

**PRELIMINARY
MILITARY TYPE DESIGNATOR
SYSTEMS ASSESSMENT**

for the

DOD CALS IDE PROJECT

January 1997

**Submitted to
D.N. AMERICAN, INC.
1000 Technology Drive, Suite 3220
Fairmont, WV 26554**

**In support of
Contract No. DEAM21-96-MC32239
T.O. No. HQ00038-6199-0002
CDRL Sequence Numbers A005**

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1.0 INTRODUCTION

This report highlights the results of our assessment of the Defense Logistics Service Center's (DLSC) client-server architecture and proposed interface with Military Service Type Designation Systems (MSTDS).

1.1 Background

The Defense Logistics Services Center (DLSC) supports defense system procurement via assigning, tracking, and retiring National Stock Numbers (NSNs) for all equipment used by the Department of Defense (DoD). DLSC maintains a database, the Federal Logistics Information System (FLIS), relating each NSN to information about the appropriate item. The assignment of a single NSN prevents duplication and unnecessary stock and storage of items. However, there is more to the system than NSNs. The FLIS contains information including item names, characteristics information, interchangeability and substitutability data, hazardous material disposal codes, demilitarization data, unit pricing, manufacturer's part numbers, and much more. DLSC supports all logistics functions of the DoD, other Government agencies and foreign governments through the collection, processing, storage and dissemination of this data. DLSC uses the FLIS as the primary means to organize and maintain information from the Federal Catalog System. The NSNs are assigned by DLSC at Battle Creek, Michigan based on requests from the armed services branch using the item.

The request for NSNs often comes from Military Service Type Designation organizations such as the U.S. Army's Central Electronics Command (CECOM) and the Air Force Material Command (AFMC). Each of these organizations have a system (a Military Service Type Designation System or MSTDS) of standards for naming and codifying equipment according to a type designation which specifies the installation, equipment type, and purpose of the item. A type designation is assigned for each item used by the U.S. Military Services. The request for an NSN assignment to DLSC comes after the type designation has been assigned.

DLSC, CECOM and AFMC share some common information such as type designation, drawing number and part number. Although this is a duplication of information, at present contractors and Government personnel often have to work with all these organizations to find information relevant to systems or equipment they are provisioning, developing, modifying, repairing, etc. In fact, if the inquirer does not know the exact organization involved with the equipment then relevant information will be missed altogether. These conditions exist because there is no direct connectivity between the various MSTDSs and between the MSTDSs and DLSC. Each exists as an independent system with only loose, and usually manual, ties to the others. According to DLSC this lack of connectivity is a contributing factor in the duplication of acquisition and logistics efforts, inability to find parts in inventories, duplicate parts in inventories, and other logistics management issues.

In order to address this lack of connectivity DLSC has proposed that an automated system be established, the DLSC Information Hub, which will allow access to parts information in the FLIS

and MSTDSs through a single user interface (see Figure 1.1-1). This system would allow a user to enter certain key information (e.g., a part number or type designation) and discover which systems had information on a part and what the information is. Thus, all information on a part would be available to a DLSC user and the problems discussed above would be alleviated.

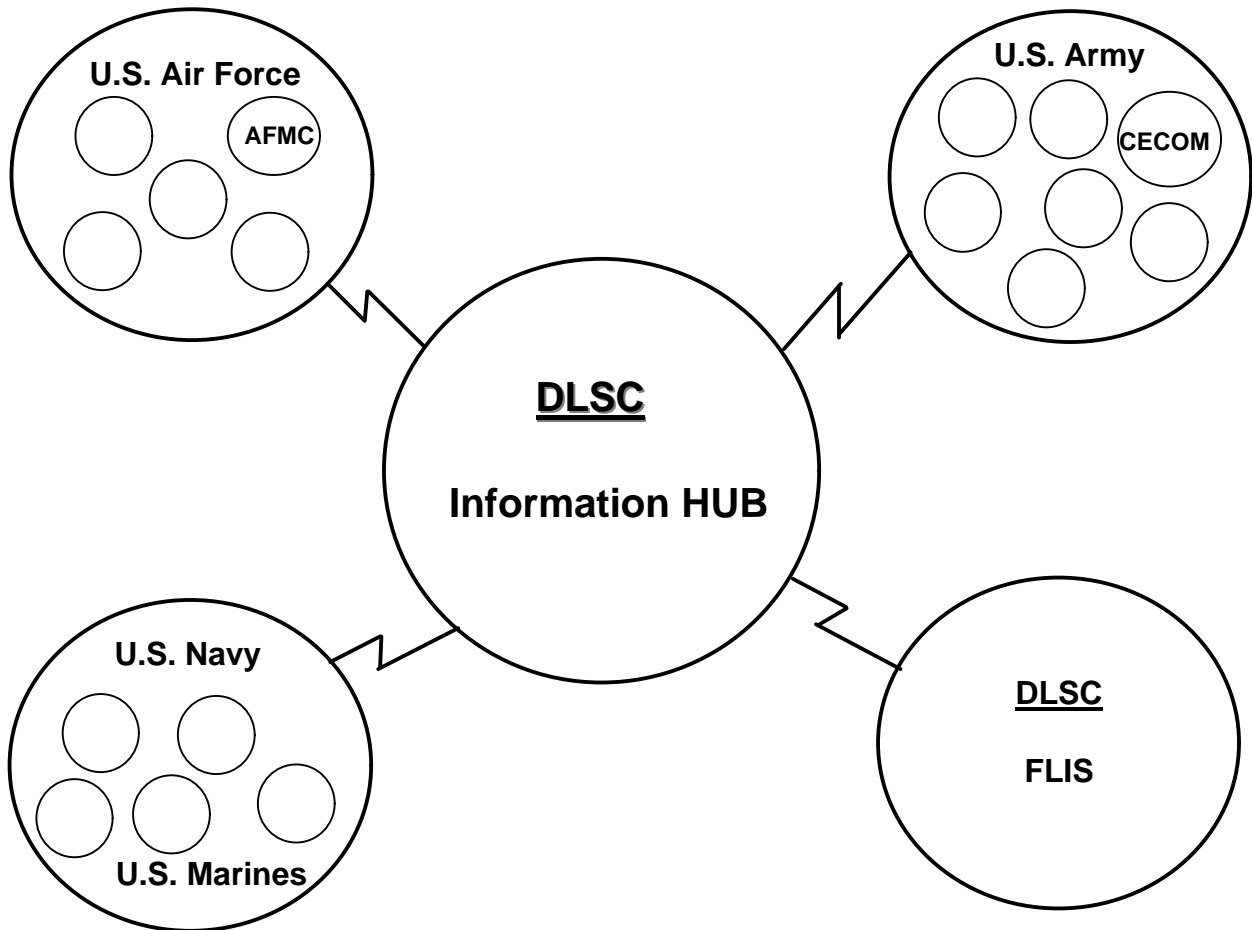


Figure 1.1-1 The DLSC Information Hub Concept

1.2 Summary of Findings

Task 2 of the Continuous Acquisition and Life-Cycle Support (CALC)/Integrated Data Environment (IDE) program was tasked with assessing the client-server architecture proposed by DLSC for the DLSC Information Hub and the capability of the existing type designation systems at CECOM and AFMC to participate in this architecture. While this Task was established with a fairly correct understanding of the existing environment for the DLSC Information Hub this was not true in regard to the CECOM and AFMC type designation systems.

