A close working relationship between individual DoD members and these sub-committees has evolved and it is in the DoD's best interest to maintain these relationships. DoD participation in ANSI X12 sub-committees generally comes from a wide range of functional users. There is, however, no central coordination mechanism to ensure that their positions are in keeping with any DoD strategy, nor to ensure that other DoD participants are supporting the same position.

2.7.2.3 MIGRATION FROM ANSI X12 TO EDIFACT

EDIFACT is being developed by the United Nations Economic Commission for Europe - Working Party (Four) on Facilitation of International Trade Procedures (UN/ECE/WP4). As the name suggests, its genesis was in Europe, but its acceptance as the single international EDI syntax standard has become evident. In some areas, e.g. Customs,

EDIFACT is already the preferred syntax. EDIFACT is managed through the use of regional EDIFACT Boards. The Pan-American EDIFACT Board (PAEB) is the coordinating body of national EDI standards organizations of the American Continents. ANSI X12 is the US national EDI standards organization and therefore will be the point of entry for DoD. Because of the historical immaturity of EDIFACT and the predominance of the domestic requirement, DoD participation in EDIFACT has been modest. While EDIFACT is very similar to ANSI X12 in both purpose and approach, sufficient technical differences exist to preclude interoperability between implementations of the two standards. Therefore, it is possible that as EDIFACT matures, some DoD agencies will be required to implement both standards. This situation is clearly undesirable and a migration strategy from the national standard (ANSI X12) to the international standard (EDIFACT) is required.

Fortunately, emerging awareness of the international nature of commerce and the desirability of a single international EDI syntax standard has resulted in a decision by the Accredited Standards Committee X12 to align its standard with EDIFACT by 1997. Although there is still some confusion about exactly what alignment means, it appears that by 1997, all ANSI X12 standards will be developed in accordance with EDIFACT rules. Therefore, a straight forward, cost effective and low risk migration strategy is possible. The DoD will continue to view ANSI X12 as the preferred syntax. As ANSI X12 migrates to EDIFACT compliant standards, the DoD will adopt each new EDIFACT compliant standard as it becomes available from ANSI X12. If the ANSI X12 alignment with EDIFACT goes more slowly than anticipated, the DoD's domestic supplier base will be protected by continuing adherence to the well established ANSI X12 standard. If it goes more quickly than expected, the entire ANSI X12 community will migrate together and there will be little danger that the DoD will get too far ahead of its supplier base. Only if a specific international need that can not be addressed by ANSI X12 emerges, will the DoD adopt an EDIFACT version directly. This approach will also minimize the demand for participation in external syntax standardization bodies. For the time being, participation in ANSI X12 will remain the primary method of influencing the standards community to meet DoD needs. As migration proceeds and EDIFACT becomes the more complete standard (circa 1997), increased participation in EDIFACT will be required and participation in ANSI X12 will be reduced. Control of exactly which standard has been adopted for each use will be through the use of stringent configuration management of Implementation Conventions.

2.7.2.4 IMPLEMENTATION CONVENTIONS

EDI Syntax standards, both ANSI X12 and EDIFACT, are intended to accommodate a full range of business activities for all industries. They are developed by consensus among a large number of users, each with his/her own set of needs. The resulting standard is very broad and is intended as a superset to meet the diverse requirements of all users. They commonly contain more data elements and structure options than any one user, or Industry, needs. In fact, they often contain a multitude of optional ways of conveying the same information. Their value is to provide the general rules and structure to allow general purpose implementations to "get in the right ball park."

Being in the "right ball park" is not good enough to conduct business via EDI. There are far too many opportunities for incomplete or ambiguous transactions. Therefore, actual implementations require ICs to fully define the transactions. IC's define the exact transactions required to conduct business by tailoring the use of the standards' segments, data elements and code values. In addition, they document the intended interpretation of a standard. For example, the ANSI X12 Invoice (810) transaction set can be used as a Commercial Invoice, a Progress Payment, and a Public Voucher. The

segments and data used in each of these contexts may be different. IC's remove the ambiguity of which segments and data are used in each context and document the different interpretations of the 810. This process of refining standards for use in a particular context is not unusual and is called Standards Profiling in the standards community.

The DoD EDI Executive Agent (Defense Logistics Agency) developed Implementation Conventions published in the "DoD Implementation Guidelines for EDI, Volume I and II." The implementation guidelines presented in Volumes I and II were developed for new participants in the EDI program and for documenting DoD's EDI data requirements. While significant progress has been made in this area, there have also been significant changes in EDI implementation efforts. The current ICs have had limited component participation, have not been coordinated and lack authority as the single set of DoD ICs. Establishing configuration management of ICs is a critical task for adoption of EDI as a standard business p· actice.

For ICs to be useful, they must form an integrated EDI environment where EDI implementors and users can depend on authoritative Implementation Conventions to explicitly describe the exact transactions required to effectively use each standard. Mapping of business practices to transaction sets must be a Functional Area responsibility, but the DISA Center For Standards (CFS) can provide the authority and expertise to manage the process. It already configuration manages a number of like programs for the C3I community. Although a large number of details must be resolved (e.g. funding), a general approach could be as follows:

1. In accordance with its Information Technology Standards Management Plan, the CFS would establish a Standards Management Committee (SMC) for EDI. The SMC may be a distinct standards body, but it may be possible to use a recently formed body, the Information Standards (INST) committee of the Defense Standardization Program (DSP) as the SMC. In either case, it would probably use the INST as the final coordination and publication method. The mission of the SMC would be to configuration manage ICs and to coordinate DoD positions in standardization bodies. The SMC would be responsible for coordination and publication of ICs. Membership would be open to all Services and Agencies.

2. Actual development and maintenance of ICs must be conducted by functional Working Groups. They will probably be formed under the Principal Staff Assistants (PSAs), Functional Activity Program Managers (FAPMs) or Functional Information Managers (FIMs) whenever possible. Each WG would have ICs for which it is responsible and would coordinate recommended changes within the appropriate functional community before referring them to the SMC for final coordination, approval and publication. In general, the SMC will only provide final coordination of individual changes to ICs, unless the final coordination process reveals a standards issue. If an issue surfaces, the SMC will resolve it within its membership if possible. Functional issues must be resolved within or among functional groups before submission to the SMC.

3. The EDI SMC would be subordinate to the Standards Coordinating Committee (SCC). This committee has already been established to provide management and conflict resolution throughout the DoD Information Technology standards community. Membership is open to all Commanders-IN-Chief (CINCs), Services and Agencies. Current membership includes all services and CINCs as well as most major Agencies. Issues which can not be resolved by the EDI SMC will be referred to the SCC. In addition, the SCC will appoint DoD representatives to Non-DoD standardization bodies (e.g., ANSI X12)

2.7.3 ESTABLISHMENT OF EDI STANDARDS MANAGEMENT

EDI Standards Management should be performed by the DISA Center for Standards. It manages Information Technology (IT) standards and IT standards bodies participation throughout the DoD. The CFS already manages a number of very similar C3I information exchange syntax standards and this alignment of responsibility will provide maximum management leverage and expertise, as well as reducing the time needed to initiate the program. Assuming adequate resources can be identified, the probable primary mission areas for the DISA CFS are discussed in following sections, along with an initial assessment of significant tasks and execution steps required to initiate the program.

2.7.3.1 MANAGE DoD PARTICIPATION IN NON-DoD EDI STANDARDS BODIES

The first proposed mission for the CFS will be to assume control of DoD participation in EDI syntax standardization activities. Since a major advantage of the EC/EDI program is to conduct business with organizations and activities outside DoD, most EDI standards activities are external ones (ANSI, UN, ISO, etc.). DoD participates in a number of these external standardization activities, but there is no control of who represents the DoD and what positions they are taking. Correctly so, participation generally comes from functional users. However, there is no coordination mechanism to ensure that their positions are in keeping with any DoD strategy, nor to ensure that other DoD participants are supporting the same position. The CFS will use the Standards Coordinating Committee to charter representatives to these bodies and will provide a coordination mechanism for DoD positions. This is not intended to restrict participation, but rather to bestow authority on the representatives.

TASKS:

    (1) Provide DoD Single POC for EDI standards groups.
    (2) Provide DoD membership in management/executive level sub-committees.
    (3) Appoint DoD representatives to working sub-committees.
    (4) Coordinate DoD positions.
    (5) Enforce "Single Voice of DoD."

EXECUTION:

(1) CFS will establish an EDI office in the Information Directorate. All other CFS information syntax and data standardization programs are in this directorate. This alignment will provide the widest range of expertise and management leverage.

(2) CFS will identify all working groups of all standards bodies appropriate for EDI syntax standardization. These include, but are not limited to, ANSI X12 and UN/EDIFACT. CFS should recommend the minimum set of groups in which DoD must participate to meet its EDI objectives.

(3) CFS will establish two levels of participation for each group identified above: DoD Representative and DoD Participant. Providing organizations will be responsible for funding Representatives and Participants.

    (a) The Representative will be the single DoD voice in working groups and sub-committees. Any DoD Service or Agency may nominate a Representative but the nominees should come from functional components in an area appropriate to the sub-committee. CFS will consolidate nominations and present them to the Standards Coordinating Committee for approval.

(b) Most non-DoD EDI standards groups allow all accredited members present to vote. Therefore, it is in DoD's interest to not restrict the number of personnel at meetings. DoD must speak with a single voice and votes must be coordinated. Participants may come from any DoD activity. They need only get approval from the DoD Representative to the sub-committee and to notify the CFS.

(4) CFS will establish a mechanism for coordinating cross-functional DoD positions among representatives to Non-DoD standardization bodies. These representative will be responsible for coordinating positions among participants in their sub-committee/ working group.

2.7.3.2 MANAGE AND PUBLISH DoD EDI IMPLEMENTATION CONVENTIONS

The Center for Standards' next proposed mission is critical (perhaps the most critical) to EDI. Since the purpose of an EDI implementation is to be able to exchange EDI information among disparate, independent business entities (e.g., voluntary interoperability), strict conformance to broadly agreed information technology standards is paramount. EDI standards (ANSI X12 or EDIFACT) are intended to provide the basis for a broad range of business activities and industries. They are, therefore, too broad to implement. Systems need further refinement of the standards and these refinements are called ICs. EDI can not be implemented without them. They must be managed in such a way as to form an integrated EDI environment where EDI implementors and users (both DoD and non-DoD) can depend on authoritative Implementation Conventions to explicitly describe the exact transactions required to effectively use each standard. Mapping of business practices to transaction sets must be a Functional Area responsibility, but the Center for Standards is the only organization with the authority and expertise to manage the process.

TASKS:

    (1) Publish one IC for each intended use of each transaction set used by DoD.
    (2) Support current plus last two standard releases (ANSI X12, EDIFACT).
    (3) Publish with authority (MILSPEC, DoDI).
    (4) Charter Functional Area Working Groups to map processes to transaction sets.

EXECUTION:

(1) Develop, coordinate and publish a DoD EDI IC Configuration Management Plan. The plan will:

    (a) Affix management responsibility.
    (b) Prescribe IC development, maintenance, coordination and publication strategy. Strategy will make maximum use of recently developed and emerging CFS capabilities (e.g., Electronic Bulletin Board, Groupware Coordination, CD-ROM).
    (c) Provide DoD Implementation Guidelines for EDI.
    (d) Charter DoD Functional Area Working Groups, usually under FIMs/FAPMs.
    (e) Define conflict resolution mechanism.

(2) Develop, coordinate and publish DoD EDI IC Configuration Management Procedures for:

(a) Developing new ICs.
(b) Maintaining existing ICs.
(c) Coordinating and approving ICs (via Groupware).
(d) Controlling IC versions and releases.
(e) Advocacy in Non-DoD Standards bodies (e.g. ANSI X12, UN/EDIFACT).
(f) Assurance of IC alignment and compliance with Non-DoD Standards (e.g., ANSI X12, UN/EDIFACT).
(g) Publication and distribution (via CD-ROM).
(h) Tracking implementations.

(3) Develop the current DoD IC situation:

(a) Initiate a data call to identify all EDI ICs in use or in draft within the DoD.
(b) Identify consistencies and inconsistencies among like ICs.
(c) Provide results to functional experts for harmonization/ rationalization.
(d) Identify an initial baseline set of DoD ICs.
(e) Establish implementation tracking.

(4) Develop a plan for transition to centralized configuration management:

(a) Milestones
(b) Resources

(5) Transition to the DoD EDI IC Configuration Management Plan developed in step 1 in accordance with the DoD EDI IC Configuration Management Procedures developed in step 2.

(a) Bring all DoD EDI ICs under central configuration management.
(b) Align all ICs with a version/release of ANSI X12 or UN/EDIFACT.
(c) Coordinate, approve and publish a baseline of DoD ICs.
(d) Establish connection mechanism between DoD ICs and DoD positions in Non-DoD EDI Standards bodies.

2.7.3.3 PROVIDE ELECTRONIC IMPLEMENTATION CONVENTION REPOSITORY AND DOWNLOAD VERSIONS

Information exchange syntax standards are not static. They continuously evolve to meet emerging information exchange requirements. This is particularly true for EDI because one of EDI's primary benefits is to allow business practice re-engineering (process improvement). As processes change, information requirements change. EDI implementations must be responsive to changes in ICs and therefore require efficient methods of implementing them. Implementing software must make extensive use of tables to describe the essential elements of the syntax so that software modifications are not required every time the conventions change. Most commercially available preparation software function this way. The tables must be maintained in accordance with the current ICs. Experience with other syntax standardization programs (e.g., United States Message Text Formats (USMTF)) has demonstrated that the most efficient method for maintaining them is for the IC preparing activity to store the standard in a data base and to make tables available to implementors. In this way, the implementor gets tables in a pre-defined format that can be uploaded into his software and thus efficiently update the implementation. Implementations that rely on software modification in response to "paper" copies of the standard are often so expensive and time consuming to update that they can not stay current.

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TASKS:

   (1) Design data base structure suitable for upload to EDI transaction preparation
       and parsing software.
   (2) Provide CM of download structure.
   (3) Insure downloads comply with coordinated / approved ICs.
   (4) Distribute to DoD implementors and authorized vendors.

EXECUTION:

(1) Identify the most cost effective system for IC Electronic Repository and publication
of ICs:

   (a) Purchase and modify, if necessary, the system currently used by the Data
       Interchange Standards Association / Washington Publishing Service (Non-DoD)
       to store ANSI X12 and UN/EDIFACT, or
   (b) Modify existing USMTF Central Data Base System (owned by DoD) to meet EDI
       IC requirements.
   (c) Develop new system.

(2) Coordinate and approve down load structure and distribution list / schedule.

(3) Develop system requirement specification and development milestones.

(4) Develop / Modify system.

(5) Enter initial data.

(6) Maintain data base, produce ICs, distribute down loads.

2.7.3.4 PROVIDE TECHNICAL SUPPORT TO EDI IMPLEMENTATION

EDI and its associated business practices will continue to evolve. Standards must
support emerging requirements as well as demonstrate opportunities for further process
improvement. Standards adoption or development must stay involved with these
emerging processes.

TASKS:

   (1) Bring existing and emerging standards expertise to implementation and re-
       engineering efforts.
   (2) Support required standards changes in appropriate standards body.

Execution:

(1) Develop EDI and Business Practice Re-engineering expertise.
(2) Support development of current EDI requirements statements as required.
(3) Support Business Practice Re-engineering efforts as required.

2.8 EVALUATION OF DISTRIBUTION PROCESS METHODS

As described in previous sections , DoD has been directed to implement EC/EDI via a
"single face to industry". One of the major decisions in developing a common approach
for DoD implementation of EC/EDI is the se' ction of a telecommunication method for
exchanging EDI transactions externally wit i c ommercial trading partners as well as

internally with other DoD activities. Although the DISA strategy for telecommunications has identified the need for VANs to communicate with Industry, DISA must still determine how DoD activities will access those VANs to exchange data with their commercial trading partners. There are several alternatives for doing that. The definitions of a VAN, a gateway, and a distribution point have been defined earlier. This section discusses the myriad of distribution methods we observed in use during our assessments of EC/EDI initiatives. These varied ways of distributing data to our trading partners are part of the problem in establishing a common distribution process within DoD. After identifying the current methods we've selected some variations of options for consideration as distribution methods. Based on a high level analysis of the alternatives, there is a recommended strategy for the establishment of an initial DISA capability to ensure that DUSD(AR) has a significant capability to distribute procurement EDI transactions to DoD trading partners.

2.8.1 CURRENT METHODS

Implementation of the distribution of EC/EDI transactions within the procurement community is currently very fragmented. The DoD systems currently using Electronic Commerce to distribute business data fall under one or more of three major categories. Some are in the development stage as is depicted in the diagram below. It should be noted that within the three major solutions there are many possibilities which are represented throughout the DoD. Under the Direct Connect falls any project which sends data from Government computer to commercial business, not a VAN, or receives data direct from a Trading Partner. Listed under Network Solutions are those systems which use a gateway to VAN or gateway to DP to VAN solution. Under the Electronic Bulletin Board are those systems which make a computer available for outside entities to log in for download and upload of information. VANs sometimes provide this service and some projects have taken advantage of the service in addition to sending transactions to Trading Partners.

Direct Connects	Network Solutions	Bulletin Board
SPEDE Proprietary	APADE	DABBS
DeCA	ITEMP	ITABBS
SPEDI	MADES	DESC IBBS
POPS-D	SPEDE X12	
	DFAS	
	DeCA	
	DE/CALS	
	DPACS (Proposed)	
	AF Bar Code (Proposed)	
	POPS-D (Proposed)	
	SACONS-EDI	VAN Provides
	GATEC	BBS

2.8.1.1 DIRECT CONNECTION METHODS

Direct connection means that the DoD and the trading partner do not use any value added service or network to connect to each other. In most cases this will be dial up connections using either 1-800 service or the regular direct dialing capabilities of the phone company. If volume is sufficient, however, a dedicated line may be used. Cost, protocols and procedures for both DoD and its trading partners will vary depending upon

the size of the processor. A very significant issue that would be a fiscal concern for DoD is the number of sites and amount of activity to get procurement transactions to trading partners, the more sites involved, the more opportunities there are for errors and differences in implementation. For example, one system in DoD calls every one of its 700 trading partners every night. It takes more than a full shift to accomplish this task alone.

2.8.1.1.1 DoD PC TO TRADING PARTNER PC

This case, represented by several DoD Procurement systems provides for the DoD PC using communications software and phone lines, to call each trading partner to drop or pick up data files.
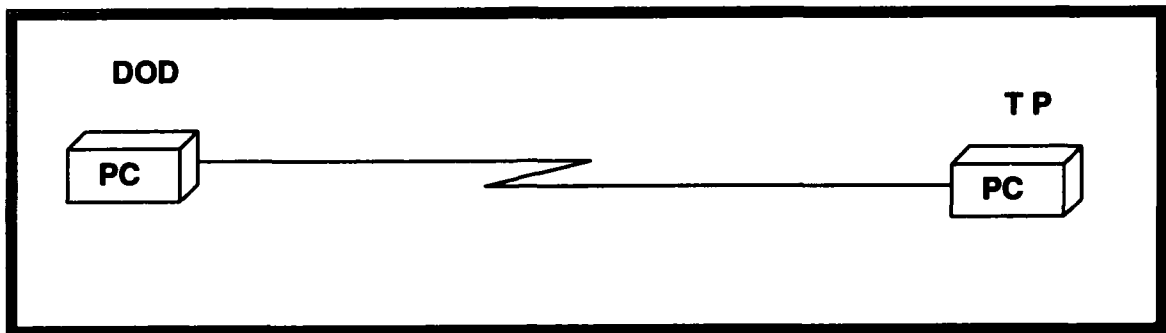
2.8.1.1.2 DoD PROCESSOR TO TRADING PARTNER PC

This case is essentially the same as the PC to PC, except that the size of the DoD processor is larger. In this case generally a DoD mainframe or mini-computer is involved.
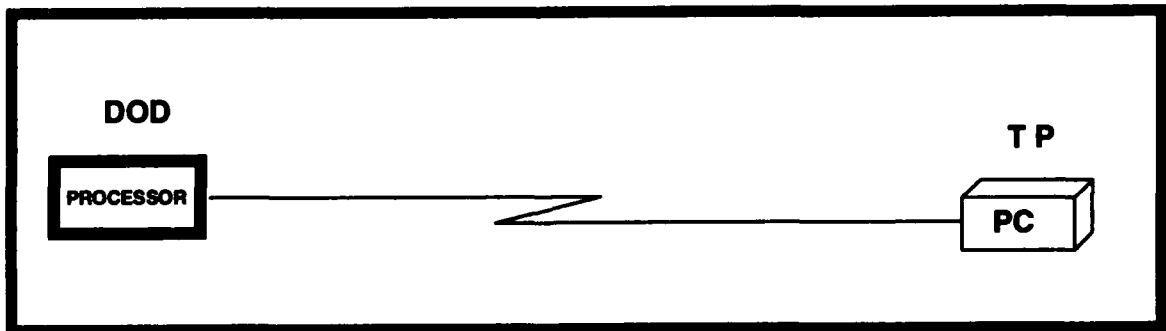
2.8.1.1.3 DoD PROCESSOR TO TRADING PARTNER PROCESSOR

This case is essentially the same as the PC to PC, also, except that the size of the both the DoD processor and the trading partner processor are larger. In this case, generally, both DoD and the vendor have a mainframe or mini-computer.
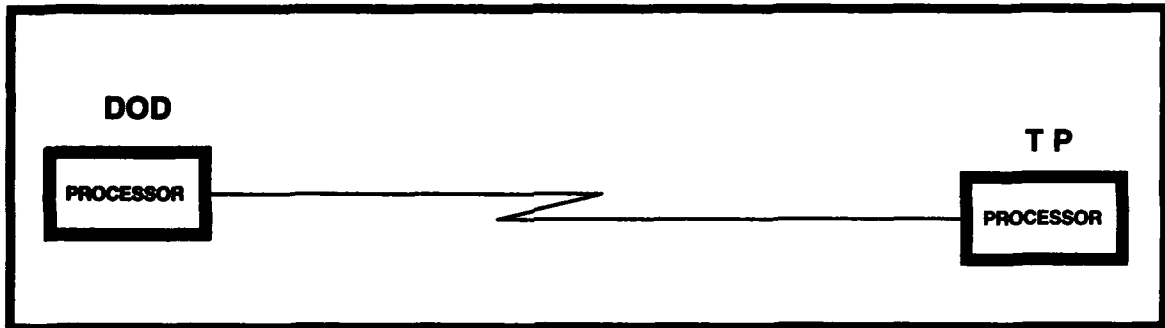
2.8.1.2 NETWORK CONNECTION METHODS

Network connection means that DoD uses networks, gateways, and collection points to send and receive data to and from VANs

2.8.1.2.1 DoD GATEWAY TO SINGLE VAN

This scenario allows for gateways that translate data into ANSI X12 format to directly transfer all data to a single VAN.

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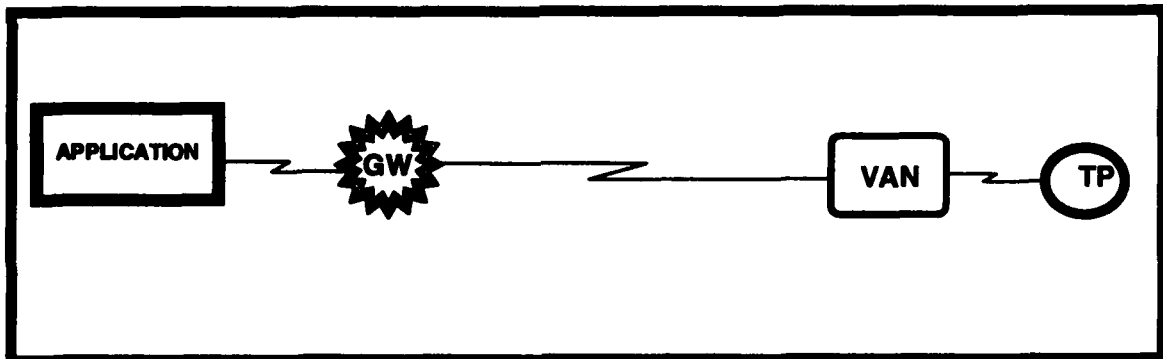
2.8.1.2.2 DoD GATEWAY TO MULTIPLE VANS

This scenario allows for gateways that translate data into ANSI X12 format to directly transfer all data to multiple VANs.
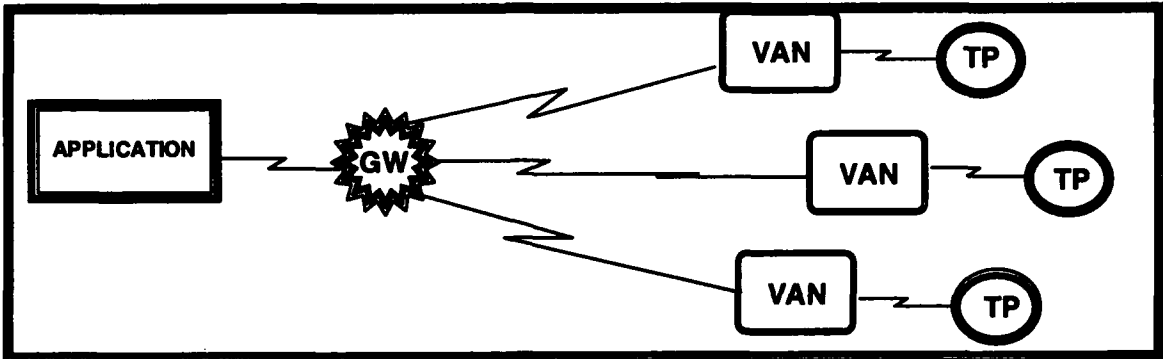
2.8.1.2.3 DoD GATEWAY TO DISTRIBUTION POINT TO SINGLE VAN

For DoD this means a collection point for all systems (procurement, logistics, health, environment, etc.), and the capability to transfer data internally much better.
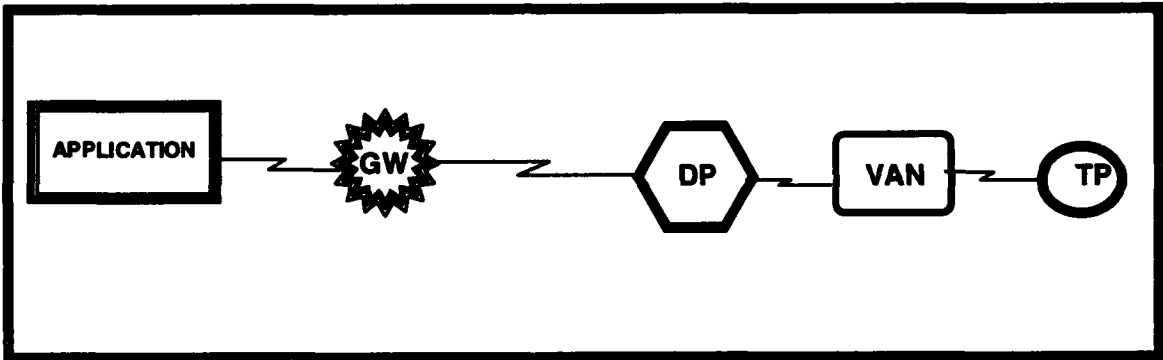
2.8.1.2.4 DoD GATEWAY TO DISTRIBUTION POINT TO MULTIPLE VANS

For DoD this means a collection point for all systems (procurement, logistics, health, environment, etc.), and the capability to transfer data internally much better.
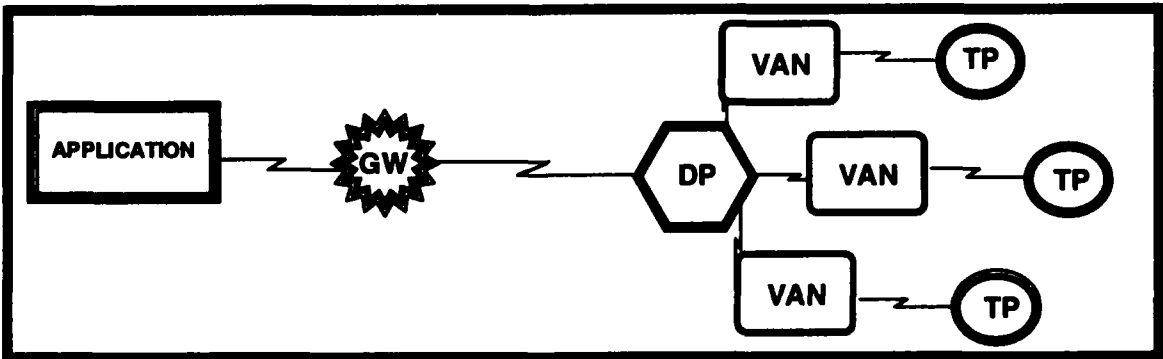
2.8.1.3 BULLETIN BOARDS

Many bulletin boards are not truly EDI systems receiving ANSI X12 data. Some value added services provide bulletin board services to their customers. They translate the ANSI X12 data and post to the bulletin board. The bulletin board generally takes data from the main procurement system and presents it on a screen using COTS bulletin board software. Formats and details vary between systems, as do procedures and presentation, and the ability to access the bulletin board is dependent upon its power and size.
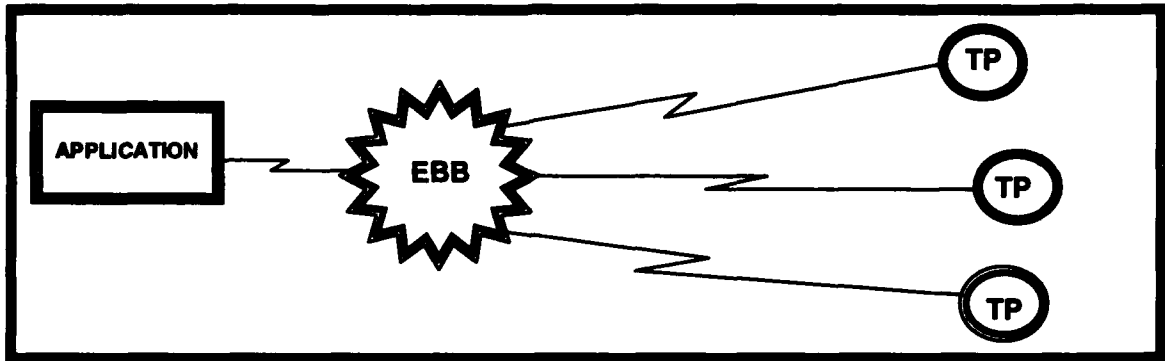
2.8.2 DISCUSSION OF ALTERNATIVES

Having discussed the existing methods for distribution of ANSI X12 transaction sets, there are several viable alternatives that must be evaluated against the constraints imposed by DoD and the resources and time available to meet the requirements. The following are critical considerations in the advantages/disadvantages of various alternatives.

Telecommunications
Security
Computing Capacity
Computing performance
Accountability
24 Hours Operations
Storage Capability
Required Interfaces
Help-desk capability
Ability to rapidly expand support
Adequate Technical Support
Continuity of Operations (COOP)
Ability to handle Multiple protocols
Costs
Acquisition requirements
Network Control Center
Network Management System
Mid tier/Mainframe capability
Efficient vs. Complex
Stability of Sites

Centralized vs. Decentralized. In EC/EDI it is best to use the best of either centralized or decentralized principles, where they make good sense. The best use of decentralized is having the system applications situated close to the buyers where they can initiate EDI transactions directly without going to a different location. The recommended DoD

Gateway process likewise is more centralized since their function is to service multi-applications once the decentralized process has initiated a transaction. The entire distribution process is more efficiently accomplished through centralization since the collection of transactions from multiple applications and gateways is a generic process. Fewer sites with greater capability is more cost effective than having many decentralized sites with less capability.

The following is a discussion of some possible alternatives and the advantages and disadvantages of implementing them within DoD;

2.8.2.1 USE OF SINGLE VAN

This alternative is perhaps the most simplistic of all the alternatives. It requires the fewest resources of all types, hardware, software, telecommunications, manpower, and dollars for the vendors to begin EC with DoD. At the same time it provides the VAN with a monopoly. The political repercussions of this alternative are perhaps greater than any other.

SINGLE VAN	
PROS	CONS
LESS HARDWARE/SOFTWARE/ TELECOMMUNICATIONS	VAN MONOPOLY
MOST SIMPLE F ₹ DOD AND VENDOR	POLITICAL FALLOUT
FEW INTERFACES	DISCOURAGES INNOVATION BY VAN
	CONTRACT REQUIRED (TIME/COSTS UNKNOWN)
	POOR COOP

2.8.2.2 USE OF VIRTUAL NETWORK

A virtual network is an interconnect point where multiple networks meet and data is exchanged between them transparently. Interconnectivity exists today between the commercial VANs used to transmit electronic business data. The role of the virtual network would be to provide a point of common connectivity for VANs, provide a single interconnectivity pathway, eliminating the redundant and costly interconnects created by each VAN independently. This is dependent upon the availability of network connectivity on the Government side or on the vendor side. DoD, for instance, has DDN, DISN, Defense Commercial Telecommunications Network (DCTN), FTS 2000, and other networks that interconnect with each other and with INTERNET. Trading partners have private networks as well to connect their various subsidiaries and locations. Cost, protocols and procedures for both DoD and its trading partners will vary depending upon proliferation of nodes on these networks. The more sites involved, the more opportunities there are for errors and differences in implementation, as discussed above. If every system within DoD (procurement, logistics, health, environmental, etc.) uses its own gateway, the possibility of different procedures and therefore many faces to Industry is greater. If DoD collects the data and then distributes it using distribution points both internally and externally, efficiencies and economies of scale can be realized.

VIRTUAL NETWORKS	
PROS	CONS
No VAN agreement necessary	None exists today commercially
DoD Controls own Net Management	Contract required (costs unknown)
Maximize use of standards	Change distribution point Concept
Single communications solution	
No DoD built software for interconnect	

2.8.2.3 USE OF SINGLE GOVERNMENT SITE AS VAN

This alternative is a massive undertaking by the Government to establish the organization to design, develop and implement the services required by all DoD trading partners in order to do EDI. Some services that VANs provide to their EDI customers include, translation, printing, archiving, security, fax, EIS services, forwarding to suppliers and subcontractors, etc. The limitations and liabilities added to DoD telecommunications responsibilities are innumerable. If a single Government site were to get all transactions from all DoD functions (procurement, logistics, transportation, finance, environment, etc.) the volume would be tremendous, so the increased connectivity capacity would be required, as would computing capacity at that site.

SINGLE GOVERNMENT SITE AS VAN	
PROS	CONS
No VAN Costs	Much DoD Software Development Required
DoD Controls Software	DoD in Direct Competition with VANs
	Changes to Concept of Operation of DP
	Connectivity Issues Exponential
	No COOP capability

2.8.2.4 USE OF SINGLE GOVERNMENT DISTRIBUTION POINT TO VANS

This means that all traffic after the gateway functions are complete would pass to a DoD distribution point for the store and forward functions to a commercial VAN. This alternative has all the same arguments as the single site acting as a VAN, except that VAN services would be utilized instead of the DoD providing those services.

SINGLE GOVERNMENT DISTRIBUTION POINT TO VANs	
PROS	CONS
Standardize everything	Telecommunications Capacity
Single face to Industry for everything	No redundancy for COOP
Centralized process	No regional focus
Central vendor registration	

2.8.2.5 USE OF MULTIPLE GOVERNMENT DISTRIBUTION POINTS TO VANS

This means that services and agencies or regions would collect incoming and outgoing transactions and do the gateway functions as described earlier. After translation, the gateway would forward the data to the distribution point for forwarding to VANs and on to trading partners. The use of a distribution point adds ability to standardize vendor registration procedures and vendor notification procedures. For DoD this means a collection point for all systems (procurement, logistics, health, environment, etc.) and the capability to transfer data internally much better.

MULTIPLE DISTRIBUTION POINTS TO VANs	
PROS	CONS
Telecommunication Capability	Additional Communications
Centralized process	Broader span-of-control
COOP capability	
Capability demonstrated	
Gov't to Gov't enhanced	
Central vendor registration	
Regional Focus	
Better capability for investment	

2.8.2.6 DIRECT TO VANS FROM COMPONENT GATEWAYS

Components would collect incoming and outgoing transactions at the gateway and perform the gateway functions as described earlier. After translation, the gateway would forward the data directly to all VANs from each gateway via dial-up telephone for forwarding to the appropriate trading partners. While seemingly more cost effective, the increase in time and equipment by the gateway and VANs to continuously poll every site plus the slow transmission times negate any perceived cost benefit.

| DIRECT TO VANs FROM COMPONENT GATEWAYS ||
PROS	CONS
Lower costs	Complex interfaces
Individual control	Component to Component transactions
Regional Focus	Decentralized process
	Complex COOP
	Security
	Connectivity issues exponential
	Reliance on telephone slow speed delivery
	Single Face to VANs
	Varying Component Site Execution
	Reductions in VAN options

2.8.3 MIGRATION STRATEGY

The many ways of sending data electronically used in the DoD have been depicted in the previous paragraphs. Although it is possible to use many different forms of distribution, the problems that would arise from doing business in that way outweigh the benefits.

DISA has the responsibility for providing an effective distribution process for all DoD business areas. As a result, an initial capability must be established in the near term to meet the requirements for a common approach. This initial capability must be consistent with the migration strategy for ADP processing capabilities being moved to DoD Megacenters. Based on the capabilities of performing Distribution Point (HUB) demonstrated by current EC/EDI projects we believe that DISA should establish two geographically dispersed Megacenters as the initial Distribution Hubs. All Megacenters will play a vital role as collection points, which store and forward electronic transactions within DoD. However, two of the Megacenters will connect directly with all VANs who choose to participate as part of the DoD EC/EDI distribution process. While all Megacenters will interconnect and connect to other Government distribution points, all EDI transactions destined for trading partners connected to VANs will be routed to these DoD Distribution Hubs.

After establishment of the two sites, studies must be performed on the existing capacity, analysis of transaction growths, system performance evaluated, and modeling must be done. Component capabilities must be analyzed and utilized if possible. Migration of the distribution function into the Megacenters should begin with the current EDI capable systems in the first six month period. As systems are deployed and new EDI applications are started, they should be migrated as they come on line.

Currently, two components have established sites that have tested the distribution point concepts during the past year. DLA has utilized DAASC in Dayton, Ohio and the Navy has utilized ASO in Philadelphia, Pennsylvania. These sites have successfully demonstrated the concepts of a distribution point connected to multiple VANs and are

expected to play key roles in the collection of electronic transactions for these components. Both of these sites are scheduled for migration into a DISA Megacenter during the next three years but can be used as an initial component capability in addition to the establishment of the initial DISA Distribution Hubs.

2.8.4 ESTABLISHMENT OF INITIAL DoD TECHNICAL DISTRIBUTION PROCESS

To ensure that the functions of DoD Distribution Hub are adequately accomplished, two of the largest DoD Megacenters, IPA-Columbus (IPA-C) and IPA-Ogden (IPA-O), have been confirmed by DISA-DISO as the proposed sites.

The following are the results of a site visit and evaluation of IPA-C and IPA-O's capabilities.

IPA-C is located on the Defense Construction Supply Center (DCSC) and occupies a newly completed (December, 1992) 92,000+ square foot facility; currently there is 33,000 square feet for computer operations, 1,600 for communications equipment, and 11,800 for future expansion. They are housed in one of the newest construction among the Megacenters and represents the latest in design and functionality. The facility has many new and improved innovations in its design such as a water-cooled air conditioning system, 30 foot raised floors for easy access, and a state-of-the-art power-plant with on-site engineering support. The facility is secure with card-key access required throughout the building, 24 hour surveillance cameras are located outside and within the building and are monitored at two locations, and a direct alarm link to center security and firehouse. Backup power is provided by a computerized system calling of batteries (40-90 min. capacity, if necessary) with an auto switch (usually 30 seconds to 2 minutes transfer from batteries) to five diesel generators located on site which easily maintain the 3,000 KVA power-plant. Power loss testing is done one to two times monthly. The current staff at the IPA is 103 personnel, distributed over a variety of job series (mostly GS-332 and GS-334.) Strength levels will increase as the processing/operations site consolidation effort moves forward.

IPA-C is connected as a part of the Defense Commercial Telecommunications Network (DCTN), also to DDN and Internet. There are currently 24 T1 lines connected at IPA-C, which through multiplexors can support 40 T1 connections. Two T1 lines to connect with AFNET are scheduled for completion by the end of September 1993. Communications are supported through two other sites on center to provide secondary and tertiary backup communication pathways. X.400 capability is being tested in conjunction with DFAS and DSAC EDI efforts. It should be production available by late-fall, 1992. Help desk services are being staffed at the present time. With current staffing, the desk is available 0600-1800 on a full-service basis, and with only basic services and referral support for the remaining non-peak hours. The Help Desk support will be increased as the IPA gains additional staff near-term and is a a priority of the IPA.

IPA-C has been directly involved in a number if EDI initiatives with DCSC and DFAS. DFAS has been running a production EDI project supported by IPA-C since April 1993, both sending and receiving transactions from trading partners through commercial VAN providers. The IPA utilizes BSC scripts in conjunction with CLEO boards to communicate with the commercial VAN providers. The current platform is a 3B2 for the communications support with plans to upgrade to a more robust mid-term machine once volumes were sufficient to develop a sizing model.

IPA-C as it currently operates as an EDI communications point, is using tape backup for archiving, though it is working with DFAS on imaging/WORM technology as a potential alternative to tape. IPA-C currently has a small EDI operations staff which supports not only communications, but the EDI Gateway services (e.g., translation, archiving) as well.

IPA-O, Ogden, Utah:

IPA-O is located on Hill AFB and occupies 142,000+ square foot facility. The initial building was built in 1989, and with recently completed expansion provides 61,000 square feet of raised floor space with contingency planning already in place for additional expansion should it become necessary. IPA-O is one of the newly constructed processing sites and as such provides the best in functional and technical design, as well as a superior working environment for it personnel. The facility is secure with card-key access required throughout the building, 24 hour surveillance cameras are located outside and within the building with motion detectors and "man traps" in highly sensitive areas, and a direct alarm link to base security and firehouse. Backup power is provided by a computerized system calling of batteries (30 minutes capacity, if necessary) with an auto switch (usually 30 seconds or less to transfer from batteries) to three diesel generators located on site which easily maintain the 5,000 KVA power-plant. Power loss testing is done monthly. The current staff at the IPA is 234 personnel, with an additional 145 to be transferred shortly from the DDOU facility also in Ogden. Most of the personnel are in the 334 series, and average grade is GS-11, lower among operators and higher among the technical support staff.

