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**MARINE CORPS DISTANCE LEARNING PROGRAM
CONFIGURATION AND ASSET MANAGEMENT PLAN (CAMP)**

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1.0 INTRODUCTION SECTION

1.1 PURPOSE

The United States Marine Corps Distance Learning Program (MCDLP) Configuration and Asset Management Plan (CAMP) provides the guidance and information regarding configuration controls, functional responsibilities, practices, and procedures that are required in order to accomplish Configuration Management (CM) for the MCDLP.

1.2 SCOPE

The CAMP applies to the Marine Corps Systems Command Training Systems (MARCORSYSCOM-TRASYS) as the MCDLP Program Manager (PM), the Marine Corps (MC) Training and Education Command (TECOM) as the Marine Corps Executive Agent (MCEA) for implementing the MCDLP, the Distance Learning Center (DLC) Technology Officer as the Distance Learning (DL) Technical Director (TD), the Naval Air Warfare Center-Aircraft Division (NAWCAD) as the Configuration Management Agent (CMA), and all other program participants. The PM office is responsible for the DL CM.

1.3 PROGRAM DESCRIPTION

The MCDLP is an Acquisition Category III Information Technology program. The MCDLP will establish a comprehensive DL network providing Marines with global access to standardized electronic training and educational resources. It will use a MC wide distributed Intranet augmented with Video Tele-training (VTT). The objectives of the MCDLP are as follows:

- Provide the automated student courseware tracking and management system.
- Develop high quality Interactive Multimedia Instruction (IMI).
- Deliver the web-based content to the Learning Resource Centers (LRCs), the Automated Electronic Classrooms (AECs), the Deployable LRC (DLRC), and the networked computer workstations.
- Provide VTT support to the MC training and education establishment.
- Leverage and capitalize on the programmed base enterprise network upgrades.
- Ensure compatibility and interoperability with other services' training modernization initiatives.
- Support the MC Training Transformation process.



The system design has been completed. It is presented within the *MC Distance Learning Modernization Plan and Communications Architecture* (dated August 1997). This architecture was implemented in the integration laboratory at NAWCAD (Saint Inigoes, Maryland). A subset of the network (including equipment for the DLC and one LRC) was demonstrated to the MC before equipment was deployed to MC Bases (MCB). To test and validate the MCDL concepts the MC selected and deployed the network systems to military installations that follow:

- MC Institute (MCI), Washington Navy Yard, Washington, DC.
- MCB Camp LeJeune, NC.
- MCB Camp Johnson, NC.
- MCB Camp Pendleton, CA.
- MCB 29 Palms, CA.

Following deployment, system, and concept testing, a Milestone III decision was granted by Brigadier General J. M. Feigley of MARCORSSYSCOM. The Initial Operational Capability (IOC) was defined in the *MarineNet System Design Description* (17 March 2000). The Final Operations Capability (FOC) was defined in *MarineNet System Design Description Final Operational Capability* (13 February 2001).

This design was of the distributed database and content delivery architecture that leveraged state-of-the-art technology from that time. It was aligned with the Base Telecommunications Infrastructure upgrade schedule. In light of recent changes in technology, pending MC Enterprise Network modifications, a review of the system and technical architecture was necessary.

Four major factors contributed to review and redesign, they are as follows:

- 1) Emergence of Navy and MC Intranet (NMCI) initiatives with associated budget constraints.
- 2) Rapid web technology advancement.
- 3) The need to reduce operations and maintenance costs of distributed architecture.
- 4) Transition of existing Block II DL management systems to Commercial-Off-the-Shelf (COTS) Learning Management Systems (LMS).

A multi-tiered, centralized, database architecture with distributed content delivery media components has been developed. This new architecture is outlined in *MC Distance Learning Network (MarineNet) Version 3.1 Communications and Information Systems Plan* (6 February 2002).

1.4 ACRONYMS

Appendix A provides a list of relevant terms, acronyms, and abbreviations.



1.5 FORMS

Appendix B provides various samples of standard CM forms.

1.6 CONFIGURATION ITEMS

Appendix C provides the minimum specifications for each of the CIS.



2.0 REFERENCE DOCUMENT SECTION

2.1 MC ORDERS

MCO 1553.1B – MC Training and Education System.

MCO 1553.2 – Management for MC Formal Schools and Training Centers.

MCO 1553.3 – MCU Training Management.

MCO 1553.4 – Professional Military Education (PME).

MCO 1553.6 – Development, Management, and Acquisition of Interactive Courseware (ICW) for MCI.

2.2 STANDARDS AND HANDBOOKS

MIL-STD-973 - CM (for guidance only).

MIL-HDBK-61 - CM Guidance.

2.3 RELATED DOCUMENTS

Operational Requirements Document (ORD) for the Marine Corps Learning, Change 1 (NO. TNG 1.23).

Concept for Employment for the Marine Corps Learning Network (MARINENET).