1.2.1 CECOM and AFMC Type Designation Systems

Task 2 was initiated with the understanding that CECOM and AFMC had some type of automated type designation system in place. Unfortunately we found that neither CECOM nor AFMC have automated MSTDS. No complete computer resident database or computer-readable database exists. CECOM and AFMC each keep a small dBase III database for tracking DD Form 61 (DD61) requests as they come in. DD Form 61 is the standard form which must be submitted to an MSTDS for type designation. The two databases share only a few common data fields, contain only a small subset of DD61 data, contain much data not on DD61s, and have only been in use for a few years.

Beside this tracking database, CECOM has no automation for their system. AFMC, however, uses a Canonfile 250 image scanner to scan and store DD61s to optical disks. These disks can then be read by a Canon Diskfile Drive 5001S with CFView software for viewing and manipulating the DD61's image on any IBM compatible PC. AFMC has used this equipment since 1987 for all DD61s. As a courtesy they have provided Canonfile disk copies to CECOM for the DD61s that are sent from the USAF to CECOM for processing. Beyond this use of the Canonfile equipment and the tracking database there is no automation of the type designation process.

The result of our analysis of CECOM and AFMC was to determine "the degree which the CECOM and AFMC type designation systems need to be augmented" in order to participate in the DLSC client-server architecture. Unfortunately we have discovered that the "degree of augmentation needed" could be summarized as follows:

No automated MSTDS systems exists at CECOM or AFMC which can take advantage of the proposed DLSC architecture. Thus, there is currently nothing to augment. Before CECOM or AFMC can participate in the DLSC hub concept, their MSTDS must be automated.

Building these systems was not envisioned when the present contract was undertaken. However, after all parties understood the real state of the CECOM and AFMC systems we agreed to undertake an effort to work with CECOM and AFMC to develop the necessary automated systems. This work is beyond the original scope of the contract, but meets the real needs of the DoD CALS community, CECOM, and AFMC. Further detail on our analysis of the environment at CECOM and AFMC appear in Section 2, *CECOM and AFMC*. A brief description of what we are currently doing and what we intend to do to resolve this lack of automation is explained in Section 4 of this report, *Direction*.

Section 3, *DLSC Information Hub*, reviews our analysis of this system. Before getting into the detailed analysis sections we present a brief overview of the current state of the DLSC Information Hub.

1.2.2 Operational Capabilities of the Prototype DLSC Information Hub

At this time DLSC, working with various contractors, is developing a proof-of-concept prototype, the Type Designator/Federal Logistics Information System Interface (TD/FLIS), not a working fielded system. The TD/FLIS prototype will provide a query only capability against the FLIS and CECOM and AFMC type designation databases. This prototype is only meant to prove the feasibility of connecting these databases in order to allow meaningful retrieval of system and item data from FLIS and MSTDSs. The prototype cannot be used in this initial form to support actual acquisition and logistics activities.

Users enter a query via a Graphical User Interface (GUI). A user at a client workstation enters one or more parameters related to FLIS or codified equipment. The query is sent to the DLSC hub and from there to FLIS and the MSTDSs. Relevant data in all the databases matching the query parameters is then returned to the user and formatted by the hub for presentation via the GUI. The user can then use certain responses to “drill down” into the data by choosing only certain rows of data on the response screen and launching a new query. More detailed information will then be retrieved. For this prototype no more than 100 rows of data can be returned for any query.

These capabilities will enable a user to easily retrieve data on a item of interest to the user and discover which entity, FLIS or specific MSTDS, controls that data. Thus, even if the user does not retrieve all the data desired the user will know where to search for more detailed information.

We now present details of our findings at CECOM and AFMC and concerning the DLSC client-server architecture.

2.0 CECOM AND AFMC

When Task 2 of the present contract was established it was done so with the understanding that the task called for integrating the DLSC hub with the existing automated type designation system at CECOM and AFMC. Unfortunately it was discovered that there was no automated MSTDSs at either site. Thus, instead of assessing automated systems, this section will describe the current manual process environment. The AFMC type designation system is currently being transitioned from Dayton, Ohio to Battle Creek, Michigan and much of the expertise from the AFMC system has retired. Thus, presently it was easier to work with CECOM. Also, the manual process for CECOM and AFMC are very similar. Due to these factors the description will focus on the CECOM type designation system. Major differences with the AFMC process will be pointed out.

2.1 Process

As previously mentioned the process for these Military Service Type Designation Systems (MSTDSs) is almost completely manual. The process for assigning a type designation is basically sequential following these steps:

- Customer prepares and mails DD61 to MSTDS.
- MSTDS personnel receive DD61 and quickly screen it for apparent errors, such as the source request number missing.
- Tracking data is entered into dBase III tracking database.
- The paper DD61 is either stored in a file cabinet for later working (CECOM) or scanned into the Canonfile 250 (AFMC).
- DD61s are retrieved for working according to oldest date received and a complete validation of data is begun by the MSTDS personnel.
- If there are minor errors then the customer responsible for the DD61 is contacted, problems are resolved, and the process continues. If there are severe errors the DD61 is sent back to the customer with an error report explaining what needs to be corrected.
- If the customer is requesting a new item name the MSTDS personnel prepares and sends a DD Form 180 (DD180) to request a new item name from DLSC. The process continues only when the MSTDS receives the new item name assignment from DLSC.
- The MSTDS personnel retrieves a ledger book which shows all nomenclatures ever assigned at the MSTDS.
- The appropriate page is found for the requested item and the next nomenclature in sequence is assigned on the original DD61.
- The DD61 is sent to supervisory personnel for signatures.
- A cover letter is prepared for the DD61.
- Copies are made of the letter and the completed DD61. These are then sent to the customer and appropriate agencies in the Army or USAF and to DLSC.

This is the basic process for assigning a new type designation. A revision or cancellation has some slight modification, but follows basically the same process.

Besides working the DD61s, CECOM and AFMC personnel must respond to customer request for information. In some cases, especially for DD61s which are in the process, this is a lookup in the tracking database. However, often the request precedes a DD61 submittal. At CECOM this then involves manually searching through forms, microfiche and microfilm to find requested information. At AFMC this involves searching through the Canonfile disks and, to a much lesser extent, old paper DD61s.