IPA-O is connected as a part of the DCTN, also to DDN and Internet. IPA-O is a primary AFNET connection and a regional AF site for communications support. There are currently 81 T1 lines connected at IPA-O, which through multiplexors can support 232 T1 connections. Communications are supported through two other sites on center to provide secondary and tertiary backup communication pathways. IPA-O operates a 24 Help Desk with technicians available for immediate problem solving and assistance. IPA-O has X.400 capability, and can move to X.435 capability within 120 days if notified of a support requirement.

IPA-O has some preliminary EDI project experience involving hazardous materials and EDI application interface design, but most have been held awaiting funding support or additional program guidance. The IPA has not in the past been required to support BSC communications, but they state they would be able to employ that capability quickly if requested. Since no specific EDI communications project is underway at the IPA, no specific communications platform was identified. Upon further discussion of basic requirements, the IPA identified a variety of mid-tier machines (RS6000, 486, Sun Sparc) could be available if requested. BSC scripts are available to the IPA through DSAC-R as a part of the UCI BSC/X.400 Project upon request. Again, since there is no existing EDI communication project at IPA-O, they have not identified an archiving solution, though the latter would likely be solved using existing tape-backup and recovery as done at IPA-C.

There is an EDI focal at IPA-O who has been supporting a number of efforts to position the IPA for future Air Force, and DoD requirements. They have successfully anticipated many of the requirements needed to support EDI, such as X.400/X.435. The level of technical support needed to bring the IPA to a DP support level is readily available and only awaits tasking to begin.

SUMMARY:

Both IPA-C and IPA-A are excellent sites for potential Distribution Hubs. Both sites provide all of the following DP attributes desired by the DoD EC/EDI needs.

- Sites are identified Megacenter locations
- Robust telecommunications/network capabilities
- 24 Hour Help Desk assistance available
- Staffs possess professional and technical qualities desired
- Strong physical security
- Sound COOP, disaster planning in place
- Modern, expandable facilities
- EDI knowledgeable staff
- Adequate personnel to support initial DP startup.

Neither site had a virus check procedure at this time, as both expect it to evolve out of the corporate network consolidation underway by the DoD Network Systems Office (DNSO).

IPA-C has been providing DP functions for DFAS for several months which should make transition to a fully operational DP simple to achieve. While IPA-O does not have a similar experience to start from, the level of technical knowledge and enthusiasm of the staff would allow them to establish an equivalent capability very quickly.

RECOMMENDATION: Official approval and designation of IPA-C and IPA-O as the initial proposed DoD EDI Distribution Points, and to initiate taskings to bring both to a specified level of customer support by November 1993.

2.9 DISA SUPPORT PLAN

2.9.1 ESTABLISHMENT OF DISA EDI PROGRAM

Recently, the DoD EC/EDI Program Management responsibilities were transferred from DLA, formerly the Executive Agent. DISA-DISPO was given the mission and established a Program Management office. A Program Manager was assigned and has participated on the DoD EC in Contracting PAT.

Many technical skills and disciplines throughout DISA are needed to support the objectives and development of a comprehensive DISA support plan for the EC/EDI program. As a result, the Program Manager has initiated, concurrent with the accomplishments of the technical assessments needed for this PAT, the development of an in-depth DISA support plan to lay out all requirements needed for an effective EC/EDI program.

The DISA support plan will include:

Missions and responsibilities of EC/EDI support for every primary technical organization that needs to be involved in performing needed tasks.

Documentation of an EC/EDI technical framework as guidance to all DoD organizations for use in implementing EC/EDI initiatives.

Consideration of all network communication services needed for a robust processing of electronic transactions to include the provisions for the DMS requirements, expansion of X.400, and network security.

The support plan will include the near-term and long-term security issues including policies and procedures of digital signatures and protection of transactions.

Requirements for modeling capacity management and performance capabilities are being identified.

Longer term Acquisition strategies and Continuity of Operations procedures have been initiated for inclusion in the support plan.

2.9.2 MIGRATION TO A DISA TARGET EC/EDI ARCHITECTURE

As a result of the DoD EC in Contracting PAT, DISA-Joint Interoperability and Engineering Office (JIEO) was requested to perform an analysis of the current operating EC/EDI architectures and to present a future target architecture that DISA could prepare to migrate from the current environment to the target. The following are selected extracts from the target architecture document prepared by the DISA Center for Architecture team.

2.9.2.1 OVERVIEW

The target architecture presented here defines the information technology environment needed to support DoD requirements for EC and EDI. The architecture will provide DoD with a means of interchanging data internally within the Department, with private Industry, and with other Federal agencies - with moderate impact on installed systems. This EC/EDI architecture supports this interchange through the development and implementation of an infrastructure based on open systems. The intent is to free EC/EDI from proprietary systems over the long-term and to provide a capability to accommodate a wide variety of applications that meet the needs of the functional user.

Figure 2.1-1 provides a high-level overview of the target EC/EDI architecture. Procurement related applications and data are distributed across multiple "local" sites (e.g., procurement activities, contracting offices, supply depots, etc.). Administrative data and applications supporting procurement management are consolidated at regional sites called "Government Distribution Points". The distribution points maintain summary data, trading partner agreements, contracts, bid boards, etc., and provide access for VANs and could accommodate dial-up access by trading partners and suppliers.
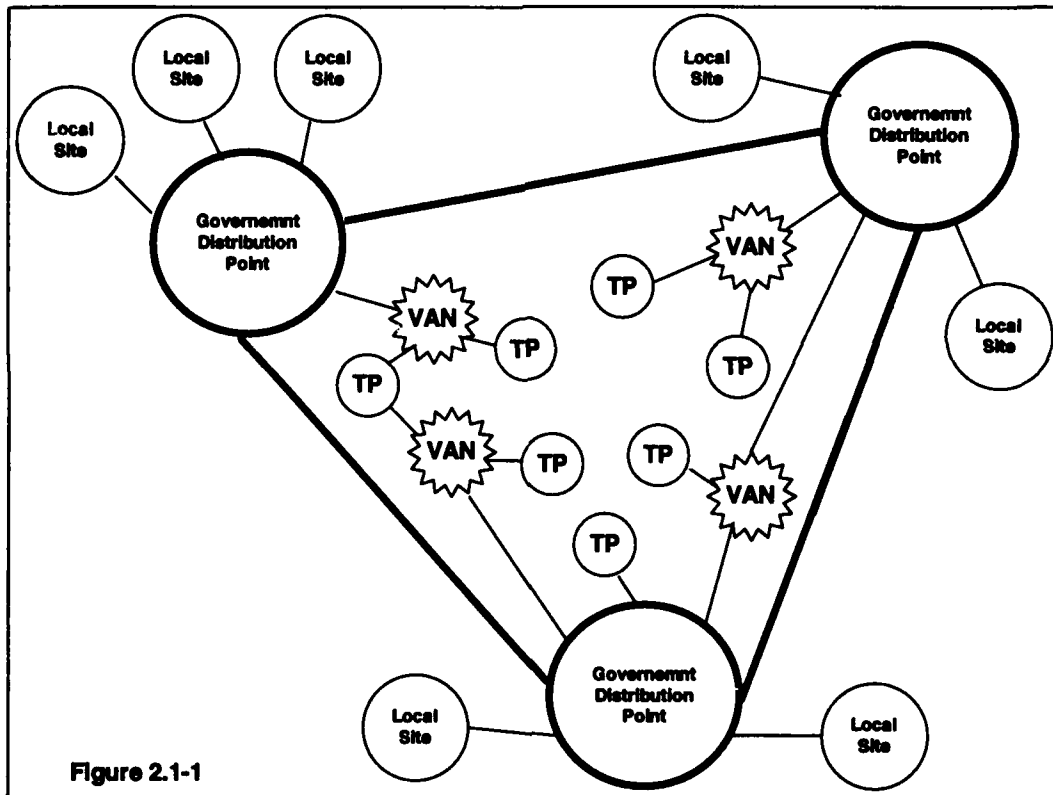
Figure 2.1-1

This architecture is not an objective architecture, looking beyond the next few years. Its focus is on the next two to five years, and establishes a target which can be implemented using existing and state-of-the-art technology. Future efforts require the development of the objective architecture for the Defense Information Infrastructure (DII) which will ultimately provide EDI as one of its many services. To develop the objective EC/EDI architecture prior to developing the objective DII architecture would be premature and risk inconsistency.

2.9.2.2 DETAILED DESCRIPTION

A major goal of implementing EDI in DoD is to develop and install a communication and computing infrastructure composed of standard support services and facilities based on standards and principles of open systems. The infrastructure must provide a means of interchanging standard EDI data at a low cost and with a minimum impact on existing automated systems. The DoD Technical Architecture Framework for Information Management (TAFIM) provides a target framework for this infrastructure and the applications that it will support.

Figure 2.1-2 shows the evolution from the baseline architecture to the target architecture, mapping through the TAFIM's Technical Reference Model (TRM).

Figure 2.1-2: Mapping of Baseline EC/EDI Architecture to Technical Reference Model
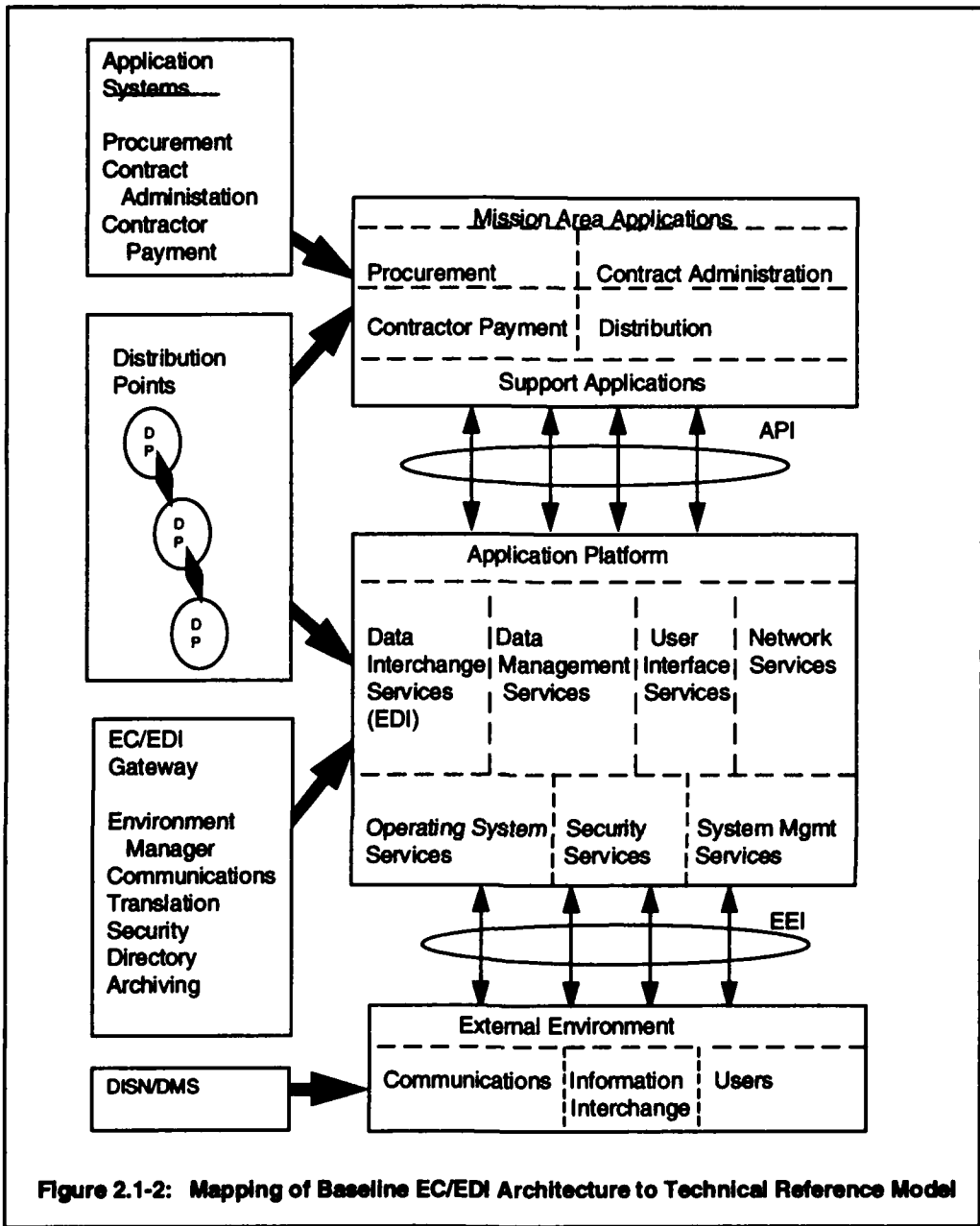
Figure 2.1-3 shows how the target architecture may be implemented at local sites and regional Government DPs. The suppliers or TPs access the DPs through VANs or direct dial-up.

Figure 2.1-3
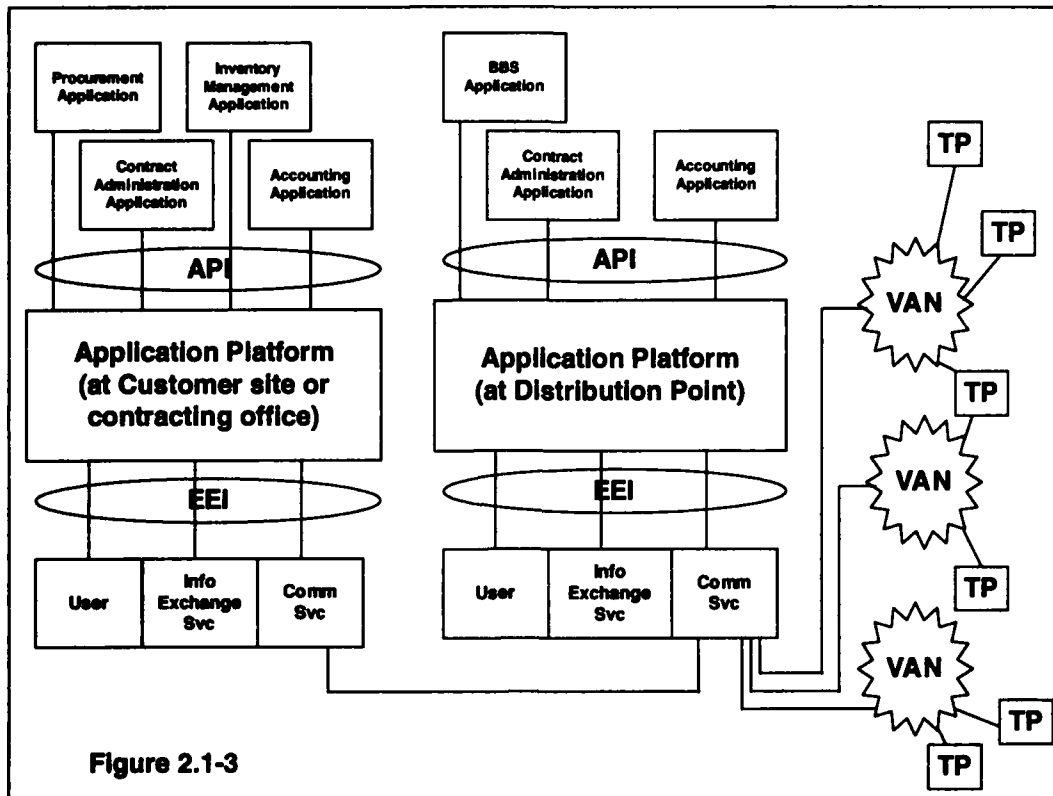
2.9.2.3 ARCHITECTURAL PRINCIPLES

The Target EDI Architecture is based on a set of principles derived from four main architectural themes:

1) Efficiency: Do more with less.
2) Effectiveness: Improved productivity.
3) Common Environment: Leads to consistency.
4) Information Sharing: Improves communication.

The principles presented in this document will serve as guidelines for developing the plans that will ultimately become the EDI architecture for DoD.

Efficiency: Do More With Less

Recent reductions in the Defense Budget have led to congressional directives concerning the consolidation, restructuring, and downsizing of the Defense Community. These budgetary restrictions have facilitated the need to do more work with reduced institutional and financial resources. A review of existing DoD procurement processes combined with the redesign of existing applications and the introduction of improved technologies will allow the Services and Agencies to improve the efficiency of

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individuals. The principles contained within this section of the document will provide a basic framework for the review and evaluation of existing business processes, application systems, and their associated technologies.

- Simplification by elimination and integration of processes is preferred to automation, whether developing new or enhancing existing information systems which support those processes.

- The architecture should facilitate the reduction of paper-intensive processes within the DoD, moving steadily toward the goal of a paperless environment.

- The EDI architecture should enable life-cycle costs of systems to be minimized.

- Technology must be viewed and applied as a means of improving the accuracy and efficiency of individual users within the DoD.

- DoD business processes and procedures should be reviewed, understood, and documented prior to design or redesign of applications.

- Networking technologies should interconnect the DoD and provide connectivity to other organizations.

Effectiveness: Improved Productivity

The effective application of technology will allow individuals within DoD to become more productive. Improved or redesigned applications systems which better support functional processes will improve the accuracy and effectiveness of individuals within DoD. Standardization of the technical environment and improved training will also increase individual effectiveness.

Principles in this section of the document will increase the productivity of individuals within DoD through the effective application of technology. Historical inconsistencies in commercially available technologies have, by necessity, forced functional organizations within DoD to create specialized departmental applications. The dissimilar nature of these application systems have significantly limited user access to electronically stored information. High operational costs combined with the associated cost of storage, maintenance, and administration of this duplicate information are the by-products of the protracted use of these technologies.

- The quality of ADP processes and services should be measured as perceived by the user.

- DoD applications should be designed and developed to adhere to a common, standard user interface which will provide a common "look and feel" to the user and promote ease of use for novice and experienced users alike.

- Routine processes should be automated whenever advantageous and cost effective.

- DoD personnel should be appropriately trained in the use of new processes, applications systems, and their associated technologies.

- The DoD should provide necessary interoperability and connectivity between DoD functional and operational areas and across the DoD and other Federal agencies.

- Timely system support services (e.g., training, maintenance, installations, etc.) throughout the ADP life cycle is an essential component of system effectiveness and customer satisfaction.

Common Environment: Leads To Consistency

Historical inconsistencies in commercially available technologies have, by necessity, forced functional organizations within DoD to create specialized departmental applications. The dissimilar nature of these application systems have significantly limited user access to electronically stored information. High operational costs combined with the associated cost of storage, maintenance, and administration of this duplicate information are the by-products of the protracted use of these technologies. The principles in this section of the document promote an information technology environment built upon a common infrastructure. This environment will reduce technological complexity by ensuring greater consistency across application and technology platforms. Increased consistency across technical environments will ensure a high degree of application interoperability.

- New business methods and procedures should be proven and validated in a pilot project before implementation across the organization.

- DoD will adopt enterprise-wide common definitions and standards for data.

- Wherever practical or required, interorganizational business and operational functions should be consistent across the DoD and DoD ADP environments to enable cross-functional sharing of information and processes.

- Where feasible, the DoD will use COTS and GOTS application components and systems rather than develop them internally.

- Where feasible, the DoD will use COTS and GOTS operating environment (system) software unless specific analysis dictates the need for custom development.

- The DoD technical environment should facilitate the interoperability of applications.

- All architectural components should be certified for compliance with applicable standards.

- All information technologies and architectural interfaces must be standardized within the DoD.

- An advanced, MultiLevel Security (MLS) architecture should be defined for all DoD distributed, trusted computing platforms.

Information Sharing: Improves Communication

In general, the evolution of application systems within the Defense and Intelligence Communities and associated Federal agencies have paralleled the evolution of DoD application systems. With an increased emphasis on joint operations, efficient access to internal and external information has now become a critical factor to the success of DoD operations.

By adopting the principles in this section, DoD can improve internal and external communication through efficient application design, improved data storage and access techniques, and advanced data management technologies.

- The DoD will implement technology components which conform to the DoD Technical Reference Model for Information Management.

- DoD electronic data exchange services should be conducted transparently using a standard set of formats, application program interfaces, and protocols.

- The architecture should support a centralized network management and diagnostic capability (for the backbone/shared network).

- Functional management has the responsibility for defining their IT needs and ensuring that the systems delivered by the development community provide the projected benefits.

- Applications should be independent of the underlying technology on which they are implemented.

- Applications should be able to capture and display information in a timely, accurate manner and at the level and format appropriate to the user's needs.

- Wherever feasible, information should be captured electronically once and immediately validated as close to the source as possible.

- Access to all electronically stored information necessary to perform one's job should be possible through the user workstation regardless of the physical location of the user or the information.

- The technique of data storage and data access should be transparent to all DoD application systems and users of those systems.

Please note, while architectural principles are the foundation of an EDI architecture, they are not a solution unto themselves. A thorough analysis of DoD current EDI environment and a clear definition of its target architecture are quite necessary before technology can be procured or information systems can be delivered. These activities are currently underway and will be delivered over the duration of this effort.

The remaining portions of the target EC/EDI architecture, submitted by the DISA Center for Architecture, are contained in a separate DISA Support Plan.

2.10 ADDITIONAL NEEDS FOR DEPLOYMENT

2.10.1 TRADING PARTNER AGREEMENT

A single standard DoD Trading Partner Agreement (TPA) is required to standardize the terms and conditions of all TPAs established between DoD and its trading partners. The purpose of a DoD TPA is to ensure that DoD and its EC/EDI trading partner(s) agree on the general procedures and policies to be followed when using EDI for transmitting and receiving business documents, including procurement-related transactions. Detailed information on EC/EDI technical and functional requirements should be provided through other documents (e.g., VAN licensing agreement) and entities (DISA and the VANs). In the past, duplication of effort was seen as each EC/EDI project developed and used its own unique TPA. Development of a single DoD standard TPA would serve to eliminate the current redundancy in this area, present a single face to Industry, and respond to Industry's comments concerning duplication efforts and inconsistencies in the current TPA process.

TPA's currently in use by various Government components (e.g., Air Force, Navy, DeCA, DFAS, DCSC, and GSA) were reviewed during development of the DoD standard TPA. Consideration was also given to the standard TPA format recommended by the LMI, the TPA currently in use at the R.J. Reynolds Co., and the terms and conditions included in the proposed DoD VAN licensing agreement. After careful review of these documents, a standard DoD TPA was drafted, reviewed and commented on by EC in Contracting PAT members. The Office of the OSD General Counsel reviewed the proposed TPA and raised no legal objections, however, further legal review was recommended prior to its final implementation and use.

The proposed standard DoD TPA is enclosed as Appendix A. General terms and conditions that apply across all functional areas are included in the body of the trading partner agreement. Each functional area, prior to being phased into EC/EDI, must have an addendum added to the TPA that includes a list of all applicable transactions sets and any terms and conditions unique to that functional area. Terms and conditions that are more appropriately or currently included in the Government regulations should not be added to the TPA addenda. The TPA will be incorporated by reference into solicitations and contracts issued via EDI through a clause. Regulatory coverage is provided for this requirement under FAR Case 91-104, Electronic Contracting.

The Services and Defense Agencies should be allowed to review and comment on the proposed standard DoD TPA prior to its final implementation and use. Each functional area (e.g., procurement, finance, logistics, transportation) should be provided an opportunity to add an addendum to the TPA.

A single DoD component should be designated to establish, monitor, and control TPA's with DoD suppliers. The list of approved trading partners should be made available to DoD contracting offices via a central data base. Centralized management of the TPA and its associated data base will avoid potential duplication of effort, present a single face to Industry, and ensure the most efficient use of DoD's resources. It is also recommended that the DoD standard TPA be incorporated into DISA's "Concept of Operation" document that can be made available for ready access by both Government and Industry personnel. The TPA should be provided to contractors via an EDI text file during the registration process.

2.10.2 VALUE ADDED NETWORK LICENSE AGREEMENT

In order to implement the approach to EC in this report, DoD has developed a technical framework for EC. An important component of the technical framework is a multi-VAN approach for exchanging electronic transactions with contractors. Appendix B provides a copy of the draft multi-VAN license to be used by DoD to implement this approach.

This agreement has been endorsed by the Defense Commercial Communications Office (DECCO), the DISA's Legal Office, and the DoD General Counsel Office. DECCO is the primary contracting office for the administration of this VAN License Agreement. The agreement is in three parts:

- The license agreement itself which is the responsibility of DECCO.

- The Technical Scope Of Work (TSOW), DISA is the responsible for implementing DoD's EC technical infrastructure to support DoD's activities requirements and to be consistent with DoD EC policy and DISA technical plans and procedures.

- Addendum A describes DoD's approach to EC for small and simplified purchases.

The VAN Agreement is a no cost agreement, which means that DoD will not compensate VANs for exchanging transactions with its contractors and VANs will not pay DoD for receiving public transactions (e.g., public RFQs and award summaries sent to all participating VANs). After the one-year agreement is finalized and signed by interested VANs, DISA plans to consider fee based alternatives. If found acceptable by DoD, these changes may be incorporated in a revised agreement for the second-year of operations.

A multi-VAN approach is not typical of EDI users. Most major private firms using EDI choose one VAN and direct their partners to use it as well or use interconnectivity between the chosen VAN and other VANs to conduct business. In contrast, the EC in Contracting PAT chose to deal with any interested and qualified public or private VANs for several reasons, some related to the VAN marketplace and others to the breadth of DoD's vendor base. Of particular note was their concern that a competitive price for VAN services will be available for DoD small business vendors.

Today, approximately 30,000 United States firms use EDI and many do so using the several VANs and Value Added Services (VASs) providing EDI-related services. Some VANs focus on particular industries, while some target their services to different levels of user sophistication. Interconnectivity between VANs is growing, but currently it is not consistently reliable and timely. Firms must pay extra for transactions that use interconnects between VANs. The market for VAN services is changing rapidly with new VANs and VASs emerging, consolidation occurring, and frequent shifts in services and pricing strategies.

Within this dynamic environment, DoD plans to move aggressively into EC. Over 300,000 vendors are interested in conducting business with DoD today. Many (although only a small minority) of those vendors already use VAN services which they chose based on their industry or their major customers' requirements. DoD conducts business across many industries from health care to aerospace, the grocery industry to the automotive industry. Different VANs have tailored their services to these diverse industries.

Given these factors, the EC in Contracting PAT's approach to EC recommends for the use of multiple VANs. This approach is based on a successful DoD pilot project which used a similar multi-VAN agreement and which has strong participation from many VANs. This approach takes full advantage of the dynamic marketplace for VANs and VASs. It does not require that vendors already subscribing to such services change to one VAN through open competition by DoD. Although the DoD will not have to rely on current connectivity between VANs, it can take full advantage of such connectivity as it improves. Finally, the DoD will provide vendors with choices between various levels of service, cost, and user interface to suit their Industry and their needs.

Any interested VAN that agrees to the terms and conditions, both technical and contractual, may sign the DoD agreement. Each firm will then be tested using a detailed test plan to confirm it can meet the requirements before it can handle any live transactions. Each firm's capabilities will also be continually monitored.

EDI VANs may sign the agreement, but any other firm may as well, as long as it meets the agreement's requirements. For example, a large firm which handles its own EDI exchanges already and has many business locations may choose to qualify as a "VAN" under this agreement, even though it does not actually sell EDI VAN services to other businesses. This firm could then receive transactions addressed to its business locations directly from DoD, rather than paying for a traditional EDI VAN for handling the exchange of information.

DISA will finalize the agreement and begin testing with participating VANs by the first quarter FY94.

As indicated the VAN License Agreement is a no-cost agreement. Input received from the VAN Industry on this particular issue were mixed. Most respondents were in favor of the no-cost arrangement as a start up approach. However, other VANs believe that the Government should pay its fair share of communications costs particularly as it relates to pure one-to-one transactions and that these costs should not be passed on to Government suppliers through increased VAN services costs. While the EC in Contracting PAT agrees with the Industry position on this particular issue, the Government requires additional lead time to develop and compete a fair and equitable fee based contractual vehicle with Industry. Given the time table requirements for expanding EC/EDI in Contracting throughout the Department, the PAT has elected to go initially with a no-cost arrangement with Industry for a one-year period if a cost arrangement is found to be acceptable by DoD, these changes will be incorporated in a revised agreement for the second year of operations.

2.10.3 PHASING OF TRANSACTION SET IMPLEMENTATION

To provide organized and practical implementation of capabilities, throughout DoD, and still serve the requirements of the majority of initiatives, a phased approach was undertaken in prioritizing the transaction sets to be supported. From a technical point of view, the capability to transmit data in the ANSI X12 standard with trading partners should use those data sets already available and design those that best support the procurement process from a functional perspective. As a result, the following phasing plan was the consensus of all DoD components and services.

PHASING PLAN

PHASE I	840	Request for Quotation
six months	843	Response to Request for Quotation
	850	Purchase Order

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PHASE II	824	Application Advice
one year	836	Contract Award
	838	Trading Partner Profile
	864	Text Message
	997	Functional Acknowledgment
PHASE III	832	Price/Sales Catalog
two years	855	Purchase Order Acknowledgment
	860	Purchase Order Change Request-Buyer Initiated
	865	PO Change Acknowledgment/Request-Seller Initiated
	869	Order Status Inquiry
	870	Order Status Report

There remains some transaction sets or variations of transactions that fall outside the phasing plan. Requirements dictate that they be technically supported as soon as possible and implemented as required by the service, component, or activity.

OTHER	810	Invoice
as required	824	Application Advice
	841	Specifications/Technical Information
	842	Non-conformance Report
	856	Ship Notice/Manifest

2.10.4 MIGRATION SYSTEM EC/EDI CAPABILITY

Each service/component presently has at least one EC/EDI initiative in operation, providing some transaction capability to their AIS. Within this report, there exists a plan to show how that system initiative will be improved and how the service/component chooses to deploy it throughout its activities.

In addition to these recommendations, there is a DoD "migration" AIS for procurement, designated under CIM by the Director of Defense Procurement, to be utilized by activities needing AIS capability and presently having no other alternative available. The "migration" system is an interim solution awaiting the design of a "target" AIS to support their entire procurement process.

It is a recommendation of this PAT, that this "migration" AIS be available to activities requiring system support, no later than 24 months from the date of this report. It is primarily recommended that the capability of this system include all the EC/EDI capabilities discussed in this report for other DoD initiatives. It is clear that to deploy a procurement AIS with no EC/EDI capability would defeat the purpose of this integrated solution.

2.10.5 CENTRAL FUNCTIONAL COORDINATOR

After the EC in Contracting PAT has made its recommendations, DoD must ensure the full deployment of EC/EDI capabilities in accordance with the implementation plan and accomplish it within the 24 month requirement. It is recommended that the Office of the Under Secretary of Defense (Acquisition) designate a single central functional coordinator to direct the schedule, funding, and program requirements of this effort.

It is recognized that to be effective, the functional coordinator would have to either be the Procurement CIM Council or meet with that group regularly to ensure an integrated approach is maintained within acquisition reform.

2.11 SUMMARY OF DoD PROCUREMENT EDI DEPLOYMENT COSTS/MILESTONES

2.11.1 ESTABLISHMENT OF INITIAL CONFIGURATION MANAGEMENT STRUCTURE

The following cost estimates are based on extensive experience with C4I syntax standardization programs such as Tactical Data Information Links, United States Message Text Formatting, Variable Message Format, etc.

General Assumptions:

1) Missions are sequentially added. (e.g., You can do mission A without doing missions B-D. However, you can not do mission B without doing mission A.)

2) Contract person-year = $100K

2) FY93 dollars

4) M. sion is for just small procurement, but initial investments (e.g. Electronic IC Repository) apply to all EDI and need not be repeated as new areas are added.

5) Other Dollars are TDY and Other Direct Costs such as document reproduction, mailing, etc.

Manage DoD participation in non-DoD EDI standards bodies (ANSI X12, UN/EDIFACT, etc.).

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	.7	.8	1.5	2.0
CONTRACT DOLLARS ($K)	100	110	100	310
OTHER DOLLARS ($K)	20	10	30	60

Assumes cost of DoD representatives and participants are borne by providing organizations.

Arrange for publication and distribution of DoD EDI ICs.

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	1.0	1.5	2.5	5
CONTRACT DOLLARS ($K)	150	250	300	700
OTHER DOLLARS ($K)	10	20	20	50

Assumes cost of Functional Area data mapping to transaction sets is born by chartered organization. FY97 increase is in anticipation of IC review and update required for transition to EDIFACT.

Provide Electronic IC Repository and download versions (data base tables) of ICs to system implementors.

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	.25	.25	.5	1.0
CONTRACT DOLLARS ($K)	200	100	200	500
OTHER DOLLARS ($K)	10	0	10	20

Assumes IC Electronic Repository is developed by modifying the existing USMTF software.

Provide technical support to EDI implementation and business practice re-engineering efforts as required.

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	.4	.6	1	2
CONTRACT DOLLARS ($K)	0	50	50	100
OTHER DOLLARS ($K)	20	0	20	40

Total resource costs:

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	2.35	2.15	5.5	11
CONTRACT DOLLARS ($K)	450	510	650	1610
OTHER DOLLARS ($K)	60	30	80	170

2.11.2 ESTABLISHMENT OF DISA SUPPORT CAPABILITY

The following represents the complete DISA support costs for the EC/EDI Program Management Office and all offices within DISA tasked to support the DUSD(AR) initiatives. The Center for Standards requirements are included in this overall support costs but are broken out separately in section 2.11.1.

DISA EC/EDI SUPPORT COSTS ($M)

COST ITEM	FY94		FY95		FY96	
	GOV'T	CONT	GOV'T	CONT	GOV'T	CONT
PROGRAM MGMT						
DISPO-PM	1.6	.5	1.7	.45	1.75	.5
Lease	.3		.3		.3	
Less DLA Funding	(.9)					
TOTAL DISPO	1.0	.5	2.0	.45	2.05	.5
TECH SPT—JIEO						
CFI&I - Integration	1.3	.3	1.5	.3	1.5	.4
Less DLA Funding	(.9)					
Architecture	.12	.4	.06			
Security	.12	.3	.12	.2	.12	.1
Test & Evaluation	.65		.4		.2	
Standards	.6	.5	.6	.3	.5	.2
TOTAL JIEO	1.89	1.5	2.68	.8	2.32	.7
DISO - MEGACENTERS						
IPA-C						
Equipment	.12		.1		.2	
Operations & Maintenance	.25		.4		.5	
IPA-O						
Equipment	.12		.1		.2	
Operations & Maintenance	.25		.4		.5	
TOTAL DISO	.74		1.0		1.4	
DISA SUPPORT	2.63	2.0	5.68	1.25	5.77	1.2
TOTALS	FY94	5.63	FY95	6.93	FY96	6.97

2.11.3 TOTAL COSTS/MILESTONES OF SYSTEM DEPLOYMENTS

The following are the summary of the total costs and milestones for each recommended DoD procurement EDI system for deployment during the next two years.

APADE

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL COST
NUMBER OF SITES	18	7	0	25
COST PER SITE	$1,000	$1,000	0	$1,000
TOTAL COST	$18,000	$7,000		$25,000

ITIMP

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTALS
NUMBER OF SITES	0	3	0	3
COST PER SITE	$1,000	$1,000	0	$1,000
TOTAL COST	$0	$3,000	0	$3,000

MADES I

DEPLOY ORDER	ACTIVITY	CITY	DEPLOY DATE	COST
1	WARNER ROBBINS ALC	MARIETTA, GA	MONTH 3	$2,000
2	SAN ANTONIO ALC	SAN ANTONIO TX	MONTH 3	$2,000
3	TINKER ALC	OKLAHOMA CITY OK	MONTH 4	$2,000
4	SACRAMENTO ALC	SACRAMENTO CA	MONTH 4	$2,000
5	OGDEN ALC	OGDEN UT	MONTH 4	$2,000
			TOTAL	$10,000

MADES II

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL
NUMBER OF SITES	16	48	29	93
COST PER SITE	$7,000	$7,000	$7,000	$7,000
TOTAL COST	$112,000	$336,000	$203,000	$651,000

SACONS-EDI

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL
NUMBER OF SITES	69	8	0	77
COST PER SITE	$2,000	$2,000	0	$2,000
TOTAL COST	$138,000	$16,000	0	$154,000

SPEDE

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTAL
NUMBER OF SITES	2	0	0	2
COST PER SITE	$15,800	0	0	$15,800
TOTAL COST	$31,600	0	0	$31,600

2.11.4 CENTRALIZED CONTRACTOR REGISTRATION REQUIREMENT

This requirement was recommended by the DoD EC in Contracting PAT to meet the desired capability of a vendor to send one electronic registration to DoD that would register the vendor for all appropriate contractual actions. The requirement is to establish one central repository in DoD with the capability to extract from the master file to update each EDI applications as necessary. The initial milestones are to establish the requirements definition with a functional and technical representative. A development

site (CDA) and a host site for the operations of the system will be coordinated during the initial requirements definition phase. The following represents the estimated milestones and costs for accomplishing the development and deployment of the centralized contractor registration capability.

CONTRACTOR REGISTRATION COSTS/MILESTONES

	MILESTONES	FUNCTIONAL COSTS	TECHNICAL COSTS
REQUIREMENTS DEFINITION	MONTH 3	$45,000	$45,000
ASSIGN CDA SUPPORT			
PERSONNEL	MONTH 2		
HARDWARE			$35,000
SOFTWARE			$45,000
ASSIGN HOST SITE	MONTH 3		
PERSONNEL		$285,000	$285,000
HARDWARE			$100,000
SOFTWARE			$50,000
TELECOMMUNICATIONS			$220,000
TESTING (TDY, TRAVEL)	MONTH 11		$10,000
TRAINING (TDY, TRAVEL)	MONTH 11	$6,000	$3,000
SYSTEM IMPLEMENTATION	MONTH 12		
DEVELOPMENT TOTAL COSTS		$336,000	$793,000
CONTINUING MAINTENANCE-FY95		$190,000	$190,000
CONTINUING MAINTENANCE-FY96		$190,000	$190,000

2.11.5 DISA MAJOR MILESTONES

The following are major DISA milestones identified by the DoD EC in Contracting PAT that involve activities that must be met for successful implementation and deployment of procurement EDI initiatives.

DISA MAJOR MILESTONES

MILESTONE ACTIVITY   **MILESTONE DATE**

PROGRAM MANAGEMENT
    Establish PMO - (DISA-DISPO)   complete
    Assign certified Program Manager   complete
    Transfer Program Management Staff - (DISPO)   January 94
    Transfer Technical Integration Staff - (JIEO)   October 93
    Perform Program Management responsibilities   MONTH 1-24

EDI STANDARDS MAINTENANCE
    Establish requirement   complete
    Assign organizational responsibility-(Center for Standards) complete
    Identify mission and functions   complete
    Approval/funding   MONTH 0
    Operational capability   MONTH 2

VAN LICENSE AGREEMENT

Establish requirement	complete
Assign organizational responsibility - (DECCO)	complete
Staff with DoD legal offices	complete
Approval	MONTH 0
Pre-solicitation conference	MONTH 1
Agreement affective	MONTH 2

CENTRALIZED CONTRACTOR REGISTRATION

Identify requirement	complete
Approval/funding	MONTH 0
Develop functional description documentation	MONTH 1-3
Assign development resources	MONTH 2
Assign host operational site	MONTH 3
Develop application	MONTH 3-10
Testing (functional and technical)	MONTH 11
Implementation commences	MONTH 12

DISTRIBUTION HUBS

Identify requirement	complete
Establish mission and functions	draft
Assign organizational responsibility - (DISO)	complete
Current Component capability (DAASO,ASO)	complete
Identify initial DISA operational sites	complete
Approval/funding	MONTH 0
VAN License Agreement affective	MONTH 2
Distribution Hubs operational	MONTH 2

IMPLEMENTATION PLAN EXECUTION — MONTH 1-24

Provide technical program guidance

Coordinate all DISA technical activities

Provide technical assistance and guidance to all component
   deployments

Provide technical assistance and guidance in establishment
   and operations of all EDI gateways

Ensure that all technical milestones are properly executed

3.0 POLICY ISSUES

3.0 POLICY ISSUES

3.1 INTRODUCTION

This chapter identifies contracting policy issues that would enhance the successful implementation of Electronic Commerce (EC)/Electronic Data Interchange (EDI) and provides recommended changes thereto in support of the Department of Defense (DoD) EC in Contracting Process Action Team (PAT) six-month, one-year, and two-year implementation plan.

3.2 BACKGROUND

In the past five years, DoD components have developed their own initiatives to automate the procurement process. Additionally, specific organizations have expanded these processes by experimenting with EC methods for Request for Quotations (RFQs), purchase orders, and delivery orders. The EC methods were designed and are currently operating under existing regulatory guidance in Federal Acquisition Regulations (FAR)/Defense Federal Acquisition Regulation Supplements (DFARS), and other supplemental regulations and procedures.

As the development and use of EC/EDI rapidly expands throughout the industrial sector, the demand for a more technologically advanced Government procurement process increases. Using the current DoD EC/EDI projects as a baseline, DoD must rapidly expand the capabilities world-wide to all its contracting offices. In doing so, procurement regulations must formally recognize this new, enhanced method of business. In addition, certain procedures that are currently accomplished manually via a paper process, (e.g., contractor registration, Trading Partner Agreements (TPAs), contractor performance, data collection, etc.) must be redesigned to maximize use of today's scarce resources through use of EDI and centralized management where feasible and practicable.

3.3 OBJECTIVE

One of the EC in Contracting PAT's objectives was to review relevant policy documents, identify issues which may require policy, regulatory, or procedural changes and provide recommended changes thereto in support of the implementation plan.

3.3.1 SOURCE DOCUMENTS

To achieve this objective, the following source documents related to the implementation of EC/EDI were considered:

- FAR Case 91-104 - Electronic Contracting

- FAR Case 91-46 - Storage of Contracting Files

- Defense Acquisition Regulation (DAR) Case 89-316 - Acquisition of Commercial Items

- FAR/DFARS Parts 16 - 52

- Streamlining Defense Acquisition Laws Report (Section 800)

- Logistics Management Institute (LMI) Reports

- Corporate Information Management Procurement Council/Functional Requirements Managers Electronic Commerce Conference Comments

A short discussion of each major source document is provided below.

3.3.1.1 FAR CASE 91-104, ELECTRONIC CONTRACTING

Originally submitted as DAR Case 91-040 on July 23, 1992, the Contract Placement Committee (CPC) developed proposed FAR and DFARS coverage to specifically authorize the use of EDI and to provide for the recognition of electronic business processes. The effort was based on two significant General Accounting Office (GAO) decisions (B-238449 and B-245714) which recognized (1) EDI contractual obligations and (2) that a signature does not have to be handwritten.

The Civilian Acquisition Advisory Council (CAAC) has reviewed and forwarded the proposed coverage for publication in the Federal Register as a proposed rule. As of the date this report went to press, it had not been published due to a severe backlog in unpublished FAR and DFARS cases. Once the case is published, it is estimated that the normal review process will take a total of 225 days before final regulatory coverage will be established. Highlights of the proposed coverage are as follows:

- Clearly states that current FAR coverage does not prohibit the use of EDI.

- Created new Subpart 4.XX, Electronic Data Interchange, providing maximum flexibility in the implementation process, in addition to established parameters.

- Added definitions (FAR Part 2) for "in writing" and "signature" to apply to any medium (e.g., paper, EDI, or any other media, even if not yet developed).

3.3.1.2 FAR CASE 91-46, STORAGE OF CONTRACTING FILES

The CPC revised the original proposed FAR coverage regarding FAR Subpart 4.7, Contractor Records Retention. The revision adds the requirement to safeguard data on the record copy, once the information has been transferred to an alternate media, and the requirement to retain records in the original format if a claim, protest, or other litigation is in process. DFARS Subpart 204.802 will be deleted as the DFARS language will be incorporated into the proposed FAR coverage.

A new paragraph has been added to FAR Subpart 4.703 that allows for record retention in any medium (paper, electronic, microfilm, etc.) or any combination of media. This change does not negate the original retention requirements of Subpart 4.7.

FAR Subpart 4.805, Storage, Handling and Disposal of Contract Files, was also revised to accommodate documents processed on other than a paper format.

3.3.1.3 DAR CASE 89-316, ACQUISITION OF COMMERCIAL ITEMS

DAR Case 89-316, prepared by the Commercial Products/Practices Defense Acquisition Regulation (DARC) subcommittee, revises the current DFARS Subpart 211.70 and Subpart 252.211 in their entirety. Since DFARS Subpart 211.70 is not applicable to

small purchases under FAR Part 13 and DFARS Part 213, the EC in Contracting PAT's assessment was limited to ensuring that the proposed language, such as the definitions of "signature" and "in writing," was consistent with proposed coverage in FAR Case 91-104, Electronic Contracting.

3.3.1.4 REVIEW OF FAR/DFARS PARTS 16 - 52

During the process of developing FAR Case 91-104, the CPC solicited input from interested parties. This input was requested since EDI could affect every aspect of the acquisition process. A "first draft" was released for comment to all DARC/CAAC standing committees, various Federal Agencies, and other interested parties. The final case was the result of the CPC's review of FAR Parts 1 through 16 and related clauses in Part 52 and comments received from interested parties on Parts 49 and 53.

To ensure FAR Parts 17 through 52 received a thorough review, the EC in Contracting PAT reviewed these parts and developed appropriate changes for submission to the DARC. The changes were considered to be minor, primarily to allow for the submission of electronic mediums.

3.3.1.5 STREAMLINING DEFENSE ACQUISITION LAWS REPORT (SECTION 800)

Relevant EC in contracting issues related to the near term and long term implementation of EC/EDI are addressed in the Section 800 report submitted to Congress in January 1993. Certain proposed statutory changes (e.g., using remote electronic access to fulfill requirement for access to procurement notice, socioeconomic thresholds, and the "simplified acquisition threshold" ($100,000)) were reviewed by the EC in Contracting PAT.

3.3.1.6 LOGISTICS MANAGEMENT INSTITUTE REPORTS

Several LMI reports regarding EDI (e.g., Electronic Commerce, Removing Regulatory Impediments and Electronic Data Interchange, Opportunities in Defense Procurement) were considered during the review process. These reports provided significant baseline information on issues such as, TPAs, full text clauses, and certifications and representations.

3.3.1.7 CORPORATE INFORMATION MANAGEMENT PROCUREMENT COUNCIL/ FUNCTIONAL REQUIREMENTS MANAGERS ELECTRONIC COMMERCE CONFERENCE COMMENTS

On February 12, 1993, component functional requirements managers, representing the Corporate Information Management (CIM) Procurement Council and its functional integration management staff, hosted a conference on EC. The purpose of the conference was to identify significant issues requiring resolution to permit continuing progress in EC and to initiate development of a procurement community strategy for EC. Significant issues identified at the conference were considered for this analysis.

3.4 ASSUMPTIONS

During the analysis process, it was recognized that certain assumptions were necessary in order to reach conclusions concerning the policy issues under consideration. The assumptions are as follows:

- Recommendations included in this chapter will be approved. ;

- The EC/EDI process will be secure (e.g., a vendor can only access certain information.) ˙

- Recommended policy or procedural changes concerning EDI and affecting functional areas other than contracting will be released for comment to those non-contracting areas;

- Information contained in the DoD EC implementation plan will be made available to Industry; and

- Certain procedures, currently accomplished manually (e.g., TPA, vendor registration, etc.) will continue on a manual basis until EDI capability for such procedures is available.

3.5 ISSUES AND RECOMMENDATIONS

3.5.1 CONTRACTOR REGISTRATION

- Establish a DoD standard, electronic registration process for EC/EDI trading partners.

- Utilize existing technology as a baseline and enhance it to meet DoD's needs.

- Designate a DoD activity to centrally manage registration process.

Currently, each EC/EDI project in DoD has a required registration process where vendors provide basic information prior to transacting business. The registration information is used for different purposes, (e.g., to update individual Automated Information System (AIS) vendor databases, establish unique identifier codes, update the bidder's mailing list files, and initiate the Contractor And Government Entity (CAGE) code requests (if necessary)). Maintenance of individual vendor databases within DoD is time-consuming and costly. Additionally, individual contracting offices within DoD continue to maintain local hard-copy bidders mailing lists.

FAR Subpart 14.205-1 requires that the SF 129, Solicitation Mailing List Application be used for obtaining information needed to establish and maintain lists and allows for the establishment of a central list. In developing the DoD EC infrastructure, a standard, electronic registration process for all EC/EDI users is the logical approach for capturing pertinent data on prospective offerors. This process would establish a DoD repository of trading partner profiles in the EC/EDI business base. It would also serve other uses such as on-line communications between contracting activities and dial-up connection for inquiries by those contracting activities without EC/EDI capability. This capability could also be provided to other functional areas that impact the procurement process, (e.g., finance and contract administration).

It is recommended that a central activity be designated to receive all EC/EDI trading partner registration information, maintain the database, and provide connectivity to component procurement AISs capable of transmitting via EC/EDI. This function could be accomplished in conjunction with management of the TPA as described in Chapter 2. Once the TPA is established with a prospective offeror, the registration process will follow.

The Air Force has recently developed an automated contractor registration module designed to obtain SF129 information and allow the contractor to apply for a CAGE code. The module provides contractors with the capability to enter information into a personal computer. Once the information is entered, the application is transmitted, to the Defense Logistics Services Center (DLSC) where, if necessary, a CAGE code request is initiated. The new CAGE code is then routed back to the repository, and the procurement AIS's database is automatically updated.

Although the registration module is not EDI-capable, it could serve as a baseline from which technological enhancements could be developed. Considering that the standard DoD EC/EDI format for registration will not be complete until the second phase of implementation, parallel efforts to enhance existing capabilities and migrate to a standard DoD EC/EDI registration module would prove beneficial. Capturing existing technology such as "common" software and reusable code, and enhancing it to meet DoD's needs would provide for a more efficient and effective EC/EDI procrss.

3.5.2 CONTRACTOR IDENTIFICATION

- Transmit contractor's name/address in EDI via code rather than full text.

- Designate a primary contractor identification code for all procurement Automated Information Systems (AISs) (with EDI capability) with cross reference to other required codes.

Several schemes currently exist for coded identification of contractors in DoD AISs and on various DoD forms (e.g., DD 1155, DD 350). Examples of such identification codes are the Con. actor Establishment Code (CEC), Tax Identification Number (TIN), and the CAGE code. The existence of multiple identification codes creates inefficiencies in contracting data bases and requires multiple cross-refer, nce files. In addition, the use of a code versus a full text name and address would speed EC by reducing transmission overhead while still providing the same benefit to an AIS. This issue was identified as a potential business process improvement at the Procurement CIM Council's Functional Requirements Managers Electronic Commerce Conference in February 1993.

A code should be used to transmit the contractor's name and address in EC rather than full text. This concept can be used in lieu of full text information without degrading access to the required data. DoD should designate a single contractor identification code for all procurement AISs with EDI capability. However, a cross reference to other required codes would be necessary due to various requirements to identify the contractor (e.g., contract administration, payment, and reporting). This concept should be included in the development of the DoD EC/EDI integrated processing system.

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3.5.3 FULL TEXT CLAUSES - CERTIFICATIONS AND REPRESENTATIONS

- Provide EDI vendors with required full text clauses via DoD master solicitation.

FAR Subpart 52.102 requires that specific provisions and clauses be provided in full text in solicitations. This subpart also recognizes that flexibility in this policy may be necessary by allowing, under certain conditions, the incorporation of provisions and clauses by reference. In today's environment, where DoD components utilize automated information systems to retrieve and transcribe full text data to a paper format, the above requirements are easily met. However, in an EDI environment where business documents, such as RFQs and purchase orders are transmitted electronically between computers, the transmission of voluminous amounts of full text data reduces the efficiency and cost savings gained through the use of EDI technology.

Instead of transmitting full text clauses in EC/EDI transactions, a standard DoD integrated processing system data base could be established which would be accessible to all DoD EC/EDI trading partners through a text file on their Value Added Network (VAN). The data base would provide potential offerors, upon request, with the full text of provisions and clauses. This approach meets the FAR requirement, while reducing the volume of transmitted data. Individual orders and contracts would reference the DoD clause data base and include only the appropriate clause reference number, title, and date. Orders and contracts incorporating unique local clauses would include these clauses in full text.

Alternatively, a DoD EC/EDI master solicitation could be established for each type of contract described in FAR 52.3, Contract Matrix. Although such a document would not be a master solicitation in the classic sense (i.e., developed for a specific commodity), it could be tailored to reflect each broad category of acquisition; for instance small purchase and fixed price supply (large purchases). Use of a master solicitation as opposed to a clause data base, could increase the comfort level of contracting personnel, by linking the above described data base concept with one that is currently used for "paper" transactions. While the benefits of both approaches appear to be equal for small purchase applications, master solicitations are more advantageous for large purchase actions due to the greater complexity, scope of requirements, and number of clauses, provisions, certifications and representations. The EC in Contracting PAT, therefore, recommends use of a master solicitation for both small and large purchases. A strawman master solicitation has been developed and will be provided under separate cover to Director of Defense Procurement (DDP) for final development and approval.

The EC/EDI master solicitation would be composed of electronic text files maintained by a central activity at the DoD level for FAR and DFARS clauses, and at the Defense Agency, Military Service level, Command level, or local level for the respective supplemental clauses and made available to the vendors on an EDI text file. This approach would significantly reduce the workload associated with clause updates, since only one person at each level will be required to input changes, versus one person at every base, post, camp, and station. An enhancement to this approach, the use of "drop down" full text capability on demand for clauses normally incorporated by reference, would further reduce the resource impact associated with the requirement to provide contractors the full text of referenced clauses, upon request (FAR 52.102-1(b)).

The EC in Contracting PAT believes that a change to the FAR is required to fully implement either concept discussed above. If the data base concept is adopted, FAR 52.102 would need to be modified to allow full text clauses to be provided by an EDI data base. To allow for a DoD master solicitation by type of action, FAR 14.203-3 would

need to be modified to clarify that "...acquisition of a specific type of supply or service..." can be broadly interpreted to be the "type" of contract described under the matrix heading "Principle type and/or purpose of contract" at FAR 52.301. A FAR case has been developed for the proposed changes and will be forwarded to the DARC.

Representations and certifications will also be provided in full text in the master solicitation. Offerors will supply "fill-in" information only in each offer in the reference number blocks of the appropriate EDI transaction set. Only one representation and one certification is required in all small purchase actions; small business status and Walsh-Healey. The 800 panel has proposed raising the threshold for Walsh-Healey to $100,000. If that recommendation is adopted, Walsh-Healey will no longer apply to small purchases and only one representation will apply to small purchases; small business status. The size status of each offeror is important to the contracting officer, since this information determines which offerors are eligible for awards under acquisitions set-aside for small businesses. Thus, it is vital that an offeror's business size status be furnished with each offer. The reference number block of the EDI transaction set for RFQ's can easily accommodate representation of the offeror's size status.

For large purchases, the EC in Contracting PAT believes that annual representations and certifications are the most effective tool for reducing EDI transmission requirements. FAR 14.213 and 15.407(i) already allow for the use of annual representations and certifications. The contractor is required to provide updates if the information on the annual representations and certifications changes and certify on each bid or proposal that the information remains accurate, current, and complete. This certification and update process can be accomplished by text blocks on an American National Standards Institute (ANSI) X12 transaction set for bid and proposal information. Required "fill-in" information can be provided on each offer as part of the reference code transaction process described above. No FAR changes are required to use annual certifications and representations.

It is apparent that simply translating "paper" procedures into EDI methods will not permit the full benefits of EDI technology to be realized in this case. We must allow alternate means of accessing full text clauses.

3.5.4 BRAND NAME OR EQUAL

- Revise FAR Part 10 to state that actions valued at less than $2,500 may be purchased on brand-name only basis, when generic purchase descriptions can not be used without reference to brand name.

- Track all actions involving technical evaluation of product substitutions for 12-18 months, and, if magnitude of the issue warrants, develop a DoD database of acceptable equivalents.

FAR 10.004, "Selecting specifications or descriptions for use," currently states that "...generally the minimum acceptable purchase description is the identification of a requirement by the use of a brand name followed by the words 'or equal.' " Further, the FAR requires that the technique should only be used when it is not feasible to provide either an adequate specification or a more detailed description by the required delivery date. Instead, inspection and analysis will be used to verify that items offered on an "or equal" basis meet the Government's minimum requirement. The acquisition process must be interrupted every time an "or equal" item is offered to meet a "brand name or equal" requirement. This creates inefficiencies in the EC/EDI process. This issue was

raised during the 1993 Procurement CIM Council EC Conference and EC in Contracting PAT interviews at DoD activities currently using EC/EDI. The CIM conference report stated that specific policy was required to allow restriction of competition to brand name or part numbered items for small purchase actions.

The use of "brand name or equal" also creates inefficiencies in the procurement process, especially for EDI transmitted actions, when "or equal" offers are allowed. For example, the requirement to perform a detailed inspection and analysis of items offered on an "or equal" basis adversely affects the procurement lead-time on a given acquisition. Further, the automated process must be interrupted until the evaluation is complete and the responsiveness of offers can be determined. At that point, the buyer must eliminate all non responsive offers from the competitive range and resume the automated award process.

This process must be repeated on all acquisitions for requirements described on a "brand name or equal" basis. We are not aware of any existing data base of acceptable substitutes for items commonly purchased as "brand name or equal." Instead, the required analysis is typically repeated on each and every "brand name or equal" acquisition, whether it be for concurrent buys at different DoD activities or for repeat buys at the same activity. We believe this situation can be easily corrected and, as such, offers an opportunity for significant resource and procurement lead-time savings.

To correct the current situation, we propose two courses of action. First, allow acquisitions under $2,500 to be acquired by brand name only. Substitutions will not be accepted or evaluated. This solution requires a change to the FAR. FAR 13.106(a)(1) currently does not require actions for "no more than 10 percent of the small purchase threshold" to be competed. However, the coverage at FAR 10.004(b)(2) leads one to believe that the acquisition of brand name only is precluded at any dollar value. Consequently, the EC in Contracting PAT developed a proposed FAR change to add coverage at 10.004(b)(2)(iii) to link it with 13.106(a)(1) and clearly allow purchases not over $2,500 of the small purchase threshold to be solicited on a brand name only basis.

Second, the DoD technical community should establish a central data base of "acceptable equivalents" for common brand name items. The data base should only be established if a 12-18 month study of the volume of technical evaluations conducted during "brand name or equal" acquisitions confirms that the magnitude of the problem is, indeed, as large as the EC in Contracting PAT believes it to be. The type of items contained in the data base should reflect the types of items purchased within DoD over the previous 12 month period; particularly those purchased using EC/EDI techniques. The data base should be accessible through DoD Integrated Processing.

Implen tation of both recommendations for EDI and Non EDI requirements would permit the procurement process to operate more efficiently and encourage expanded use of EDI solicitations. Additional benefits of implementing the recommendations include increased customer satisfaction, decreased labor costs, and reduced procurement lead-time. We believe these benefits far outweigh the costs of developing and maintaining a DoD data base for brand name and acceptable equivalents and making the policy and procedural changes required to fully implement the recommendation. The lead-time and costs associated with developing the centralized data base makes the second recommendation a long-term, rather than a short term, solution.

3.5.5 LOCAL VERSUS NATIONAL COMPETITION

- Require the solicitation of sources outside the local trade area for EDI RFQs.

FAR 13.106(b)(3) states that the maximum practicable competition for small purchases ordinarily can be obtained without soliciting quotes from sources outside the trade area in which the purchasing office is located. This coverage considers burdens associated with the paper process actually performed by buyers. Each additional firm contacted during the solicitation process increases the total administrative costs of that acquisition by a fixed amount.

Contrast this with an acquisition in the EDI environment: The cost of soliciting potential offerors is the same for reaching one as it is for soliciting additional sources over a larger geographical area. This efficiency carries over to the offer abstracting process, as EDI makes automated quote abstracts practical.

In order to clearly state that electronic solicitations must be extended on a national basis, FAR 13:106(b)(3) should be changed to read:

> Maximum practicable competition for small purchases ordinarily can be obtained without soliciting quotations from sources outside the local area in which the purchasing office is located. [When an electronic solicitation is issued (see 5.101(b)(5)), maximum practicable competition for small purchases shall be obtained by soliciting quotations from all sources with access to a VAN.]

Additionally, FAR 5.101(b) in Subpart 5.1, Dissemination of Information, will be modified to include the electronic method of disseminating solicitation information:

> (b) In addition, one or more of the following methods may be used.
>
> * * * *
>
> [(5) Electronically transmitting solicitations when the contracting officer determines that it is in the best interest of the Government to allow for the broadest dissemination of such information.]

3.5.6 CONTRACTOR PERFORMANCE

- Develop electronic capability to access contractor performance history (including the list of Parties Excluded from Procurement Programs), apply evaluation factors, and provide resultant information electronically to buyers during offer evaluation phase.

Performance data should be made accessible at any point in the acquisition process since performance data may be useful after evaluation in determining responsibility of the otherwise successful offeror and in the pre-solicitation phase to help determine evaluation factors and their relative importance. Several initiatives/systems exist within DoD that collect quality, delivery, and other performance data. This occurs during contract administration as well as during other phases of the acquisition process. DoD components have developed vendor rating programs, best value contracting programs, and past performance systems targeted to assist the buyer in making sound business decisions when considering awards to responsible, prospective contractors.

The expanded visibility of requirements solicited via EDI will provide contractors with increased opportunities to conduct business with procurement offices that they may not have previously dealt with. The DoD procurement offices, receiving offers from "new" contractors, would lack their performance history or access to any data which might be available at other office activities that have conducted business with these contractors.

In the development of EDI capabilities, the collection of performance data available DoD-wide, including the list of parties excluded from procurement programs, should be made readily accessible, via electronic means, to the buyer for both small and large purchase actions during the offer evaluation phase. Such access should include programs designed to automatically apply evaluation factors in the offer evaluation phase. It must also include the capability for direct connectivity to other procurement and contract administration offices to obtain relevant performance history.

Additionally, contractors must be allowed access to their individual performance profile. This requirement can be met by providing the vendor with information on all negative performance data via transaction set 870, Order Status Report. This methodology supports best value initiatives and maximizes the effectiveness and efficiency of EC/EDI.

3.5.7 EVIDENCE OF SHIPMENT

* Allow Contractors to certify that the item was shipped as evidence of shipment in lieu of current requirement to submit certificates of mailing or signed Commercial Bill's of Lading (CBL).

FAR 52.247-48, F.O.B. Destination--Evidence of Shipment, requires that the contractor submit paper original documents such as signed commercial bills of lading or certificates of mailing from the Post Office as evidence that the item has been shipped. Typically these documents do not specify the contents of the packages being shipped nor do the certificates of mailing specify the destination. Contractors can easily substitute mailing receipts for shipments to other customers or for personal packages. Thus, while the certificates give the Government some assurance that the contractor has performed in accordance with their contract, they are not, in and of themselves, adequate evidence that the item in question was shipped as required by the contract.

This requirement impacts the electronic invoice process by mandating the submission of paper documents. Approximately 23 percent of all contract actions processed through the Defense Finance and Accounting Service (DFAS) - Columbus Center, the Agency's prime contractor payment site, include the above clause, and therefore, require a manual review of shipment documents.

An alte. ·ative to the current method is recommended. Under this concept, a contractor would simply certify that shipment has been made. The original paper documents would be retained in the Contractor's files for later examination by Government personnel, should an audit be necessary. The contractor's certification would provide acceptable evidence to the paying office that shipment had been accomplished. This procedure would replace the current requirement to submit CBLs or Post Office certificates and can be accomplished by an electronic medium.

It is also recommended that an audit trail be created to allow the Government to verify shipment through Contractor retained documents if the contractor is suspected of fraud or of submitting invoices before actual shipment. This can be accomplished by modifying coverage to FAR 52.247-48(d) to allow the Government to examine the

Contractor's records of shipment and would require that the Contractor retain documents supporting shipment for three years after contract close-out when supplies are shipped F.O.B. destination and acceptance is at origin. This three year period is in consonance with the audit access period accorded other contractor records as required by FAR 47.302. As the clause at FAR 52.247-48 does not specify what Agency will perform the audit, either Defense Contract Management Command (DCMC) or local personnel could perform the audit.

A FAR case has been prepared for submission to the DAR Council.

3.5.8 OTHER REGULATORY CHANGES

- Revise regulations to allow electronic transmission of business documents where not covered in FAR CASE 91-104, Electronic Contracting.

- Publish interim coverage on all pending EC FAR Cases.

Certain FAR and DFARS provisions currently specify paper methods, thereby inhibiting the full implementation of EC.

A review was conducted on all major contracting policy documents related to use of electronic contracting. The review included current FAR and DFARS coverage, proposed FAR and DFARS cases prepared by the CPC of the DARC, and an ad hoc Committee for Commercial Contracting, proposed statutory changes contained in the 800 Panel Report, and recommendations in several LMI reports/white papers. During this process certain impediments to EC were identified. The principal problem is language that specifies paper methods such as certified mail. It is recommended that several minor changes be made to the FAR beyond those contained in pending FAR and DFARS cases to set electronic contracting methods on a par with paper methods. Contracting activities should be able to take advantage of increased opportunities for competition and decreased administrative costs associated with electronic methods at the earliest opportunity.

Electronic methods may be substituted for paper methods when all parties to a transaction possess the technology and training necessary to effect the transaction by electronic means. At that time, it is appropriate to use electronic methods and media to support the normal course of business. For example, a natural outgrowth for long term goals would be full electronic compliance for procurement notices in accordance with the 800 Panel's proposed statutory revisions.

A recommended FAR case entitled "Electronic Methods" has been prepared which proposes changing references to mail or certified mail in coverage on protests at FAR 19.302 and 19.501; terminations at 49.102; hazardous material identification and safety data at 49.601 52.223-3 (e); bankruptcy at 52.242-13; document formats for recording wage determination receipt dates at 22.404-6; document media for the report of shipment at 52.242-12; and to change order signature requirements at 43.201.

The case described above, as well as pending FAR Cases 91-104, Electronic Contracting, and 91-46, Storage of Contracting Files and DFARS Case 89-316, Acquisition of Commercial Items should also be implemented at the earliest opportunity. The EC in Contracting PAT recommends that all pending EC FAR Cases be published to obtain public comment.

3.6 MILESTONES

Table 3-1 contains the implementation schedule for contract policy issues developed by the EC in Contracting PAT.

MILESTONES FOR POLICY/PROCEDURAL IMPLEMENTATION	PHASE I 0-6 Mos.	PHASE II 7-12 Mos.	PHASE III 13-24 Mos.
INTERIM COVERAGE - FAR CASE: 91-104 91-46 PROPOSED FAR CASES • EVIDENCE OF SHIPMENT • ELECTRONIC METHODS	X		
FINAL COVERAGE : ALL PENDING FAR CASES		X	
ESTABLISH MANAGEMENT OFFICE FOR STANDARD DoD: TPA PROCESS VIA EDI CONTRACTOR REGISTRATION VIA EDI MASTER SOLICITATION VIA EDI	X		
DESIGNATE PRIMARY CONTRACTOR IDENTIFICATION CODE FOR ALL PROCUREMENT AISs WITH EDI CAPABILITY		X	
BRAND NAME OR EQUAL STUDY COMPLETE			X

TABLE 3.1

3.7 RESOURCE ESTIMATES

Table 3-2 sets forth resource requirements to establish, maintain, and monitor trading partner agreements, contractor registration/SF 129, and master solicitations at a central DoD site. An accurate estimate of resources cannot be developed without a better understanding of the DoD integrated processing system or an approved course of action. Until these are in place, it is extremely difficult to provide complete and accurate estimates. Consequently, the broad brush estimates reflect non-systems resources only. At $95,000 per man-year, this total effort is estimated at $1,805,000.

COST ESTIMATES (IN MAN YEARS)	TPA	MASTER SOLICITATION	REGISTRATION
DEVELOP	1	3	3
ESTABLISH	3	2	2
MANAGE	2	1	2
TOTAL COST	$570,000	$570,000	$665,000

TABLE 3-2

3.8 SUMMARY

With DoD's shrinking budget and resources, efforts to improve business methods with EC/EDI is a necessity. To capture the largest volume of business in a relatively short period of time, small purchases and other simplified methods were targeted for the initial implementation phases. To support this effort, contracting policy must be developed to recognize these enhanced methods, while maintaining the integrity of the procurement process. Current proposed legislation, such as the Section 800 Panel's recommendation to raise the small purchase threshold from $25,000 to a simplified acquisition threshold of $100,000, as well as raising the socioeconomic thresholds, clearly expresses the need to support a streamlined procurement process. The cumulative effects of this change will allow DoD to capture an even greater volume of business through the use of simplified purchase procedures, and allows for a wider approach to implement EC.

Although the EC in Contracting PAT's analysis primarily focused on contracting policy for small purchases, we also recommended changes to large purchase procedures to allow for the use of EC/EDI as this area is phased into the system in the future. Although the

emphasis on implementing EC/EDI for small purchases as a target of opportunity is greater, we must be prepared to capture additional efficiencies in the large purchase environment. For example, significant savings can be realized just by improving the communication process, (e.g., electronic Commerce Business Daily (CBD) announcements, video teleconferencing for pre-proposal conferences, debriefings, various procurement and technical discussions; as well as electronic proposal submissions; and electronic mail). By promoting increased efficiency in the procurement process, the best use of scarce resources within DoD can be realized.

After extensive evaluation and analysis of relevant policy documents, certain recommendations were developed as discussed earlier in this Chapter. In summary, the following recommendations are offered:

- Establish a DoD standard electronic registration process for EC/EDI trading partners.

- Utilize existing technology as a baseline with enhancements to meet DoD's needs.

- Designate a DoD activity to centrally manage registration.

- Transmit contractor's name/address in EDI via code rather than full text.

- Designate a primary Contractor identification code for all procurement AISs (with EDI capability) with cross reference to other required codes.

- Provide EDI vendors with required full text clauses via DoD master solicitation.

- Allow actions valued at less than $2,500 to be purchased on brand-name only basis.

- Track all actions involving technical evaluation of product substitutions for 12 - 18 months, and if magnitude of the issue warrants, develop a DoD database of acceptable equivalents.

- Require the solicitation of sources outside the local trade area for EDI RFQs.

- Develop electronic capability to access contractor performance history (including list of parties excluded from procurement programs), apply evaluation factors, and provide resultant information to buyers during offer evaluation phase.

- Allow Contractor to certify item was shipped as evidence of shipment in lieu of current requirement to submit certifications of mailing or signed CBL's.

- Revise regulations to allow electronic transmission of business documents where not covered in FAR CASE 91-104, Electronic Contracting.

- Publish interim coverage on all pending EC FAR Cases.

In conclusion, the current regulations do not preclude the procurement community from doing business electronically. However, we must recognize the EC/EDI methodology and provide for flexibility in our processes. Proposed FAR Case 91-104, Electronic Contracting, in addition to those recommendations provided herein, will allow the successful implementation of EC/EDI.

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4.0 RISK MANAGEMENT PLAN

4.0 RISK MANAGEMENT PLAN

4.1 INTRODUCTION

The Department of Defense (DoD) has emphasized the rapid expansion of Electronic Data Interchange (EDI) as an accepted business technology for participating in today's global market. Within DoD, EDI holds great promise for improving the quality and efficiency of defense procurement. However, this technology will not be implemented in a risk free environment. DoD must ensure that full consideration is given to the risk issues inherent in the use of computers and telecommunications to accomplish traditional paper-based administrative functions.

4.2 OBJECTIVES

This chapter is directed toward the identification and management of risks associated with Electronic Commerce (EC) in Contracting. The purpose of the Risk Management Plan is to identify, analyze, and reduce risk items to ensure they do not become threats to successful implementation and operation of EC in Contracting.

The following are specific objectives to be accomplished and documented in this chapter:

- Identify and describe each significant functional risk, technical risk, program risk, and transaction set risk.

- Analyze and prioritize each identified risk to determine an Annual Loss Expectancy (ALE) based on the impact and frequency of each occurrence.

- Plan risk handling techniques for each category of risk and apply these techniques to each risk identified.

- Recommend responsibilities and time frames for resolving each of the identified risks.

- Recommend a procedure for monitoring the accomplishment of each approach and establish a continuing assessment.

4.3 BACKGROUND

EDI technology supports contracting activities as well as related vendor payments, receipt, and shipment notification, exchange of technical data and contractor performance data. The introduction of this technology is being accompanied by a change in the internal control and security risk environments. EC applications are based on the use of existing computer technology and contracting systems. These risk handling methods include appropriate changes to procedures, password controls, physical safeguards, technical safeguards and training of personnel.

4.4 ASSUMPTIONS

The assumptions used during this risk assessment are those derived from the DoD EC in Contracting Process Action Team (PAT) Charter. These specific assumptions include:

- An EC approach for contracting and procurement functions will be implemented within six months. Additional capabilities will also be planned for implementation within the one and two-year time frames.

- EC policy issues are addressed in Chapter 3. The policy recommendations that are part of a risk reduction approach will be related to identified risks in Section 4.8, Risk Management.

- Risk handling techniques which are expected to cost more than the risk occurrence will not be implemented. Other risk handling techniques with more appropriate lower cost requirements will be recommended.

- Any other assumptions required for risk control are identified as specific actions in Section 4.8, Risk Management.

4.5 DESCRIPTION OF RISK ASSESSMENT

The Defense Systems Management College (DSMC) has provided some general guidance for the development of risk management plans. The EC in Contracting PAT has adopted the DSMC approach along with the two part process for risk management. This process consists of risk assessment and control, with three subsystems for each of the processes (see Table 1).

Table 1. Risk Management Approach	
RISK ASSESSMENT	RISK CONTROL
Risk Identification	Risk Management Planning
Risk Analysis	Risk Resolution
Risk Prioritization	Risk Monitoring

4.5.1 RISK ASSESSMENT APPROACH

"Risk analysis" or "assessment" is accomplished in order to determine both the impact and potential frequency of occurrences. The calculation of risk is based on the estimated frequency or probability of a threat occurring and the order of magnitude estimated loss per occurrence. A formula for calculating risk is in Federal Information Processing Standard Publication No. 65 (FIPS PUB 65). This formula combines frequency of threat occurrence with damage impact to produce an ALE. For the purpose of this analysis, the probability of risk occurrence and impact are based on expert judgment, not empirical data. The impact is being addressed based on tangible and intangible evaluation (see Table 2).

Table 2 lists four valuation qualities and threat impacts.

Table 2. TANGIBLE -INTANGIBLE EVALUATION	
VALUATION QUALITY	THREAT IMPACT
Replacement	Destruction
Confidentiality	Disclosure
Integrity	Modification
Availability	Delay to Denial

An example of each of these four "valuation qualities" and corresponding "threat impacts" are discussed below:

- The cost of replacement of quote data because of destruction is being evaluated based on the cost of delayed awards as well as the inability to use the system if this loss is frequent.

- The loss of confidentiality of the inappropriate disclosure of quote information results in the inability to use the system as well as the cost of legal action.

- A loss of integrity is based on the impact of modification of contract quantities or requirements.

- Availability include both the cost to Government and Industry when the EC capability is not available for immediate use is inappropriately denied.

The ALE is determined based on the estimated frequency of occurrence multiplied by the impact. A prioritized list of all identified and analyzed risk items has been completed in order to focus on development of a plan to control risk.

4.5.2 DEVELOPMENT OF A RISK MANAGEMENT PLAN

The key step in controlling risk is the development of a "risk management plan." This plan addresses each of the risk items, how they interrelate, and how they are related to the overall project. The EC in Contracting PAT has reviewed four methods for risk management; avoidance, control, assumption, and transfer.

Risk Avoidance: In many cases, lower risk choices are available which can provide program success or options which avoid the risk.

Risk Control: This practice involves establishing a mechanism for eliminating or reducing the effects of occurrence. One of the mechanisms used in risk control is the development of a resolution approach with specified actions and milestones.

Risk Assumption: The conscious decision on the part of the project management to accept a risk.

Risk Transfer: This is an approach to transfer responsibility for risk management. This risk sharing can be effective in involving interested participants in the management of risk.

Risk Monitoring: Risk monitoring will be continued throughout the six-month, one-year and two-year development periods. This includes assessment of specific risk control plans, revision, and an update of the plan.

4.5.3 RISK ASSESSMENT PROCESS

Risk assessment will be treated as a subset of risk management and shall be defined to mean, "the process to determine a measurable expectancy of loss, expressed in terms of frequency over a given unit of time, and the amount of potential loss to the identified assets." This section is divided into three areas: (1) Risk Identification, (2) Impact Analysis, and (3) Prioritization of Risks.

The key result of this assessment process is the development of a rough order of magnitude estimate of risk. The calculation is based upon the estimated frequency, or probability, of a threat occurring and the estimated loss per occurrence. To estimate frequency, we considered the threat source and the motive or cause. To estimate the loss, we used expert judgment to consider the estimated asset value and the extent of damage that would potentially result from a threat occurrence.

The formula used for the calculation was taken from FIPS PUB 65. This formula combines frequency of threat occurrence, given as "P," with damage impact, given as "D," to produce an annual dollar loss, given as ALE. Given that these estimates will be imprecise, this formula uses order-of-magnitude scales for both frequency and damage:

P = Rating for the frequency of occurrence for a threat

0 - Virtually impossible
1- Once in 300 years
2 - Once in 30 years
3 - Once in 3 years (1,000 working days)
4 - Once in 3 months (100 working days)
5 - Once in 10 days
6 - Once each day
7 - Once every two hours (10 times per day)
8 - Once every 15 Minutes (100 times per day)

D = Rating for the amount of damage caused

0 - Less than $1
1- $10
2 - $100
3 - $1K
4 - $10K
5 - $100K
6 - $1M
7 - $10M
8 - $100M

These "P" and "D" ratings are substituted into the following equation to compute the ALE:

ANNUAL LOSS EXPECTANCY = $10^{(p+d-3)}$/ $3 per year

To simplify manual calculations, the following table was used (Note: The ALE values are approximate; however, they are still reasonable given the imprecision of the inputs.).

P + D =	6	7	8	9	10	11	12
ALE =	300	3K	30K	300K	3M	30M	300M

EXAMPLE: The contents of a computer room have been valued at $10M. Should a flood occur, the expected damage is estimated at approximately $100K. The frequency of flooding is estimated to be once in 30 years based on the existence of few threat sources and reasonably effective safeguards. Given the previous scales, the ratings D = 5 and P = 2 can be assigned. Applying these values to the table yields ALE = $3K (e.g., 5+2=7; 7 represents an ALE value of $3K).

4.6 RESULTS OF THE EC IN CONTRACTING PAT RISK ASSESSMENTS

Each risk identified in the three areas is first described, the nature is then stated, and an impact analysis is provided in terms of both tangible and intangible impact. An overall approach to manage and minimize the risk and a specific approach or tactic is then described, rank order of importance is not delineated.

4.6.1 IDENTIFICATION OF FUNCTIONAL RISKS

This section addresses those specific risks which directly impact the procurement community's ability to promote its goals and objectives to ensure a smooth transition to an EC/EDI environment. The functional risks are as follows:

4.6.1.1 RECORDS RETENTION

Records retention is required for three years after final payment for small purchase transactions in the Federal Government. With a volume of 11.9 million transactions in FY92 for DoD, the issue of records retention represents a significant savings opportunity since each transaction must be filed by both the buying and finance offices involved in the transaction. Electronic record keeping is authorized; however, resistance has been encountered causing EDI users to print paper records of their EDI transactions. Technology also presents a challenge in that the Government's archival standards for optical storage devices are still emerging, thus making system selection more difficult.

Risk reduction is a two-fold approach: First, federal and DoD regulations allowing the use of electronic record keeping must be enforced; and second, federal standards for archival mediums must be developed and a medium selected based on those standards.

A. Impact Statement

   1. Tangible Impact:

   - The DoD may experience increasing costs associated with records storage and maintenance.

   2. Intangible Impact

   - Failure to develop an economical approach to records retention circumvents significant cost avoidance.

B. Management Plan and Approach

DoD should require the functional and technical communities begin work to resolve this issue. Aggressive policy review must be conducted and field implementing guidance provided.

4.6.1.2 UNAUTHORIZED ACCESS TO CONTRACTOR QUOTE DATA

Access to Contractor quote data is limited to only those procurement officials involved in the procurement. Every reasonable effort is made to ensure that quote data is protected from disclosure. Any communication method used to transmit procurement data must protect the confidentiality of the data. EDI procedures and communications architecture must retain the current level of security that is afforded the paper based process.

A. Impact Statement

None of the sites visited by the EC in Contracting PAT were aware of or had experienced any security deviations that compromised the integrity of their procurement process.

1. Tangible

- Legal action may result if quote data were inappropriately disclosed. However, since the average small purchase is valued at $1,250, we anticipate the damage is minimal.

2. Intangible

- Loss of public confidence could result if quote information is disclosed to unauthorized individuals.

B. Management Plan and Approach

Management may be accomplished through the security procedures and control technology provided by the technical architecture.

4.6.1.3 INTERNAL EDUCATIONAL REQUIREMENTS

Internal educational requirements are needed to provide the DoD work force the skills and abilities to effectively use and manage EDI. Successful implementation of EDI will require that DoD management and employees receive training. Management will require an understanding of the changes in the process; its anticipated efficiency impact and the appropriate application of new measures. At the worker level, the need for training may not be as demanding because the EDI process is relatively transparent at that level. However, the buyer, as a minimum, should be provided a basic familiarization with the process and the rationale for its implementation.

A. Impact Statement

These educational requirements can be integrated into required mandatory training with minimal program or cost.

B. Management Plan and Approach

DoD should ensure the mandatory training incorporates blocks of EDI instruction within the Defense Acquisition University (DAU) curriculum. This includes initial training of managers, system administrators, contracting officers and buyers (see Chapter 6).

4.6.1.4 BEST VALUE

The use of quality vendors is of great importance to DoD. This policy must be balanced with the philosophy of disseminating solicitations to the public at large in order to ensure that we achieve maximum competition.

A. Impact Analysis

    1. Tangible Impact

- Disseminating solicitations to all contractors increases business with greater numbers of contractors about which we have little or no information regarding their performance history.

- Increased number of quotes to review for small dollar actions.

- Increased lead time.

    2. Intangible Impact

- Open competition.

B. Management Plan and Approach

In order to minimize our vulnerability, DoD personnel must work towards creating a "corporate knowledge bank" about the vendors with which we do business. Development and use of data banks such as contractor profile or quality vendor profiles can improve our ability to gather and maintain intelligence about potential contractors. This approach is further supported by section 3.5.6, Contractor Performance, which delinates policy with respect to providing DoD contracting personnel access to contractor performance data.

4.6.1.5 ORGANIZATIONAL STRUCTURE/CHANGES

It is important to ensure that the organizational structure is in place to accommodate the business process improvements which are necessary to transition to an EC/EDI environment. Failure to restructure organizations and identify new roles and responsibilities in an EC/EDI environment may result in unaccomplished tasks.

A. Impact Analysis

    1. Tangible Impact

- Failure to establish a structure to support education of Government personnel and vendors, will result in poor execution of EC/EDI.

- Without an organizational structure to interface with technical personnel providing support to the contracting community, we may deploy EC/EDI technology that does not meet the functional requirements.

    2. Intangible Impact

- Failure to educate the vendors may result in slow social migration to EC/EDI.

B. Management Plan and Approach

DoD activities should develop business counseling centers to support the vendor base and educate their work force. Organizations should also establish teams composed of functional and technical personnel to ensure that a fully integrated approach is developed.

4.6.1.6 EDI PREFERENCE

The regulatory environment must address a preference for EDI transactions in order to reduce the tendency for organizations and businesses to continue the use of paper based applications. In order to maximize the savings associated with EDI, we must pursue its implementation to minimize the impact of budgetary cuts. Electronic transactions are less costly to produce and transmit than paper documents. Therefore, failure to transition to a EC/EDI environment is detrimental to the development of an efficient DoD contracting process.

A. Impact Analysis

   1. Tangible Impact

   - Continued high costs associated with paper-based operation, e.g., reproduction costs, postage, and associated labor.

   - Costs associated with errors and error correction resulting from increases in the frequency of data entry.

   2. Intangible Impact

   - Failure to manage the social change involved with the transition to a paperless work environment.

B. Management Plan and Approach

DoD must state a preference for EDI transactions in its regulations and policy statements. Contracting management personnel must promote and encourage the use of EC/EDI among its work force through education and effectively manage the associated social change through education.

4.6.1.7 OFFER EQUAL TO BRAND NAME

Allowing an offer equal to brand name in the EDI procurement process significantly reduces the buyer productivity. Each substitution requires manual intervention and evaluation to ensure that the product substituted will meet the end user's need.

Allowing product substitution will decrease the potential EDI savings for the DoD.

A. Impact Analysis

   1. Tangible Impact

   - Allowing an offer equal to brand name could substantially decrease the potential EDI savings for the DoD. EC/EDI PAT visits revealed 35 to 40 percent manual intervention required when product substitution was allowed.

   - The cost of a procurement will increase if manual intervention is required.

   2. Intangible Impact

   - Solicitations may appear overly restrictive to the business community if the Government limits the product substitution acceptability.

B. Management Plan and Approach

Initial and follow-on policy reviews can be conducted to balance various socio-economic interests with the need to operate a cost efficient procurement process.