2.2 Network

Since there is no automated system in place, no network exists specifically for the type designation systems. The existing telecommunication and network capabilities at CECOM can, most likely, be utilized to support the TD/FLIS prototype once a small database of DD61 data is established for purposes of testing this prototype. The CECOM and AFMC MSTDSs may need to be connected to the Defense Logistics Agency's (DLA) Logistic Remote User's Network (LOGRUN) for the purposes of this prototype, but this has not yet been firmly established. Access to LOGRUN is envisioned by DLSC as causing no barriers.

It must be pointed out, however, that we have been unable to meet with representatives of Information Builders Incorporated (IBI) and thus have been unable to conclusively establish that the impact of various Enterprise Data Access/Standard Query Language (EDA/SQL) software in the TD/FLIS configuration will be negligible and cause no serious network modifications (see section 3.0 for further detail on EDA/SQL). Based on the EDA/SQL documentation provided by IBI and separate meetings with CECOM network personnel we can only make a preliminary assessment that the TD/FLIS prototype can be accommodated with only minor modifications to existing networks.

2.3 Data

MSTDS data has been stored in many different forms of media. These include:

- The original paper DD61s,
- Images of DD61s on Canonfile optical disks,
- Microfilm,
- Microfiche,
- UNISYS 9 track tape in S2K format,
- The tracking databases which have a subset of the data, and
- Ledger books which contain a subset of the data.

Present Data. Currently all requests are made via a paper DD61 form. Data to be used for the TD/FLIS test will be extracted from these paper forms and/or from the Canonfile optical disks which are used by AFMC to store DD61 images. Only a small set of data from CECOM and AFMC will be used for the TD/FLIS test; the exact amount is To Be Determined (TBD).

Legacy Data. The legacy data is stored in all the formats. The microfiche and microfilm are not in DD61 format, do not include some DD61 fields, and names some equivalent data elements to the DD61 differently than the DD61. The microfilm, which appears to cover the years 1943 to 1981,

contains images of, at least, four different forms. CECOM is attempting to read UNISYS 9 track tapes but has been unable to do so, to this date, as the S2K format is obsolete. There are large amounts of data in each medium (e.g., 75,000 pages on microfiche, 85,000 paper DD61s). Much of the data is of poor quality (e.g., CECOM estimates 30% of the microfilm is possibly illegible).

The legacy data thus presents an enormous challenge, technically, logically, cost-wise and time-wise. Thus, the legacy data issue will not be addressed for the TD/FLIS prototype test. This issue is discussed further under section 4.0 Direction.

2.4 MSTDS Users

Obviously the personnel currently working the DD61s are users of the MSTDS. The customers who prepare and submit the DD61 are also users. These include government contractors, program offices and DoD control points. There are thus, potentially, thousands of users who can make inquiries for information, fewer who can submit the final DD61.

Some users have the potential to easily be networked to an automated MSTDS system, others would involve a significant investment in hardware and software.

3.0 DLSC INFORMATION HUB

DLSC, working with two contractors - PRC and Information Builders Incorporated (IBI), is currently developing a proof-of-concept prototype, the Type Designator/Federal Logistics Information System Interface (TD/FLIS), for the DLSC Information Hub concept. PRC is responsible for specifying the requirements and the GUI. IBI is responsible for installing the middleware software EDA/SQL. The client-server architecture for this prototype is presented in Figure 3.3-1. The rest of this section describes this architecture.

3.1 Clients

Hardware. These are existing personal computers of FLIS users with a minimum of the Windows 3.1 operating system. The requirements for Random Access Memory (RAM) and hard-disk storage for the TD/FLIS client front end on each client are TBD.

Software. The TD/FLIS client front end will consist of a Graphical User Interface (GUI) and Enterprise Data Access/Standard Query Language (EDA/SQL) client software package from IBI. The GUI will be developed in Visual Basic and enable user queries to the TD/FLIS via the EDA/SQL client software package. The EDA/SQL client software will provide Transmission Control Protocol/Internet Protocol (TCP/IP) network protocol support enabling access to the hub server. All EDA/SQL software will be provided by IBI.

3.2 Hub Server

Hardware. This will be a Hewlett-Packard (HP) UX T-520 computer installed in Battle Creek, Michigan. The HP's TCP/IP process will provide network access in conjunction with the hub's EDA/SQL software.

Software. The EDA/SQL server/client engine software package will function as the hub server software. This software will provide network protocol support for inbound clients and outbound user requests.

3.3 Databases

FLIS. The DLSC FLIS database is stored within an Amdahl 5995 mainframe computer in Columbus, Ohio. In order to enable TD/FLIS the present system will be augmented with an EDA/SQL server configured with a DB2 driver for the native FLIS Relational Database Management System (RDBMS). The EDA/SQL software will authenticate user access attempts, provide network protocol support and retrieve appropriate FLIS data in response to queries.

CECOM and AFMC. Currently there are no RDBMSs for these systems. The CECOM and AFMC type designator systems are currently in their requirements definition phase. The results of the current assessment and considerations of CECOM and AFMC environments, needs and constraints will determine the appropriate hardware for these sites. EDA/SQL Relational Gateway server software will be necessary at each site to accommodate the TD/FLIS queries.

The DLSC hub EDA/SQL server will interface to each of the EDA/SQL subservers at MSTDS sites. The DLSC hub server will initiate Remote Procedure Calls (RPCs) that trigger a database Standard Query Language (SQL) query at the these type designator systems.

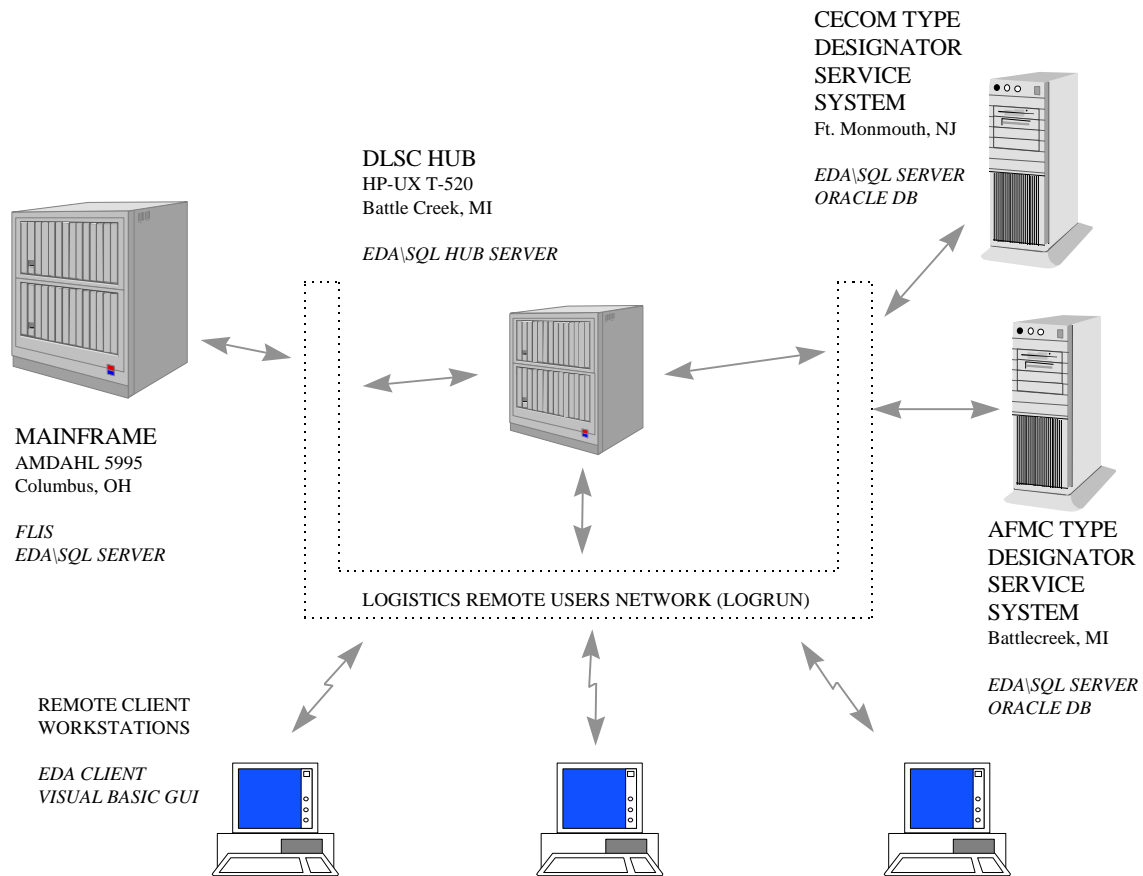


Figure 3.3-1 Proposed DoD Type Designation/Federal Logistics Information System (TD/FLIS) Architecture

3.4 Network

Networking capabilities will be supplied via the Defense Logistics Agency’s (DLA) Logistic Remote User’s Network (LOGRUN). All clients must have access and authentication for LOGRUN to use TD/FLIS. The client’s Local Area Network (LAN) must support TCP/IP. The FLIS is already accessible via LOGRUN. Connectivity of the type designation system databases to LOGRUN will be provided once the procurement procedure for this hardware and software are complete. At present it is envisioned that CECOM and AFMC can utilize existing physical networks to provide the physical connectivity. Any modification should be minor (e.g., additional

cabling, connections, etc.). The use of EDA/SQL software at CECOM and AFMC in conjunction with existing TCP/IP use on their networks will provide the logical connectivity to LOGRUN.

3.5 Users

Users of the prototype will come from an existing base of users of various DLA systems (e.g., FLIS). User training will be minimal, mostly provided by a user guide. Some developer training will be provided, but this will be limited to a few DLSC personnel.

At present the TD/FLIS prototype is envisioned as supporting at most fifty users and the connect time is limited (a few minutes at most). However, typical usage is estimated at five users performing 10 queries each per day for a total of 50 queries per day.

4.0 DIRECTION

The commitment made in the current contract was only to assess the DLSC client-server architecture and the CECOM and AFMC MSTDS, and determine the degree to which the CECOM and AFMC MSTDSs need to be augmented in order to participate in this architecture.

Obviously, when Task 2 of the present contract was established it was done so with the understanding that the task called for integrating existing automated MSTDSs at CECOM and AFMC with the DLSC hub. As pointed out in section 1.2.1 our analysis found that there were no automated systems at CECOM and AFMC. Although the work is beyond the original scope of our contract we have agreed to undertake an effort to assist CECOM and AFMC in automating their systems.

In order to develop these systems we have gathered detailed information on the current environment, legacy data, needed hardware and software, data conversion procedures, etc. Appendix A shows a questionnaire which was developed to initiate this information gathering from DLSC, CECOM and AFMC personnel. We also undertook an analysis of some U.S. Navy MSTDSs which are automated to a certain degree. The results of this analysis will be used to facilitate the development of the CECOM and AFMC systems.

We quickly discovered that the challenges were so severe that we could not develop automated systems in time to meet the desired TD/FLIS testing time frame (approximately mid-March, 1997). Therefore, it was decided to pursue development in two phases. In the first phase we will work to develop an RDBMS containing a small subset of DD61 data at CECOM and AFMC to meet the TD/FLIS test time frame.

The second phase, begun concurrently with the first but completed much later, involves actual development of the automated CECOM and AFMC automated type designation systems. There are a number of major issues which must be resolved in this development such as:

- Defining requirements to a detailed level, enabling software development.
- Discovery and procurement of the appropriate equipment and software.
- Developing a complete, detailed understanding of all existing legacy data.
- Resolving issues concerning legacy data elements from different media and forms in order to design the database schema.
- Developing a legacy data conversion process and recommending conversion equipment and/or services.
- Integrating our development with necessary vendors such as IBI.
- Enabling the necessary security for the system.
- Meeting needs of CECOM, AFMC MSTDS personnel, as well as the customers of these systems.
- The usual myriad issues surrounding software development, installation, and testing.

Appendix B shows a briefing given December 6, 1996 which laid out and gave a high level plan for resolving these issues. The Task 2 Plan of Action and Milestone report, being delivered concurrently with this report, explains our current direction in detail, expanding upon the high level plan.

With the support of our customer, DLSC, CECOM and AFMC we are confident that our efforts in the next phase of this contract will meet the true needs of the DoD CALS community in regard to MSTDS and the DLSC hub concept.

APPENDIX A: QUESTIONNAIRE FOR DLSC AND MSTDS

DLSC

In order to assess the concept of Defense Logistics Services Center (DLSC) to Type Designation System (TDS) connectivity, we need to understand a great deal about the proposed DLSC side of this system. We need to understand the *functionality* which the DLSC architecture enables and we need to understand the *proposed physical and software environment*. We have developed a series of questions which will help us to develop this understanding. These questions will be used as the basis of discussions with you when we meet.

We would like you to look over these questions and form some response to each one. Please formulate the best answer you can at this point. If you do not know an answer, consider if you know of someone or some source (document, web page, etc.) that may supply the information. We do not expect any one person to be able to answer all of these questions. Just discovering who can best answer which questions is one of the early goals of our assessment.