4.6.1.8 USER ACCEPTANCE

Contracting personnel must embrace EC/EDI to fully realize the benefits of this technology. Some users may be reluctant to change to the EC procedures. Risk behavior is assumed to occur even after a reasonable amount of initial and follow-on training.

A. Impact Analysis

    1. Tangible Impact

- EDI users may continue to operate expensive parallel operations if EDI is not fully accepted as a standard business process.

    2. Intangible Impact

- The social change required to make EDI the preferred way of doing business will evolve more slowly if EDI is not fully supported by management.

B. Management Plan and Approach

Management should ensure that employees are trained and they should use performance measures to monitor implementation. Numerous education options have been proposed in Chapter 6, Education of Industry and Government.

4.6.1.9 NOTICE TO INDUSTRY

Industry trading partners must be informed of the Government's intent to use EC as well as the standards and procedures to be used. Premature notice without execution or late notice to Industry trading partners may initially forfeit some of the anticipated benefits of EC. Risk behavior could include "no-quotes" or fewer quotes.

B. Impact Analysis

    1. Tangible Impact

- Use of EDI may initially result in higher prices due to the maintenance of parallel operations.

    2. Intangible Impact

- Poor execution of EDI may cause the public to lack confidence in DoD EC initiatives.

B. Management Plan and Approach

DoD must develop a wide ranging, detailed plan to inform Industry of our EDI initiatives and appropriate adequate lead time for Industry preparation, Volume II, Chapter 1.

4.6.1.10 INCREASE IN QUOTE EVALUATION TIME

Use of EC could result in more quotes than historically received in response to the Response For Quotations (RFQs); consequently, more time will be required for the evaluation process. Failure to carefully monitor the number of quotes received in response to RFQs could result in buyers spending an inordinate amount of time reviewing a large number of quotes for relatively small dollar actions.

A. Impact Analysis

  1. Tangible Impact

   - As a result of the public broadcast capability of EC technology, an unusually high number of quotes may be received in response to small dollar RFQs resulting in an expensive evaluation process.

   - Additional evaluation time will add administrative costs to the process and longer lead times.

  2. Intangible Impact

   - The public may view the procurement process as inefficient.

B. Management Plan and Approach

DISA should create an automated abstract capability with the components contract writing systems.

4.6.1.11 USE OF BULLETIN BOARDS

The Government currently uses Electronic Bulletin Boards (EBBs) at some contracting activities as an EC approach. Continued use of EBBs and non-EBB approaches may segregate trading partners or result in redundant administrative costs in quotes. At the same time, EBBs are an excellent low cost alternative which saves the Government money.

A. Impact Analysis

  1. Tangible Impact

   - EBBs offer procurement offices and their trading partners an interim EC approach.

  2. Intangible Impact

   - Industry may perceive the lack of a standard EDI approach as cost prohibitive and inefficient.

B. Management Plan and Approach

Near term EC approach should use existing EBBs with a commitment to gradually migrate as the standard DoD architecture evolves. Transition to standard transactions and conventions is beneficial to Government and Industry.

4.6.2 IDENTIFICATION OF TECHNICAL RISKS

The technical risks outlined below represent those risks which potentially may compromise the EC/EDI technical architecture.

4.6.2.1 ARCHIVE (ARCHIVAL QUALITY OF STORAGE MEDIUM)

Archiving is the process of storing key information. Accurate and safe storage for EC/EDI transaction information will be required. Electronic storage of data in mediums provided that can be easily displayed electronically or transported to hard copy is critical.

A. Impact Analysis

Archival requirements have tangible and intangible impact on access to sensitive procurement data.

1. Tangible Impact

- Unauthorized access to data can provide a competitive advantage; data must be secured and protected.

- Archived records may not be available when needed.

- Inability to access and restore data needed in a recovery of operation weakens the procurement process.

2. Intangible Impact

- Adverse public opinion and loss of public confidence.

B. Management Plan and Approach

Avoidance and reduction of risk through sound technical recording practice should provide adequate protection. Close work with standards community and adherence to FIPS procedures developed will help ensure compliance to standards. Sound procedures can enhance the availability of recovery data. DoD must research archiving methods and develop a strategy for a long-term archival plan.

4.6.2.2 SECURITY (VIRUSES)

Hardware, software, and data must be protected from direct or inadvertent tampering. Classified and sensitive data must be protected as well. Because EDI requires electronic connectivity with a large number of networks and processors outside DoD control, the system is vulnerable to unauthorized access. Unauthorized access can come in many forms (e.g., virus, illegal entry) and can cause significant damage, violate the confidentiality of vital information and impede competition. Even those under DoD control will be more vulnerable to inadvertent security violations due to data sharing and distributed processing. This may be an archival security risk, or could possibly lead to security violations.

A. Impact Analysis

Damage to software or data can cause loss of time and increase expense to support procurement systems.

1. Tangible Impact

- Costly processing time correcting damaged system software or data base reconstruction may result.

- Contractor access to unauthorized data could give an unfair advantage to a Contractor.

2. Intangible Impact

- Loss of public confidence in the procurement process.

B. Management Plan and Approach

Avoiding and minimizing security risks are the goals. System software protection through efficient configuration management and access controls should be implemented (see Chaper 2).

Virus protection software products are available in Commercial-Off-The-Shelf (COTS). Access controls for unclassified sensitive protection can be provided through software controls, using controlled access protection (C2) level. Encrypting the end-to-end circuit and providing required "trusted computer system evaluation criteria" access for the specific requirement can be purchased for hardware/software.

4.6.2.3 TRANSACTION SYNTAX STANDARDS/INFORMATION RE-USE (ANSI X12/EDIFACT ALIGNMENT)

Common procedures and business practice allow communication between partners to occur more efficiently. Information reuse is the multiple use of data by several partners. EDI requires conducting business in mutually agreed upon transaction formats (syntax). Since there is no single, universally agreed syntax for every business activity, there is some risk that a DoD syntax will not be supported by some contractors, thus precluding EC within that group. In addition, the DoD EDI syntax may conflict with other DoD syntax standards (primarily Command, Control, Computers, Communications, and Intelligence (C3I), e.g., United States Message Text Formats) and thus preclude information re-use within DoD.

A. Impact Analysis

Lack of standards can cause confusion and require costly changes to allow different standards to co-exist.

1. Tangible Impact

- Costly changes to each trading partner's system would be required to translate and use.

- Missing information must be added.

- Inconsistent information must be resolved.

- Misunderstanding between partners may arise.

2. Intangible Impact

- Inconsistency between Government and Industry would be viewed adversely by the public.

B. Management Plan and Approach

DoD EDI will rely on strict adherence to Implementation Conventions (ICs). Management plans will contain procedures for activities involved with EDI for use of ICs. EDI ICs reduce ambiguities and insulate implementations from volatile standards. Conventions will be ANSI X12 based to provide consistency with commercial implementations and will evolve to EDIFACT as that standard matures. Over time, EDI information exchange requirements will be combined with C3I requirements to provide a broad, enterprise-wide information architecture. Information re-use can then be facilitated by managing that architecture.

4.6.2.4 DATA STANDARDS/DATA RE-USE

DoD standards are being developed for data administration, data elements, and the re-use of data. Every attempt should be made to ensure EC/EDI systems are in compliance with the developed standards. DoD is committed to data standardization through the Defense Data Standardization Program for the Defense Data Repository System. The EDI community may use data in conflict with DoD data elements. This conflict can preclude data re-use.

A. Impact Analysis

1. Tangible Impact

- Costly re-engineering of elements and data base systems.

- Delays in implementing systems that are not compliant.

- Data inconsistency resolution will be cost prohibitive.

- Misunderstanding may result.

2. Intangible Impact

- Loss of Industry confidence.

B. Management Plan and Approach

The procurement community is currently standardizing procurement systems data elements and transitioning to use of standard procedural EC/EDI training for management and employees. Directives should be in place to provide strict adherence to data standardization.

Risk can only be resolved through the use of standard data elements. Data derived for use in DoD EDI must be submitted to the Defense Data Standardization Program for approval. That office requires Data Model Assessment developed for EDI oriented business activities.

4.6.2.5 COMMUNICATIONS INFRASTRUCTURE

The amount of data and connectivity requirements for distribution points must be sized to ensure the Defense Information Systems Network (DISN) can support the increased requirement. EDI will require electronic connectivity and capacity not required by paper based business practices. The commercial and DoD communications infrastructure required for connectivity and capacity may not be cost effective for some organizations/activities.

A. Impact Analysis

Communication capabilities are negatively impacted if total requirements are not sized and network analysis performed.

1. Tangible Impact

   - Loss of service to the DoD long-haul network.

   - Some organizations may not be able to conduct EDI.

2. Intangible Impact

   - Loss of credibility for support to Industry.

   - Perception by Industry that DoD lacks commitment.

B. Management Plan and Approach

Avoid and reduce risk by collecting data on transaction volumes that expand due to increased usage of EC/EDI capability. Determine basic distribution points capability and provide to DISN office for analysis. Requirements for communications must be programmed into the analysis of the DoD information infrastructure.

Provide total data requirements and distribution point requirements to the DISA and Defense Information Systems Office (DISO) for analysis and recommendation. The architecture and engineering representatives should consider a comprehensive network-wide analysis for a DoD-wide solution in support of future EC/EDI expansion.

4.6.2.6 COOP (REDUNDANCIES/DENIAL/AVAILABILITY/PARALLEL PROCESSES)

EC/EDI capability will be implemented on COTS computer hardware and software. Information will reside at many sites and be transported over DoD networks to/from Industry systems/networks. Service interruption is the inability to transmit data from the procurement automated information system to the Gateway and from the VAN user to DoD systems.

Business activities supported by EDI will become dependent upon information technologies. Catastrophic failures could bring the associated business activities to a halt. Service interruption impairs the ability of the contracting activity to conduct business via EC.

A. Impact Analysis

The reliability of hardware/software will have tangible and intangible impact on the availability of contracting information. This may include the ability to make an award, thus delaying transaction processing.

1. Tangible Impact

   • Non-availability of systems can be costly to contracting offices.

   • Lack of accessibility to data can cause financial loss to an organization.

   • Costs incurred as a result of non-availability of the product or service during a system outage.

   • Delays realized in identifying alternate means of acquiring product or service during system outage or litigation process.

   • Contractor loss of revenues.

2. Intangible Impact

   • Loss of prestige to the organization or automated process providing the service.

   • Loss of public confidence.

B. Management Plan and Approach

Many different technical and programmatic techniques will reduce the chances of a catastrophic problem. There are many ways of providing capabilities, each with increased costs. One Value Added Network (VAN), Automated Information System (AIS), or Gateway could be cross-connected would provide alternative connectivity. This would require the sizing of those cross-connected networks to assume the workload of the other. Detailed test plans must be developed and used to ensure accuracy and availability of the cutover systems.

Highly reliable COTS hardware and software ensure sustainability. Several technical capabilities are available at an incremental cost. Redundant systems for cutover, as an example, may be cost prohibitive. Uninterruptable Power Source (UPS) devices help ensure "up" time of systems and should be part of the plan. The analysis of the approach should be engineered using the Joint Interoparability and Engineering Organization and the Defense Information Services Organization representatives. See Chapter 2.

4.6.2.7 EDI EVOLUTION (OBSOLESCENCE, RAPID EXPANSION, TECHNICAL AVAILABILITY)

EDI as a technology is provided through computer software. COTS and Government-Off-The-Shelf (GOTS) software for EC capability are available. EDI capability is not realized through specific hardware but rather through software implementation.

If EDI capabilities are implemented in a static or proprietary manner, maintenance, technology insertion and EDI evolution (both technical and functional) will be adversely affected.

A. Impact Analysis

1. Tangible Impact

- Allowing proprietary development of EC/EDI software, that is potentially hosted on non-Open System Environment (OSE) hardware can result in higher costs to the Government.

- Costly development of proprietary software capabilities will result in higher costs.

- Costly future changes to maintain to OSE compliance.

- Inability to change software easily using state-of-the-art techniques and products.

2. Intangible Impact

- Industry confidence in technical ability of Government.

B. Management Plan and Approach

Plan for new technology and use technology enhancements in contracts where possible. Develop strong configuration management plans to control direction and use of the hardware and software. DoD must develop technology insertion specifications in current and future contracts. The technical staff must specify near and long term migration strategies and plan for configuration management of systems for technical expansion as usage of EC increases. DoD should also develop guidance and plans for use of EDI to replace current procedures. DoD must also train personnel to effectively use EDI.

4.6.2.8 WAR FIGHTER SUPPORT (WAR ZONE CAPABILITIES)

EC/EDI capability will be needed during a war-time scenario. Peace time capability must work "as is" in war. The ability to execute transactions to order and fill theater needs must be accurate and efficient, and must not interfere with C2 information requirements. EDI computer and communications requirements may reduce, or even eliminate, the ability to provide support within an isolated Theater of Operation. This may also overload tactical communication systems, delaying critical C2 information.

A. Impact Analysis

The inability to provide EC/EDI capability in support of our war fighters can degrade our readiness.

1. Tangible Impact

- Delay in receiving war materials in combat operations.

- Loss of life could result.

- Delay critical command and control decisions and actions.

2. Intangible Impact

- Loss of war fighter confidence.

- Loss of public confidence.

B. Management Plan and Approach

The functional community must determine and formally state the requirements needed to support procurement actions in a war-time environment. Then DoD must ensure technical planning involves deploying EDI capable systems which have been tested and are in place to provide timely support.

The cycle of information exchange in support of the war-fighter must be considered. EDI business transactions are created to meet a materiel need and EDI supporting systems must be considered as far into the future as possible. Analysis of the defense infrastructure needed to support EDI capabilities in war-time must be performed.

4.6.3 IDENTIFICATION OF PROGRAM RISKS

The risks which we have identified as being programmatic in nature impact both the functional and technical communities. These risks must be addressed from an overall operational approach. The program risks are outlined below:

4.6.3.1 OFFICE OF THE SECRETARY OF DEFENSE (OSD) SENIOR LEADERSHIP, DIRECTION, MANAGEMENT, AUTHORITY, AND RESOURCES

An OSD senior leader is needed to generate the enthusiasm, support, resources, and policy changes required to accomplish EC implementation and continued operations while overcoming resistance and impediments to EC. If the DoD program manager for EC is lacking the authority and resources to implement and operate the EC network, DoD will be unable to achieve its business and acquisition reform goals.

A. Impact Analysis

The current EC projects have evolved from the field activities and were separately developed in the Components to meet varied organizational objectives. This has resulted in many solutions which place diverse requirements upon Industry. In most instances, limited DoD corporate support has been available. To present a "single face to industry" and gain component commitment, DoD must reverse this condition.

1. Tangible Impact

- Costs to the organization due to continued manual and limited automated support for labor intensive tasks.

- Costs to the organization through higher prices for procured supplies and services.

- Costs incurred as a result of non-availability of the supply item or service in a timely manner.

2. Intangible Impact

- Absence of DoD senior leadership, direction, and management will signal to Industry a lack of resolve on DoD's part, and thus, jeopardize the EC program.

B. Management Plan and Approach

Avoidance and reduction of the threat through high level approval and funding commitments to EC, concurrent with the identification of an OSD official responsible for its administration.

OSD must issue a clear statement of its EC objectives with consistent decision-making for its execution. Additionally, OSD senior management must ensure a cohesive functional and technical approach to EC with a clear focus on DoD's EC objectives. The program manager tasked with the responsibility to implement and operate EC in the Department must be granted sufficient authority and resources to take action in a timely and decisive manner. Resources must be identified at the OSD level and committed to EC implementation and operations to maintain a stable relationship with Industry.

4.6.3.2 COMPONENT IMPLEMENTATION

Implementation of EC and its supporting infrastructure at the component level will be executed according to that Component's requirements and architecture and may lack a DoD corporate approach.

Uncoordinated component implementation endangers the success of the DoD EC program due to differing strategies, technical solutions, and functional requirements. Private Industry cannot effectively adjust its business practices for each DoD contracting organization.

A. Impact Analysis

The EC program must evolve to a "single face to industry." If the DoD role is limited to strategy and technical guidance, the attainment of a "single face to industry" will be more difficult to accomplish.

1. Tangible Impact

- Costs to the organization due to continued manual and limited automated support for labor intensive tasks.

- Costs to the organization through higher prices for procured supplies and services.

- Costs incurred as a result of non-availability of the supply item or service in a timely manner.

2. Intangible Impact

- Loss of Industry confidence and support of the DoD EC program.

B. Management Plan and Approach

OSD must appoint a Program Manager to lead, direct, control, and coordinate the EC/EDI program.

4.6.3.3 SINGLE POINT OF ENTRY

Trading partners currently conduct EC/EDI business using many different access methods, conventions, and systems. If contractors must use multiple points of entry for access to DoD's activities, the number of contractors available to each contracting office will be reduced based upon the cost of maintaining these communication links.

A. Impact Analysis

Multiple points of entry will further reduce competition, visibility of solicitations, and Industry confidence in DoD's full and open competition. As the number of entry points expand, the number of trading partners who will cease to engage in EC with smaller activities can be expected to grow. The result is that DoD EC expansion goals and objectives will not be met.

1. Tangible Impact

- Costs to the organization due to continued manual and limited automated support for labor intensive tasks.

- Costs incurred as a result of non-availability of the supply item or service in a timely manner.

2. Intangible Impact

- Loss of Industry confidence and support to the DoD EC program.

B. Management Plan and Approach

Avoidance and reduction of the threat through implementation of a technical and functional architecture which provides a single point of entry capability.

4.6.3.4 CENTRAL CONTRACTOR REGISTRATION

The registration of contractors conducting EC with DoD should be managed by and accessed through a single point of entry.

Current legacy systems require a data record on each contractor with whom it will do business. Absent this information, the activity cannot make an award without receiving the data from the contractor.

A. Impact Analysis

The need to contact and obtain data from a contractor causes delays in the buying process.

1. Tangible Impact

   - Increased costs to the organization due to continued manual intervention in an otherwise automated process.

   - Costs incurred as a result of non-availability of the supply item or service in a timely manner.

2. Intangible Impact

   - Loss of Industry confidence and support to the DoD EC program.

B. Management Plan and Approach

Avoidance and reduction of the threat could be accomplished through implementation of central management of contractor registration.

As EC will bring DoD new contractors daily, a central repository of this information will economically facilitate creation of the data record concurrent with eliminating the need for each contractor to register with each potential site. Elimination of the Standard Form (SF) 129, Solicitation Mailing List Application, and Contractor and Government Entity (CAGE) code application can be resolved.

4.6.3.5 NATIONAL OR REGIONAL VISIBILITY

The technical architecture should provide the option to disseminate request for quotations and other documents on a nationwide basis, or limit the dissemination to a regional/local trade area or on a one-to-one basis (see Chapter 3).

A. Risk Statement

Failure to provide the capability to disseminate solicitations on a nation-wide basis (i.e., one-to-all basis) as well as a limited (e.g., one-to-a few or one-to-one), could result in an unmanageable expensive procurement process for both the Government and contractor.

A. Impact Analysis

1. Tangible Impact

   - Costs to the organization through potentially higher prices for procured supplies and services.

   - Costs incurred as a result of potential non-availability of the supply item or service in a timely manner.

   - Awards to contractors with little or no performance history.

2. Intangible Impact

   - Loss of Industry confidence and support to the DoD EC program.

B. Management Plan and Approach

Avoidance and reduction of the threat is accomplished by providing the capability to disseminate solicitations on a nation-wide basis, a one-to-few basis or one-to-one basis. DoD procurement policy must be issued which balances the need to: (1) Make awards to quality vendors, and (2) Disseminate solicitations on a "one-to-all" basis to the maximum extent practicable.

4.6.3.6 ELECTRONIC SIGNATURES

Documents are executed with electronic data codes, encrypted or otherwise protected, which signify approval by the named official. Many contractors and Government offices are reluctant to accept electronic documents due to the absence of a signature. Some regulations used in DoD require original signatures, including the Federal Acquisition Regulation (FAR) for procurement documents such as a bilateral purchase order.

A. Impact Analysis

Losses from this risk are both tangible and intangible.

   1. Tangible Impact

   - Costs to the organization due to continued manual and limited automated support for labor intensive tasks.

   - Costs to the organization through potentially higher prices for procured supplies and services processed manually.

   - Costs incurred as a result of potential non-availability of the supply item or service in a timely manner.

   2. Intangible Impact

   - Loss of Industry confidence and support to the DoD EC program.

B. Management Plan and Approach

Avoidance and reduction of the threat through implementation of electronic signatures in accordance with National Institute of Standards and Technology (NIST) standards. Use of electronic signatures replicates paper practices and may provide an even higher degree of confidence among some users. Another approach is to revise all statutes, regulations, etc. to permit. Use of a combination of these approaches seems most advantageous. An original signature should not be required when another form of validation exists (see Chapter 3).

4.6.3.7 DATA INTEGRITY - DESTRUCTION/MODIFICATION OR LOSS OF CONTRACTOR QUOTE DATA

Overall security responsibility belongs to the owner of the business process. The contracting activity must be assured that the data transmitted is received in total by the trading partner.

A. Impact Analysis

Failure to receive a complete transaction set, or loss on modification of a transaction set will have both tangible and intangible impacts on the contracting process. These impacts are discussed below:

1. Tangible Impact

   • Costs incurred as a result of non-availability of the product or service.

   • Loss of administrative lead time.

   • Increased procurement lead time.

2. Intangible Impact

   • Loss of public confidence in the ability to conduct business via electronic commerce.

   • Adverse impact on vendor community.

B. Management Plan and Approach

Avoidance and reduction of this threat is accomplished by wrapping the transaction set in an electronic envelope. Once the envelope with the transaction set is received, the data is regenerated and compared for equality. In the event the data does not compare, the data is rejected by the receiving activity.

4.6.3.8 INTERFACE WITH OTHER BUSINESS AREAS

To ensure that EC has a global impact within DoD, the various business areas (e.g., contracting, contract management, finance, transportation, etc.) must develop the appropriate EDI transaction sets in a coordinated manner. Development of EC for contracting, without considering interface to other business areas, can result in misalignment of the functional areas.

A. Impact Analysis

Failure to interface with other business areas will have tangible and intangible impact on the business areas and processes. They are as follows:

1. Tangible Impact

   • Business areas such as contracting and finance will not be able to utilize electronic commerce in the conduct of their respective business.

   • Contractors dealing with the different business areas will have to have various procedures in place to conduct business with the various business areas.

   • Additional administrative costs placed on contractors will lead to more expensive supplies and services procured by DoD.

2. Intangible Impact

- The vendor community will view the Government and the various business areas as inefficient.

- There is the potential for a morale impact on Government personnel in the various business areas as a result of daily business operation (e.g., labor intensive versus automated).

B. Management Plan and Approach

Avoidance and reduction of this threat is accomplished through configuration management practices. Each component should have a member to serve on a Configuration Management Board.

4.6.3.9 VAN AGREEMENTS

VAN agreements are made to establish a trusted third party to support contractor trading partners in effectively using EC to conduct business with DoD contracting activities. Without adequate and consistent agreements, VANs and the contractors will be required to operate EC capabilities differently for various buying activities. Acceptable VAN performance cannot be readily assessed or ensured.

A. Impact Analysis

Failure to centralize VAN Agreements in one location will have tangible and intangible impacts on the business areas. They are as follows:

1. Tangible Impact

- Business areas conducting business with the same VAN may have different agreements which may result in and higher costs..

- Contractors dealing with the different business areas will have to have multiple procedures in place to conduct business with DoD.

2. Intangible Impact

- The contractor community will view DoD as inefficient.

B. Management Plan and Approach

Avoidance and reduction of this threat is accomplished by placing the responsibility for the VAN Agreements with DISA.

4.6.3.10 INTERNAL DISTRIBUTION

There are many organizations that must establish EC connections and use appropriate conventions and translations into their operations. This presents many opportunities for failure to complete EC communications.

A. Impact Analysis

Failure to establish internal distribution procedures in DoD will have tangible and intangible impacts on the business areas. They are as follows:

1. Tangible Impact

   - There may not be assurance that documents are received by these business areas to close out contract actions or to effect payment.

   - Contractors dealing with the different business areas will need multiple procedures in place to conduct business with DoD.

2. Intangible Impact

   - The vendor community will view the various DoD business areas as inefficient.

B. Management Plan and Approach

Reduction of this threat is accomplished by establishing procedures that require all business areas to: 1) meet the data transmission and format standards established by DISA, and 2) establish the required connectivity between the various business areas to ensure that transactions can be passed between one another.

4.6.3.11 SOFTWARE DEVELOPMENT COSTS

This represents the costs that are needed to develop software for all of the various components' "legacy" systems regardless of business area to create the "single face to industry". The availability of COTS products in the market for translation software, and the various "legacy" systems now in use by the various components, to develop software specifically for EC applications makes software development a high risk. If all transactions are sent using the standard conventions, data standardization among the various business areas can be achieved.

A. Impact Analysis

To pursue software development for the various "legacy" systems in the different business areas would mean that a deployable system would not be available within the next two years, and would have tangible and intangible impact on DoD business areas.

1. Tangible Impact

   - Business areas such as contracting and finance will still be conducting business in the same manner as they are now. There would be no "single face to industry."

   - Costs incurred as a result of supporting the component unique solutions.

2. Intangible Impact

   - Adverse impact on the vendor community in that they will be required to subscribe to multiple VANs.

B. Management Plan and Approach

Reduction of this threat is accomplished by utilizing COTS products where available. DoD should work towards a solution which requires that COTS products are used to the maximum extent.

4.6.3.12 GOVERNMENT DEPENDENCY ON PROPRIETARY INDUSTRY SOLUTIONS

As with Software Development, DoD cannot to rely on any type of proprietary data to implement EC. The use of EC within DoD should be compatible with the existing "legacy" systems now in use, and the solution should be sought in the "migration" or "target" system. The development of EC standards must be made in concert with Industry, but not be driven by Industry.

A. Impact Analysis

To pursue a proprietary Industry solution to EC for the various "legacy" systems would mean that there would be several versions deployed for the components until a solution for the "migration" or "target" system is developed and deployed. This would have tangible and intangible impact on the business areas and processes that participate.

1. Tangible Impact

   - All costs incurred to date by the components would be sunk and non-recoverable, and additional costs would have to be taken into account for the proposed Industry solution.

   - Personnel utilizing the component unique solution would need additional training for the Industry solution that is to be used.

2. Intangible Impact

   - Adverse impact on the vendor community if they were tied to the Industry unique solution.

B. Management Plan and Approach

Avoidance and reduction of this threat is accomplished by utilizing COTS products to the maximum extent.

4.6.3.13 DIFFERENT FUNCTIONAL/TECHNICAL SOLUTIONS

As DoD strives toward "target" systems in the various business areas through the respective CIM Councils, efforts are underway to identify business process improvements through business modeling efforts. These modeling efforts show the business process from "as-is" and "to-be" perspectives. The technical and/or functional solutions developed must be made in concert with one another in order to implement the "single face to industry" concept. DoD cannot rely on component unique solutions, whether functional or technical. If DoD is to have the "single face to industry" it is imperative that a single solution represent the business process improvements that have been identified in the modeling efforts.

A. Impact Analysis

To pursue different functional and/or technical solutions to EC would mean that there would be several versions deployed for the various components until a solution for the "migration" or "target" system is developed and deployed. This would have tangible and intangible impact on the business areas and processes that participate.

1. Tangible Impact

   • The "single face to industry" concept would not be realized, and therefore would increase costs both in the functional and technical areas.

   • All costs incurred to deploy the different solutions would be sunk costs that could not be recovered upon deployment of the "migration" system or "target" system.

2. Intangible Impact

   • Adverse impact on the vendor community from the standpoint that they may still be required to conduct business with several VANs to do business with DoD.

B. Management Plan and Approach

DoD must streamline and standardize its business practices to the maximum extent practical. This approach must be balanced with the need to utilize commercial practices.

4.6.3.14 DoD STANDARDS AVAILABILITY

In December 1991, the DoD Executive Agent for EDI published the DoD Implementation Guidelines for Electronic Data Interchange. This document provided the first version of the draft Implementation Conventions (ICs) to be utilized in DoD.

Since the issuance of the above document several other systems have been deployed ; with EC/EDI capability, utilizing different ICs. In order to overcome and maintain effective standards availability, DoD must centralize control over all IC documentation.

A. Impact Analysis

In order to attain the goal of "single face to industry", DoD must implement and utilize standard ICs to the ANSI X12 Standards. This can be attained by placing the responsibility for the ICs with one organization. Failure to do so would have tangible and intangible impact on DoD business areas.

1. Tangible Impact

   • The "single face to industry" concept would not be realized, and therefore would increase costs both in the functional and technical areas.

   • The costs to maintain numerous implementation conventions would be sunk costs that could not be recovered.

2. Intangible Impact

   • Adverse impact on the vendor community in that they may still be required to conduct business with several VANs in order to do business with DoD.

B. Management Plan and Approach

Avoidance and reduction of this threat is accomplished by placing the responsibility of DoD Standards availability under one organization, with a configuration management board composed of representatives from each component.

4.6.3.15 IMPACT FROM/ON OTHER GOVERNMENT PROGRAMS

The methodology that DoD adopts for execution of EC/EDI as well as the overall strategy, must fit into each and every business area that has potential EC/EDI applications. The overall implementation and business strategy that DoD utilizes for the conduct of EC/EDI must be transparent to the user, regardless of business area (e.g., procurement, transportation, or finance). Failure to consider all business areas in the execution of such a plan will increase overall costs, and could possibly result in parallel operations.

A. Impact Analysis

For DoD to implement a strategic plan for implementation across DoD, all business areas' requirements must be considered.

1. Tangible Impact

- The DoD direction for EC/EDI may not be realized because parallel operations may continue, thus negating the "single face to industry" concept.

2. Intangible Impact

- Loss of confidence in DoD's EC/EDI program.

B. Management Plan and Approach

Avoidance and reduction of this threat is accomplished by ensuring that the strategic plan developed by DoD considers all business areas. In this manner, the methodologies planned for the "single face to industry" can be realized. DoD should establish an organization that has overall responsibility for the development and execution of a DoD Strategic Plan for EC/EDI implementation.

4.6.3.16 RE-ENGINEERING BUSINESS PRACTICES

Business process improvement leads to new and more efficient ways of doing business. Changes to the current processes and procedures will lead to new automated solutions. A major benefit of EC/EDI is to provide information technologies that allow for efficiency improvements. Applying EDI without re-engineering the associated business practices may preclude DoD from realizing potential savings and may adversely impact the situation by accelerating the rate of information transfer.

A. Impact Analysis

Without re-engineering, we could be automating an inefficient process.

1. Tangible Impact

- Costly re-engineering associated with new methods.

- Cost of automating a bad process.

2. Intangible Impact

- Loss of opportunity for other use of funds by automating a new process.

B. Management Plan and Approach

Develop a functional process improvement plan for the procurement functions. Then using EC principles, determine where changes in automation can provide productivity enhancements to the process. A thorough functional process improvement program should be completed. A complete procurement area business process analysis must be performed according to Department of Defense Manual (DoDM) 8020 and then the final technical migration strategies applied, to obtain a "to be" solution.

4.7 IMPACT ANALYSIS

This section groups the functional, technical, and program risks identified in section 4.6, risk identification, into seven areas based on the nature of the threat. A description of each of the seven threats is provided below:

1. Unauthorized Access/Disclosure of Data - The risk(s) in this area address the potential impact of unauthorized users gaining access to DoD data files.

2. Unauthorized Modification or Destruction of Data - The risk(s) in this area address the potential impact of users intentionally or unintentionally modifying or destroying Government data.

3. Sender/Receiver Reproduction of Transactions - The risk(s) in this area revolve around the proof of authenticity of data transmissions.

4. Lack of System Availability - The risk(s) address the threat of the system not being available to authorized users.

5. Incomplete Business Area Interface - The risk(s) in this area address how contracting EC initiatives interface with other business area from both a functional and technical perspective.

6. Lack of a "single face to industry" - DoD must transmit data to Industry in a standard manner. The risk(s) in this area address DoD's vulnerability in this arena.

7. System Costs/Migration/Acceptance - The risks associated with this threat revolve around the DoD's ability to migrate towards a standard EC/EDI.

The following Table, 4-3, Risk Assessment, summarizes the functional, technical, program risks identified in Section 4.6. This table also provides a summary of the risk estimate computed. The table also groups the risk estimates into low, medium, or high categories.

TABLE 4-3

RISK	IMPACT RATING (D)	FREQUENCY RATING (P)	Low $300 or Less 6	Low $3K 7	Medium $30K 8	Medium $300K 9	High $3M 10	High $30M 11	High $300M 12
1. Unauthorized Access/Disclosure of Data									
A. Unauthorized Access to Contractor Quote Data	3	2	X						
2. Unauthorized Modification or Destruction of Data									
A. Security (Viruses)	6	3				X			
B. Data Integrity	5	4				X			
3. Sender/Receiver Repudiation of Transactions									
A. Records Retention	2	8					X		
B. Archive	5	4				X			
C. Electronic Signatures	3	3	X						
4. Lack of System Availability									
A. Communications Infrastructure	6	3				X			
B. COOP	6	4					X		
C. War Fighter Support	4	4			X				
5. Incomplete Business Area Interface									
A. Transaction Syntax Standards/ Information Reuse	2	8					X		
B. Data Standards/Data Re-use	2	8					X		
C. Interface with Other Business Areas	4	6					X		
D. Internal Distribution	4	5				X			
6. Lack of a Single Face to Industry									
A. Notice to Industry	2	8					X		
B. Use of Bulletin Boards	1	7			X				
C. Component Implementation	6	3				X			
D. Single Point of Entry	7	3					X		
E. Central Contractor Registration	3	6				X			
F. National or Regional Visibility	7	3					X		
G. VAN License Agreement	4	3		X					
H. Different Functional/ Technical Solutions	6	4					X		
I. DOD Standards Availability	6	4					X		
7. System Conversion/Migration Acceptance									
A. Internal Educational Requirement	3	7					X		
B. Best Value	3	7					X		
C. Organizational Structure/ Changes	4	6					X		
D. EDI Preference	2	8					X		
E. Product Substitutions	2	8					X		
F. User Acceptance	2	7				X			
G. Increase in Quote Evaluation Time	3	7					X		
H. EDI Evolution	5	4				X			
I. Management, Authority, & Resources	7	3					X		
J. Software Development Costs	5	6						X	
L. Government Dependency in Proprietary Industry Solutions	6	4					X		
M. Impact of/on Other Government Programs	6	4					X		
N. Re-Engineering Business Practices	4	5				X			

4.8 RISK MANAGEMENT

4.8.1 IDENTIFICATION OF CONTROLS

Risk management refers to the activities associated with actions taken following a risk assessment. After the risk assessment is completed, countermeasures may be identified and deployed to eliminate those risks or reduce them to an acceptable level. A list of available solutions identified by the EC in Contracting PAT are provided below.

a. Confidentiality refers to the need to restrict sensitive information from being disclosed to unauthorized recipients. Available solutions include:

    (1) Access controls (passwords, smart cards)

    (2) Data Encryption (Data Encryption Standards)

b. Message integrity is provided by ensuring that messages are changed only in a specified and authorized manner, as follows:

    (1) Imbedded References - Including a unique identification code with each transaction to distinguish it from all others.

    (2) Message Repetition Acknowledgment - Sending an acknowledgment that repeats messages or parts of messages.

    (3) Internal Message Verification - Recalculating and verification of message character totals (hash totals) for checking similar fields.

    (4) Cryptographic Techniques - Using Message Authentication Codes (MAC), digital signatures, and public key encryption.

c. Authentication - A message recipient will want reasonable assurance that the source of the message is the named originator or the intended recipient. Originator/recipient authentication can be provided by:

    (1) Imbedded references (EDI sender/receiver codes) which are numbers or passwords both parties have agreed to use.

    (2) TPA - A requirement within the DoD trading partner agreement which requires each activity to submit a discrete authentication code within a specified segment of the Transaction Set.

    (3) Functional Acknowledgment - An ANSI X12 997 Transaction Set can be dispatched which notifies the originator of a transmission that it has been received and either accepted or rejected.

    (4) Trusted Third Party - An EDI Value Added Network (VAN) can provide additional originator authentication as only authorized users, can access the EDI VAN to retrieve or deposit EDI transactions from or to a particular EDI mailbox.

d. Non-repudiation - Provides assurance that one of the two parties to a data interchange cannot falsely deny involvement due to proof that can be offered to a third party. In addition to the techniques listed above for authentication, the following techniques provide strong protection against non-repudiation.

    (1) Third Party Notarization (EDI VAN)

    (2) Public Key Cryptography

    (3) Audit Trails - Will provide history files of transactions generated with identification of the sender or receiver.

e. System Availability - Contingency planning to include data backup and recovery procedures will ensure continuity of system availability. Archived data are often used for backup and recovery purposes. Virus protection software, COTS software will provide protection from the introduction of viruses resulting in a loss of system availability.

f. Data and Transaction Set Standardization - Through the use of software standardization, data elements, and ANSI X12 and DoD connection data standardization will support data re-use and "single face to industry" objectives.

g. EDI User Education/Training - A commercial base of technical courses for systems people can provide needed skills for efficient implementation of EDI. In addition, training for the user community can be provided to reduce the instances of unauthorized access and other misuses of the EDI systems. Included in this training is a Security Awareness Program, that will emphasize security needs for EDI (see Chapter 6).

h. Configuration Management - Implementing an effective Configuration Management Program will ensure standardization is maintained (see Chapter 2).

i. Centralized Control for VAN Agreements. Representation for each component will reduce the risk of numerous VAN Agreements (see Chapter 2).

j. Policy Reviews - Initial and follow-on policy reviews will identify required changes necessary to ensure protection of business interests (see Chapter 3).

k. Procedure Changes - Improvement to the business process or change to internal procedures could be implemented to effectively reduce the risks to an acceptable level.

4.8.2 RISK CONTROL PLAN

The EC in Contracting PAT believes that the best resolution of identified risks is to map the specific Functional, Technical, Program and Transaction Set risks to the appropriate solution provided above. The results are provided in Table 4-4, along with initial identification of responsible organization(s) and estimated time frames for implementation. The initial identification of responsibility is based on the EC in Contracting PAT's determination of current management responsibility.

TABLE 4-4 RISK CONTROL

RISK	RISK MANAGEMENT TECHNIQUE	RESPONSIBILITY	SCHEDULE
RECORDS RETENTION	POLICY REVIEWS - 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT AND DISA	12 MTH
UNAUTHORIZED ACCESS TO CONTRACTOR QUOTE DATA	CONFIDENTIALITY 4.7.1.A, (1) ACCESS CONTROLS,(2) DATA ENCRYPTION	DISA	6 MTH
INTERNAL EDUCATIONAL REQUIREMENTS	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DIRECTOR, DEFENSE PROCUREMENT AND DOD COMPONENTS	12 MTH
BEST VALUE	QUALITY VENDOR PROFILES	DIRECTOR, DEFENSE PROCUREMENT	12 MTH
ORGANIZATIONAL STRUCTURE CHANGES	BUSINESS IMPROVEMENT/ PROCEDURAL CHANGES 4.7.1K	DOD COMPONENTS	24 MTH
EDI PREFERENCE	EDI USER EDUCATION/ TRAINING 4.7.1.G, POLICY REVIEWS 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT	6 MTH
PRODUCT SUBSTITUTIONS	POLICY REVIEWS - 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT	6 MTH
USER ACCEPTANCE	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DOD COMPONENTS	12 MTH
NOTICE TO INDUSTRY	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DOD COMPONENTS, DISA	12 MTH
INCREASE IN QUOTE EVALUATION TIME	ACCEPT RISK	DOD COMPONENTS	12 MTH
USE OF BULLETIN BOARDS	2 YEAR PHASE OUT	DISA AND DOD COMPONENTS	6 MTH
ARCHIVE	CONTINGENCY PLANNING 4.7.1.E	DISA	12 MTH
SECURITY (VIRUSES)	VIRUS PROTECTION SOFTWARE 4.7.1.E, ACCESS CONTROLS 4.7.1.A (1)	DISA	6 MTH
TRANSACTION SYNTAX STANDARDS INFORMATION REUSE	DATA AND TRANSACTION SET STANDARDIZATION 4.7.1.F, DATA & TRANSACTION SET STANDARDIZATION,4.7.1.H	DISA	12 MTH
DATA STANDARDS DATA RE-USES	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	6 MTH
COMMUNICATIONS INFRASTRUCTURE	CONFIGURATION MANAGEMENT 4.7.1.H; CONTINGENCY PLANNING 4.7.1.E	DISA	12 MTH
COOP	CONTINGENCY PLANNING	DISA	12 MTH
EDI EVOLUTION	DATE STANDARDIZATION 4.7.1.F CONFIGURATION MANAGEMENT 4.7.1.H , TRANSACTION SET STANDARDIZATION. POLICY REVIEW 4.7.1.J	DDP, DISA	24 MTH
WAR FIGHTER SUPPORT	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	24 MTH
MANAGEMENT AUTHORITY & RESOURCES	PROGRAM MANAGEMENT (FUNCTIONAL & TECHNICAL)	DUSD (A&T), DISA	6 MTH
COMPONENT IMPLEMENTATION	PROGRAM STANDARDIZATION 4.7.1.F, CONFIGURATION MANAGEMENT 4.7.1.H	DOD COMPONENTS, DISA	12 MTH
SINGLE POINT OF ENTRY	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	6 MTH
CENTRAL CONTRACTOR REGISTRATION	OPTIONAL SERVICE FOR DISTRIBUTION POINT, DLSC, OR MEGA CENTER SHOULD BE CONSIDERED	DOD COMPONENTS, DIRECTOR, DEFENSE PROCUREMENT	12 MTH
NATIONAL OR REGIONAL VISIBILITY	PLANNED FUNCTION OF THE DOD DISTRIBUTION POINT TO PROVIDE CAPABILITY TO TRANSMIT NATIONALLY OR REGIONALLY	DISA	12 MTH
ELECTRONIC SIGNATURES	ACCESS CONTROLS 4.7.1.A, (1)SMART CARDS MESSAGE INTEGRITY 4.7.1.B, (2)CRYPTOGRAPHIC TECHNIQUES	DISA, NSA, NIST, AND DIRECTOR, DEFENSE PROCUREMENT	12 MTH
DATA INTEGRITY	MESSAGE TO INTEGRITY 4.7.1.B, (1) IMBEDDED REFERENCES, (2) MESSAGE REPETITION, (3)INTERNAL MESSAGE VERIFICATION, (4)CRYPTOGRAPHIC TECHNIQUES	DISA	6 MTH
INTERFACE WITH OTHER BUSINESS AREAS	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	12 MTH
VAN LICENSEE AGREEMENTS	CENTRALIZED MANAGEMENT (DISA) OF VAN AGREEMENTS WITH COMPONENT REPRESENTATION 4.7.1.H	DISA, DOD COMPONENT	6 MTH
INTERNAL DISTRIBUTION	CONFIGURATION MANAGEMENT 4.7.1.H	DISA, DOD COMPONENT	6 MTH
SOFTWARE DEVELOPMENT LOSSES	CONFIGURATION MANAGEMENT 4.7.1.H, DATA STANDARDIZATION 4.7.1.F	DISA	12 MTH
PROPRIETARY SOLUTION	CONFIGURATION MANAGEMENT 4.7.1.H, STANDARD SOFTWARE 4.7.1.F	DISA	6 MTH
DIFFERENT FUNCTIONAL/ TECHNICAL SOLUTIONS	CONFIGURATION MANAGEMENT 4.7.1.H, STANDARDS SOFTWARE 4.7.1.F	DISA	6 MTH
DOD STANDARDS AVAILABILITY	DATA STANDARDIZATION 4.7.1F	DISA, DOD COMPONENTS	6-24 MTH
IMPACT OF/ON OTHER GOVERNMENT PROGRAMS	CONFIGURATION MANAGEMENT 4.7.1N	DUSD (A&T)	6 MTH
RE-ENGINEERING BUSINESS PRACTICES	PROCESS/PROCEDURAL CHANGES 4.7.1K	PROCUREMENT CIM, DIRECTOR, DEFENSE PROCUREMENT	6-24 MTH

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4.8.3 MONITORING

In order to ensure the effectiveness of the controls initiated in the risk management plan, risk monitoring will be accomplished by the Procurement CIM organization, DISA and implementing components as identified in Table 4-4. Each of the risk handling techniques will be assessed during implementation to assure implementation has the planned effect on reducing or eliminating risks as described in Section 4.7.

Implementation of mechanisms to eliminate or reduce identified risks will be monitored throughout the six month, one year, and two year development periods. During this period the success of risk handling techniques will be evaluated and if necessary more stringent control initiated. Revision and update of this Risk Management Plan will be accomplished as necessary.

4.9 SUMMARY

EDI can improve the quality and efficiency of defense procurement. However there are a number of risks which must be managed in order to achieve EDI benefits without unacceptable risks. The use of EDI technology also introduces new risks that can adversely affect the confidentiality and integrity of data and the continuity of contracting operations. In this risk management plan these risks are identified, assessed in terms of their impact, prioritized and linked to resolution techniques.

The EC in Contracting PAT used a risk assessment and risk control for risk management. Risk Assessment consists of the following three steps:

- Identification of risks based on input from site visits, Industry and Government responses. Identified risks were organized into functional, technical and program areas.

- Analysis of risks to estimate an ALE. The ALE is a factor of impact of a risk occurring and the expected frequency of occurrence.

- Risks were prioritized based on the ALE.

Risk control was used to organize the risk handling techniques. These techniques focused on risk avoidance, control, assumption, and transfer. Risk Monitoring will be continued throughout the six month, one year and two year development periods to ensure successful implementation.

The responsible organization, Procurement CIM, DISA, or implementing DoD component will monitor accomplishment of each of the recommended risk handling techniques. These techniques will be assessed during implementation and updated by the responsible organization as needed.

The team identified a total of 37 risks. Each of the identified risks can be adequately managed during the implementation time frame. Existing Industry and Government techniques can be applied to provide the full range on needed controls. These EDI practices along with program management, configuration management and education constitute the techniques needed to adequately resolve the identified risks.

5.0 DoD AND INDUSTRY BENEFITS

5.0 DoD AND INDUSTRY BENEFITS

5.1 INTRODUCTION

This Chapter discusses the DoD and industry benefits through the implementation of Electronic Data Interchange (EDI) in contracting related to simplified purchases, under $25,000, and the proposed simplified acquisition threshold of $100,000 and provides recommendations of the measurements of benefits associated within the DoD procurement offices deployed.

5.2 BACKGROUND

The DoD procurement community and its DoD trading partners face an environment of a declining DoD budget, reductions in manpower, and a shrinking business base. These challenges must be met with reduced inventories, increased efficiencies, and effectiveness in all their respective operations. Funding constraints will require both parties to seek faster inventory turns and shorter payment cycles to enhance liquidity. Amid the backdrop of the DoD down-sizing, new hardware, software and telecommunications technologies have emerged. These new Commercial-Off-The-Shelf (COTS) technologies may pres⌐ : r ⌐w opportunities for both groups to re-engineer the critical processes within the procurement process affecting interfaces both external and internal to thei. r⌐ ⌐pective organizations. Additionally the COTS will provide the necessary technology to re-engineer some of the same federal procurement processes that Vice President Gore's National Performance Review (NPR) has targeted to produce an estimated savings of $22.5 billion from 1995 through 1999.

Numerous federal studies and extensive commercial research, as well as an actual experience base of almost 20 years, in both the private and public sectors substantiate the benefits of EDI. The substantiation is so conclusive that as early as 1988 the Deputy Secretary of Defense, following up on 10 years of projects that were emerging in various sectors of the DoD, issued a memorandum to the Military Departments and Defense Agencies calling for the maximum use of EDI. This action was followed by a specific Defense Management Review Decision, (DMRD) 941, in 1990.

DMRD 941 stated:

> The strategic goal of the DoD's current efforts is to provide the department with the capability to initiate, conduct, and maintain its external business related transactions and internal logistics, contracting and financial activities without requiring the use of hard copy media. This DMRD specifically identified 16 contractual documents that were the substance of its overall direction for DoD's elimination of the associated contracting paper transactions and directed that 96 percent of all the documents be accomplished by EC/EDI.

DMRD 941 was revalidated in December 1992 and concluded:

> The hallmark of the DoD's Electronic Commerce (EC)/EDI strategy is that it is not only acceptable but economically desirable in the current political and economic environment. The program produces a tremendous return on investment and fully supports the modernization of the operational base as well as the DoD acquisition and payment process.

The merits of EDI implementation in the federal sector were revisited by Vice President Gore's NPR and on September 7, 1993, EC/EDI was recommended for expansion within the federal acquisition system.

5.3 BENEFITS

EDI's inherent benefits are well documented. Therefore, rather than duplicate the results of previous studies, the EC in Contracting Process Action Team (PAT) performed an integrated assessment of the specific benefits that DoD will realize from implementing EC/EDI. These benefits for both DoD and Industry were identified and categorized in this report.

5.3.1 MUTUAL BENEFITS

- Significant increased visibility of requirements and the requiring activity.

Through the implementation of EC/EDI in contracting, the DoD requirements will be available for the contractor to see all requirements from all requiring activities that have deployed the EDI capability. Such visibility will expand the trading partner's market from greater accessibility to two perspectives; both in accessibility to a larger volume of items, and access to more DoD purchasing offices. Increased visibility of requirements should increase the trading partners' opportunities to market their goods and services to the Federal Government. The visibility of the Governments small purchase requirements will expand exponentially for the trading partner as the number of the government buying offices transition to EDI increases. This allows the DoD trading partner greater opportunities to quote and compete. Secondly, the vendor will now have the opportunity to view the results of the preceding procurement of the sought item because the Government will be electronically posting the award results of all the EDI solicitations. This information will allow the DoD trading partner to compare and analyze their quotes to the contractor winning the award, thus significantly improving their knowledge of their competitors and their prices.

An additional advantage to trading partners who are utilizing the EDI capabilities will be the opportunity to be aware of items procured that are not presently within their product line, consequently affording contractors the opportunity to expand their present line of supplies or services in areas in which little or no competition has historically existed. This will facilitate the trading partner and increase our industrial base. At the same time the Government will reduce the volume of items that "no quotes" are received due to a higher level of contractor awareness of the items being procured. This will expedite the purchases of items which are typically smaller quantities than previous suppliers have provided. In addition, this will facilitate the Government in locating new sources in the instances where previous suppliers are no longer interested in supplying the items or are no longer in business. This greater market visibility and new analysis will improve the DoD trading partner ability to adjust to a declining DoD business base.

- Single Point Registration.

The DoD EC in Contracting PAT's recommendation for a central vendor registration presents an additional benefit for both the DoD and their trading partners. Currently, the DoD trading partner's opportunity to be called or solicited by the government buyer is dependent on the DoD's trading partner's registration at each individual government buying office. There are over 1,400 government contracting offices in which the contractor, in the present environment, must independently register, if they are interested in being placed on the contracting office's bidders list. This registration places the DoD trading partner on that particular vendor list and is exclusive of all other government buying office's vendor lists. This requirement is extremely cumbersome on the trading partner and the government offices who maintain the information. The requirement to register at each facility circumvents the trading partner with an efficient process for registering with the Government for the supply of goods and services. The increasing administrative costs associated with the clerical receipt, and input of the data to the automated systems combined with the manual filing of the registration is cost prohibitive to both parties. The information is seldom updated by contractors, and consequently causes a high return of solicitations, e.g. "addressee unknown" and the potential of "no response" to the item being procured which increases the Government's overall administrative lead-time. The PATs recommendation for a central vendor registration with the deployment of EDI will establish a single point of registration that will allow the government trading partner to register one time for all government buying offices. This single point registration not only saves the trading partner time and effort, it also provides a significant savings for the Government in that the requirement to process multiple registrations at each installation will be eliminated along with the associated file storage.

- Electronic payment processing.

EDI facilitates the payment process. Shorter payment processing results in faster payment to the trading partners. EDI's automation of data required to support the payment process allows for better information flow across the government procurement and logistics functions to the payment office. The automation of this data greatly increases the sorting and compiling capabilities within the payment office. In addition to the payment cycle time savings within the payment office, the trading partner benefits from reduced mailing time of the pay related documents. EDI's simple departure from the paper based payment process increases the ease and speed that payment data can be handled. The use of EDI is essential in expediting the contract payment process and it is instrumental in establishing a paperless business environment for all trading partners paid by DoD.

The PAT recognized the importance of the electronic payment process to both the Government and the trading partners. Subsequent to the issuance of the charter, the PAT requested full time membership to the team of a Defense Finance Accounting Service (DFAS) representative. The DFAS team member immediately became an integral part of the team, and participated with the team in the determination of the DoD EC/EDI deployment sites. Consequently, DFAS is aggressively working towards the identification of the payment systems that are representative of the sites within this plan to provide for electronic payment processing as soon as possible. The addition of other functional areas to the EC in contracting implementation furthers the return of investment to the Government and all trading partners.

- Increased competition for small purchase items.

EDI will provide the Government with the ability to allow all requirements to be visible to all contractors and therefore afford the competition of all of its small purchase requirements. That ability, until the advent of EDI, has been cost prohibitive because of the sheer volume and schedule requirements. If the purchase is less than $2,500 the buyer may proceed to award the solicitation based on a single offer, provided the price offered by that vendor is deemed fair and reasonable. Orders are not necessarily accomplished with paper, but rather telephone orders or calls are issued orally and documented by handwritten notation on the purchase request. Phone quotes may be obtained for actions valued between $2,500 and $25,000; however, a minimum of three vendors must be called for actions in this range. Considerable manual labor is required to telephone and make notations on paper documents. In those procurements where EDI is used, EDI's automation of the small purchase process will replace the buyer making a phone call to a vendor. With EDI, the requirements will be electronically advertised to all vendors on the DoD system and then the offers will be electronically collected and analyzed for award. EDI's simple replacement of the telephone transaction significantly increases the processing efficiency of the buyer. With the buyer efficiency improved it then is cost effective for the Government to provide an opportunity for all EDI participating vendors to bid. This increases the amount of vendors that will have an opportunity to quote and compete and greatly increases the amount of bid opportunities for the DoD trading partners.

5.3.2 GOVERNMENT BENEFITS

- Greater buyer productivity.

Historically the buyer has been inundated with clerical functions associated with the processing of Request for Quotes (RFQs). This redundant repetitive operation has been compounded over time due to the increases in the regulatory requirements of documentation associated with RFQs and Purchase Orders (POs). Further impact to the contracting community has been exacerbated by the reduction in personnel within DoD, particularly the clerical sector of the workforce, which historically performed these duties for the buyers and contracting officers. The elimination of many of the repetitive and redundant clerical entries will be capable through the implementation of EC/EDI. These savings in processing times will be realized in a more efficient execution of RFQs, responses back from the Contractor and subsequent POs. The electronic transmission of these documents will eliminate many of the duplicative efforts associated with the paper process, such as a significant reduction in reproduction, mailing, handling, telephone contacts, and repetitive data entry to legacy systems. With this capability, the buyer will be able to process more RFQs, in an efficient manner and with higher quality, thereby allowing time for the more complex decision process required by the buyer. The contract writing system's ability to collect RFQs and automatically abstract the received quotes for the buyer will additionally enhance the buyers productivity. This increased productivity will afford the buyer with the time required to provide analysis based upon the contractor's performance, and ensure the Government is receiving a high quality of items.

- Lower item prices.

Through the expansion of awareness of Government requirements to contractors, historically the present initiatives have indicated a reduction in item prices to the Government. This is probable when the competitive items are basically openly advertised through the utilization of EC/EDI versus the present process which is primarily within the local area of the base installation. In addition, there will be new business opportunities for all, local area contractors who will have access to all DoD

requirements, and contractors not collocated with an installation, will have the same information. It is projected that there will be an initial reduction in competitive item prices in some stock classes, and it is probable that this reduction price will decrease as we consistently advertise the item to all interested contractors. The last purchase price of the item will be available for the contractor's review prior to the submission of a RFQ. This will circumvent the quoting on items in which the contractor is not competitive, and thereby reduce their overhead costs associated with doing business with the Government.

- Reduced lead times.

A reduction in lead-time has been experienced through the utilization of EC/EDI in contracting through the component's existing initiatives. This is primarily attributed to the fact that the requirement to process the RFQ through an administrative area, then through the postal system to the contractor has been eliminated. The availability of the buyer's execution of the transmission of the RFQ from the workstation from one to one, one to many, or one to all, is at the touch of the keyboard. In addition, the contractor receives immediately the RFQ, if they were on the original source list, or a contractor may request the solicitation, via the computer, without expending additional resources. The execution of the DoD EC in Contracting implementation plan will provide this improved process to more sites and will further reduce the administrative lead times associated with the processing of RFQs. In addition, it is speculated that upon the completion of the two year implementation plan, the period of time the solicitation is required to be open for quotes could be substantially reduced.

- Reduced inventories.

Our present systems generate requirements from the using organization, and due to the elongated processing times, often requires the using organization to request procurements that will provide a substantial inventory of the item. Warehousing of these items until they are requisitioned out of stock is very expensive. As we move into a full implementation of EC/EDI in contracting, with the reduced administrative lead-times, we can anticipate a lesser need for large inventories. As Contracting Officers establish contractual instruments of repetitive required items, and provide the inter-connectivity to their customers, a reduction in additional lead-time will be experienced as well as reduced inventories. Dependent upon the availability of the item, a "Just In Time" procurement will facilitate the user, eliminating the need for an inventory.

5.3.3 MUTUAL RE-ENGINEERING OPPORTUNITIES

Perhaps the greatest benefit of EDI is the impact that EDI can have as an enabling technology for the re-engineering of the DoD procurement process. EDI will provide both the DoD and its trading partners with numerous opportunities to re-engineer their respective areas of the procurement process. EDI, as an enabling technology, greatly increases the ability to access information that has to date been constrained to a paper intensive process. Paper based data is much more difficult to manipulate, audit, analyze, and reuse than its electronic counterpart. EDI facilitation of those data handling capabilities will provide both the DoD and its trading partners numerous re-engineering opportunities.

- Reduced administrative workload and the creation of multi-use databases.

The reduction in administrative workloads associated with the handling of large volumes of paper documents, generally associated with the utilization of the DD Form 1155, Order for Supplies and Services, is beneficial to both the Government and its trading partners. The DD Form 1155, is a multi-purpose form which serves as an order, a receiving document, and an invoice. Therefore the cost savings reflected are not only the paper handling labor eliminated within the buying office, but also the costs associated in the accounting and finance, receiving, and payment offices. The current government paperwork workload associated with the performance of the small purchase function is often underestimated by those not familiar with the process. A generic small purchase of a COTS item routinely requires a six page government file (often duplicated across various government functional offices for the requirement) to document and support payment of the transaction. This multiplied by the almost 12 million purchases and delivery orders made by the DoD in FY 92 adds up to over 100,000 reams of paper. Normal distribution of these actions consumes an additional 500,000 reams of paper. EDI will automate this collection process and provide for data bases that can be shared by the separate functional offices. Electronic capture of this data will also facilitate less expensive archiving, retrieval, and audit and analysis of the small purchase data. The availability of accurate information supplied by EDI will permit an organization to identify problematic areas more quickly. It will highlight areas with the greatest potential for efficiency improvement or cost reduction thereby reducing overhead costs. These databases will also allow the automation of the payment process resulting in faster payments. Both parties will be able to reconcile problems faster and provide more timely information to one another. Reduced mailing costs along with reduced administrative processing will provide for the ability to reduce overall inventory and warehousing costs.

- Automated linkage of DoD logistics systems to DoD trading partner order fulfillment systems.

The automation of the government purchase order provides an opportunity to interface directly with the trading partners' other internal automated systems that support the order fulfillment process as well as interfacing with government requirements systems. This can reduce the administrative burden associated with invoicing, payment, transportation, and restocking. Depending on the sophistication of the DoD logistics systems and of the vendors material requirement planning system, EDI will support an automated interface. Most communications packages today, provide for the ability to transmit information directly from one computer to another. By exchanging the data directly between computer systems EDI ensures greater information accuracy. Such interfaces enhance the reporting of sales/orders to the warehouse or factory floor and provide for reduced inventory requirements.

- Electronic cataloging and bar coding.

Retail, commercial, and industrial environments utilize bar codes to increase their accuracy and efficiency. Some of the benefits of bar coding are as follows:

The elimination of non-electronic quality problems by the allowance of the system to perform the visual recognition and the matching task

- Improvement of the operator's productivity

- Reduction of errors caused by manual data entry

- Retrieval of product information and management of the inventory levels

Combining EDI with bar coding addresses the market needs and reduces overall inventory. Purchase orders can be sent and acknowledged within the same day, thereby eliminating the normal manual input in accounts receivable and purchasing areas associated with the paper process. Transportation and shipping bills can be rated, audited, and paid automatically. Point-of-entry sales to billing takes place without human intervention thereby reducing cost and lowering consumer prices.

Commercial purchasing organizations experienced in EDI have used this technology to improve their ability to service internal customers by providing them electronic cataloging capability. As the PAT observed in a visit of R.J. Reynolds, Winston Salem, North Carolina, the use of electronic cataloging allows the internal customer the opportunity to interface with the trading partner during the small purchase process without the direct involvement of the purchasing personnel. Historically, in the commercial sector, purchasing personnel involvement was to ensure proper payment for accounting purposes and often, as in the Government, to preserve the integrity of the procurement process itself. EDI and automation of the procurement process allows purchasing organizations to control internal customers' access to the trading partner and maintain the integrity of the purchasing process without the non-value added manual intervention of purchasing personnel in each and every small purchase action. This should improve service to the internal customer as well as allow procurement personnel more time with higher dollar, more complex contracts where the application of the procurement personnel's skills and training can provide a value-added input to the procurement process.

Within the Government, the PAT observed examples of electronic cataloging initiatives currently in operation. The Naval Air Warfare Center Weapons Division, China Lake, California and General Services Administration (GSA) both provided briefings and demonstrations on operational use of electronic cataloging that allow end user ordering of small purchase items without the imposition of the contracting buyer for each small purchase. Both operations are successfully conducted with few if any, technical problems. EDI will facilitate the use of these two associated technologies and the benefits that accrue from them.

5.4 CONCEPTS OF MEASUREMENT EMPLOYMENT

The selected measures represent an emphasis on the deployment of EDI. Initially, the team explored the possible use of more than 50 measures to capture both the impact of the technology deployment and its associated cost savings, as well as the depth of this new technology's employment in the procurement process. After reviewing, both commercial and government EDI projects, it became apparent that the measures should focus on how well the local procurement office is implementing the EDI processes rather than how much the procurement process is being impacted in the way of efficiency and effectiveness. The impacts to efficiencies and effectiveness will be adequately covered as the procurement offices routinely measure their process efficiencies and effectiveness through their current procurement reviews.

The 50 plus measures identified by the PAT were eliminated in the following order of precedence. First, the decision to deploy and invest will have already been made. That decision is based upon a substantial experience base, both in public and private sectors, that EDI, its peripheral processes and opportunities have conclusively proven to merit the investment, and provided normal reasoning is used in its application. This makes the measurement of the savings redundant in proving that the application of this technology saves money. Second, regardless of the findings, the manager cannot manage sunk costs which is what the implementation and new equipment costs represent once EDI is implemented. Third, many of the current measures used by the

procurement managers will provide insight to the impact of EDI on buyer productivity and procurement lead time; therefore the recommendation of new measures is unnecessary. Finally, the procurement workload continues to increase. The addition of new measures should be kept to an absolute minimum and only in areas where current automated collection techniques can be used or developed with the enabling technology to assure adequate measures are employed. Therefore this report will only address those additional measures required to determine how well the organization is implementing EDI.

5.5 MEASURES

Twelve measures remained after a review that challenged the merits of the original 50+ measures. The remaining 12 emphasize the extent that the local procurement office has been able to employ EDI. As recommended by the PAT, 10 of the 12 measures, deal with actual process employment and the remaining two concern the monitoring of that employment impact on the business relationship between DoD and its trading partner.

5.5.1 ELECTRONIC DATA INTERCHANGE EMPLOYMENT EFFECTIVENESS

The PAT recommends the following minimum set of measurements of a procurement office's effective employment of EDI. If the procurement office managers seek to further substantiate the actual benefits being derived from EDI, they can use their routine measures by segregating the EDI effected procurement actions from the non-EDI for analysis.

PROPOSED MEASURES:

- % ACTIONS - EDI

- % "NO QUOTES" - EDI ("NO QUOTES" - RFQ RETURNED WITH NO QUOTES FROM VENDOR BASE)

- % PURCHASE $ - EDI

- % LINE ITEMS PROCURED - EDI

- % EDI REQUEST FOR QUOTATIONS (RFQs) RECEIVED

- % EDI RFQs RECEIVED REQUIRING BUYER INTERVENTION

- % "NO QUOTES BY STOCK CLASS

- # ACTIVE EDI TRADING PARTNERS

- % ACTIVE TRADING PARTNERS - EDI

- # EDI TRANSACTION SETS BEING USED

5.5.2 VENDOR RELATIONS

A performance measure that quantifies contractor complaints, and congressional inquiries, associated with EC/EDI implementation could help identify and expedite the early resolution of problems associated with the implementation of electronic procurement procedures within DoD. The impact of EC/EDI implementation on the government relationship with its trading partners should continually be evaluated.

PROPOSED MEASURES:

- # EDI COMPLAINTS (COMPLAINT- VENDOR INPUT THAT OBJECTS TO EDI PROCESS)

- # EDI RELATED CONGRESSIONAL INQUIRIES

5.6 SUMMARY

The EC in Contracting PAT performed an integrated assessment of the specific benefits that DoD will realize from implementing EC/EDI, rather than duplicating the well documented results of previous studies of EDI's inherent benefits. Measurements of EDI implementation recommended by the PAT focus on macro process improvements that impact every DoD component . The PAT's findings indicate that EDI will increase the efficiencies and effectiveness of the overall procurement process. The improvements will increase, over time, as procurement processes are re-engineered and more contractors utilize this method of contracting. In addition, as more functional areas, e.g., finance, transportation, receiving, and contract administration, move toward an EC/EDI environment, the potential for the maximum utilization of electronic commerce will be realized in the future contracting arrangements with the Government.

6.0 EDUCATION OF INDUSTRY AND GOVERNMENT

6.0 EDUCATION OF INDUSTRY AND GOVERNMENT

6.1 INTRODUCTION

Education of Government and Industry is an essential ingredient in the implementation of Electronic Commerce (EC) in Contracting in the Department of Defense (DoD). Timely implementation of high quality education optimizes the benefits realized by all participants. Various Government, Industry, and private resources will be used to accomplish education objectives. These include Value Added Networks (VANs) services, formal training programs, trade associations, Small Business Administration (SBA), and other Government education and procurement assets.

Industry has been leading the Government in EC for the last ten years, but the Government has gained experience in the past three to five years with EC in Contracting through DoD initiatives referenced in Chapter 1. The lessons learned from this experience have been substantiated by data calls and meetings with interested parties. This Chapter is based on these sources of input.

6.2 OBJECTIVE

Identify educational requirements and propose functional assignment of responsibilities to support the Government implementation of EC in contracting; supporting the successful participation of Government procurement organizations and trading partners in six-month, one-year, and two-year implementation milestones.

6.3 ASSUMPTIONS

The EC in Contracting Process Action Team (PAT) recognizes that certain assumptions are necessary in order to reach conclusions concerning educational issues under consideration. The assumptions are as follows:

- The DoD will designate an office to implement EC in Contracting, hereafter referred to as the Program Office.

- Implementation will be on a regional basis.

- DoD procurement organizations in each region will convert simplified purchases to EC in accordance with the phased implementation.

- Regional conferences will be conducted to provide orientation to prospective trading partners.

- Any exceptions to regional fielding will be accompanied by local orientation efforts for the affected trading partners.

6.4 CONCEPT

Educating the public and private sectors are a key ingredient for a successful EC implementation. Many aspects of education must be accomplished to ensure success. First, training must be done early enough in the implementation process to allow Industry

to make appropriate resource and business arrangements, but not so early that significant change occurs after Industry makes those commitments. Second, DoD must ensure that instructors in educational institutions should be among the first to be trained. Content is a crucial aspect of education. Educational efforts must provide accurate information; consistent with the procedures and methods that will actually be used.

Other aspects of education include providing basic information, training on operational procedures and methods, and training on theoretical concepts. Informing consists of notification of basic information such as the rationale and schedule for implementing EC. Educating addresses procedures and methods necessary to conduct EC transactions. Training leads to a change in behavior, resulting in new skills and knowledge, and may include simulation. Different approaches will be required, as appropriate for different audiences.

The private sector target audience of trading partners is divided into three groups; (1) those who already understand and are practicing EC; (2) those who are aware of EC but are not practicing it; and (3) those who are not aware of EC. The public sector target audience consists of buyers, contracting officers, managers, and system administrators who will be using and managing EC contracting processes. Furthermore, a distinction is made between initial baseline and the sustainment training of new personnel. Each group has different educational needs that have been further divided into six major efforts listed below:

- Prepare literature, video tapes, and other instructional materials.

- Request participation of small business and small disadvantaged business trading partners.

- Conduct regional orientation conferences.

- Conduct initial training of buyers, contracting officers, managers, system administrators, and Small Disadvantaged Business Utilization Specialists (SADBUS).

- Conduct sustainment training of buyers, contracting officers, managers, systems administrators, and SADBUS.

- Provide training information to trading partners via VANs.

6.4.1 PREPARE INSTRUCTIONAL MATERIALS

Materials must be generated during Phase I and provided to organizations participating in the educational efforts. For the sake of consistency, information should be developed by a single contractor under the direction of the program office. The information is a prerequisite to fielding, since it will be used to prepare trainers, Government users and trading partners. It should include tutorials, news releases, informational brochures, manuals, and articles for trade magazines. It will be available to VAN service providers, trading partners, SBA, contracting offices, SADBUS, and the agents for orientation conferences. Costs for these efforts are estimated to be $100,000.

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6.4.2 OUTREACH PROGRAM TO SMALL BUSINESS AND SMALL AND DISADVANTAGED BUSINESS TRADING PARTNERS

The Small Business Association and DoD contracting organizations will each conduct separate efforts during Phases I, II and III. They will provide information and education to current and prospective trading partners and will actively solicit their participation. These efforts will be conducted through effective use of the instructional materials identified above, as well as DoD and SBA participation in trade fairs and conferences.

6.4.2.1 SMALL BUSINESS ADMINISTRATION

The Department of Defense will enter into an interagency agreement with SBA to support educational efforts in accordance with implementation of the DoD EC plan. SBA will play a major role in this activity. The Office of Business Initiatives, Education and Training (BIET) will institute a comprehensive outreach program that should inform, educate, and train the small businesses and small disadvantaged business community through the SBA network of 10 regional offices and 68 district offices.

SBA will inform using Government bulletin boards, such as "SBA On-line", Industry and trade association newsletters, and preparation of materials for association meetings to inform potential trading partners of the benefits of EC. They may also consider educational television/cable as a broad outreach tool and develop an orientation package that explains what EC and EDI are and what adjustments to contractor in-house computer system capabilities may be required. Finally, SBA may prepare general fact sheets and information brochures for dissemination to Industry at no cost through SBA and external sources.

SBA suggests the use of a newly developed self-pace learning package, including a manual, software, and a 30 minute video tape. These materials will be used at hundreds of procurement fairs and distributed, at cost, to the general public. SBA has experienced that response is better in the business community when a product or service carries a reasonable fee.

Training will be "hands-on," through seminars and conferences. It will focus on the technical aspects, business implications, and the procedural requirements of EDI transactions with DoD. SBA will develop training modules for use in each of their 68 district offices and 100 procurement centers.

SBA requires resources to supplement their core capabilities to be able to accomplish efforts discussed above. The resources include adequate staff, travel, contractor support, equipment, and other needs necessary to implement this key effort. The EC in Contracting PAT's estimate of the additional staff includes seven positions in Phase I and II, and four positions in Phase III. The total estimated cost over two years is $1,556,000.

6.4.2.2 DoD CONTRACTING ORGANIZATIONS

DoD contracting organizations will conduct aggressive local efforts to promote trading partner participation. These efforts will require utilization of locally operated business opportunity centers and the far-reaching assets of the DoD Procurement Technical Assistance (PTA) Cooperative Agreement Program. This program, established by Congress in the FY85 Authorization Act consists of 94 agreements with state governments, local governments and nonprofit entities that help businesses market their

goods and services to DoD. The PTA program, implemented by the Defense Logistics Agency (DLA), conducts conferences throughout the year across the nation. DLA will provide information to the PTA program cooperative entities for use in their efforts. No additional costs are associated with these efforts.

6.4.3 REGIONAL ORIENTATION CONFERENCES

Sixteen regional orientation conferences will be conducted during Phase I to introduce EC to trading partners and to solicit their participation. The conferences will serve as a training ground for SADBUS and other personnel who will interface with trading partners at the local level. By using DoD sponsored regional conferences, significant time and cost savings can be achieved. These conferences will include representatives from every base, post, camp, and station in the region and address all DoD EC implementation efforts. This process should never be repeated at an activity, unless the activity was unable to participate in the regional conference.

All regional conferences should be conducted by a contractor. The estimated cost is $30,000 for travel and $50,000 for labor for a total of $80,000.

Funding for Government participation in each of the 16 one-day conferences is estimated at $500 for airfare and $250 per diem for five persons from the component program offices; $250 for airfare or ground transportation, and $250 per diem for 20 persons from the component deployment locations; and $1,250 for conference expenses for a total of $15,000 for each conference. The total estimated cost for the 16 conferences is $240,000. Cost associated with DFAS participation is an additional $12,000.

The grand total, including contractor support and Government participation, is $332,000. The conference sites selected are listed below.

- Orlando, Florida
- Norfolk, Virginia
- Little Rock, Arkansas
- San Antonio, Texas
- Los Angeles, California
- Sacramento, California
- San Diego, California
- Honolulu, Hawaii

- St. Louis, Missouri
- Denver, Colorado
- Detroit, Michigan
- Minneapolis, Minnesota
- Seattle, Washington
- Albany, New York
- Harrisburg, Pennsylvania
- Boston, Massachusetts

6.4.4 INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SYSTEM ADMINISTRATORS AND SMALL AND SMALL DISADVANTAGED BUSINESS UTILIZATION SPECIALISTS (SADBUS)

Initial training of subject audience will occur throughout Phases I, II, and III and will be accomplished through a combination of Government training teams with contractor support. The estimated cost is depicted in the following chart.

NUMBER OF SITES IMPLEMENTED BY SYSTEM AND PHASE

SYSTEM	Phase I	Phase II	Phase III
APADE	18	7	0
ITIMP	0	3	0
MADES/MADES II	21	48	29
SAACONS	69	8	0
SPEDE	2	0	0

TABLE 6.1

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TRAINING COSTS PER SITE

SYSTEM	COST ($000)
APADE	$1,000
ITIMP	$1,000
MADES/MADES II	$2,000
SAACONS	$2,000
SPEDE	$2,000

TABLE 6.2

INITIAL TRAINING COSTS FOR IMPLEMENTATION ($000)

SYSTEM	PHASE I	PHASE II	PHASE III
APADE	$18,000	$7,000	0
ITIMP	0	$3,000	0
MADES/MADES II	$42,000	$96,000	$58,000
SAACONS	$138,000	$16,000	0
SPEDE	$4,000	0	0
TOTAL	$202,000	$122,000	$58,000

TABLE 6.3

6.4.5 SUSTAINMENT TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SYSTEM ADMINISTRATORS AND SADBUS

Sustainment training will be the responsibility of the Defense Acquisition University (DAU), and should begin in Phase III. Curriculum pertaining to or affected by EC should be modified to include the following courses: (1) Purchasing Fundamentals, PUR101, (2) Intermediate Purchasing, PUR201, (3) Contracting Fundamentals, CON101, (4) Executive Pre-Award Contracting, CON311, (5) Executive Contracting, CON301.

The first two courses focus on small purchases and other simplified purchase procedures, the next two courses cover contract award, and the last course addresses management in contracting. Developmental costs are estimated to be $70,000 and will be needed in Phase I.

6.4.6 TRAINING TRADING PARTNERS VIA VALUE ADDED NETWORKS

VANs should provide training to their customers on EC business procedures as part of their service. Based on the input from Industry, VANs have been the primary source of training for their customers on EC business procedures. It is assumed that VANs will continue to play that role.

6.5 MILESTONES

Table 6.4, 6.5, 6.6 contain the implementation schedule for education developed by the EC in Contracting PAT.

PHASE I

DESCRIPTION/MONTH	0	1	2	3	4	5	6
PREPARE INSTRUCTIONAL MATERIALS	X						
OUTREACH PROGRAM	X	X	X	X	X	X	X
REGIONAL ORIENTATION CONFERENCES		X	X	X	X	X	X
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SYSTEM ADMINISTRATORS (SA), AND SADBUS		X	X	X	X	X	X

TABLE 6.4

PHASE II

DESCRIPTION/MONTH	7	8	9	10	11	12
OUTREACH PROGRAM	X	X	X	X	X	X
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA, AND SADBUS	X	X	X	X	X	X

TABLE 6.5

PHASE III

DESCRIPTION/MONTH	13	14	15	16	17	18	19	20	21	22	23	24
OUTREACH PROGRAM	X	X	X	X	X	X	X	X	X	X	X	X
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA, AND SADBUS	X	X	X	X	X	X	X	X	X	X	X	X
SUSTAINMENT TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA, AND SADBUS	X	X	X	X	X	X	X	X	X	X	X	X

TABLE 6.6

6.6 RESOURCES

Table 6.6, 6.7, and 6.8 set forth the resources required to develop, establish, and maintain the educational portion of this effort. An accurate estimate of required resources cannot be developed without a complete DoD integrated processing system or an approved plan of action. Until these are in place, it is extremely difficult to provide complete and accurate estimates.

PHASE I

ACTIVITY	COST
PREPARE INSTRUCTIONAL MATERIALS	$100,000
OUTREACH PROGRAM	$673,000
REGIONAL ORIENTATION CONFERENCES	$332,000
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA AND SADBUS	$202,000
SUSTAINMENT TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA AND SADBUS	$70,000

TABLE 6.6

PHASE II

ACTIVITY	COST
OUTREACH PROGRAM	$673,000
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA AND SADBUS	$122,000

TABLE 6.7

PHASE III

ACTIVITY	COST
OUTREACH PROGRAM	$210,000
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA AND SADBUS	$58,000

TABLE 6.8

SUMMARY COST

ACTIVITY	PHASE I	PHASE II	PHASE III	TOTAL
PREPARE INSTRUCTIONAL MATERIALS	$100,000	$0	$0	$100,000
OUTREACH PROGRAM	$673,000	$673,000	$210,000	$1,556,000
REGIONAL ORIENTATION CONFERENCES	$332,000	$0	$0	$332,000
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA AND SADBUS	$202,000	$122,000	$58,000	$382,000
SUSTAINMENT TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA AND SADBUS	$70,000	$0	$0	$70,000
TOTAL	$1,377,000	$795,000	$268,000	$2,440,000

TABLE 6.9

6.7 TASKS

The DoD Program office will accomplish the following tasks to provide education support for implementation of EC in Contracting:

- Provide a contractual vehicle for preparation of educational materials and conduct regional orientation conferences in cooperation with components.

- Provide resources and materials to components participating as educational support during implementation of EC, to include regional orientation conferences, PTA program, and initial training.

- Implement interagency agreement between SBA and DoD Program offices to accomplish training of trading partners.

- Implement requirement for DAU to make appropriate changes in curriculum for sustainment training.

APPENDIX A

DEPARTMENT OF DEFENSE

ELECTRONIC DATA INTERCHANGE

TRADING PARTNER AGREEMENT

1. PURPOSE AND SCOPE:

a. This agreement prescribes the general procedures and policies to be followed by the Department of Defense (DoD) and its trading partner (vendor) when using Electronic Data Interchange (EDI) for transmitting and receiving business documents, including procurement-related transactions. Collectively, DoD and the vendor are referred to as "the parties". EDI is a technique for electronically transferring formatted information between computers.

b. The purpose of this agreement is to create an obligation between the parties using EDI and to ensure that (i) use of any electronic equivalent of documents (transactions) referenced or exchanged under this agreement shall be deemed an acceptable practice in the ordinary course of business and (ii) such transactions shall be admissible as evidence on the same basis as customary paper documents. The parties intend to be bound by such transactions.

c. Information exchanged through EDI will be the same as that currently required on paper documents.

d. Actions transmitted via EDI are subject to all applicable statutes and regulations.

2. OBJECTIVE:

DoD intends to maximize the use of EDI across those functional areas (e.g., procurement, finance, transportation, etc.) involved in the acquisition of supplies or services. EDI will be used in lieu of paper processes when DoD indicates via public notice its intent to use EDI for such purposes.

3. EFFECTIVE DATE AND PERIODIC REVIEW:

a. The effective date of this agreement will be the latest date shown in paragraph 14 of this agreement.

b. The parties will periodically review this agreement and make any required changes, additions, or deletions.

4. ADDITIONAL TERMS:

a. For EDI transactions, both DoD and the vendor shall strictly adhere to published American National Standards Institute (ANSI) X12 standards and, optionally, United Nations EDI for Administration, Commerce, and Trade (EDIFACT) standards when informed by the DoD Technical Representative that DoD sites will begin to use EDIFACT, for approved transaction sets delineated in the addenda to this agreement and shall comply with DoD data conventions and implementation guidelines thereto.

b. When DoD intends to upgrade an ANSI X12 or EDIFACT standard, DoD and the vendor will support both the current and previous versions of a standard within the following time frame: DoD will give the vendor at least 30 days notice of intent to upgrade to a new published standard. The vendor must upgrade to the new standard within 30 days after (i) DoD's published date of conversion or (ii) the actual date of conversion, whichever is later. DoD will discontinue support of the previous version within 60 days after the vendor's conversion date, or 60 days after the published date of conversion, whichever is later.

c. As a matter of common practice, ASC X12 standards and DSTU's (as well as EDIFACT messages) are seldom used in their entirety. For this reason, the DoD (in a manner similar to many private sector industry groups) has written a series of implementation conventions which are sub-sets of the ASC X12 standards and DSTU's. These conventions describe the precise manner in which the DoD intends to use the ASC X12 standards and DSTU's with its trading partners.

The EDI VAN Providers must (directly or indirectly via affiliated services) enable interested businesses to receive and send ASC X12 transaction sets following the DoD implementation conventions for the ASC X12 standards. (Conventions will be provided for EDIFACT messages when DoD begins using them). The EDI VAN Provider must support the exchange of ASC X12 transaction standards and draft standards for trial use (DSTU's) in the current version and release (Version 3, Release 3, referred to as "3030") as well as two prior releases (3010 and 3020). The DoD Technical Representative will provide the EDI VAN Provider with the DoD conventions and all updates for any ANSI ASC X12, EDIFACT, or other EDI messages DoD uses. The EDI VAN Providers must comply with the conventions and any changes to them within 90 calendar days of receipt from the Technical Representative.

Currently DoD conventions are available for ASC X12 Version 2, Release 3 and in draft form for transaction sets in ASC XI2 Version 3, Release 1 (many transaction sets) and Version 3, Release 2 (one transaction set only, the ANSI X12 838). DoD will issue new or updates to the conventions no more frequently than every six months, unless an emergency change to the conventions becomes required.

d. DoD will not provide EDI training or implementation support. The vendor is responsible for maintaining personnel trained in EDI application.

e. The parties will verify that all EDI transactions received are intact and comply with the appropriate ANSI X12 and any future EDIFACT standard. Either party may reject (i.e. return as unprocessable) any transaction that is missing information, contains altered data, or does not comply with the appropriate standard. The recipient may also reject a transaction if it is found to contain invalid data after translation by transmitting an ANSI X12 824, Application Advice Transaction Set. Translation is the conversion of computer system specific formats to ANSI X12 (or EDIFACT) transaction sets and vice versa. Transactions are deemed received only after they are successfully translated. DoD and

the vendor will retrieve and translate transactions within one working day of their arrival in the recipient's EDI mailbox. The recipient must transmit an ANSI X12 997, Functional Acknowledgment transaction set by the end of the business day following arrival of the transmission in the recipient's EDI mailbox to notify the sender that an ANSI X12 transaction hhas been accepted or rejected

     f. Information anticipated to be common to certain transmissions is set forth in the addenda to this agreement (e.g., Procurement, Finance, Logistics, etc.). Additional addenda and particular specifications and requirements for transmissions may be added upon the agreement of both parties.

5. REGISTRATION

     a. Prior to conducting EDI with DoD, the vendor must register by transmitting a Trading Partner Profile form to the DoD office listed below. The registration process will occur only once for each vendor. This will allow each vendor to conduct EDI business with all participating DoD EDI-capable sites. When DoD makes the ANSI X12 838 Trading Partner Profile transaction set available for use, the vendor will send the registration information to the DoD office listed below via a participating Value Added Network (VAN).

_____

_____

_____

_____

     b. It is the vendor's responsibility to ensure that the information provided to DoD at the time of registration is kept current and accurate. After registration, the vendor must submit a revised registration form to the DoD within 30 days of any change to such information.