You do not have to write down answers (but you may wish to do so for your own benefit). We will discuss them at our meeting.

Thanks for your help in this.

Functionality of DLSC Architecture

1. What opportunities does this system open?
2. Is there a list of requirements for the DLSC hub or some requirements document? If not can you describe the requirements?
3. Do you propose to set any user interface specifications or will that be entirely up to the TDSs?
4. What information will users want to receive from this system?
 - Can you first supply a general description?
 - Can you identify specific data fields which will be in user queries?
 - Can you identify specific data fields which should be returned to the user?
5. What functions do you see the DLSC hub system performing?
6. How quickly do users normally obtain a response from DLSC when making an inquiry?

Environment of DLSC Architecture

General

7. Can you provide a conceptual diagram that describes the relationships among the DLSC Information Hub and various Type Designation Systems?
8. Have you identified any hardware required for the DLSC Information Hub?
9. Have you identified any software required for the DLSC Information Hub?
10. Will any constraints regarding the hardware/software be imposed on a Type Designation System to enable them to interact with the DLSC Information Hub?
11. Will there be any procedure manuals a Type Designation System will need to follow in order to use the DLSC Information Hub?

Telecommunications

12. Can you give us a high-level description of the network within the DLSC client-server architecture?
13. Is there a specific existing Government or industry network which will be used (e.g., the DISN IP router network -NIPRNET)? If so, name it.
14. What is the minimum transfer rate a telecommunication link must have in order to achieve a desirable performance?
15. What protocol is envisioned?
16. Are there potential performance problems due to too much load on the server?

Users of DLSC Hub

17. Will use of the DLSC hub be constrained to any certain Government agencies, companies, personnel, etc.? If so, describe how constrained. If access is constrained, how will access be controlled?
18. What is the minimum number of concurrent users to be supported?

CECOM and AFMC

In order to assist in automating your Type Designation System (TDS) and assessing the concept of Defense Logistics Services Center (DLSC) to Type Designation System connectivity we need to understand a great deal about the Type Designation Systems identified as sites participating in this prototype. We need to *understand the current process used at each site, the extent to which the TDSs are automated, the current and proposed physical environment, the data items which should be in the proposed relational database and the amount and quality of this data.* We have developed a series of questions which will help us to develop this understanding. These questions will be used as the basis of discussions with you when we meet.

We would like you to look over these questions and form some response to each one. Please formulate the best answer you can at this point. If you do not know an answer consider if you know of someone or some source (document, web page, etc.) that may supply the information. We do not expect any one person to be able to answer all of these questions. Just discovering who can best answer which questions is one of the early goals of our assessment.

You do not have to write down answers (but you may wish to do so for your own benefit). We will discuss them at our meeting.

Thanks for your help in this.

Existing TDS Process and Automation

1. Can you briefly explain the process, including manual and automated steps, by which data is entered and modified in your TDS? The process may vary depending on the situation (e.g., there appears to be at least six different ways to use a DD61-New Assignment, Revision,

Cancellation, etc.). It would be helpful if you could explain how the process varies depending on the situation.

- Begin with what initiates the process and end with the final product(s) of the process.
 - Please point out any forms or other documents (e.g., manuals) used in the process.
 - Please explain what people with specific responsibilities are involved in the process. (We are trying to understand what the roles in the process are.)
2. If any of this process has included any automated system, can you identify what data is used or produced (e.g., fields on a DD61, other forms, or any other data) by the automated systems?
 3. Is there any documentation on this process and automation and, if so, can we get copies?
 4. If any automation, can you identify the hardware and software currently used?

If workstations are used, can you explain their configuration (i.e., hardware, operating system, usual software installed, memory limitations, network capability, etc.)?

5. If any automation, is there any relational database system used to facilitate this automation?
 - If yes, is there any entity-relationship (E-R) diagram on this database? Can we get a copy?
 - If yes, is there any data dictionary on this database? Can we get a copy?

Telecommunications

6. Do you use a particular network managed by an outside group? For example, a number of Government networks exist, do you use one of these?
7. Describe your current network architecture for data communications. Include hardware, network software, network line capacity and current load, protocol(s) used, etc.
8. Can you connect to the DLSC hub with your current environment?
9. Do you have planned enhancements? If so what are these? Are any of these enhancements to enable you to connect to the DLSC hub?
10. If you have already decided on the necessary server for your database can you identify:
 - the operating system
 - disk storage capacity
 - expansion capability
 - how you came to these decisions? In other words, what are the requirements which lead to the decision and can we see those?

Data

11. Do you use any forms besides DD61 for type designation?
 - If so what are they and can you supply any copies?
 - If copies are supplied we may have time to go through same/similar questions below as time permits.

In regard to data on DD61:

12. Is there a document defining each field on the form? If so, can we have a copy?

13. Is there a document describing the allowable information which can be entered in the field? If not can you describe what can be entered in each field? For example, if a field can only have a very prescribed set of values (e.g., true or false; 1,2 or 3) we want to know that.

- If a field can allow a wide range of alphanumeric characters (e.g., the Government Drawing No.), describe it in terms of number of possible characters, where spaces or dashes occur, etc.
- If field is virtually free-form (as field 14 under Technical Data appears to be) please give a general description of what could be entered there.

14. Is it necessary for someone using the information on a DD61 to have access to other information (forms, standards, numbering schemes, etc.) to use or understand the DD61 information? If so, what are these sources?

15. Are there any instruction manuals for filling out a DD61? If so can you supply us with copies? Are there any other job aids to filling out this form?

Data quality:

16. Are some DD61s obsolete? Can you identify these?

17. If some of the data on a DD61 is illegible, can the rest of the data be used?

- Are there critical fields (e.g., Recommended Nomenclature) which, if illegible, render the DD61 virtually useless?

18. Can you identify the DD61 forms, over all media, which are not obsolete and contain completely legible data? Can we safely assume that the data on this set of forms is valid?

Users

19. Who will be the users of the automated systems? For example, only CECOM personnel, other Army personnel, other?

20. Do you envision different access capabilities for the user population (e.g., some users can only do certain functions, others can use all system functions? If so, please explain.

21. Can you give a general description of how you expect them to use the system? If different types of users will use it, please explain the different usage.

22. What do you expect to be the computer experience level of the users?

23. Do you have expertise in house for database administration and software development? If yes, please briefly describe this expertise.

**APPENDIX B: CALS/IDE TASK 2: TYPE DESIGNATION SYSTEM AUTOMATION
REVIEW, DECEMBER 6, 1996**

CALS/IDE Program

DoD Integrated Data and Technology Environment

Internal Program Review, (IPR)
Task #2: Type Designation System Automation

Friday, December 6, 1996

* DoD
* PRC
* ManTech

DoD Facility
Falls Church, VA

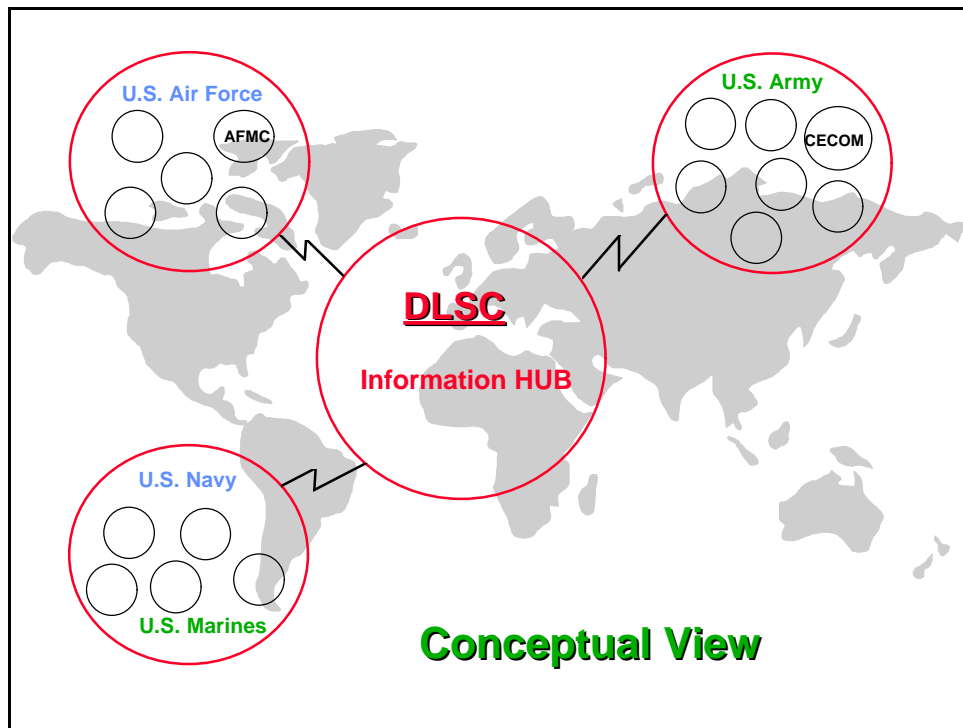
ManTech Team: Mr. J. Richman/ED, Mr. R. S. Kidwell/TD,
Dr. Michael Fotta, Steve Lu/CO-PL, Mr. Phil McGillivray/FS

Purpose Of Our IPR/Agenda:

- * **To Highlight for You Our Work Accomplished Thus Far, Our Current Status, Full Project Plans/Schedule and Any Outstanding Issues and Problems Towards Realizing A Type Designation Automated System At:**

- * CECOM/New Jersey
- * AFMC/Battle Creek, Michigan

*** Informal * Informative**



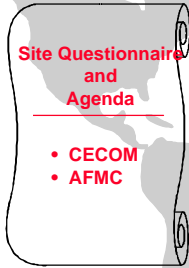
Initial Assessment

Preliminary
Type Model
Code Designation
System

- * Both "CECOM" and "AFMC" are Predominately Manual Processing of DD61(s) Type Designation with Minimal Automation Support
 - * No structured automation system support for full processing exist on which to build electronic interface to "DLSC" information HUB
 - * DLSC information HUB is evolving with PRC developing Graphical User Interface (GUI); Good dialogue with PRC
- * Must formulate and develop a fully supportive and comprehensive type designation automated system CECOM/AFMC
- * Performed initial assessment of other DoD type designation automation system i.e., U.S. Navy

CECOM/AFMC Site Visit(s)

Week Of: November 18, 1996



- * Current Processing (As - Is)
- * Envisioned Processing (To - Be)
- * Users of system Internal/External
- * System Concepts Client/Server Architecture
- * Tele Communications
- * Legacy Data



CECOM/AFMC Site Visits:

CECOM Processing

- * All Services/PM(s)
- * Canada
- * Australia
- * UK
- * NSA

Customers

Note: DoD Control Point for Communications and Electronics




- * Mail or Fax form DD61 (Target: 30 day Process)
- * Log-in Registry  dBASE III
- * Validation of Data Fields
- * Approved Item Name (DLSC CD-ROM)
- * Assignment * Revision * Cancellation
- * The "Ledger" Book
- Approx. 200 books
- Manual History of what happens to a DD61 by nomenclature  Type Designate
- * Authorized sign-off (Gov't Rep.)
- * DD61 form stored on various media
- * Ref. guide MIL-STD-196"E"
- * High # of DD form 61s processed on annual basis

CECOM/AFMC Site Visits:

AFMC Processing

- * Responsible for all (AF) request for "Nomenclature" except for communications and electronic

Customers

- * Mail or Fax form DD61
- * Log-in Registry  dBASE III
- * Validation of Data Fields
- * Approved Item Name
- * Assignment * Revision * Cancellation
- * The "Ledger" Book  Type Designate
- * Manual History
- * DD61 form stored on Canonfile250 system  DD61(s)
- * Ref. Guide MIL-STD-1812
- * AF approx. 700 - 900 per year

Legacy Data Issue

CECOM / DD61(s)

- * Paper Based
- * Microfiche
- * Microfilm
- * Magnetic Tape (9/S2K Format)
- * Canonfile 250 Format

AFMC / DD61(s)