6. FORCE MAJEURE

     Neither party shall be liable to the other for failure to conduct EDI in the event of war; accident; riot; fire; explosion; flood; epidemic; power outage; act of God; act of public enemy; act of government; labor dispute; error of, or nonperformance by, a third-party network; or any other cause beyond the party's control.

7. DAMAGES

     Neither party shall be liable to the other for any incidental, exemplary, or consequential damages resulting from any delay, omission, or error in electronic transmissions under this agreement.

8. SECURITY

     The parties will safeguard electronic data from tampering and unauthorized disclosure to ensure, as a minimum, the same level of protection required for their paper equivalents. This protection must extend beyond the transactions themselves to any files or data bases that contain information conveyed via EDI. Both parties shall also maintain

the confidentiality of passwords and other codes required for accessing this information. Neither party will sell, release, or otherwise furnish such information to unauthorized persons or third parties without the written approval of the other trading partner.

9. TERMINATION OF EDI OPERATIONS

Either party may permanently terminate EDI operations and this agreemtn, at no cost, provided at least 30 days advance written notice is given. Termination will not affect transactions already accepted. Emergency temporary termination of computer connections may be made to protect data from illegal access or other incidental damage. Such action does not constitute termination of this agreement.

10. THIRD-PARTY NETWORK

a. Before entering into this agreement, the parties shall agree on the mode of exchange. If the vendor chooses an EDI VAN provider to transmit, translate, or carry data between the parties, the VAN shall be identified below.

> The following EDI VAN provider is authorized under this agreement to process data for the purpose of EDI between DoD and the vendor. The EDI VAN provider possesses a valid EDI VAN license with DoD.

_____(Company Name)
_____(Address)
_____

b. The vendor may elect to perform as its own EDI VAN by obtaining a DoD VAN license through the Defense Information Systems Agency.

c. When a third-party network will be used by the vendor:

i. The vendor shall be responsible for the cost of its third-party network.

ii. The vendor is responsible for ensuring that the third-party network is capable of providing such system/data security as data integrity, error-free protocol, identification code and password protection, encryption, etc.

iii. The vendor may terminate use of a third-party provider with a 30 day advance written notice to DoD. DoD will not incur any liability for costs associated with such a termination.

11. ELECTRONIC SIGNATURE

Each party agrees not to disclose its own discrete authenticating signature code or that of the other party to any unauthorized person. When a signature is required on a transmission, receipt of a vendor's authenticating code in the proper transaction set data element shall have the same force and effect as a manual written signature. Use of any electronic signature or encryption software will be coordinated with both trading partners prior to its use.

12. WHOLE AGREEMENT

This agreement and all addenda attached constitute the entire agreement between the parties. No change in the terms and conditions of this agreement shall be effective unless approved in writing by both parties. Modifications to this agreement are effective upon the date of the last signature. The parties agree to abide by the terms of the conformed agreement, including all modifications in effect at the time of a particular transaction.

13. ORDER OF PRECEDENCE

a. Any inconsistency in this agreement shall be resolved by giving a precedence in the following order: i) amendments, ii) addenda and iii) the basic agreement.

b. The purpose of this agreement is to provide for the electronic exchange of business information and data, including orders and contracts. In the event that this agreement conflicts with any order or contract between the parties, the terms of the order or contract shall take precedence.

14. EXECUTION OF FORMAL AGREEMENT

All notices under this agreement shall be in writing and shall be transmitted to the address identified below.

Vendor: DoD:

_____   _____

_____   _____

_____   _____

Attn: _____   Attn: _____

IN WITNESS WHEREOF, the parties have executed this agreement.

Vendor: DoD:
By   _____   By   _____
Name   _____   Name   _____
Title   _____   Title   _____
Date   _____   Date   _____

DEPARTMENT OF DEFENSE

EDI TRADING PARTNER AGREEMENT

ADDENDUM__

PROCUREMENT

Small Purchase and Other Simplified Procedures

    a. Applicable Transaction Sets and Standards

    Procurement actions transmitted via EDI are subject to all applicable statutes and regulations set forth in the Federal Acquisition Regulation (FAR), the Department of Defense Supplement (DFARS), Service and Defense Agency Supplements thereto.

       824 - Application advice (to accept or reject translated data)
       836 - Award summary
       838 - Trading partner profile
       840 - Request for Quotation (RFQ)
       843 - Response to Request for Quotation
       850 - Purchase order or deliver order
       855 - Purchase order acknowledgment
       864 - Text message
       997 - Functional acknowledgment (to accept or reject ANSI X12 transmissions)

    b. Electronic Text Mail

    Electronic text mail may be exchanged as simple text mail or as part of the ANSI X12 transaction set 864. Transaction set 864 must be used when submitting text in reference to a particular transaction, such as an RFQ.

    c. Acknowledgment

    A contracting officer has the discretion to require a contractor to acknowledge receipt of order prior to performance. When such acknowledgment is required, any document which has been properly received by the contractor shall not give rise to any obligation against the Government, unless the Government has properly received an acknowledgment of receipt within the time period specified in the request for acknowledgment.

VOLUME 2
IMPLEMENTATION PLAN

VOLUME 2 IMPLEMENTATION PLAN

This implementation plan sets forth the actions to deploy and operate the necessary infrastructure and related procurement Automated Information System (AIS) capability for Electronic Data Interchange (EDI) within the Department of Defense (DoD).

1.0 INTRODUCTION

This section describes the background, planning considerations, and planning assumptions affecting the implementation plan.

1.1 BACKGROUND

1.1.1 EDI OPPORTUNITIES

EDI provides an electronic medium in which to exchange business transactions with our trading partners, that is, private Industry. EDI achieves its efficacy through moving large volumes of transactions. The best opportunities for EDI in the procurement function reside with those transactions which are high volume and most straightforward in their data requirements.

1.1.2 FY92 STATISTICS

The present DoD procurement environment can be examined by an analysis of the types of transactions executed by its contracting offices. As shown below, transactions of $25,000 and less are the majority (98 percent) of DoD's actions. These actions below the $25,000 small purchase threshold represent the best target for DoD's EDI initiative in contracting. The statistical information for the first six months of Fiscal Year 1993 (FY93) is consistent with the volume and proportions of transactions which occurred in Fiscal Year 1992 (FY92).

FY92	ACTIONS	$ OBLIGATED
Total	12.087M	136.3B
Greater than $25,000	0.236M	121.4B
$25,000 or Less	11.851M	14.8B

Source: Washington Headquarters Services

In FY92, more than 1,400 DoD contracting offices participated in performing the DoD total of 11.851M transactions of $25,000 or less. Approximately 10.2 million of these transactions (85 percent) were performed by the 238 DoD activities which accomplished 10,000 or more such actions in FY92. Most of these activities were installation and facility engineering offices. The remaining 1,000+ contracting activities accomplished the remaining 15 percent.

Transactions below the small purchase threshold consist of small purchases, delivery orders, and modifications. A small number of actions using formal contracting procedures but awarded at values of $25,000 or less is also included. The small

purchases represent approximately 6 million actions. Of these, approximately 85 percent are awarded at values of $2,500 or less and do not presently require competitive solicitation.

Small purchases present opportunities for dissemination of solicitations using EDI as the medium. While these purchases include some services and noncompetitive actions which would not lend themselves to broad, open market solicitation with current EDI capability, 65 percent of all small purchases could be expected to be available for solicitation via EDI. A greater percentage could be available as EDI capabilities mature.

1.1.3 EDI CAPABILITY

The capability for EDI is tied to a procurement AIS or materiel management AIS in most instances. These capabilities are discussed in Volume I, Chapter 2.

The EDI capable procurement AISs are found in significant numbers at DoD installations. These are the bulk of the 238 sites that perform 85 percent of the transactions of $25,000 or less. The most prevalent procurement AISs at these installations are SAACONS, BCAS, and APADE, reflecting the installations' numerous supply and service actions. Accordingly, the EDI capability of these procurement AISs is the critical factor in near term success for Electronic Commerce (EC).

1.2 PLANNING CONSIDERATIONS

1.2.1 INTRODUCTION

This subsection describes factors for consideration in planning the implementation of EDI capability in DoD. These factors include time sensitive and support service items which will impact the pace of implementation.

1.2.2 INFRASTRUCTURE

The infrastructure consists of those services, both centralized and decentralized, which are required to support the implementation plan, the related transaction telecommunications, security, archiving, etc. The infrastructure may also include central support services for functional operations. Examples are centralized contractor registration and the centralized issuance of trading partner agreements. Resources to support these recommendations are included in this implementation plan.

1.2.2.1 PROGRAM MANAGEMENT

Program management for the functional infrastructure and operations is the responsibility of the Office of the Under Secretary of Defense (Acquisition & Technology) (OUSD(A&T)). Execution occurs primarily in the components.

Program management for the technical infrastructure and operations is the responsibility of the Office of the Assistant Secretary of Defense (Command, Control, Communications & Intelligence) (C3I) and is executed by DISA.

1.2.2.2 DISTRIBUTION HUBS AND GATEWAYS

DoD distribution hubs and gateways operated by the components are presently available or can be available by the time required to execute their function in support of the implementation plan. The addition of certified Value Added Networks (VANs), operating under the DoD VAN agreement, will require 60 to 90 days lead time from approval of the technical plan and OUSD(A&T) direction to proceed. In the interim, VAN services will continue to be supplied under existing contracts and agreements. Two of the largest DoD information processing centers, Columbus, Ohio and Ogden, Utah, are the proposed distribution hub sites.

1.2.2.3 CONFIGURATION MANAGEMENT OF THE DoD EDI CONVENTIONS

Operating and maintaining DoD's EDI capability to the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 standards or the international EDIFACT standards require DoD EDI conventions. This is essential for the proper alignment and transfer of data. To ensure the accuracy of the conventions and their usage, coordination with functional users must be effected by a DoD standards body tasked with configuration management of the conventions. This effort requires participation by all components. Pending further development of conventions, the DoD EDI Conventions dated December 1991 are effective for this plan. The DISA Center for Standards in conjunction with the Procurement CIM will satisfy the requirement for issues pertaining to transaction sets which do not fulfill the functional requiring activities needs in accordance with Volume I, Section 2.7.3.

1.2.2.4 MASTER CONTRACTOR REPOSITORY

A Master Contractor Repository does not exist and should be established to perform this function in support of DoD EDI. Such a repository allows contractors to register one time with DoD versus each contracting activity. This database will significantly reduce the number of contractor SF 129 submissions while providing information on contractors not presently known at each activity. This is also a necessary step for future connectivity of the procurement AIS in sharing contractor information and is a critical part of migration to a standard procurement system.

1.2.2.5 TRADING PARTNER AGREEMENTS

A Trading Partner Agreement (TPA) sets forth the obligations of DoD and each contractor for conducting EDI. It is not a contractual instrument. To reduce the need for multiple TPAs, a single TPA with addenda describing requirements for different functional areas is proposed.

1.2.3 DoD REGIONAL CONTRACTOR CONFERENCES

Conferences should be used to introduce EDI to DoD's contractors and to solicit their participation. Additionally, these conferences will provide a training ground for the small business and small disadvantaged business utilization specialists and other personnel who will interface with contractors at the local level. By using regional conferences sponsored by DoD, significant time and cost savings can be achieved. These conferences would include representatives from all components and address all DoD

3

EDI implementation efforts within the region. This process should be repeated at a smaller level at each activity. Components will host individual conferences at their expense if their deployment acceleration occurs at individual activities in advance of the regional conferences.

1.2.4 DEPLOYMENT LOCATIONS

The majority of locations at which EDI capability will be implemented are located in the southern and western United States. These two areas also represent the majority of locations with an EDI capability presently and offer an existing contractor base.

1.2.5 DEFENSE COMMISSARY AGENCY

The Defense Commissary Agency (DeCA) performs approximately 20 percent of all DoD small purchases. However, DeCA is subject to specific statutes defining its acquisition procedures which do not apply to most DoD purchases. Accordingly, DeCA is invited to use as much of the DoD EDI infrastructure and capabilities as exist that comply with their requirements. Additional actions by DeCA are not included in this implementation plan.

1.3 PLANNING ASSUMPTIONS

1.3.1 INTRODUCTION

This subsection describes the assumptions upon which this implementation plan is based. Changes in the assumptions, particularly as related to the approval of the plan and the availability of funding, will defer deployment schedules on a week for week basis.

1.3.2 IMPLEMENTATION PLAN ASSUMPTIONS

- This plan will be approved by OUSD(A&T) and directed to an activity for execution.

- Funding will be made available to the components and DoD staff activities involved in execution of the plan. The time phasing of the plan is predicated upon a start date coincident with the receipt of funds.

- The OUSD(A&T) activity tasked with the oversight and execution of this plan will be provided sufficient direction, authority, and resources to perform that function timely and efficiently.

- Full support to the DISA execution plan will be provided by ASD (C3I).

- Only procurement AIS capability which is presently or imminently available and in general conformance with the objectives of establishing a "single face to industry" will be deployed pursuant to this plan.

- EDI capabilities must provide a single face to Industry.

    - DoD will use ANSI X12 and EDIFACT standards.

    - DoD EC/EDI initiatives will adhere to DoD implementation conventions.

    - One point of entry will be available for contractor connectivity.

- A Master Contractor Repository will be established to provide a single point of registration.

- A centralized standard TPA will be established at an activity identified to perform this task.

- A standard VAN agreement will be used.

- EC/EDI initiatives will take advantage of Industry practices.

- Deployment planning is to be addressed in 6 month, 12 month, and 24 month phases. Emphasis is on the first six months.

- Focus is on activities making small purchases (transactions of $25,000 or less).

- In applying the Pareto principle to prioritize deployment of procurement EDI initiatives, OUSD (A&T) will sponsor deployments for those 20 percent of the activities that process 80 percent of the transactions that are $25,000 or less. These activities have been identified as those that award greater than 10,000 of these transactions annually. Only one Inventory Control Point (ICP) met this criteria, therefore, to provide EC/EDI capability to the ICP, the PAT incorporated their costs and scheduled ICP implementation dates.

- DoD contracting activities which are located in foreign countries will use EC/EDI only for procurement actions with firms using ANSI X12 transactions sets pending a DoD capability with EDIFACT.

1.4 PLAN PHASES

This subsection describes the phasing of the implementation plan.

1.4.1 PHASE I

Phase I of this plan describes activities during the first six months after the receipt of funding. This phase contains the primary effort to deploy EC/EDI in DoD. The deployment scheme begins in the Southeast, moves westward across the South to the Pacific Coast, north and eastward across the upper tier states and Midwest, and ends in the Northeast. This scheme facilitates the use of regional contractor conferences, balances training and start-up efforts on the part of the components, and takes advantage of the existing EDI contractor base early in the process. Concurrently, infrastructure will be built to accommodate the increased EDI requirements.

1.4.2 PHASE II

Phase II of this plan describes activities during the second six months after the receipt of funding. This phase contains the deployment scheme to field EDI capability at DoD contracting activities in Alaska, the Pacific Rim, NATO, and Panama. Additional deployments would occur at smaller CONUS activities as the infrastructure is available to support them.

1.4.3 PHASE III

Phase III of this plan describes activities during the 13th through 24th month after receipt of funding. This phase contains the effort to strengthen EC/EDI use and processes through improvements to standards, implementation conventions, additional infrastructure, and expansion of procurement AIS capability where appropriate.

1.5 DEPLOYMENT SCHEDULE AND LOCATIONS

The deployment schedule for component locations and the actions necessary to build the DoD EC/EDI infrastructure are set forth in section 11.0 of this volume and in Volume I, Chapter 2.0. Components retain the flexibility to deploy their EDI capability to their priority locations in variance of the schedule.

2.0 FUNCTIONAL MILESTONES AND REQUIRED RESOURCES

This section summarizes the key milestones and resource requirements which were identified in Volume I, Chapter 2.0.

2.1 FUNCTIONAL MILESTONES

	PHASE I	PHASE II	PHASE III
TRANSACTION SET DEVELOPMENT AND PHASING	840 - REQUEST FOR QUOTE (RFQ) 843 - RESPONSE TO RFQ 850 - PURCHASE ORDER (PO)	824 - APPLICATION ADVICE 836 - CONTRACT AWARD SUMMARY 838 - TRADING PARTNER PROFILE 864 - TEXT MESSAGE 997 - FUNCTIONAL ACKNOWLEDGMENT	832 - PRICE/SALES CATALOG 855 - PO ACKNOWLEDGMENT 860 - PO CHANGE 865 - PO CHANGE ACKNOWLEDGMENT 869 - ORDER STATUS INQUIRY 870 - ORDER STATUS REPORT

2.2 SUPPORTING DFAS MILESTONES

APPLICATION	EDI DEVELOPMENT STAGE	TESTING STAGE	INITIAL OPERATING CAPABILITY (IOC)
COMMERCIAL INVOICES MOCAS SAMMS O & M	COMPLETE COMPLETE BEGIN 1ST QTR 94	1ST QTR FY 94 COMPLETE TBD	2ND QTR FY 94 3RD QTR 93 TBD
PAYMENT/ REMITTANCE ADVICE	TBD	TBD	TBD
PROGRESS PAYMENTS	IN PROGRESS	4TH QTR FY 94	4TH QTR FY 94
SOURCE DD 250/ SHIP NOTICE	IN PROGRESS	4TH QTR FY 94	4TH QTR FY 94
PUBLIC VOUCHER	IN PROGRESS	TBD	TBD
APPLICATION ADVICE	IN PROGRESS	2ND QTR FY 94	3RD QTR FY 94
FUNCTIONAL ACKNOWLEDGMENT	COMPLETE	COMPLETE	3RD QTR FY 93

2.3 REQUIRED RESOURCES

2.3.1 IMPLEMENTATION PLAN EXECUTION

Implementation of this plan requires coordination and execution by a single central functional coordinator in the OUSD(A&T) and each component. This is estimated at two persons annually for OUSD(A&T) and each Service (Army, Navy, Air Force); and one person annually each for the Marine Corps, the Defense Logistics Agency, the Defense Contract Management Command, and the Defense Finance and Accounting service. Further, it includes two persons annually for support by the Corporate Information Management Procurement Council's Functional Integration Management staff to the Deputy Under Secretary of Defense (Acquisition Reform) and to the Director of Defense Procurement. Each man-year is estimated at $95,000. These functional coordinators should be identified in Month 1.

COMPONENT	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTALS
OUSD(A&T)	$95,000	$95,000	$190,000	$380,000
ARMY	$95,000	$95,000	$190,000	$380,000
NAVY	$95,000	$95,000	$190,000	$380,000
AIR FORCE	$95,000	$95,000	$190,000	$380,000
FIM STAFF	$95,000	$95,000	$190,000	$380,000
USMC	$47,500	$47,500	$95,000	$190,000
DLA	$47,500	$47,500	$95,000	$190,000
DCMC	$47,500	$47,500	$95,000	$190,000
DFAS	$47,500	$47,500	$95,000	$190,000
TOTAL COST	$665,000	$665,000	$1,330,000	$2,660,000

2.3.2 CONFIGURATION MANAGEMENT (FUNCTIONAL PARTICIPATION)

Configuration management of the implementation conventions requires participation from the components. Funding for configuration management represents $500 for airfare and $500 per diem per one week trip for two persons from each component and the FIM staff plus one person from OUSD(A&T). To accomplish the outstanding tasks, the estimated work effort is seven trips in FY94 and six trips in FY95. A small reserve has been included. Funding will be managed through the FIM staff which will provide fund citations to the travelers from each component. The primary purpose of the travel is mapping of component data elements to transaction sets and development of data maintenance items for the ANSI X12 meetings. Separate funding is identified in Chapter 2 for DISA Center of Standards participation.

COMPONENT	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTALS
OUSD(A&T)	$4,000	$3,000	$6,000	$13,000
ARMY	$8,000	$6,000	$12,000	$26,000
NAVY	$8,000	$6,000	$12,000	$26,000
AIR FORCE	$8,000	$6,000	$. .00	$26,000
FIM STAFF	$8,000	$6,000	$. .0	$26,000
USMC	$8,000	$6,000	$. .0	$26,000
DLA	$8,000	$6,000	$12,000	$26,000
DCMC	$8,000	$6,000	$12,000	$26,000
RESERVE	$5,000	$5,000	$10,000	$20,000
TOTAL COST	$65,000	$50,000	$100,000	$215,000

3.0 TECHNICAL MILESTONES AND REQUIRED RESOURCES

This section summarizes the key milestones and resource requirements which were identified in Volume I, Chapter 2.0.

3.1 APADE-AUTOMATION OF PROCUREMENT AND ACCOUNTING DATA ENTRY, US NAVY

3.1.1 COST/MILESTONES FOR REQUIRED BASELINE CHANGES

APADE does not require modification to meet minimum requirements.

3.1.2 COST/MILESTONES FOR FULL DEPLOYMENT

The deployment of APADE can be accomplished without additional hardware and software at APADE sites. The Gateway/Distribution Hubs exist at various US Navy installations. Approximately $1,000 per site is needed to deploy APADE. Deployment is scheduled to be completed by Month 8.

TABLE 3.1 APADE

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTALS
NUMBER OF SITES	18	7	0	25
COST PER SITE	$1,000	$1,000	0	$1,000
TOTAL COST	$18,000	$7,000		$25,000

3.2 ITIMP-INTEGRATED TECHNICAL ITEM MANAGEMENT AND PROCUREMENT SYSTEM, US NAVY

3.2.1 COST/MILESTONES FOR BASELINE CHANGES

ITIMP does not require modification to meet minimum requirements.

3.2.2 COST/MILESTONES FOR FULL DEPLOYMENT

The deployment of ITIMP can be accomplished without additional hardware and software at ITIMP sites. Gateway/Distribution Hubs are located at ASO, Philadelphia and SPCC, Mechanicsburg, Pennsylvania. There are three sites to implement, at a cost of $1,000 per site. Completion date is Month 8.

TABLE 3.2 ITIMP

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTALS
NUMBER OF SITES	0	3	0	3
COST PER SITE	$1,000	$1,000	0	$1,000
TOTAL COST	$0	$3,000	0	$3,000

3.3 MADES-MENU ASSISTED DATA ENTRY SYSTEM, US AIR FORCE

3.3.1 COSTS/MILESTONES FOR REQUIRED BASELINE CHANGES

MADES and MADES II as prototyped meet the baseline requirements.

3.3.2 COSTS/MILESTONES FOR FULL DEPLOYMENT

3.3.2.1 MADES/AUTOMATED CONTRACT PREPARATION SYSTEM

MADES in cooperation with Automated Contract Preparation System (ACPS) provides procurement AIS support to the Air Force Materiel Command's Inventory Control Points. Connectivity and operational issues with the Air Force Gateway at Gunter AFB, Alabama and the DISA Gateway/Distribution Hub at IPA, Columbus, Ohio are the only potential impediments to making the system operational. There is no additional cost for hardware or software at the MADES/ACPS processing site. Management and buyer education has been completed, hence, the EC/EDI capability in MADES/ACPS could be implemented as soon as the Air Force Gateway and DISA Distribution Hub are established.

TABLE 3.3.1 MADES

DEPLOY ORDER	ACTIVITY	CITY	DEPLOY DATE	COST
1	WARNER ROBBINS ALC	MARIETTA, GA	MONTH 3	$2,000
2	SAN ANTONIO ALC	SAN ANTONIO TX	MONTH 3	$2,000
3	TINKER ALC	OKLAHOMA CITY OK	MONTH 4	$2,000
4	SACRAMENTO ALC	SACRAMENTO CA	MONTH 4	$2,000
5	OGDEN ALC	OGDEN UT	MONTH 4	$2,000
			TOTAL	$10,000

3.3.2.2 MADES II/BASE CONTRACTING AUTOMATION SYSTEM

MADES II in cooperation with Base Contracting Automation System (BCAS) provides procurement AIS support to installation contracting activities. The EC/EDI capability of MADES has not yet been completed. An estimated 6 man-months must be invested in completing MADES II EC/EDI. Testing the delivery of data to and from MADES II/BCAS will be via an AF Gateway and a DISA Distribution Hub. Availability of a Gateway and Distribution Hub is required. A second Air Force Gateway will be established in Phase III. The cost per site is estimated at $7,000. There are 211 potential sites for MADES II deployment at a total cost of $1.48M. However, scheduled deployment is for the 93 sites that process more than 10,000 actions per year.

TABLE 3.3.2 MADES II

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTALS
NUMBER OF SITES	16	48	29	93
COST PER SITE	$7,000	$7,000	$7,000	$7,000
TOTAL COST	$112,000	$336,000	$203,000	$651,000

3.4 SAACONS-STANDARD ARMY AUTOMATED CONTRACTING SYSTEM, US ARMY

3.4.1 COSTS/MILESTONES FOR BASELINE CHANGES

SAACONS with SACONS-EDI has the initial generating capability of X12 COTS translator, and DoD Conventions. Funding and scheduling for additional changes to meet the baseline are not necessary.

3.4.2 COSTS/MILESTONES FOR FULL DEPLOYMENT

The planned near-term hardware and software changes convert proprietary SACONS-EDI Intelligent Gateway Processor (IGP) software to ABC EDI-Server (COTS), ABC Translator, and DoD conventions. The long term planned changes for SACONS-EDI are to incorporate the results of the EDI pilot into the SAACONS application. The Army estimated cost for deployment is $2,000 per site for installation and systems training. There is no cost expected for hardware or software at the sites. Implementation plans depend upon the establishment of Distribution Hubs for DoD. There are 36 existing SACONS-EDI activities. Estimated cost of implementing EC/EDI for the remaining 201 Army sites is $402,000. The implementation schedule includes 77 sites processing more than 10,000 actions per month, with a single Army wide Gateway at Ft. Lee, Virginia, during Phase I and established DoD Distribution Hubs. A second Army Gateway will be established in Phase III. Completion date is Month 8.

TABLE 3.4 SAACONS

	0-6 MONTHS	7-12 MONTHS	13-24 MONTHS	TOTALS
NUMBER OF SITES	69	8	0	77
COST PER SITE	$2,000	$2,000	0	$2,000
TOTAL COST	$138,000	$16,000	0	$154,000

3.5 SPEDE-STANDARD AUTOMATED MATERIEL MANAGEMENT SYSTEM PROCUREMENT BY ELECTRONIC DATA EXCHANGE, DEFENSE LOGISTICS AGENCY

3.5.1 COSTS/MILESTONES FOR BASELINE CHANGES

The conversion of SPEDE has already begun and will carry over into FY94. The DLA Gateway is at DAASC in Dayton, Ohio.

3.5.2 COSTS/MILESTONES FOR FULL DEPLOYMENT

Deployment of SPEDE is already being implemented to the five DLA Inventory Control Points.

TABLE 3.5 SPEDE

DEPLOY ORDER	ACTIVITY	CITY	DEPLOY DATE	COST
1	DPSC (MED)	PHILADELPHIA PA	DONE	0
2	DISC	PHILADELPHIA PA	DONE	0
3	DCSC	COLUMBUS OH	DONE	0
4	DESC	DAYTON OH	OCT '93	$15,800
5	DGSC	RICHMOND VA	NOV '93	$15,800
			TOTAL	$31,600

3.6 ESTABLISHMENT OF INITIAL CONFIGURATION MANAGEMENT STRUCTURE

The following cost estimates are not based on an extensive review of conditions within the current EDI Program or an estimate of specific courses of action. They are based, however, on extensive experience with C4I syntax standardization programs such as Tactical Data Information Links, United States Message Text Formatting, Variable Message Format, etc.

3.6.1 MANAGE DoD PARTICIPATION IN NON-DoD STANDARDS ORGANIZATIONS

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	.7	.8	1.5	3.0
CONTRACT DOLLARS	$100,000	$110,000	$100,000	$310,000
OTHER DOLLARS	$20,000	$10,000	$30,000	$60,000

Assumes the associated cost in the functional area data mapping requirements to transaction sets is paid by the requiring activity. FY97 increase is in anticipation of Implementation Convention (IC) review and update required for harmonization with EDIFACT.

3.6.2 ARRANGE FOR PUBLICATION AND DISTRIBUTION OF DoD EDI IMPLEMENTATION CONVENTIONS

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	1.0	1.5	2.5	5
CONTRACT DOLLARS	$150,000	$250,000	$300,000	$700,000
OTHER DOLLARS	$10,000	$20,000	$20,000	$50,000

Assumes IC Electronic Repository is developed by modifying existing DISA repository software.

3.6.3 PROVIDE ELECTRONIC EC REPOSITORY AND DOWNLOAD VERSIONS (DATA BASE TABLES) OF ICs TO SYSTEM IMPLEMENTATORS

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	.25	.25	.5	1.0
CONTRACT DOLLARS	$200,000	$100,000	$200,000	$500,000
OTHER DOLLARS	$10,000	$0	$10,000	$20,000

3.6.4 PROVIDE TECHNICAL SUPPORT TO EDI IMPLEMENTATION AND BUSINESS PRACTICE RE-ENGINEERING EFFORTS AS REQUIRED

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	.4	.6	1	2
CONTRACT DOLLARS	$0	$50,000	$50,000	$100,000
OTHER DOLLARS	$20,000	$0	$20,000	$40,000

3.6.5 TOTAL RESOURCE COSTS

	0-6	7-12	13-24	TOTAL
STAFF PERSON-YEARS	2.35	3.15	5.5	11
CONTRACT DOLLARS	$450,000	$510,000	$650,000	$1,610,000
OTHER DOLLARS	$60,000	$30,000	$80,000	$170,000

4.0 POLICY MILESTONES AND REQUIRED RESOURCES

This section summarizes the key milestones and resource requirements which were identified in Volume I, Chapter 3.0.

4.1 MILESTONES

MILESTONES FOR POLICY/PROCEDURAL IMPLEMENTATION	PHASE I 0-6 MONTHS	PHASE II 7-12 MONTHS	PHASE III 13-24 MONTHS
INTERIM COVERAGE - FAR CASE: 91-104 91-46 PROPOSED FAR CASES - EVIDENCE OF SHIPMENT - ELECTRONIC METHODS	X		
FINAL COVERAGE : ALL PENDING FAR CASES		X	
ESTABLISH MANAGEMENT OFFICE FOR STANDARD DoD: TPA PROCESS VIA EDI CONTRACTOR REGISTRATION VIA EDI MASTER SOLICITATION VIA EDI	X		
DESIGNATE SINGLE CONTRACTOR IDENTIFICATION CODE FOR ALL PROCUREMENT AISs		X	
BRAND NAME OR EQUAL STUDY COMPLETE			X

4.2 RESOURCE ESTIMATES

Below are the resource requirements to establish, maintain, and monitor trading partner agreements, contractor registration/SF 129, and master solicitations at a central DoD site. An accurate estimate of resources cannot be developed without a better understanding of the DoD integrated processing system or an approved course of action. These estimates reflect non-systems resources only. At $95,000 per man-year, this total effort is estimated at $1,805,000.

COST ESTIMATES (IN MAN-YEARS)	TPA	MASTER SOLICITATION	REGISTRATION
DEVELOP	1	3	3
ESTABLISH	3	2	2
MANAGE	2	1	2
TOTAL COST	$570,000	$570,000	$665,000

5.0 RISK MILESTONES AND REQUIRED RESOURCES

This section summarizes the key milestones which were identified in Volume I, Chapter 4.0. No separate resource requirements were identified as the risk control actions are concurrent with other implementation plan activities.

5.1 INTRODUCTION

EDI can improve the quality and efficiency of Defense procurement. However, there are a number of risks which must be managed in order to achieve EDI benefits and minimize risks. Contracting functions have traditionally been the targets of fraud. The use of EDI technology also introduces new risks that can adversely affect the confidentiality and integrity of data and the continuity of contracting operations. These risks were identified, assessed in terms of their impact, prioritized and linked to resolution techniques in Volume I, Chapter 4.0.

5.2 RISK MANAGEMENT APPROACH

The DoD EC in Contracting PAT used a two part process for risk management. This consisted of risk assessment and control. Risk assessment consists of the following three steps:

- Identification of risks based on input from site visits, Industry and Government responses. Identified risks were organized into functional, technical and program areas.

- Analysis of risks to estimate an Annual Loss Expectancy (ALE). The ALE is a factor of impact of a risk occurring and the expected frequency of occurrence.

- Risks were prioritized based on the ALE.

Risk control was used to organize the risk handling techniques. These techniques focused on risk avoidance, control, assumption, and transfer. Risk monitoring must be continued throughout the six month, one year and two year plan phases to ensure successful implementation.

5.3 RISK IDENTIFICATION

The DoD EC in Contracting functional, technical and program risks were organized into the following seven risk categories.

- Unauthorized access/disclosure of data
- Unauthorized modification or destruction of data
- Sender/receiver repudiation of transactions
- Lack of system availability
- Incomplete business area interface
- Lack of a single face to Industry
- System costs/migration/acceptance

5.4 RISK ANALYSIS

A risk analysis was performed, containing an "impact rating" and a "frequency rating" for each of the 37 identified risks. These two factors were used to determine the annual loss estimate (ALE). The ALE was used by the DoD EC in Contracting PAT as the basis for recommending risk priorities. The priority list is contained in Volume I, Chapter 4.

5.5 RISK CONTROL

The risk control or risk handling techniques were organized into eleven categories as follows:

- Confidentiality controls
- Message Integrity Controls
- Authentication
- Non repudiation
- System Availability
- Data Standardization
- EDI User Education/Training
- Configuration Management
- Centralized Control for VAN Agreements
- Policy Reviews
- Procedural Changes

Each of these risk handling techniques were mapped to the identified risks for the functional, technical, and program areas. These tables also identified responsibilities and schedule time frames. The schedule time frames are based on implementation plans for deployment of EC in Contracting.

The responsible organization must monitor accomplishment of each of the recommended risks handling techniques. These techniques will be assessed during implementation and updated by the responsible organization as needed.

5.6 CONCLUSIONS

Each of the identified risks can be managed during the six month, one year and two year implementation phases. Existing Government and Industry techniques can be applied to provide the full range of needed controls. These EDI practices along with program management, configuration management and education constitute the techniques needed to resolve the identified risks.

TABLE 4-4 RISK CONTROL

RISK	RISK MANAGEMENT TECHNIQUE	RESPONSIBILITY	SCHEDULE
RECORDS RETENTION	POLICY REVIEWS - 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT AND DISA	12 MTH
UNAUTHORIZED ACCESS TO CONTRACTOR QUOTE DATA	CONFIDENTIALITY 4.7.1.A, (1) ACCESS CONTROLS,(2) DATA ENCRYPTION	DISA	6 MTH
INTERNAL EDUCATIONAL REQUIREMENTS	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DIRECTOR, DEFENSE PROCUREMENT AND DOD COMPONENTS	12 MTH
BEST VALUE	QUALITY VENDOR PROFILES	DIRECTOR, DEFENSE PROCUREMENT	12 MTH
ORGANIZATIONAL STRUCTURE CHANGES	BUSINESS IMPROVEMENT/ PROCEDURAL CHANGES 4.7.1K	DOD COMPONENTS	24 MTH
EDI PREFERENCE	EDI USER EDUCATION/ TRAINING 4.7.1.G, POLICY REVIEWS 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT	6 MTH
PRODUCT SUBSTITUTIONS	POLICY REVIEWS - 4.7.1.J	DIRECTOR, DEFENSE PROCUREMENT	6 MTH
USER ACCEPTANCE	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DOD COMPONENTS	12 MTH
NOTICE TO INDUSTRY	EDI USER EDUCATION/ TRAINING - 4.7.1.G	DOD COMPONENTS, DISA	12 MTH
INCREASE IN QUOTE EVALUATION TIME	ACCEPT RISK	DOD COMPONENTS	12 MTH
USE OF BULLETIN BOARDS	2 YEAR PHASE OUT	DISA AND DOD COMPONENTS	6 MTH
ARCHIVE	CONTINGENCY PLANNING 4.7.1.E	DISA	12 MTH
SECURITY (VIRUSES)	VIRUS PROTECTION SOFTWARE 4.7.1.E, ACCESS CONTROLS 4.7.1.A (1)	DISA	6 MTH
TRANSACTION SYNTAX STANDARDS INFORMATION REUSE	DATA AND TRANSACTION SET STANDARDIZATION 4.7.1.F, DATA & TRANSACTION SET STANDARDIZATION,4.7.1.H	DISA	12 MTH
DATA STANDARDS DATA RE-USES	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	6 MTH
COMMUNICATIONS INFRASTRUCTURE	CONFIGURATION MANAGEMENT 4.7.1.H; CONTINGENCY PLANNING 4.7.1.E	DISA	12 MTH
COOP	CONTINGENCY PLANNING	DISA	12 MTH
EDI EVOLUTION	DATE STANDARDIZATION 4.7.1.F CONFIGURATION MANAGEMENT 4.7.1.H , TRANSACTION SET STANDARDIZATION. POLICY REVIEW 4.7.1.J	DDP, DISA	24 MTH
WAR FIGHTER SUPPORT	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	24 MTH
MANAGEMENT AUTHORITY & RESOURCES	PROGRAM MANAGEMENT (FUNCTIONAL & TECHNICAL)	DUSD (A&T), DISA	6 MTH
COMPONENT IMPLEMENTATION	PROGRAM STANDARDIZATION 4.7.1.F, CONFIGURATION MANAGEMENT 4.7.1.H	DOD COMPONENTS, DISA	12 MTH
SINGLE POINT OF ENTRY	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	6 MTH
CENTRAL CONTRACTOR REGISTRATION	OPTIONAL SERVICE FOR DISTRIBUTION POINT, DLSC, OR MEGA CENTER SHOULD BE CONSIDERED	DOD COMPONENTS, DIRECTOR, DEFENSE PROCUREMENT	12 MTH
NATIONAL OR REGIONAL VISIBILITY	PLANNED FUNCTION OF THE DOD DISTRIBUTION POINT TO PROVIDE CAPABILITY TO TRANSMIT NATIONALLY OR REGIONALLY	DISA	12 MTH
ELECTRONIC SIGNATURES	ACCESS CONTROLS 4.7.1.A, (1)SMART CARDS MESSAGE INTEGRITY 4.7.1.B, (2)CRYPTOGRAPHIC TECHNIQUES	DISA, NSA, NIST, AND DIRECTOR, DEFENSE PROCUREMENT	12 MTH
DATA INTEGRITY	MESSAGE TO INTEGRITY 4.7.1.B, (1) IMBEDDED REFERENCES, (2) MESSAGE REPETITION, (3)INTERNAL MESSAGE VERIFICATION, (4)CRYPTOGRAPHIC TECHNIQUES	DISA	6 MTH
INTERFACE WITH OTHER BUSINESS AREAS	CONFIGURATION MANAGEMENT 4.7.1.H	DISA	12 MTH
VAN LICENSEE AGREEMENTS	CENTRALIZED MANAGEMENT (DISA) OF VAN AGREEMENTS WITH COMPONENT REPRESENTATION 4.7.1.H	DISA, DOD COMPONENT	6 MTH
INTERNAL DISTRIBUTION	CONFIGURATION MANAGEMENT 4.7.1.H	DISA, DOD COMPONENT	6 MTH
SOFTWARE DEVELOPMENT LOSSES	CONFIGURATION MANAGEMENT 4.7.1.H, DATA STANDARDIZATION 4.7.1.F	DISA	12 MTH
PROPRIETARY SOLUTION	CONFIGURATION MANAGEMENT 4.7.1.H, STANDARD SOFTWARE 4.7.1.F	DISA	6 MTH
DIFFERENT FUNCTIONAL/ TECHNICAL SOLUTIONS	CONFIGURATION MANAGEMENT 4.7.1.H, STANDARDS SOFTWARE 4.7.1.F	DISA	6 MTH
DOD STANDARDS AVAILABILITY	DATA STANDARDIZATION 4.7.1F	DISA, DOD COMPONENTS	6-24 MTH
IMPACT OF/ON OTHER GOVERNMENT PROGRAMS	CONFIGURATION MANAGEMENT 4.7.1N	DUSD (A&T)	6 MTH
RE-ENGINEERING BUSINESS PRACTICES	PROCESS/PROCEDURAL CHANGES 4.7.1K	DOD COMPONENTS, DIRECTOR, DEFENSE PROCUREMENT	6-24 MTH

See Volume I, Chapter 4.0 for descriptions of the risks.

6.0 BENEFITS MILESTONES AND REQUIRED RESOURCES

This section summarizes the key milestones and resource requirements which were identified in Volume I, Chapter 5.0.

6.1 BENEFITS

Trading Partner benefits include:

- Increased visibility of procured items and the requiring activity;

- Single registration for all DoD procurement offices using EDI, including TPA and SF 129 information; and

- Reduced payment processing time.

Government benefits included increased visibility and competition for small purchase items. Both DoD and Industry benefit from reductions in administrative workload and the potential for the creation of multiple user databases. EDI also facilitates electronic cataloging and bar coding while presenting an opportunity to link DoD acquisition data to Industry's ordering systems.

6.2 MEASURES

The following minimum set of measurements is recommended to measure the procurement office's effective employment of EDI. If the procurement office manager seeks to further substantiate the actual benefits being derived from EDI, they can use their routine measurements by simply segregating the EDI effected procurement actions from the non-EDI for analysis.

PROPOSED MEASURES:

- % ACTIONS - EDI

- % "NO QUOTES" - EDI ("NO QUOTES" - RFQ RETURNED WITH NO QUOTES FROM VENDOR BASE)

- % PURCHASE $ - EDI

- % LINE ITEMS PROCURED - EDI

- % EDI RFQs RECEIVED

- % EDI RFQs RECEIVED REQUIRING BUYER INTERVENTION

- % "NO QUOTES BY STOCK CLASS

- # ACTIVE EDI TRADING PARTNERS

- % ACTIVE TRADING PARTNERS - EDI

- # EDI TRANSACTION SETS BEING USED

6.3 CONTRACTOR RELATIONS

A performance measure that qualifies contractor complaints, congressional inquiries, associated with EC/EDI implementation could help identify problems of electronic procurement procedures. The impact of EC/EDI implementation on the Government relationship with its trading partners should be evaluated.

PROPOSED MEASUREMENTS:

- # EDI COMPLAINTS (COMPLAINT - CONTRACTOR INPUT THAT OBJECTS TO EDI PROCESS)

- # EDI RELATED CONGRESSIONAL INQUIRIES

6.4 MILESTONES AND COSTS

There are no milestones or estimated costs for benefits and the employment of metrics which are severable from deployment and education.

7.0 EDUCATION MILESTONES AND REQUIRED RESOURCES

This section summarizes the key milestones and resource requirements which were identified in Volume I, Chapter 6.0.