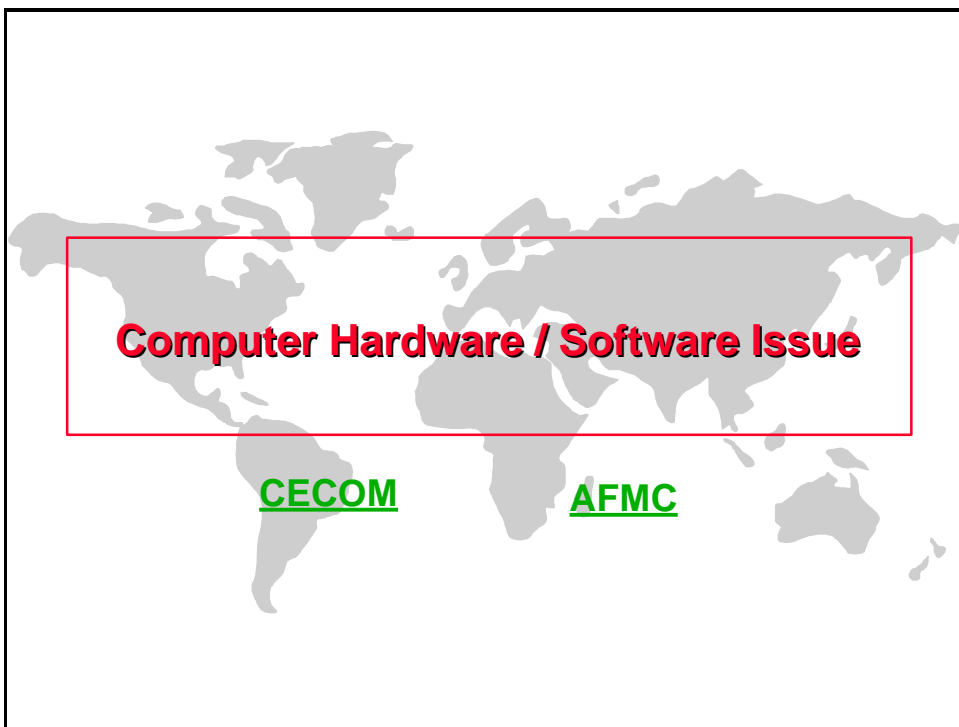
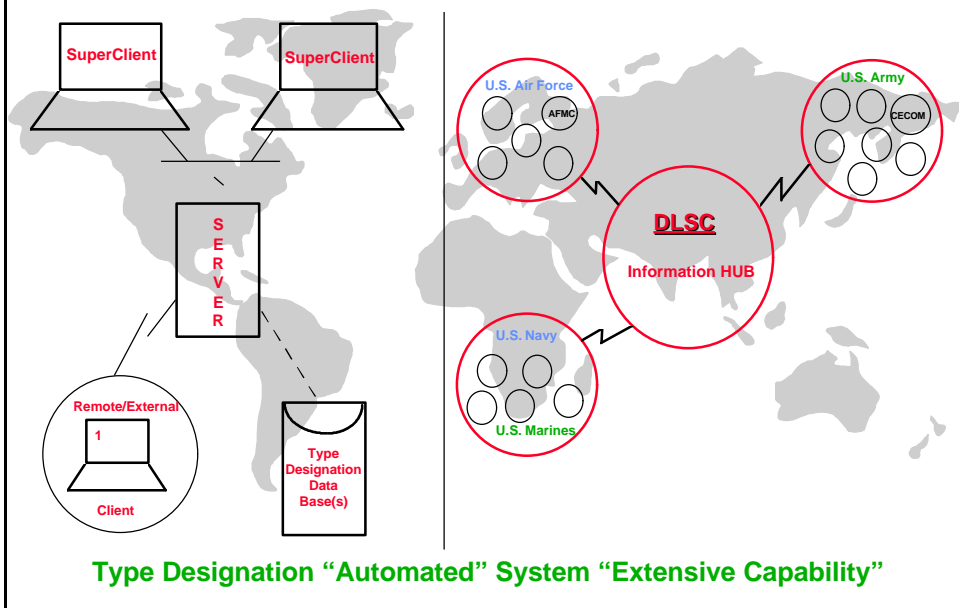
- * Canonfile 250 System
- * Multiple Disks Containing DD61(s) (TIFF Format)

Standard

ASCII Format

GOAL: Capture All DD61(s) Processes So We Can Eliminate The "Ledger" Books

Conceptual View / To-Be



Client / Server Architecture Considerations

- * HP Server (UNIX) with two (2) PC for Superclients
- * Sun Server (UNIX) with two (2) PC for Superclients
- * PC Server (Windows NT) with two (2) PC for Superclients

+
Software

Consideration Points

- * Performance
 - * I/O (Internet / Web Server)
 - * Processor
- * Growth
- * Interoperability
- * Delivery
- * Cost / Initial / Life-cycle

Client/Server
Configuration

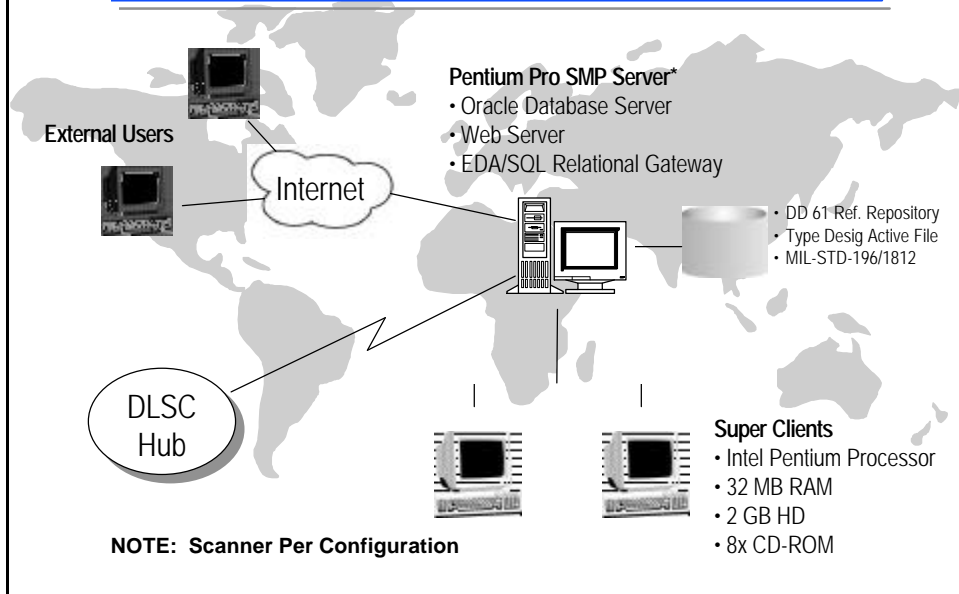
UNIX Systems Estimates

- **HP D310**
 - 100 MHz, 128 MB RAM, 5 2GB Hot-Pluggable Drives, Console, Floppy Drive, CD-ROM, 4 GB Backup
 - COST: \$26,700
- **SUN M1170**
 - 167 MHz, 128 MB RAM, 2 2.1 GB + 1 4.2 GB Drives, Console, Floppy Drive, CD-ROM, 4.8 GB Backup
 - COST: \$16,700
- **Oracle**
 - Oracle 7.3 Enterprise: \$10,600
 - Oracle Web Server: \$3,500
- **TOTAL COSTS:**
 - HP: \$40,800
 - SUN: \$30,800

Intel SMP (Windows NT) Configuration

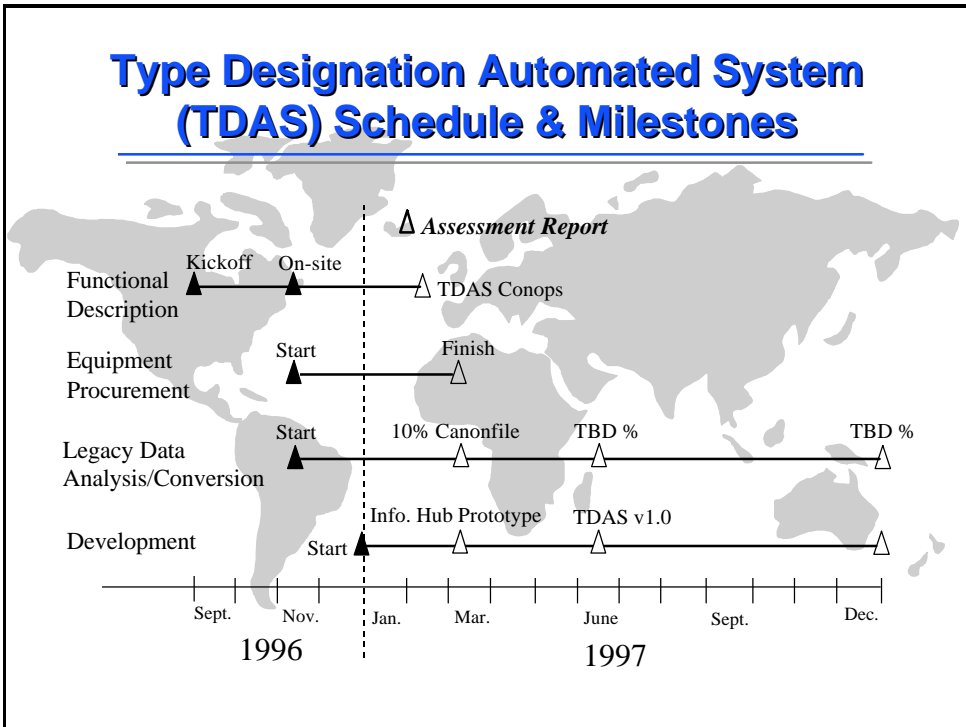
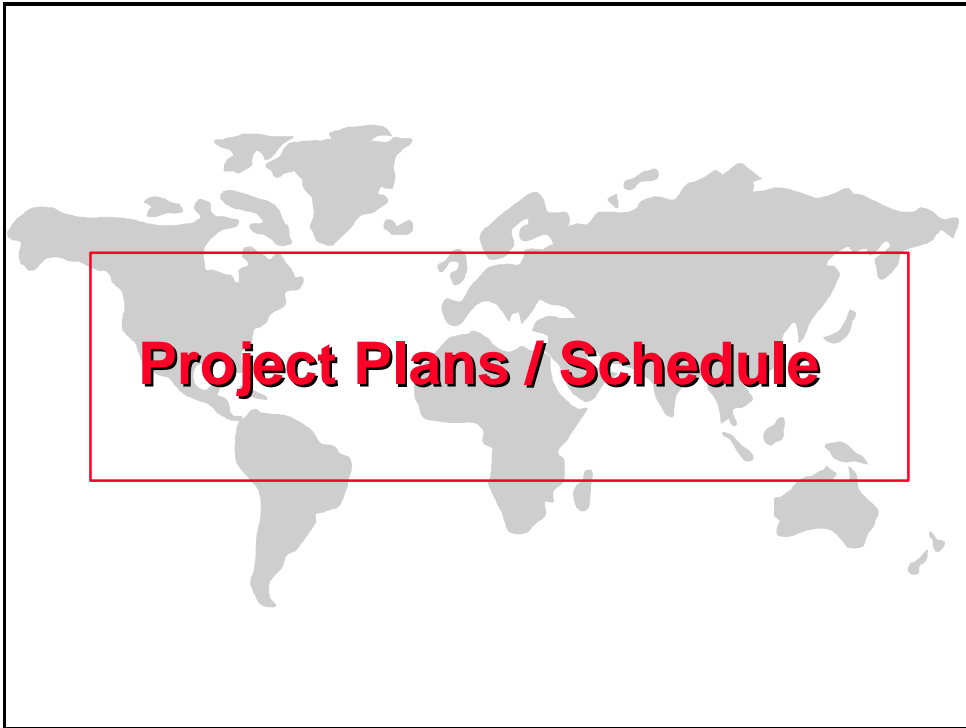
- * **Two (2) 200 MHz Pentium Pro Processors, Expandable to Four (4) CPUs.**
- * **128 MB of RAM, Expandable to 1GB.**
- * **RAID 5 Controller w/ 5 “Hot Swappable” Hard Disks, 2 GB Each.**
- * **8x CD-ROM.**
- * **Cost (Hardware + Software): \$13,000***

Windows NT Configuration



Software Requirements

- * **Windows NT Server 4.0**
- * **Oracle for Workgroup**
- * **Web Server:**
 - Oracle Web Server vs. Microsoft IIS
- * **EDA/SQL Relational Gateway**
- * **Development Tools:**
 - GUI Design: PowerBuilder (or Visual Basic) vs. Oracle Web Toolkit vs. Delrina FormFlow
 - Database Design: E-R Win or S-Designor
 - Report Feature



ManTech Team Summary

- * **Legacy Data at CECOM is Still a Concern**
 - Utilize "Canonfile 250 sample DD61 data to test DLSC information HUB concept with "PRC" (files)
 - CECOM will dump approximately 40 data records from magnetic tapes
 - Eliminate the "Ledger" book
- * **Continue to Work with "PRC" on Testing Scenarios**
- * **Develop "TDAS" Functional Description/Concept of Operation**
- * **Formulate Process to Create Full Relational Databases**
- * **Stage Computer Hardware/Software Configurations**
 - Scanner Decision
 - Print DD61(s)

APPENDIX C: ABBREVIATIONS AND ACRONYMS

AFMC	Air Force Material Command
CALS	Continuous Acquisition and Life-Cycle Support
CECOM	Central Electronics Command
dBase III	Data Base III
DD61	DD Form 61
DD180	DD Form 180
DLA	Defense Logistics Agency
DLSC	Defense Logistics Services Center
DoD	Department of Defense
E-R	Entity Relationship
EDA/SQL	Enterprise Data Access/Standard Query Language
FLIS	Federal Logistics Information System
GUI	Graphical User Interface
HP	Hewlett-Packard
IBI	Information Builders Incorporated
IDE	Integrated Data Environment
IP	Internet Protocol
JETDS	Joint Electronics Type Designation Systems
LAN	Local Area Network
LOGRUN	Logistic Remote User's Network
MSTDS	Military Service Type Designation Systems
NSN	National Stock Number
PC	Personal Computer
RAM	Ready Access Memory
RDBMS	Relational Database Management System
RPC	Remote Procedure Calls
SQL	Standard Query Language
TBD	To Be Determined
TCP	Transport Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
TD	Type Designator
TDAS	Type Designation Automated System
TDS	Type Designation System
TD/FLIS	Type Designation/Federal Logistics Information System Interface
USAF	United States Air Force