7.1 MILESTONES

PHASE I

DESCRIPTION/MONTH	-3	-2	-1	1	2	3	4	5	6
PREPARE INSTRUCTIONAL MATERIALS	X	X	X						
OUTREACH PROGRAM	X	X	X	X	X	X	X	X	X
REGIONAL ORIENTATION CONFERENCES				X	X	X	X	X	X
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SYSTEM ADMINISTRATORS (SA), SADBUS				X	X	X	X	X	X

PHASE II

DESCRIPTION/MONTH	7	8	9	10	11	12
OUTREACH PROGRAM	X	X	X	X	X	X
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA, AND SADBUS	X	X	X	X	X	X

PHASE III

DESCRIPTION/MONTH	13	14	15	16	17	18	19	20	21	22	23	24
OUTREACH PROGRAM	X	X	X	X	X	X	X	X	X	X	X	X
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SYSTEM ADMINISTRATORS, AND SADBUS	X	X	X	X	X	X	X	X	X	X	X	X
SUSTAINMENT TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA, AND SADBUS	X	X	X	X	X	X	X	X	X	X	X	X

7.2 ESTIMATED COSTS

ACTIVITY	PHASE I	PHASE II	PHASE III	TOTAL
PREPARE INSTRUCTIONAL MATERIALS	$100,000	$0	$0	$100,000
OUTREACH PROGRAM	$673,000	$673,000	$210,000	$1,556,000
REGIONAL ORIENTATION CONFERENCES	$332,000	$0	$0	$332,000
INITIAL TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA, and SADBUS	$202,000	$122,000	$58,000	$382,000
SUSTAINMENT TRAINING OF BUYERS, CONTRACTING OFFICERS, MANAGERS, SA AND SADBUS	$70,000	$0	$0	$70,000
TOTAL	$1,377,000	$795,000	$268,000	$2,440,000

8.0 MIGRATION SYSTEM DEVELOPMENT

8.1 DPACS-DEFENSE LOGISTICS AGENCY PRE-AWARD CONTRACTING SYSTEM

Based upon studies accomplished through December, 1992, DPACS was selected as the DoD procurement migration system by the Director of Defense Procurement. The next DPACS software update, scheduled for December, 1993, will include the capability to issue ANSI X12 transaction set 840 (RFQ), receive transaction set 843 (Response to RFQ), and issue transaction set 850 (Award). Subsequent releases will include the other EDI transaction shown in Volume I, Chapter 2, in accordance with the new joint DoD conventions. The funding required for completing the development of the DPACS EDI capability is $1,296,216 for FY94 and $750,000 for FY95.

8.2 DPACS DEVELOPMENT COSTS

	FY 94	FY 95
APPLICATION INTERFACE DEVELOPMENT	250,000	580,000
CONVERSION	100,000	100,000
FIELD IMPLEMENTATION EXPENSES (FIVE SITES)	200,000	50,000
CDA IMPLEMENT EXPENSES	10,000	10,000
TDY CDA	15,000	10,000
CONTRACTOR SUPPORT FOR CDA	721,216	----------
TOTAL	1,296,216	750,000

9.0 MANAGEMENT OPTIONS

This section describes management options in the execution of EDI implementation.

9.1 FIELD MADES II EDI CAPABILITY TO ADDITIONAL ACTIVITIES

The implementation plan deploys the MADES II EDI capability to the 93
MADES/MADES II activities which process more than 10,000 transactions of $25,000 or
less annually. There are another 118 activities which can benefit from this capability.
The lower volume of transactions at these 118 activities lengthens the return on
investment period and the expense may not be amortized at the end of the system's life
cycle. As an option, these activities could be included in Phase III of the implementation
plan and beyond at a total cost of $1,062,000.

9.2 FIELD SACONS EDI CAPABILITY TO ADDITIONAL ACTIVITIES

The implementation plan deploys the SACONS EDI capability to the 77 SAACONS
activities which process more than 10,000 transactions of $25,000 or less annually.
There are another 97 activities which can benefit from this capability. The lower volume
of transactions at these 97 activities lengthens the return on investment period and the
expense may not be amortized at the end of the system's life cycle. As an option, these
activities could be included in Phases II and III of the implementation plan at a total cost
of $388,000.

10.0 RESOURCE ESTIMATES SUMMARY

This section summarizes the resource estimates shown for the various actions.

ACTION	PHASE I	PHASE II	PHASE III	TOTALS
APADE - EDI	$18,000	$7,000	$0	$25,000
ITIMP - EDI	$0	$3,000	$0	$3,000
MADES II - EDI	$122,000	$336,000	$203,000	$661,000
SACONS-EDI	$138,000	$16,000	$0	$154,000
SPEDE	$31,600	$0	$0	$31,600
DPACS-EC	$648,108	$648,108	$750,000	$2,046,216
SYSTEMS SUBTOTAL	$957,708	$1,010,108	$953,000	$2,920,816
DISA PROGRAM OFFICE	$750,000	$750,000	$2,450,000	$3,950,000
TECHNICAL SUPPORT	$1,185,000	$1,155,000	$2,750,000	$5,090,000
CONFIGURATION MANAGEMENT	$510,000	$540,000	$730,000	$1,780,000
DISTRIBUTION HUBS	$370,000	$370,000	$1,000,000	$1,740,000
DISA SUBTOTAL	$2,815,000	$2,815,000	$6,930,000	$12,560,000
PROGRAM EXECUTION	$665,000	$665,000	$1,330,000	$2,660,000
CONFIGURATION MANAGEMENT	$65,000	$50,000	$100,000	$215,000
TPA	$190,000	$190,000	$190,000	$570,000
MASTER SOLICITATION	$285,000	$190,000	$95,000	$570,000
CONTRACTOR REGISTER	$564,500	$564,000	$380,000	$1,508,500
FUNCTIONAL SUBTOTAL	$1,769,500	$1,659,000	$2,065,000	$5,493,500

SACONS-EDI GATEWAYS	$150,000	$150,000	$600,000	$900,000
NAVY GATEWAYS	$240,000	$240,000	$480,000	$960,000
AIR FORCE GATEWAYS	$150,000	$150,000	$600,000	$900,000
DAASC GATEWAY	$60,000	$60,000	$120,000	$240,000
GATEWAY SUBTOTAL	$600,000	$600,000	$1,800,000	$3,000,000
REGIONAL CONFERENCES	$332,000	$0	$0	$332,000
EDUCATION/ TRAINING	$372,000	$122,000	$58,000	$552,000
SBA PARTICIPATION	$673,000	$673,000	$210,000	$1,556,000
EDUCATION SUBTOTAL	$1,377,000	$795,000	$268,000	$2,440,000
TOTALS	$7,519,208	$6,879,108	$12,046,000	$26,444,316

11.0 MILESTONES

The attached GANTT charts represent key execution milestones identified throughout the DoD EC in Contracting PAT report. These milestones represent the best estimates from all participating organizations at the time of submission. There may be deviations to these scheduled milestones during the implementations. The assigned implementation coordinators, functional and technical, will continuously evaluate and update all milestones, when appropriate.

There are three deployment milestones which represent the key events during:

PHASE I - 0-6 MONTHS
PHASE II - 7-12 MONTHS
PHASE III - 13-24 MONTHS

Name	1993	1994
	Oct | Nov | Dec	Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec
FUNCTIONAL EC/EDI INITIATIVES		12/20
Brief Plan	10/10	
Plan Approved	12/20 ◆	12/20
Funding Approved	12/20 ◆	12/20
TECHNICAL DEPLOYMENTS		1/29 — 9/30
APADE		2/1 — 8/1
Prepare Baseline Changes (Done)		2/1 ▼ 2/1
Establish 12 Gateways (Done)		
Deploy to Remaining 26 Sites		2/1 — 7/5
TRF King's Bay, GA		2/1 ▪ 2/3
FISC Charleston, SC		2/4 ▪ 2/8
MCAS Cherry Point, NC		2/9 ▪ 2/12
FISC Norfolk, VA		3/1 ▪ 3/3
FISC Newport Det, VA		3/4 ▪ 3/8
NSY Norfolk, VA		3/9 ▪ 3/11
NTSC Orlando, FL		4/4 ▪ 4/5
FISC Pensacola, FL		4/6 ▪ 4/8
FISC Jacksonville, FL		4/11 ▪ 4/13
MRCC/FISC San Diego, CA		5/2 ▪ 5/3
NAWC AD China Lake, CA		5/4 ▪ 5/6
FISC Oakland, CA		5/9 ▪ 5/11
NSY Mare Island, CA		5/12 ▪ 5/16
NAS Point Mugu, CA		5/17 ▪ 5/19
FISC Pearl Harbor, HI		6/1 ▪ 6/3
NSY Pearl Harbor, HI		6/6 ▪ 6/8
FISC Yokosuka, Japan		6/9 ▪ 6/13
FISC Puget Sound, WA		7/4 ▪ 7/5
First 6 Mos Deployment Complete		4/5 ◆ 4/5
Maintain 12 Gateways		2/1 — 8/1
MADES		2/1 — 9/30
Prepare Baseline Changes (Done)		2/1 ▼ 2/1
MADES I to ACPS Sites		2/1 — 9/30
Estab Gunter/IPCC Gate/DPs		2/1 ▪ 2/5

Project:	Critical ▬▬▬	Milestone ◆	
Date: 12/17/93	Noncritical ▬▬▬	Summary ▬▬▬	
	Progress ▬▬▬	Rolled Up ◇	

Name	1994														
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Deploy 5 ACPS Sites											8/20 ▬▬▬ 9/30				
Warner Robbins ALC											8/20 ◆ 8/20				
San Antonio ALC											8/30 ┃ 8/31				
Tinker ALC											9/10 ◆ 9/10				
Sacramento ALC											9/20 ┃ 9/20				
Ogden ALC											9/30 ┃ 9/30				
MADES II to BCAS Sites									6/1 ▬▬▬ 7/29						
Pope AFB, Fayetteville, NC									6/1 ┃ 6/3						
Seymor Johnson AFB, Goldsboro, SC									6/6 ┃ 6/8						
MCB Camp Lejeune, Jacksonville, NC									6/9 ▪ 6/13						
Charleston AFB, Charleston, SC									6/14 ┃ 6/16						
9th AF Shaw AFB, Sumter, SC									6/17 ▪ 6/21						
Shaw AFB, Sumter, SC									6/22 ┃ 6/24						
MCB Parris Island, Beaufort, SC									6/24 ▪ 6/28						
Maxwell AFB, Montgomery, AL									6/29 ┃ 6/30						
Patrick AFB, Cocoa Beach, FL									7/4 ┃ 7/5						
Homestead AFB, FL									7/6 ┃ 7/8						
Hurlburt Field, Fort Walton Beach, FL									7/11 ┃ 7/13						
Tyndall AFB, Panama City, FL									7/14 ▪ 7/18						
McDill AFB, Tampa, FL									7/19 ┃ 7/21						
AFDTC Elgin AFB, Valparaiso, FL									7/21 ▪ 7/25						
Warner Robins AFB, GA									7/25 ┃ 7/27						
Moody AFB, Valdosta, GA									7/27 ┃ 7/29						
First 6 Mos Deployment Complete										7/29 ◆ 7/29					
SACONS-EDI				2/1 ▬▬▬▬▬▬▬▬▬▬▬ 8/16										
Prepare Baseline Changes (Done)				2/1 ▼ 2/1											
Move Gateway to Ft. Lee, VA (Done)				2/1 ◆ 2/1											
Deploy to Remaining Sites					3/1 ▬▬▬▬▬▬▬▬ 7/29									
Fort McClellan, Anniston, AL					3/1 ┃ 3/2									
CoE Dist. Mobile, AL					3/3 ┃ 3/4									
USPFO Alabama, Montgomery, AL					3/3 ▪ 3/6									
Fort McPherson, Atlanta, GA					3/7 ┃ 3/8									
CoE Dist New Orleans, LA					3/9 ┃ 3/10									
USPFO Louisiana, New Orleans, LA					3/11 ▪ 3/14									
Fort Polk, Fort Polk, LA					3/14 ┃ 3/14									

Project:	Critical	▬▬▬▬▬	Milestone	◆
Date: 12/17/93	Noncritical	▬▬▬▬▬	Summary	▬▬▬▬
	Progress	▬▬▬▬▬	Rolled Up	◇

EXECUTION PLAN - PHASE II (7-12 MONTHS)

Name	1994							1995							
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug

FUNCTIONAL EC/EDI INITIATIVES

Funding Approved — 8/1 ◆

TECHNICAL DEPLOYMENTS — 8/1 ▬▬▬▬▬ 2/28

  APADE — 8/1 ▬▬▬▬▬ 2/3

    Deploy to Remaining 26 Sites — 8/1 ▬▬▬ 9/15

      NSY Portsmouth, VA — 8/1 ▮ 8/4

      NAEC Lakehurst, NJ — 8/5 ▮ 8/9

      SUBASE New London, RI — 8/10 ▮ 8/12

      NRCC Washington D.C. — 9/1 ▮ 9/3

      NAWC AD Pax River, Paxtuxent River, MD — 9/5 ▮ 9/7

      NRCC Philadelphia, PA — 9/8 ▮ 9/12

      NSY Philadelphia, PA — 9/13 ▮ 9/15

    Second 6 Mos Deployment Completed — 9/16 ◆

    Maintain 12 Gateways — 8/25 ▬▬▬▬ 2/3

      Software — 8/25 ▬▬▬▬ 2/3

        Next 6 Mos FY 94 Costs — 8/25 ▬▬▬▬ 2/3

      Manpower — 8/25 ▬▬▬▬ 2/3

        Next 6 Mos FY 94 Costs — 8/25 ▬▬▬▬ 2/3

  ITIMP — 8/2 ▬▬▬ 9/21

    Deploy to Remaining Sites — 8/2 ▬▬▬ 9/21

      ASO Philadelphia, PA — 8/2 ▬▬ 9/20

      SPCC, Mechanicsburg, PA — 8/2 ▬▬ 9/20

      MCLB, Albany, GA — 8/2 ▬▬ 9/21

    ITIMP Deployment Completed — 9/20 ◆

  MADES — 8/1 ▬▬▬▬ 1/31

    MADES II to BCAS Sites — 8/1 ▬▬▬▬ 1/31

      MCLOGB Albany, GA — 8/1 8/4

      England AFB, Alexandria, VA — 8/5 ▮ 8/9

      Barksdale AFB, Bossier City, LA — 8/10 ▮ 8/12

      MARCORRESFOR NO, New Orleans, LA — 8/15 ▮ 8/17

Project:
Date: 12/17/93

Critical	▬▬▬▬	Milestone	◆
Noncritical	▬▬▬▬	Summary	▬▬▬
Progress	▬▬▬▬	Rolled Up	◇

Name	1994							1995							
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Kessler AFB, Biloxi, MS			8/18 ▮ 8/20												
Langley AFB, Hampton, VA			8/22 ▮ 8/25												
MCB Quantico, Quantico, VA			8/25 ▮ 8/27												
MC Headquarters, Arlington, VA		8/1 ◆													
Eaker AFB, Blytheville, AR			9/1 ▮ 9/3												
Little Rock AFB, Little Rock, AR			9/5 ▮ 9/7												
Luke AFB, Litchfield Park, AZ			9/9 ▮ 9/13												
Davis-Monihan AFB, Tucson, AZ			9/14 ▮ 9/16												
Holloman AFB, Alamogordo, NM			9/17 ▮ 9/21												
Kirtland AFB, Albuquerque, NM			9/22 ▮ 9/26												
Cannon AFB, Clovis, NM			9/26 ▮ 9/28												
Altus AFB, Altus, OK			9/28 ▮ 9/30												
Tinker AFB, Oklahoma City, OK				10/1 ▮ 10/5											
Dyess AFB, Abilene, KS				10/6 ▮ 10/10											
Bergstrom AFB, Austin, TX				10/9 ▮ 10/12											
Carswell AFB, Fort Worth, TX				10/14 ▮ 10/18											
Goodfellow AFB, San Angelo, TX				10/19 ▮ 10/21											
HSC Brooks AFB, San Antonio, TX				10/21 ▮ 10/25											
Kelly AFB, San Antonio, TX				10/25 ▮ 10/27											
Lackland AFB, San Antonio, TX				10/27 ▮ 10/29											
Randolph AFB, San Antonio, TX					11/1 ▮ 11/3										
Shepard AFB, Wichita Falls, TX					11/4 ▮ 11/8										
Travis AFB, Fairfield, CA					11/11 ◆										
AFFTC Edwards AFB, Lancaster, CA					11/14 ▮ 11/16										
Vandenberg AFB, Lompoc, CA					11/17 ▮ 11/21										
Beale AFB, Marysville, CA					11/24 ◆										
22 CONS March AFB, Riverside, CA					11/28 ▮ 11/29										
AREFW March AFB, Riverside, CA					11/29 ▮ 11/30										
McClellan AFB, Sacramento, CA						12/1 ▮ 12/6									
Norton AFB, San Bernardino, CA						12/6 ▮ 12/8									
George AFB, Victorville, CA						12/9 ▮ 12/13									
MCAGCC, 29 Palms, CA						12/16 ▮ 12/19									
MCLOGB Barstow, CA						12/21 ◆									
MCB Camp Pendelton, CA						12/23 ◆									
Hickam AFB, Honolulu, HI						12/27 ◆									

Project:
Date: 12/17/93

Critical	▬▬▬▬	Milestone	◆
Noncritical	▬▬▬▬	Summary	▬▬▬▬
Progress	▬▬▬▬	Rolled Up	◇

EXECUTION PLAN - PHASE I (0-6 MONTHS)

Name	1994														
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
USPFO Mississippi, Jackson, MS						3/15 ▌ 3/16									
CoE Dist Vicksburg, , MS						3/17 ▌ 3/18									
CoE Waterways Station, Vicksburg, MS						3/21 ▌ 3/22									
CoE Dist Wilmington, DE						3/21 ▌ 3/22									
Fort Jackson, Columbia, MO						3/23 ▌ 3/24									
Belvoir RDE Center, Ft. Belvoir, VA						3/27 ▌ 3/29									
Fort Eustis, Newport News, VA						3/28 ▌ 3/30									
Fort Lee, Petersburg, VA						3/31 ▌ 4/1									
CoE Dist Little Rock, AR							4/4 ▌ 4/5								
USPFO Arkansas, Little Rock, AR							4/6 ▌ 4/7								
Fort Chaffee, Fort Chaffee, AR							4/8 ▌ 4/11								
Bluegrass Army Depot, Lexington, KY							4/12 ▌ 4/13								
CoE Dist Louisville, Louisville, KY							4/14 ▌ 4/15								
McAlester Ammo Plant, OK							4/12 ▌ 4/13								
CoE Dist Tulsa, OK							4/14 ▌ 4/15								
CoE Dist Nashville, TN							4/18 ▌ 4/19								
USPFO Tennessee, Nashville, TN							4/20 ▌ 4/21								
USPFO Texas, Austin, TX							4/20 ▌ 4/21								
Fort Bliss, El Paso, TX							4/22 ▌ 4/25								
CoE Dist Fort Worth, TX							4/26 ▌ 4/27								
Fort Sam Houston, San Antonio, TX							4/26 ▌ 4/27								
CoE Dist Huntington, WV							4/28 ▌ 4/29								
Sierra Army Depot, Herlong, CA								5/2 ▌ 5/3							
CoE Dist Sacramento, CA								5/4 ▌ 5/5							
USPFO California, San Luis Obispo, CA								5/3 ▌ 5/4							
DDR West, Herlong, CA								5/5 ▌ 5/6							
Fort Shafter, Honolulu, HI								5/9 ▌ 5/10							
Korea Cont. Agency, Seoul, Korea								5/11 ▌ 5/12							
USPFO Missouri, Jefferson City, MO								5/11 ▌ 5/14							
USA Aviation-Troop Cmd, St. Louis, MO								5/16 ▌ 5/17							
CoE Dist St Louis, MO								5/18 ▌ 5/19							
Fort Leonard Wood, MO								5/20 ▌ 5/23							
CoE Dist Portland, OR								5/23 ▌ 5/23							
USPFO Oregon, Salem, OR								5/24 ▌ 5/25							
Tooele Army Depot, Tooele, UT								5/26 ▌ 5/27							

Project:
Date: 12/17/93

Critical	▬▬▬▬	Milestone	◆
Noncritical	▬▬▬▬	Summary	▜▬▬▙
Progress	▬▬▬▬	Rolled Up	◇

Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
								1994							
USPFO Iowa, Johnston, IA								5/30 ∎ 5/31							
CoE Dist Rock Island, IL								6/1 ∎ 6/2							
Rock Island Arsenal, IL								6/3 ∎ 6/4							
USPFO Illinois, Springfield, IL								6/6 ∎ 6/7							
Fort Benjamin Harrison, Indianapolis, IN								6/8 ∎ 6/9							
USPFO Kansas, Topeka, KS								6/10 ∎ 6/13							
USPFO Michigan, Lansing, MI								6/13 ∎ 6/14							
USPFO Minnesota, Little Falls, MN								6/15 ∎ 6/16							
CoE Dist Omaha, NE								6/17 ∎ 6/20							
USPFO Ohio, Columbus, OH								6/21 ∎ 6/22							
USPFO Washington, Tacoma, WA								6/23 ∎ 6/24							
CoE Dist Walla Walla, WA								6/23 ∎ 6/24							
USPFO Wisconsin, Camp Douglas, WI								6/27 ∎ 6/28							
Fort McCoy, Fort McCoy, WI								6/29 ∎ 6/30							
DSSW, Washington D. C.								7/1 ∎ 7/4							
CoE Div New England, Waltham, MA								7/5 ∎ 7/6							
Fort Devens, Ayers, MA								7/5 ∎ 7/5							
Aberdeen Proving Ground, MD								7/8 ∎ 7/11							
Fort Detrick, Frederick, MD								7/12 ∎ 7/13							
Fort Meade, Fort Meade, MD								7/12 ∎ 7/13							
USA Comm-Elec Cmd, Ft Monmouth, NJ								7/14 ∎ 7/15							
USPFO New York, Latham, NY								7/18 ∎ 7/19							
Fort Drum, Watertown, NY								7/22 ∎ 7/25							
USMA, West Point, NY								7/22 ∎ 7/25							
USPFO Pennsylvania, Annville, PA								7/26 ∎ 7/27							
CoE Dist Pittsburg, PA								7/26 ∎ 7/27							
DDR East, Harrisburg, PA								7/28 ∎ 7/29							
First 6 Mos Deployment Complete								7/29 ◆ 7/29							
Maintain Gateway				2/1 ▬▬▬▬▬▬▬▬ 8/16											
SPEDE				2/1 ▬▬▬▬ 7/1											
Make Baseline Changes				2/1 ▼ 2/1											
Deploy to 5 Sites				2/1 ▬▬ 3/29											
DPSC, Philadelphia, PA (Done)				2/2 ◆ 2/2											
DISC, Philadelphia, PA (Done)				2/1 ∣ 2/1											
DCSC, Columbus, OH (Done)				2/1 ∣ 2/1											

Project:	Critical ▬▬▬	Milestone ◆	
Date: 12/17/93	Noncritical ▬▬▬	Summary ▬▬▬	
	Progress ▬▬▬	Rolled Up ◇	

Name	1994							1995							
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug

- Tech Support to EDI Implement — 8/24 ▬▬▬▬▬▬▬▬ 2/4
- Support Dev EDI Rqmnts Statemnts — 8/24 ▬▬▬▬▬▬▬ 2/4

POLICY ISSUES — 8/19 ▬▬▬▬▬▬▬ 2/4

- Trading Partner Agreement Process — 8/19 ▬▬▬▬▬▬▬ 2/4
  - Develop TPA Process — 8/19 ▬▬▬▬▬ 12/12
  - Establish TPA Process — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Manage TPA Process — 8/24 ▬▬▬▬▬▬▬ 2/4
- Master Solicitation Via EDI — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Develop Master Solicitation — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Establish Master Solicitation — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Manage Master Solicitation — 8/24 ▬▬▬▬▬▬▬ 2/4
- Contractor Registration via EDI — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Develop Contractor Registration — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Establish Contractor Registration — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Manage Contractor Registration — 8/24 ▬▬▬▬▬▬▬ 2/4

IDENTIFICATION OF ISSUES & RISKS — 8/1 ◆

IDENTIFICATION OF GOV'T/INDUST BENEFITS — 8/1 ◆

EDUCATION REQMTS OF INDUST/GOV'T — 8/24 ▬▬▬▬▬▬▬ 2/4

- Phase II — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Outreach Program — 8/24 ▬▬▬▬▬▬▬ 2/4
  - Init Train Buyers/Mngrs/SA/SADBUS — 8/24 ▬▬▬▬▬▬▬ 2/4

Project:
Date: 12/17/93

Critical	▬▬▬▬▬	Milestone	◆
Noncritical	▬▬▬▬▬	Summary	▬▬▬▬
Progress	▬▬▬▬▬	Rolled Up	◇

EXECUTION PLAN - PHASE III (12-24 MONTHS)

Name	1995														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar

FUNCTIONAL EC/EDI INITIATIVES

Funding Approved — 2/1 ◆

TECHNICAL DEPLOYMENTS — 2/1 ▬▬▬▬▬▬▬▬▬▬▬▬ 2/2

APADE — 3/2 ▬▬▬▬▬▬▬▬▬▬ 2/2

Maintain 12 Gateways — 3/2 ▬▬▬▬▬▬▬▬▬▬ 2/2

Software — 2/2 ▬▬ 2/2

FY 95 Costs — 2/2 ▬ 2/28

Manpower — 3/2 ▬▬▬▬▬▬▬▬ 2/2

FY 95 Costs — 3/2 ▬▬▬▬▬▬▬▬ 2/28

MADES — 2/1 ▬▬▬▬ 5/22

MADES II to BCAS Sites — 2/1 ▬▬▬▬ 5/22

Malmstrom AFB, Great Falls, MT — 2/1 ▮ 2/3

Grand Forks AFB, ND — 2/6 ▮ 2/8

Minot AFB, Minot, ND — 2/9 ▮ 2/14

Offutt AFB, Omaha, NE — 2/15 ▮ 2/17

WPCC Wright-Patt, Fairborn, OH — 2/20 ▮ 2/21

Ellsworth AFB, Rapid City, SD — 2/22 ▮ 2/24

Fairchild, AFB, Spokane, WA — 2/24 ▮ 2/28

McChord AFB, Tacoma, WA — 2/28 ▮ 2/28

Andrews AFB, Washington D. C. — 3/1 ▮ 3/3

K. I. Sawyer AFB, Gwinn, MI — 3/6 ▮ 3/8

Plattsburg, AFB, Morrisville, NY — 3/9 ▮ 3/13

Dover AFB, Dover, DE — 3/14 ▮ 3/16

Hanscom AFB, Bedford, MA — 3/17 ▮ 3/21

Loring AFB, Limestone, ME — 3/21 ▬ 4/5

McGuire AFB, Wrightstown, NJ — 3/23 ▬ 4/5

Griffiss AFB, Rome, NY — 4/6 ▮ 4/10

Elmendorf AFB, Anchorage, AK — 4/3 ▮ 4/5

Anderson AFB, Guam — 4/6 ▮ 4/10

Misawa AB, Misawa, Japan — 4/11 ▮ 4/13

Yokota AB, Tokyo, Japan — 4/14 ▮ 4/18

Kadena AB, Okinawa, Japan — 4/18 ▮ 4/20

Project:
Date: 12/17/93

Critical ▬▬▬▬	Milestone ◆		
Noncritical ▬▬▬▬	Summary ◤▬▬▬◥		
Progress ▬▬▬▬	Rolled Up ◇		

Name	1995														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Bitburg AB, Bitburg, Germany				4/21 ■ 4/25											
Ramstein AB, Ramstein, Germany				4/25 ▌ 4/27											
Aviano AB, APO, Italy				4/27 ■ 5/1											
Howard AFB, Panama				5/1 ▌ 5/3											
RAF Bentwaters, Bentwaters, ENG				5/4 ■ 5/8											
Det4, 7000CONS, Felwell, ENG				5/9 ■ 5/13											
RAF Upper Heyford, , ENG				5/15 ▌ 5/17											
RAF Upwood , ENG				5/17 ■ 5/22											
Year 2 Deployments Complete				5/21 ◆											
SACONS-EDI			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
Maintain Gateway			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
Hardware			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
FY 95			3/2 ◣━━━━━━━━━━━━━━━━━━━ 2/28												
Software			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
FY 95			3/2 ◣━━━━━━━━━━━━━━━━━━━ 2/28												
Manpower			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
FY 95			3/2 ◣━━━━━━━━━━━━━━━━━━━ 2/28												
Telecomm			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
FY 95			3/2 ◣━━━━━━━━━━━━━━━━━━━ 2/28												
SPEDE	2/1 ◣━━━━━━━━━━━━━━━━━━━━◗ 2/2														
Maintenance Costs for 5 Sites	2/1 ◣━━━━━━━━━━━━━━━━━━━━◗ 2/2														
Hardware Maint			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
FY 95			3/2 ◣━━━━━━━━━━━━━━━━━━━ 2/28												
Software Maint			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
FY 95			3/2 ◣━━━━━━━━━━━━━━━━━━━ 2/28												
Telecomm Maint			3/2 ◣━━━━━━━━━━━━━━━━━━━◗ 2/2												
FY 95			3/2 ◣━━━━━━━━━━━━━━━━━━━ 2/28												
Manpower	2/1 ◣━━━━━━━━━━━━━━━━━ 1/30														
FY 95	2/1 ◣━━━━━━━━━━━━━━━━━ 1/30														
DPACS DoD Procure Migration System	2/1 ◣━━━━━━━━━━━━━━━━━━ 12/29														
Conversion to X12	2/1 ◣━━━━━━━━━━━━━━━━━━ 12/29														
Support in FY 95	2/1 ◣━━━━━━━━━━━━━━━━━━ 12/29														

Project:
Date: 12/17/93

Critical	━━━━━	Milestone	◆
Noncritical	━━━━━	Summary	◣━━━◗
Progress	━━━━━	Rolled Up	◇

EXECUTION PLAN - PHASE III (12-24 MONTHS)

Name	1995												Jan	Feb	Mar
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
CDA Implementation Expenses	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 12/29
Support in FY 95	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 12/29
Application Interface Development	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 12/29
Development in FY 95	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 12/29
TDY CDA	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 12/29
TDY in FY 95	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 12/29
Implement to 5 Sites	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 12/29
Site 5	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 12/29
Year 2 Deployment Completed	12/28 ◆
DoD PROC EDI DEPLOY COST/MILESTONES	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/31
Mng DoD in Non-DoD EDI Stds Bodies	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/31
Coord DoD Pos to Reps (On-Going)	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/31
Mng & Pub DoD EDI Impl Conventions	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30
Devel Current DoD IC Situation	2/1 ▬▬▬▬ 6/6
Devel Transit to Central CM Plan	6/7 ▬▬▬▬ 10/10
Transition to DoD EDI IC CM Plan	10/11 ▬▬▬ 1/30
IC Reposit & Download Vers of ICs	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30
Develop/Modify System	2/1 ▬▬▬▬ 6/6
Enter Initial Data	6/7 ▬▬▬▬ 10/10
Maint DB, Prod ICs, Distrib Dwnlds	10/11 ▬▬▬ 1/30
Tech Support to EDI Implement	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30
Support Bus Practic Re-Engineer	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30
POLICY ISSUES	2/1 ◆
IDENTIFICATION OF ISSUES & RISKS	2/1 ◆
IDENTIFICATION OF GOV'T/INDUST BENEFITS	2/1 ◆
EDUCATION REQMTS OF INDUST/GOV'T	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30
Phase III	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30
Outreach Program	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30
Init Train Buyers/Mngrs/SA/SADBUS	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30
Sustain Train Buyers/Mngrs/SA/SADBUS	2/1 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 1/30

Project:
Date: 12/17/93

Critical	▬▬▬	Milestone	◆
Noncritical	▬▬▬	Summary	▬▬▬
Progress	▬▬▬	Rolled Up	◇

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Name	1994						1995							
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug

Name	Schedule
Nellis AFB, Las Vegas, NV	12/28 ■ 12/30
F.E. Warren AFB, Cheyenne, WY	1/3 ■ 1/5
Peterson AFB, Colorado Springs, CO	1/6 ■ 1/11
USAF Academy, Colorado Springs, CO	1/12 ■ 1/16
Lowry AFB, Denver, CO	1/18 ◆
Mountain Home AFB, ID	1/19 ■ 1/23
Scott AFB, Belleville, IL	1/23 ■ 1/25
McConnell AFB, Wichita, IL	1/25 ■ 1/27
Whiteman AFB, Knob Noster, MO	1/27 ■ 1/31
Second 6 Mos Deployment Completed	1/31 ◆
SACONS-EDI	8/2 ▬▬▬▬▬▬▬▬ 2/3
Deploy to Remaining Sites	8/2 ▬▬▬ 9/20
Fort Richardson, AK	8/2 ▐ 8/3
RCO Benelux, Brussels, Belgium	9/1 ▐ 9/2
RCO Frankfurt, Germany	9/5 ▐ 9/6
RCO Fuerth, Germany	9/7 ▐ 9/8
RCO Grafenwoehr, Germany	9/9 ■ 9/12
RCO Seckenheim, Germany	9/13 ▐ 9/14
Fort Ord, Monterey, CA	9/15 ▐ 9/16
Fort Sheridan, Chicago, IL	9/19 ▐ 9/20
Second 6 Mos Deployment Completed	9/20 ◆
Maintain Gateway	8/25 ▬▬▬▬▬▬ 2/3
Hardware	8/25 ▬▬▬▬▬▬ 2/3
Second 6 Mos FY 94	8/25 ▬▬▬▬▬▬ 2/3
Software	8/25 ▬▬▬▬▬▬ 2/3
Second 6 Mos FY 94	8/25 ▬▬▬▬▬▬ 2/3
Manpower	8/25 ▬▬▬▬▬▬ 2/3
Second 6 Mos FY 94	8/25 ▬▬▬▬▬▬ 2/3
Telecomm	8/25 ▬▬▬▬▬▬ 2/3
Second 6 Mos FY 94	8/25 ▬▬▬▬▬▬ 2/3
SPEDE	8/25 ▬▬▬▬▬▬ 2/4
Maintenance Costs for 5 Sites	8/25 ▬▬▬▬▬▬ 2/4
Hardware Maint	8/25 ▬▬▬▬▬▬ 2/4

Project:
Date: 12/17/93

Legend		
Critical ▬▬▬	Milestone ◆	
Noncritical ▬▬▬	Summary ▬▬▬	
Progress ▬▬▬	Rolled Up ◇	

Name	1994							1995							
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Second 6 Mos FY 94			8/25 ▼━━━━━━━━━━━ 2/4												
Software Maint			8/25 ▼━━━━━━━━━━━ 2/4												
Second 6 Mos FY 94			8/25 ━━━━━━━━━━━ 2/4												
Telecomm Maint			8/25 ▼━━━━━━━━━━━ 2/4												
Second 6 Mos FY 94			8/25 ━━━━━━━━━━━ 2/4												
Manpower			8/25 ▼━━━━━━━━━━━ 2/4												
Second 6 Mos FY 94			8/25 ━━━━━━━━━━━ 2/4												
DPACS DoD Procure Migration System		8/5 ▼━━━━━━━━━━━ 2/3													
Contractor Support for CDA			8/25 ▼━━━━━━━━━━━ 2/3												
Support for Next 6 Mos FY 94			8/25 ━━━━━━━━━━━ 2/3												
Conversion to X12			8/25 ▼━━━━━━━━━━━ 2/3												
Support for Next 6 Mos FY 94			8/25 ━━━━━━━━━━━ 2/3												
CDA Implementation Expenses			8/25 ▼━━━━━━━━━━━ 2/3												
Support for Next 6 Mos FY 94			8/25 ━━━━━━━━━━━ 2/3												
Application Interface Development			8/25 ▼━━━━━━━━━━━ 2/3												
Development Next 6 Mos FY 94			8/25 ━━━━━━━━━━━ 2/3												
TDY CDA			8/25 ▼━━━━━━━━━━━ 2/3												
TDY Next 6 Mos FY 94			8/25 ━━━━━━━━━━━ 2/3												
Implement to 5 Sites		8/5 ▼━━━━━━━━━━━ 2/1													
Site 3		8/5 ━━━━━━━ 11/23													
Site 4						11/24 ━━━━ 2/1									
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DoD PROC EDI DEPLOY COST/MILESTONES		8/3 ▼━━━━━━━━━━━ 2/4													
Mng DoD in Non-DoD EDI Stds Bodies		8/3 ▼━━━━━━━━━━━ 2/2													
Ident Work Grps of Stds Bodies		8/3 ━━━━━ 10/26													
Estab Partic in ANSI & EDIFACT					10/27 ▼━━━ 2/2										
DoD Representatives					10/27 ━━━ 2/2										
DoD Participants					10/27 ━━━ 2/2										
Mng & Pub DoD EDI Impl Conventions			8/24 ▼━━━━━━━━━━━ 2/4												
Devel/Pub DoD EDI IC CM Proced			8/24 ━━━━━━━━━━━ 2/4												
IC Reposit & Download Vers of ICs		8/4 ▼━━━━━━━━━━━ 2/2													
Download Struct & Distrib Sched		8/4 ━━━━━ 11/9													
Sys Rqmt Spec & Devel Milestones						11/10 ━━━━ 2/x									

Project:
Date: 12/17/93

Critical	━━━━━━	Milestone	◆
Noncritical	━━━━━━	Summary	▼━━━━▼
Progress	━━━━━━	Rolled Up	◇

APPENDIX B

LICENSE AGREEMENT

DCA200-93-H-0018

This license agreement is effective as of the _____ day of _____ 1993, between the UNITED STATES OF AMERICA (hereinafter called the Government),and _____ (hereinafter called the EDI VAN Provider/Contractor). Whenever the term Contractor appears in a DFARS clause it refers to EDI VAN Provider.

WHEREAS, EDI VAN Provider warrants that he has the right to grant the within license and release, and the Government desires to procure the same, and

NOW THEREFORE, in consideration of the grant, release, and agreements hereinafter recited, the parties have agreed as follows:

ARTICLE 1. LICENSE GRANT - DFARS 252.227-7004 (AUG 1984)

(a) The Contractor hereby grants to the Government an irrevocable, nonexclusive, nontransferable, and no charge license under the following patents, applications for patent, and any patents granted on such applications, and under any patents which may 'ssue as the result of any reissue, division or continuation thereof, to practice by or cause to be practiced for the Government throughout the world, any and all of the inventions the.eunder, in the manufacture and use of any article or material, in the use of any method or process, and in the disposition of any article or material in accordance with law:

U.S. Patent No.

Date

Application Serial No.

Filing Date

Together with corresponding foreign patents and foreign applications for patents, insofar as the Contractor has the right to grant licenses thereunder without incurring an obligation to pay royalties or other compensation to others solely on account of such grant.

(b) No rights are granted or implied by the agreement under any other patents other than as provided above or by operation of law.

(c) Nothing contained herein shall limit any rights which the Government may have obtained by virtue of prior contracts or by operation of law or otherwise.

ARTICLE 2. LICENSE TERM - DECCO/RPrS (OCT 1992)

The license hereby granted shall terminate in whole or in part, by giving the EDI VAN provider or Contracting Officer not less than thirty (30) calendar days notice in writing of the date such termination is to be effective.

The term of this agreement shall be for one year with four annual reviews. This clause expires one year from date of License Agreement. At this time, the Government will review any changes to the Technical Scope of Work as well as review all terms and conditions contained in the License Agreement including the no-cost provision. Revisions to the License Agreement shall be made unilaterally.

ARTICLE 3. RELEASE OF PAST INFRINGEMENT - DFARS 252.227-7001 (AUG 1984)

The Contractor hereby releases each and every claim and demand which he now has or may hereafter have against the Government for the manufacture or use by or for the Government prior to the effective date of this contract, of any inventions covered by (i) any of the patents and applications for patent identified in this contract, and (ii) any other patent or application for patent owned or hereafter acquired by him, insofar as and only to the extent that such other patent or patent application covers the manufacture, use, or disposition of the Electronic Data Interchange (EDI) Value Added Network (VAN).

ARTICLE 4. NON-ESTOPPEL - DFARS 252.227-7000 (OCT 1966)

The Government reserves the right at any time to contest the enforceability, validity, scope of, or the title to any patent or patent application herein licensed without waiving or forfeiting any right under this contract.

ARTICLE 5. PAYMENT - DECCO/RPPS, (OCT 1992)

In consideration for the Electronic Data Interchange (EDI) Value Added Network (VAN) provided by the EDI VAN provider and the access to the DOD Distribution Point (DOD DP) located at up to two locations for operations and disaster recovery purposes, provided by the Government, as described in the Technical Scope of Work, there will be no monetary charge to either party. Sole consideration shall be the EDI VAN services provided by the EDI VAN provider and access to the DOD data provided by the DOD DP.

ARTICLE 6. COMPUTER SECURITY - DECCO/RPPS (OCT 1992)

Notwithstanding any other provision of this license agreement, the Government may unilaterally disconnect the EDI VAN provider from the DOD Distribution Point (DOD DP) (or stop acceptance of electronic mail from the EDI VAN provider), if the Government suspects any breach of computer security due to the connection with the EDI VAN provider (or acceptance of electronic mail from the contractor) which would compromise the integrity, normal operations, or privacy of the Government's computer system. The DOD/DISA Technical representative will notify the EDI VAN provider within two (2) hours, if the Government disconnects the EDI VAN provider (or stops accepting mail from the EDI VAN provider). Such notice will be verbal and optionally by electronic mail, but will be followed by a written notice within 24 hours of the reasons for the disconnect, the steps being taken to determine whether a breach indeed exists, and an estimated completion schedule for such steps. The Government will research and/or test to confirm any such breach of computer security. Upon satisfactory resolution of any apparent or real breach, the Government will reconnect the EDI VAN provider to the DOD DP. EDI VAN provider shall indemnify Government against liability, including costs, which may result from disconnecting the EDI VAN provider from the DOD DP.

ARTICLE 7. NEWS RELEASE - DECCO/RPPS (OCT 1992)

EDI VAN Providers shall not make news releases (i.e., publications, advertising, speeches, technical papers, and photographs) pertaining to this license agreement without the written approval of the Contracting Officer.

ARTICLE 8. NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT - FAR 52.227-2 (APR 1984)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

ARTICLE 9. EXCLUSIVITY - DECCO/RPPS (OCT 1992)

This license agreement provides for EDI VAN Provider access to the EC data provided as described in the Technical Scope of Work. The DOD Distribution Point (DOD DP) will provide DOD transactions offered under this agreement only to VANs signing this agreement. DOD will not provide these transactions to VANs under other agreements. This license agreement shall be used exclusively for obtaining access to the EC Data provided by the DOD DP computer during the term of this agreement.

ARTICLE 10. EXTEND TERM OF AGREEMENT - DECCO/RPPS (OCT 1992)

This agreement shall be effective the date the Government signs the agreement and shall continue unless sooner terminated in accordance with the provisions of this agreement. The total duration of this License Agreement shall not exceed 60 months.

ARTICLE 11. MINIMUM GUARANTEE - DECCO/RPPS (OCT 1992)

The magnitude of DOD transactions depends on Congressional appropriations. Therefore, DOD cannot guarantee any minimal level transactions activity at any of its facilities.

ARTICLE 12. LIABILITY EXCLUSION - DECCO/RPPS (OCT 1992)

The Government is not responsible for errors or omissions of the EDI VANs in providing information to other commercial entities. The Government is not liable for non-performance of the EDI VANS.

ARTICLE 13. USE OF LICENSE AGREEMENT - DECCO/RPPS (SEP 1993)

The License Agreement is for use by both DOD and non-DOD Agencies.

ARTICLE 14. CLAUSES INCORPORATED BY REFERENCE - DECCO/RPPS (OCT 1992)

This agreement incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

FAR REF	CLAUSE TITLE	DATE
52.203-1	Official Not to Benefit	APR 1984
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.232-23	Assignment of Claims (JAN 1986) - ALT I	APR 1984
52.233-1	Disputes	DEC 1991

IN WITNESS WHEREOF, the parties hereto have executed this license agreement. Both parties agree that by signing this license agreement they do so within the scope of their authority. If any party exceeds the scope of their authority they do so at their own risk.

THE UNITED STATES OF AMERICA   EDI VAN PROVIDER
BY: BY:
TITLE: TITLE:
DATE: DATE:

TECHNICAL SCOPE OF WORK

A. OBJECTIVE

The objective of this attachment to the EDI VAN Provider license agreement is to describe the DoD technical approach to electronic commerce using a multi-VAN DoD Distribution Point (DP) to exchange transactions with EDI VAN Providers participating in the agreement. It defines technical requirements and procedures for participating EDI VAN Providers. Most functional areas within DoD including procurement, finance, transportation, supply, and administration are ultimately expected to use the technical approach described in this attachment. Procurement is the first functional area to use it. The application of this technical approach to procurement is provided in Addendum A to this agreement. Addendum A is consistent with and uses the technical approach described below.

B. OVERVIEW

The Department of Defense (DoD) is committed to implementing electronic commerce (EC) using electronic data interchange (EDI). In a May 1988 policy memorandum, the Deputy Secretary of Defense directed the Department of Defense (DoD) components to make "maximum use of electronic data interchange (EDI) for the paperless processing of all business-related transactions." Defense Management Report Decision 941, issued in November 1990, commits DoD to replace existing documents with EDI. The benefits from exchanging this information electronically include fewer data entry errors, elimination of mailing costs, decreased paper handling, reduced inventories, better cash management, and shortened order times.

DoD has set aggressive goals to make electronic commerce a standard way of conducting business in the 1990s. By 1995, DoD plans to conduct 75 percent of its most frequently used business transactions electronically. DoD believes a "common approach for all Military Services and Defense agencies with a single face to industry" is the most expedient and efficient manner to implement EDI and EC within DoD.

To that end, DoD will use a multi-VAN Distribution Point to exchange transactions between DoD and the EDI VAN Providers used by DoD's commercial trading partners. These commercial trading partners can choose to use any of the EDI VAN Providers participating in this agreement. A commercial trading partner will send and receive information to and from DoD via its EDI VAN Provider. A firm meeting the terms and conditions of this agreement can operate as an EDI VAN Provider on its own behalf under this agreement, even if the firm does not intend to act as an EDI VAN Provider for other DoD trading partners. DoD activities will transmit data to the Distribution Point which will forward the data to the appropriate EDI VAN Providers used by the DoD activities' trading partners. DoD will send any one-to-all (i.e., available to the public) transactions sent by DoD activities to each of the participating EDI VAN Providers via the Distribution Point. The participating EDI VAN Providers are required to make these public transactions available to all interested subscribers. DoD will also exchange one-to-one transactions, i.e., transactions addressed to specifically to one or more contractors, via the multi-VAN Distribution Point.

DoD will develop and distribute to all participating EDI VAN Providers a document detailing the policies and procedures that will be followed to establish and maintain connectivity with the multi-VAN DoD Distribution Point. Each EDI VAN Provider will establish redundant connectivity with the Distribution Point in accordance with this agreement.

DoD will use a phased approach for implementing EDI in its various functional areas and across DoD activities. Procurement and payment transactions have been identified as priority targets for DoD's EC program but all business areas will move to an EC environment when it makes good business sense to do so. DoD has designed a standard framework and technical solution for all business areas.

C. EDI VAN PROVIDER SERVICES

C.1 DEFINITION OF AN EDI VAN PROVIDER

An EDI VAN Provider shall be defined as a service that transmits, receives, and stores EDI messages for EDI trading partners. The EDI VAN Provider also provides access to these EDI messages by the parties to which the messages are addressed. A firm meeting the terms and conditions of this agreement can operate as an EDI VAN Provider on its own behalf under this agreement, even if the firm does not intend to act as an EDI VAN Provider for other DoD trading partners. Trading partners need not directly receive nor send documents in standard formats defined below, but DoD will send all documents to the EDI VAN Provider using these formats and all transactions must be in these formats when they are received by DoD from the EDI VAN Provider.

C.2 EC Program Mailbox

The EDI VAN Provider must provide DoD with at least one EDI mailbox which DoD will use to monitor compliance with the terms and conditions of this agreement and for troubleshooting and testing. DoD may store data in this mailbox for up to five business days. The EDI VAN Provider must provide DoD with the use of any software needed to use this mailbox. This software and mailbox shall only be used for the above purposes by the DoD Technical Representative, not by individual DoD activities.

C.3 Standards and Conventions for Standards Usage

C.3.1 Transaction Set Standards

The EDI VAN Provider must be able to exchange all transactions with the multi-VAN DoD Distribution Point using the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 standards or United Nations EDI for Administration, Commerce, and Trade (EDIFACT) standards when the EDI VAN Providers are informed by the DoD Technical Representative that DoD will begin to use EDIFACT standards. DoD will notify EDI VAN Providers at least 90 days before any EDIFACT messages are used by DoD via the Distribution Point. The EDI VAN Provider must have the ability to read and interpret ASC X12 header and/or trailer records (i.e., ISA, GS, GE, IEA segments) and the equivalent parts of EDIFACT messages.

The EDI VAN Provider must support the exchange of ASC X12 transaction standards and draft standards for trial use (DSTU's) in the current version and release (Version 3, Release 3, referred to as "3030") as well as two prior releases (3010 and 3020). New versions and releases of the ANSI ASC X12 standards must be supportable by the EDI VAN Provider within 90 days' notice from the Technical Representative. For one year after this agreement becomes effective, the EDI VAN Provider must also support ASC X12 Version 2, Release 3 (referred to as "2003). When DoD begins using EDIFACT messages, the DoD Technical Representative will inform the EDI VAN Providers of which EDIFACT messages and statuses must be supported. The DoD Technical Representative will provide participating VANs a list of transactions to be used initially prior to the commencement of testing.

Consistent with the Federal Information Process Standard (FIPS) Publication 161-1, DoD activities may also use industry-specific standards, if no equivalent X12 or EDIFACT standards have been approved and issued by September 30, 1995 and the DoD activity was using such industry-specific standards on September 30, 1991. DoD will inform the participating EDI VAN Providers of any such usage of standards and identify the source of such standards at least 90 days before such standards are used by DoD via the Distribution Point.

The ANSI ASC X12 standards and supporting documents may be obtained from the Data Interchange Standards Association, 1800 Diagonal Road, Suite 355, Alexandria, Virginia 22314-2840, ph⌐⌐e (703) 548- 7005.

C.3.2 Implementation Conventions for Use of ASC X12 Standards

As a matter of common practice, ASC X12 standards and DSTU's (as well as EDIFACT messages) are seldom used in their entirety. For this reason, the DoD (in a manner similar to many private sector industry groups) has written a series of implementation conventions, which are sub-sets of the ASC X12 standards and DSTU's. These conventions describe the precise manner in which the DoD intends to use the ASC X12 standards and DSTU's with its trading partners.

The EDI VAN Providers must (directly or indirectly via affiliated services) enable interested businesses to receive and send ASC X12 transaction sets following the DoD implementation conventions for the ASC X12 standards. (Conventions will be provided for EDIFACT messages when DoD begins using them.). The EDI VAN Provider must use the most current version of these conventions for each ASC X12 version and release. The DoD Technical Representative will provide the EDI VAN Provider with the DoD conventions and all updates for any ANSI ASC X12, EDIFACT or other EDI messages DoD uses in accordance with Section C.3.1, above. The EDI VAN Providers must comply with the conventions and any changes to them within 90 calendar days of receipt from the Technical Representative.

Currently DoD conventions are available for ASC X12 Version 2, Release 3 and in draft form for transaction sets in ASC X12 Version 3, Release 1 (many transaction sets) and Version 3, Release 2 (one transaction set only, the ANSI X12 838). DoD will issue new or updates to the conventions no more frequently than every six months, unless an emergency change to the conventions becomes required.

C.3.3 CALS Data Within ASC XI2 Transaction Set 841

DoD plans to include CALS (Continuous Acquisition and Life Cycle Support) data (both binary and ASCII, as specified in MIL-STD-1840A and its companion suite of military specifications) within some of its electronic Requests for Quotation (RFQ) transaction sets. The EDI VAN Provider may provide services to enable interested subscribers to exchange such data with a DoD activity and translate it into usable forms. All binary data will be exchanged in ASC X12 841 transaction sets.

C.3.4 Transaction Exchange Methods

The EDI VAN Provider may exchange ASC X12 (and eventually EDIFACT) transactions with the multi-VAN DoD Distribution Point using one of the following methods or another method, if found mutually acceptable by DoD and the EDI VAN Provider. In determining acceptability of a method proposed by an EDI VAN Provider but not listed below, DoD will consider among other factors the DoD resources required to test and support the alternative method. Consistent with the term of the License Agreement, DoD may modify the transaction exchange methods available annually.

C.3.4.1 FTP (file transfer protocol) over TCP/IP

The following four methods are subject to DoD availability. EDI VAN Providers will be informed as DoD achieves these capabilities.

C.3.4.2 FTAM (File Transfer Access Management) over OSI

C.3.4.3 ITU-TSS (International Telecommunications Union-Telecommunications Standards Sector) X.400 (Version 1988). This standard is compliant with the Government Open Systems Interconnect Profile (GOSIP) via X.25 access methods. GOSIP compliant X.400 and, when available, X.435 (the version of X.400 designed for exchange of EDI transactions) is preferred by DoD and will likely be required in future (e.g., 1994) versions of this license agreement.

C.3.4.4 ANSI ASC X12.56 Interconnect Mailbag Control Structure. This ANSI X12 standard is designed to control the exchange of groups of ANSI X12 transaction sets between two interconnecting entities. The entities in this agreement will be the EDI VAN Provider and the multi-VAN DoD Distribution Point.

C.3.4.5 Simple Mail Transfer Protocol (SMTP) (Internet RFC [Request for Comment] 822) based on DoD Military Standard (MIL-STD) 1781. Each EDI transaction set (in the case of ANSI X12, beginning with an ISA segment) will be in a separate SMTP envelope.

C.4 Interface Between Multi-VAN DoD Distribution Point and EDI VAN Providers

All EDI transactions exchanged between commercial trading partners and DoD activities will be exchanged via the DoD Distribution Point. Connectivity between the DoD DP and the EDI VAN Providers will be established through one of three alternative connectivity methods:

C.4.1 Toll free phone call by DoD whereby DoD can dial a phone number to exchange transactions with the EDI VAN Provider. Minimum speed is 9600 bps.

C.4.2 Dedicated circuit (leased line) to DoD Distribution Point at EDI VAN Provider expense. The EDI VAN Provider is responsible for all needed cables and peripheral equipment to receive the data beyond the port on the multi-VAN DoD Distribution Point computer. Minimum line speed is 19,200 bps.

C.4.3 Internet address (as defined in the DDN (Department of Defense Data Network) Protocol Handbook, NIC 50004-50006) which DoD can use to exchange all mail with an EDI VAN Provider mailbox.

The EDI VAN Provider may change the transaction exchange method or interface to the multi-VAN Distribution Point providing 10 days advance notice to the DoD Technical Representative. Any change will be subject to the same testing requirements in Section K (Testing and Initiation of Services). The actual implementation date will be coordinated with the DoD Technical Representative.

D. DATA RESPONSIBILITY

The DoD assumes responsibility of all data until it is delivered to each EDI VAN Provider's connection on the DoD DP, at which point it becomes the EDI VAN Provider's responsibility. The DoD will make every effort to ensure the communications session is properly completed and all data is transmitted to the EDI VAN Provider.

E. EDI VAN PROVIDER HOURS OF OPERATION AND AVAILABILITY

The EDI VAN Provider must be accessible to exchange transactions to and from the DoD DP 24 hours a day, 7 days a week except for eight hours weekly for regularly scheduled routine maintenance. The EDI VAN Provider must report any scheduled and unscheduled break in services under this agreement to the DoD Technical Representative in a timely manner.

F. DATA BACK-UP AND RECOVERY

The EDI VAN Provider must back up all data processed by its host computer(s) related to this agreement such that full file recovery is possible. That data must be retained by the EDI VAN Provider a minimum of 14 days after the mailbox has been emptied (received) by DoD and may be retained in off line storage. The EDI VAN Provider must provide DoD with the capability to restore EDI transactions to the DoD EDI mailbox for at least 14 days. Either the entire contents of the mailbox or specific sets of transactions identified by the X12 interchange control number will be requested for restoration. An audit trail must be available for at least 90 days. As a minimum, that audit trail should include the date and time a message has been received or delivered, and the interchange control number.

Each EDI VAN Provider will establish redundant connectivity with the Distribution Point for disaster recovery purposes.

G. QUALITY CONTROL

The EDI VAN Provider must have an internal quality monitoring program that assures that reliable communication lines are maintained to enable the DoD DP computer(s) to exchange electronic transactions using the provided mailbox. The system availability must be at least 98 percent during normal service hours excluding regularly scheduled routine maintenance (see Section E, EDI VAN Provider Hours of Operation and Availability).

H. DATA PROTECTION

Adequate protection must be provided for DoD's data traffic. EDI VAN Providers are expected to provide administrative, technical, and physical safeguards against threats and hazards to the security and confidentiality of data. The EDI VAN Provider must be able to secure system access, database access, and EDI mailbox from unauthorized personnel. The EDI VAN Provider must use reasonable care to prevent loss, alteration or disclosure of information or data generated by or addressed to the DoD. The EDI VAN Provider will not knowingly disclose information or data belonging to the DoD without written consent of DoD.

Only one-to-all transactions addressed directly to the EDI VAN Provider by DoD and identified as such shall be considered public and do not require DoD's written consent for disclosure to others.

I. USER DOCUMENTATION

The EDI VAN Provider must provide to the DoD Technical Representative all user documentation concerning the EDI VAN Provider services provided to other basic electronic mailbox subscribers conducting electronic commerce with the DoD via this

agreement. The EDI VAN Provider must provide timely updates of such documentation when modified. All such materials will be returned by DoD to the EDI VAN Provider upon the expiration or termination of this agreement.

J. ENCRYPTED DATA TRANSMISSION

Upon selection of a data encryption standard by DoD, some EDI transactions may be encrypted. The EDI VAN Provider must be capable of handling such encrypted transactions exchanged between DoD and contractors. The address segments of the EDI transaction set (e.g., the ISA and IEA segments in ANSI ASC X12 transaction sets) nor any electronic envelope described in Section C.3.4 will not be encrypted. However, there is no DoD requirement for the EDI VAN Provider to encrypt or decrypt data. The DoD selection of a standard will be made public and available to participating EDI VAN Providers. The EDI VAN Provider may optionally offer encryption and decryption services for EDI transactions between the EDI VAN Provider and its subscribers. No transactions exchanged with the multi-VAN DoD Distribution Point will have the address segments (e.g., the ISA and IEA segments in ANSI ASC X12 transaction sets) encrypted.

K. TESTING AND INITIATION OF SERVICES

Services as specified in the addendum(s) may begin after successful testing of the following: (1) connectivity between the EDI VAN Provider and the DP Computer; (2) compliance with the relevant enveloping and transaction standards; and (3) other requirements in this agreement. Testing will commence after the DoD Technical Representative has informed the EDI VAN Provider that DoD is ready and the EDI VAN Provider responds that is ready. The detailed, written test plan will be provided to the EDI VAN Provider by the DoD Technical Representative.

The test will include a procedure to determine that the steps of the registration process satisfactorily function in accordance with Addendum A to this agreement.

The test must be successfully completed within 20 calendar days of the test start date, unless DoD and the EDI VAN Provider agree to extend the test period.

After completion of successful testing, the DoD Technical Representative will inform the EDI VAN Provider in writing of the date to establish actual services (the exchange of production transactions).

If DoD concludes that the EDI VAN Provider has failed the test, it will inform the EDI VAN Provider in writing of the reasons for failure. The EDI VAN Provider can request a second test within 10 days of notice of failure. A retest may only be carried out in accordance with mutually acceptable conditions between DoD and the EDI VAN Provider. DoD shall not be required to agree to subsequent tests.

L. DISASTER RECOVERY SERVICES

In the event of an unplanned interruption or inaccessibility to EDI VAN Provider services relevant to this agreement, DoD shall have access to and use of "back up capabilities" as defined below after delivery of a "disaster notification" to the EDI VAN Provider or its designee. The initial disaster notification and request for access may be oral or written. However, oral notifications must be followed by a written disaster notification within 24 hours of the initial notification.

"Back up capabilities" are defined as the computer and telecommunications equipment located at the EDI VAN Provider designated computer recovery center which operates in lieu of the EDI VAN Provider regular services when services are curtailed.

DoD shall continue to have the right of access to and use of the backup capabilities until the EDI VAN Providers' regular services are restored. The backup facilities must pass the same tests as used during initiation of services.

M. ACCESS TO ONE-TO-ALL (PUBLIC) TRANSACTIONS

All transactions sets sent by DoD that are intended for any interested party to see, will be sent to all participating EDI VAN Providers as "one-to-all" (public) transactions. These transactions will be addressed to a "public" mailbox controlled by the EDI VAN Provider itself and identified to DoD by the EDI VAN Provider. DoD will provide all public transactions to each EDI VAN Provider using the transaction exchange and interface methods selected by the EDI VAN Provider for exchanging all transactions as part of this agreement.

The EDI VAN Providers must make these one-to-all transactions (e.g., public RFQs and award summaries [ANSI ASC X12 836 transaction set]) accessible to all interested subscribers to its services within the time limits specified for each transaction set. Time limits are defined in addenda to this agreement by functional area. Each EDI VAN Provider will receive all public transactions; no EDI VAN Provider may request to receive only a sub-set of them. DoD encourages the EDI VAN Providers to make these public transaction sets available to the widest number of interested subscribers.

N. OTHER CONSIDERATIONS

All DoD-to-contractor transactions electronically exchanged as part of this EC program must be exchanged via a participating EDI VAN Provider. EDI VAN Providers participating in this agreement will be notified of the schedule of implementation of DoD activities in this EC program. DoD activities will be phased into this program in accordance with a DoD-wide plan. Electronic exchanges between DoD activities are not required to be conducted using an EDI VAN Provider and will likely be exchanged using internal DoD networks.

ADDENDUM A: DOD APPROACH TO ELECTRONIC COMMERCE FOR SMALL
PURCHASES AND OTHER SIMPLIFIED PURCHASES

1.0 OVERVIEW

This addendum defines how DoD will use the technical approach described in the
Technical Scope of Work of this agreement in order to implement a DoD-wide approach
to electronic commerce for small purchases and other simplified purchases consistent
with the Federal Acquisition Regulation (FAR) and other applicable statutes and
regulations.

Requests For Quotations (RFQs) will be issued by DoD activities, quotes will be sent by
interested contractors to these activities, and the activities will make awards. All
transactions will be exchanged in electronic form via the multi-VAN DoD Distribution
Point. All contractors will send and receive transactions via one of the participating EDI
VAN Providers. EDI-capable DoD activities will be phased into using this approach
based on a DoD-wide implementation plan.

Before conducting electronic commerce with DoD, all contractors must register using a
simple electronic registration transaction sent to DoD via a participating EDI VAN
Provider.

DoD activities may issue public RFQs and award summaries as defined in the Technical
Scope of Work. Award summaries provide basic award information about prior public
RFQs against which awards have been issued, e.g., winning contractor, unit price,
quantity. This addendum does not prescribe how EDI VAN Providers must provide
subscribers access to public RFQs and award summaries nor does it prescribe the
format of the information to be provided. A participating EDI VAN Provider may sort
these transactions and provide them to interested subscribers as deemed appropriate.
For example, an EDI VAN Provider may choose to make RFQs and award summaries
available to interested subscribers via electronic bulletin board type services allowing
subscribers to browse through an RFQ bulletin board to select to which RFQs to
respond. Other EDI VAN Providers may choose to select RFQs or award summaries of
particular interest to their subscribers based on subscriber profiles and provide only
these transactions to subscribers in a preselected, convenient format. This electronic
access to public procurement information is intended to:

- Provide the means for conducting fast-paced procurements and payments

- Increase competition for DoD's procurement awards

- Reduce operating costs for both DoD agencies and contractors

- Make it easier for small businesses to learn of business opportunities with DoD

DoD will electronically transmit to the participating EDI VAN Providers some information regarding the DoD electronic commerce approach and contractor registration. EDI VAN Providers must make this information accessible to their subscribers. (This information and the registration process are described in Section 4.)

DoD activities will also be able to issue priced orders against established contracts using this approach. These orders will be sent electronically by DoD activities to relevant contractors in accordance with the terms and conditions of the established contracts.

2.0 TRANSACTIONS TO BE EXCHANGED

All transactions exchanged between DoD and contractors will be in compliance with the transaction set standards and relevant DoD conventions for their use as prescribed in the Technical Scope of Work. DoD activities will issue "one to all" as well as "one to one" transactions. DoD activities will receive one-to-one transactions from registered contractors. These transactions are described in Sections 2.2 and 2.3. Participating EDI VAN Providers will be provided with a list of specific transaction sets to be used at the outset of this agreement. This list will be updated in accordance with the Technical Scope of Work.

2.1 CONTRACTOR USE OF VAN SERVICES

All contractors desiring to conduct business with participating DoD activities electronically must register as participating contractors and will be required to exchange all electronic transactions via a participating EDI VAN Provider. DoD activities participating in this approach will be phased into it in accordance with a DoD-wide implementation plan.

2.2 PUBLIC (ONE TO ALL) TRANSACTIONS

Under this Addendum, DoD activities may issue two types of public transactions: public RFQs and public award summaries. These will be issued electronically to all participating EDI VAN Providers via the multi-VAN Distribution Point in compliance with the Technical Scope of Work (section on "Access to One-to-All (Public) Transactions").

The EDI VAN Provider must provide DoD read-only access to one-to-all transactions in the same way it provides such access to its subscribers. DoD will use this capability to monitor compliance with this agreement. The capability will not be provided to contractors directly by DoD except as chosen by the EDI VAN Provider in Section 2.4.

DoD encourages the EDI VAN Provider to make the one-to-all transactions accessible to the widest number of interested contractors to strengthen competition and improve DoD access to the U.S. industrial base.

2.2.1 PUBLIC (ONE TO ALL) RFQs

DoD activities can elect to send an individual RFQ as a one-to-one transaction to one or more specific contractors concurrent with, or in place of, a one-to-all (public) transaction.

DoD will use the ANSI ASC X12 840 transaction set for the public RFQ in accordance with the DoD conventions for that transaction set. Consistent with these conventions, the RFQ will contain the location (e.g., zip code) to which an item must be shipped and the

Federal Supply Class (FSC) of each item to be purchased. The FSC will be in a separate data element (field) in the RFQ transaction set to enable more convenient searches of RFQs by or on behalf of interested subscribers. Some RFQs will contain more specific classifications, such as National Stock Numbers.

The EDI VAN Provider must make available to all of its interested subscribers any changes to or cancellations of public RFQs within the time frames specified in Section 3. This is may require action by the interested subscriber.

2.2.2 PUBLIC (ONE TO ALL) AWARD SUMMARIES

If a public RFQ is awarded, a public award summary will be issued.

DoD will use the ANSI ASC X12 transaction set 836 for the award summary in accordance with DoD conventions for the use of that transaction set. An award summary provides basic information about an award made in connection with the issuance of a public RFQ. The award summary refers to the relevant RFQ by RFQ number, provides the identity of the winning contractor, and basic award information.

2.3 ONE TO ONE TRANSACTIONS

DoD activities will exchange all transactions with individual contractors via the multi-VAN DoD Distribution Point and the appropriate participating EDI VAN Provider using the approach described in the Technical Scope of Work. These transactions are referred to as "one-to-one" transactions, because they are addressed to individual contractors.

The EDI VAN Provider must provide DoD read-only access to one-to-one transactions as a test subscriber in the same way the EDI VAN Provider provides such access to its interested subscribers. DoD will use this capability to monitor compliance with this agreement. The capability will not be provided to contractors directly by DoD except as chosen by the EDI VAN Provider in Section 2.4.

The EDI VAN Provider must make the one-to-one transactions accessible to only the identified addressee(s) within the time frames specified in Section 3.

All one-to-one RFQs will be in compliance with the DoD conventions for the RFQ. Consistent with these conventions, the RFQ will contain the location (e.g., zip code) to which an item must be shipped and the FSC of each item to be purchased. The FSC will be in a separate data element (field) in the RFQ transaction set to enable more convenient searches of RFQs. Some RFQs will contain more specific classifications, such as National Stock Numbers.

All of the transactions are subject to modification or cancellation. If a DoD originated RFQ, award, or other transaction set is changed or canceled, the EDI VAN must provide access to the transaction to all interested or pertinent subscribers in a timely manner. This may require action by the interested subscriber.

DoD will exchange text messages with participating contractors using the ASC X12 864 transaction set.

2.4 OPTIONAL MARKETING OPPORTUNITIES AT SITES

In conjunction with the DoD activities using the DoD-wide approach to electronic commerce, DoD may provide limited marketing opportunities for the EDI VAN Providers at each DoD activity as electronic commerce is introduced to interested contractors.

These marketing opportunities will vary by DoD activity and are not an endorsement of any contractors or a particular product.

If the EDI VAN Provider has executed this agreement after such opportunities have already been conducted at some activities, DoD and the activities are under no obligation to repeat an opportunity for the EDI VAN Provider. Sites may restrict such marketing opportunities to participating EDI VAN Providers that have successfully passed testing required by the agreement.

Some examples of opportunities that may be provided are (1) participation in contractor conferences or meetings as speakers or exhibitors; (2) provision of written EDI VAN Provider material at the DoD activity for interested contractors; or (3) distribution of lists of interested contractors from an activity.

3.0 MINIMUM TRANSACTION ACCESSIBILITY REQUIREMENTS

Because many of the procurement-related transactions will be time-sensitive, participating EDI VAN Providers must make the transactions accessible to subscribers within certain time limits. Accessibility is defined as the time elapsed from the time the transaction leaves the multi-VAN DoD Distribution Point to when it is accessible to a subscriber. In the case of one-to-all transactions, "access to a subscriber" means when it is accessible to any interested subscriber. For one-to-one transactions, "access to a subscriber" means when it is accessible to the addressee. A transaction may be accessible to a subscriber before the subscriber actually sees or reads it. For example, a transaction is accessible to a subscriber if it is on a bulletin board that the subscriber can access freely or if it is in the subscriber's electronic mailbox. The following accessibility requirements apply:

> One-to-all transactions: Two Hours
>
> One-to-one transactions: One Hour

In the future, accessibility requirements may vary by the priority of the transaction when this priority information can be carried with the transaction in a way to be accessible to the EDI VAN Provider, e.g., in a ITU-TSS X.435 compliant envelope.

4.0 VENDOR REGISTRATION INFORMATION AND CAPABILITIES

All contractors must register with DoD to conduct business with DoD activities using the DoD-wide approach to electronic commerce described in this Addendum.

The EDI VAN Provider must be able to provide any interested subscriber (1) basic information about the DoD approach to electronic commerce for procurement and how to register as a contractor; and (2) the capability to register. The information described in 4.1, 4.2, and 4.3, will be provided to the EDI VAN Provider by the DoD Technical

Representative in electronic form. From time to time, the Technical Representative will provide the EDI VAN Provider with modifications to these files. In the aggregate, these text files will be no more than the equivalent of 80 to 100 single spaced, typed pages.

These requirements can may be met in various ways by the EDI VAN Provider.

4.1 ACCESS TO BASIC INFORMATION ON THE DoD APPROACH

A contractor interested in exchanging a transaction for the first time with a DoD must be given access by the EDI VAN Provider to basic information on the DoD-wide approach to electronic commerce and how contractors can participate.

4.2 NOTIFICATION OF REQUIREMENT TO TRADE PROCEDURES, TERMS AND CONDITIONS FILE(s)

The EDI VAN Provider must provide any interested subscriber access to a notification which explains that to participate in electronic commerce with DoD, the subscriber must first read and agree to the EC Procedures, Terms and Conditions file and submit a completed contractor registration transaction set.

4.3 ACCESS TO EC PROCEDURES, TERMS AND CONDITIONS FILE(s)

The EDI VAN Provider must provide any interested subscriber access to up to five text files of EC Procedures, Terms and Conditions applicable to conducting business electronically with DoD. The EDI VAN Provider must provide the subscriber with the capability to determine which text files apply to the type of business the subscriber intends to conduct with DoD. The DoD Technical Representative will provide the EDI VAN Provider with rules subscribers can use to determine which files apply under what conditions.

4.4 REGISTRATION TRANSACTION

The EDI VAN Provider must directly or indirectly provide any interested subscriber the capability to complete the registration transaction set. The transaction set will be the ASC X12 838 transaction set following the DoD implementation conventions. The DoD expects the EDI VAN Provider to enable subscribers to conduct these four steps easily, preferably using electronic mail or similar electronic means.

APPENDIX C

CONTRACTOR INPUTS

The following contractors responded to questionnaires or submitted information to the EC in Contracting PAT. Their support of acquisition reform in DoD and this PAT are truly appreciated.

BP OIL COMPANY	OVERTON GEAR & TOOL CORP
COMPUSERVE	PRECISION GEAR, INC
COMTECH MANAGEMENT SYSTEMS	PROCESS GEAR COMPANY
DATAMATIX	THE PURDY CORPORATION
DUPONT	RAYTHEON COMPANY
ELECTRONIC INDUSTRIES ASSOCIATION	ROCKWELL INTERNATIONAL CORP
GDE SYSTEM, INC	SIMPLIX
GRUMMAN DATA SYSTEMS & SERVICES	SUNSTRAND CORPORATION
HATCH & KIRK, INC.	TEXAS INSTRUMENTS
HUGHES AIRCRAFT COMPANY	TRINOVA
ITAA	TRW
JOHNSON TECHNOLOGY	UNISYS GOVERNMENT SYSTEM GROUP
LTV AEROSPACE AND DEFENSE CO	ZIMMER
MAGNAVOX	

GLOSSARY

A&E	Architecture and Engineering
AAM	Automated Acquisition Module
ABC	American Business Computer
ACPS	Automated Contract Preparation System
ADP	Automated Data Processing
AF	Department of the Air Force
AFB	Air Force Base
AFDTC	Air Force Development and Test Center
AFFTC	Air Force Flight Test Center
AFMC	Air Force Materiel Command
AIS	Automated Information System
ALE	Annual Loss Expectancy
AMIS	Acquisition Management Information System
ANSI	American National Standards Institute
APADE	Automation of Procurement and Accounting Data Entry
ASC	Accredited Standards Committee
ASCII	American Standard Code for Information Interchange
ASD	Assistant Secretary of Defense
ASO	Aviation Supply Office
AT&T	American Telephone & Telegraph
BA	Basic Ordering Agreement
BCAS	Base Contracting Automated System
BDO	Blanket Delivery Order
BLSM	Base Level Systems Modernization
BPA	Blanket Purchase Agreement
BPS	Bits per Second
BRAC	Base Realignment and Closure
BSC	Binary Synchronous
BT	British Telecom
C2	Command and Control
C3I	Command, Control, Communications, and Intelligence
C4I	Command, Control, Computers, Communications, & Intelligence
CAAC	Civilian Acquisition Advisory Council
CACO	Cognizant Administrative Contracting Officer
CAGE	Commercial and Government Entity
CALS	Continuous Acquisition and Life-Cycle Support
CAPS	Commercial Accounts Payment System
CAS	Contract Administration Services
CASE	Computer Aided Software Engineering
CBD	Commerce Business Daily
CD-ROM	Compact Disk Read Only Memory
CDA	Central Design Activity
CEC	Contractor Establishment Code
CFS	Center for Standards
CIM	Corporate Information Management
CINC	Comander in Chief
CINC	Commanders In Chief
CM	Configuration Management
CONS	Contracting Squadron
CONUS	Continental United States

COOP	Continuity of Operations
COTS	Commercial Off-the-Shelf
CPC	Contract Placement Committee
CR	Contractor Registration Module
CRUD	Create, Read, Update, and Delete
CSL	Computer Systems Laboratory
DAASC	Defense Automatic Addressing System Center
DAASO	DLA Automatic Addressing Systems Office
DABBS	DISA Acquisition Bulletin Board System
DAR	Defense Acquisition Regulations
DARC	Defense Acquisition Regulations Council
DAU	Defense Acquisition University
DBMS	Data Base Management System
DCAA	Defense Contract Audit Agency
DCMC	Defense Contract Management Command
DCSC	Defense Construction Supply Center
DCTN	Defense Commercial Telecommunications Network
DD	Department of Defense Form
DDN	Defense Data Network
DDP	Director of Defense Procurement
DE/CALS	Defense Electronic/Continuous Acquisition and Life Cycle Support
DeCA	Defense Commissary Agency
DECCO	Defense Commercial Communications Office
DESC	Defense Electronic Supply Center
DFARS	Defense Federal Acquisition Regulations Supplement
DFAS	Defense Finance and Accounting Service
DGSC	Defense General Supply Center
DIBS	DeCA Interim Business System
DII	Defense Information Infrastructure
DISA	Defense Information System Agency
DISC	Defense Industrial Supply Center
DISN	Defense Information Systems Network
DISO	Defense Information Systems Office
DITPRO	Defense Information Technology Procurement Office
DITSO	DoD Information Technology Services Organization
DLA	Defense Logistics Agency
DLSC	Defense Logistics Service Center
DMRD	Defense Management Review Decision
DMS	Defense Message System
DNSO	DoD Network Systems Office
DoD	Department of Defense
DoDM	Department of Defense Manual
DP	Distribution Point
DPACS	DLA Pre-Award Contracting System
DPRO	Defense Plant Representative Office
DPSC	Defense Personnel Supply Center
DSAC	DLA Systems Automation Center
DSC	DLA Supply Center
DSP	Defense Standardization Program
DSTU	Draft Standards for Trial Use
DTDN	DLA Transaction Distribution Network
DTRS	Defense Transportation Payment System
DUN	Dun and Bradstreet Number
E-Mail	Electronic Mail

EA	Executive Agent
EBB	Electronic Bulletin Board
EBBS	Electronic Bulletin Board System
EC	Electronic Commerce
EC/EDI	Electronic Commerce/Electronic Data Interchange
EDCARS	Engineering Data Computer Assisted Retrival System
EDIFACT	EDI for Administration, Commerce, and Transport
EDL	Engineering Data List
EFT	Electronic Funds Transfer
EIS	Electronic Information Services
EM	Environmental Manager
EMail	Electronic Mail
FAPM	Functional Activity Program Manager
FAR	Federal Acquisition Regulation
FFRDC	Federally Funded Research and Development Center
FIM	Functional Integration Management
FIPS	Federal Information Processing Standards
FISC	Fleet Industrial Support Center
FMSO	Navy Fleet Materiel Support Office
FOB	Free on Board
FSC	Federal Supply Class
FSS	Federal Supply Service
FTP	File Transfer Protocol
FY	Fiscal Year
GAEs	General Application Environments
GAO	General Accounting Office
GATEC	Government Acquisition Through Electronic Commerce
GDP	Government Distribution Point
GE	Functional Group Trailer
GEIS	General Electric Information Services
GOSIP	Government Open System Interconnect Profile
GOTS	Government Off the Shelf
GP	Gateway Processor
GS	Function Group Header
GSA	General Services Administration
GST	Government Standard Translator
GTEs	Generic Technology Environments
GTPs	Generic Technology Platforms
GUI	Graphical User Interface
IC	Implementation Convention
ICH	Interchange Control Header
ICP	Inventory Control Point
ICT	Interchange Control Trailer
IDEF	Integrated Computer-aided Manufacturing Definition Language
IDTC	Indefinite Delivery Type Contract
IEA	Interchange Control Trailer
IFB	Invitation for Bid
iGP	Intelligent Gateway Processor
ILSMIS	Integrated Logistics Support Management Information System
INFOPORT	Information Port
INST	Information Standards
INX	Information Exchange System
IOC	Initial Operating Capability
IPA	Information Processing Agency

IPC	Information Processing Center
IRM	Information Resources Management
ISA	Interchange Control Header
ISO	International Standards Organization
ISVS	International Switched Voice System
IT	Information Technology
ITABBS	Information Technology Acquisition Bulletin Board System
ITIMP	Integrated Technical Item Management Procurement System
ITPB	Information Technology Policy Board
ITU-TSS	International Telelcommunications Union-Telecommunications Standards Sector
J090A	Acquisition Screening System
JIEO	Joint Interoperability and Engineering Office
JPMO	Joint Program Management Office
JTSG	Joint Technical Support Group
KB	Kilobit
KO	Contracting Officer
LAN	Local Area Network
LLNL	Lawrence Livermore National Laboratory
LMI	Logistics Management Institute
LMS	Logistics Modernization System
LOU	Logical Operating Unit
MAC	Message Authentication Code
MADES	Menu Assisted Data Entry System
MARCORRESFOR	Marine Corps Reserve Forces
Mb	Mega Byte
MCAGCC	Marine Corps Air Ground Combat Command
MCAS	Marine Corps Air Station
MCLB	Marine Corps Logistics Base
MCLOGB	Marine Corps Logistics Base
MIL-STD	Military Standard
MILSCAP	Military Standard Contract Administration Procedures
MIME	Multi-Media Internet Message Exchange
MIPR	Military Interdepartmental Purchase Request
MIS	Management Information System
MLS	Multilevel Security
MOCAS	Mechanization of Contract Administrative Services
MODELS	Modernization of Defense Logistics Standard Systems
MTBF	Mean Time Between Failure
MTMC	Military Transportation Management Command
NAEC	Naval Air Engineering Center
NAWC	Naval Air Warfare Center
NDM	Network Data Mover
NFS	Network File System
NIST	National Institute of Standards and Technology
NPR	National Performance Review
NRCC	Naval Regional Contracting Center
NSA	National Security Agency
NSD	Naval Supply Depot
NSWC	Naval Surface Warfare Center
NSY	Naval Ship Yard
O & M	Operations and Maintenance
OO	Object Oriented
OS	Operating System

OSD	Office of the Secretary of Defense
OSI	Open Systems Interconnect
OUSD(A&T)	Office of the Undersecretary of Defense (Acquisition and Technology)
PAEB	Pan American EDIFACT Board
PAIS	Procurement Automated Information System
PALT	Procurement Action Lead Time
PASS	Procurement Automated Source System
PAT	Process Action Team
PC	Personal Computer
PCIP	Procurement, Contracting and Industrial Preparedness
PCO	Procurement Contracting Officer
PIP	Project Implementation Plan
PM	Program Manager
PMO	Program Management Office
PO	Purchase Order
POC	Point of Contact
POPS	Paperless Ordering Placement System
POSIX	Portable Operating System for Information Exchange
PR	Purchase Request
PSA	Principal Staff Assistant
PTA	Procurement Technical Assistance
PUB	Publication
PUBS	Publications
QPL	Qualified Products List
QUEUE	Line Print Spooler
RAF	Royal Air Force
RDBMS	Relational Data Base Management System
RFP	Request for Proposal
RFQ	Request for Quotation
RPP	Commercial and Agency Procurement Systems
RTA	Requiring Technical Activities
SA	System Administrators
SAACONS	Standard Army Automated Contracting System
SACONS	Standard Automated Contracting System
SADBUS	Small and Small Disadvantaged Business Utilization Specialist
SAMMS	Standard Automated Material Management System
SASPS	SAMMS Automated Small Purchase System
SAT	Simplified Acquisition Threshold
SAVES	SAACONS Automated Voucher Examination System
SB	Small Business
SBA	Small Business Administration
SCC	Standards Cooordinating Committee
SCSI	Standard Computer System Interconnect
SDB	Small Disadvantaged Business
SDS	Standard Depot Support System
SDS	Standard Depot System
SF	Standard Form
SM-ALC	Sacramento Air Logistics Center
SMC	Standards Management Committee
SMTP	Simple Mail Transfer Protocol
SOW	Statement of Work
SPCC	Ships Parts Control Center
SPEDE	SAMMS Procurement by Electronic Data Exchange

SQL	Standard Query Language
SSC	Standard Systems Center
SUBASE	Submarine Base
TAFIM	Technical Architecture Framework for Information Management
TBD	To Be Determined
TCO	Telecommunications Certification Office
TCP/IP	Transmission Control Protocol/Internet Protocol
TDCC	Transportation Data Coordinating Committee
TDR	Technical Design Review
TDY	Temporary Duty
TELNET	Telecommunications Network Protocol
TIN	Tax Identification Number
TPA	Trading Partner Agreement
TR	Telecommunications Request
TRF	Trident Refit Facility
TRM	Technical Reference Model
TSOW	Technical Scope of Work
TSR	Telecommunication Service Requests
U.N.	United Nations
UADPS	Uniform Automated Data Processing System
UCS	Uniform Communication Standard
UNCTAD	United Nations Conference on Trade and Development
UPS	Uninterruptable Power Source
USA	United States Army
USC	United States Code
USMTF	United States Message Text Formats
USN	United States Navy
UUCP	UNIX to UNIX Copy
VAN	Value Added Network
VAS	Value Added Services
WAN	Wide Area Network
WD	Weapons Division
WG	Working Group
WORM	Write Once Read Many
WPAFB	Wright-Patterson Air Force Base
WPCC	Wright-Patterson AFB Contracting Center
XMODEM	Transmission Protocol