Marine Corps Distance Learning - *Systems Integration Test Plan*, 28 April 1999.

Marine Corps Distance Learning - *System Security Plan*, March 1999.

Marine Corps Distance Learning - *Systems Integration Test Report*, 8 November 1999.

Marine Corps Distance Learning - *MarineNet System Design Description*, 17 March 2000.

Marine Corps Distance Learning - *MarineNet System Design Description Final Operational Capability (FOC)*, 13 February 2001.

Marine Corps Distance Learning - *Marine Corps Distance Learning Network (MarineNet) Version 3.1 Communications and Information Systems Plan*, 6 February 2002.

Marine Corps Distance Learning - *Alpha Test Report MarineNet Next Generation*, 21 December 2001.

Marine Corps Distance Learning Program - *Test Report for Beta User Testing of the Learning Management System (LMS)*, 30 January 2002.

Marine Corps Distance Learning Program - *Distance Learning System Security Authorization Agreement*, 19 February 2002.



3.0 ORGANIZATION SECTION

3.1 CONFIGURATION CONTROL BOARD (CCB)

The CCB organization is shown here in Figure 3-1.

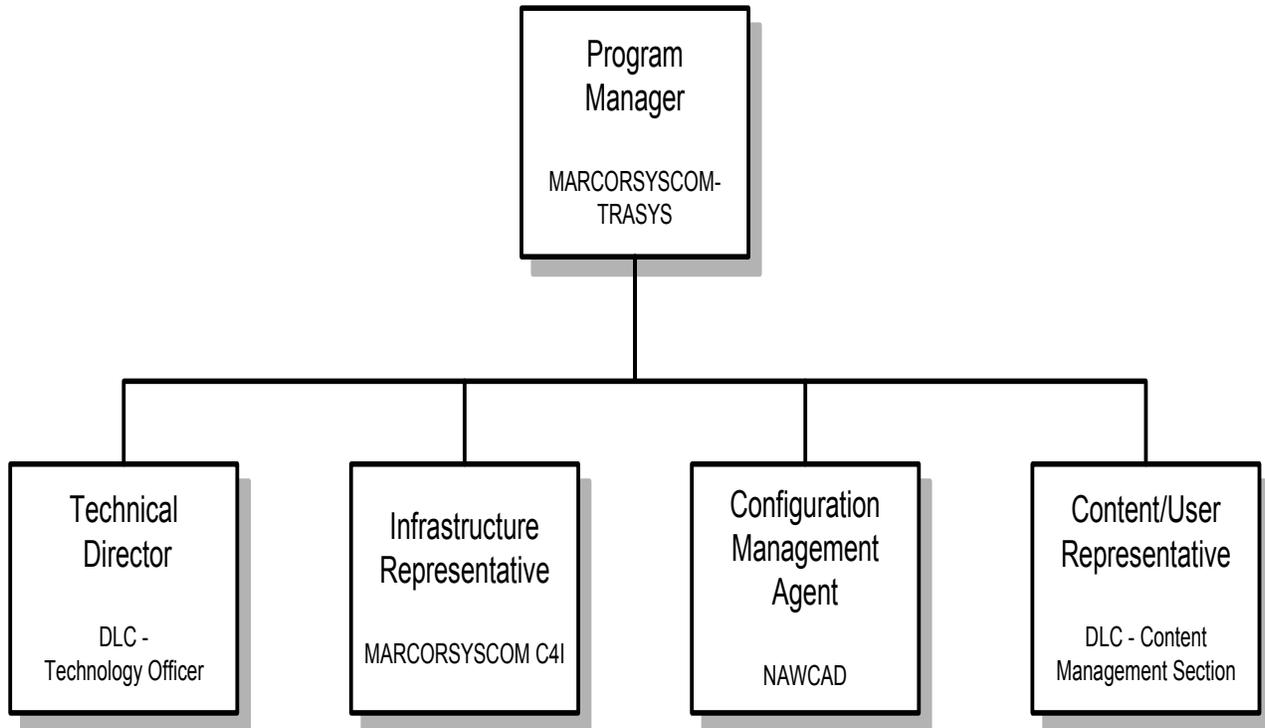


FIGURE 3-1: CCB ORGANIZATION

3.1.1 Purpose

CCB responsibilities include:

- Review and evaluation of proposed Engineering Change Proposals (ECPs).
- Provide final approval or disapproval authority for proposed MCDLP ECPs and Request For Deviations (RFD).
- Identify ECPs falling outside the scope of the MCDLP ORD as new requirements.

3.1.2 Membership

The PM serves as the CCB Chairperson. CCB membership consists of the PM, the TD, an Infrastructure Representative, a Change Management Analyst (CMA), and a Content-User Representative.



3.2 CONFIGURATION CONTROL WORKING GROUP (CCWG)

CCWG organization is exhibited in Figure 3-2.

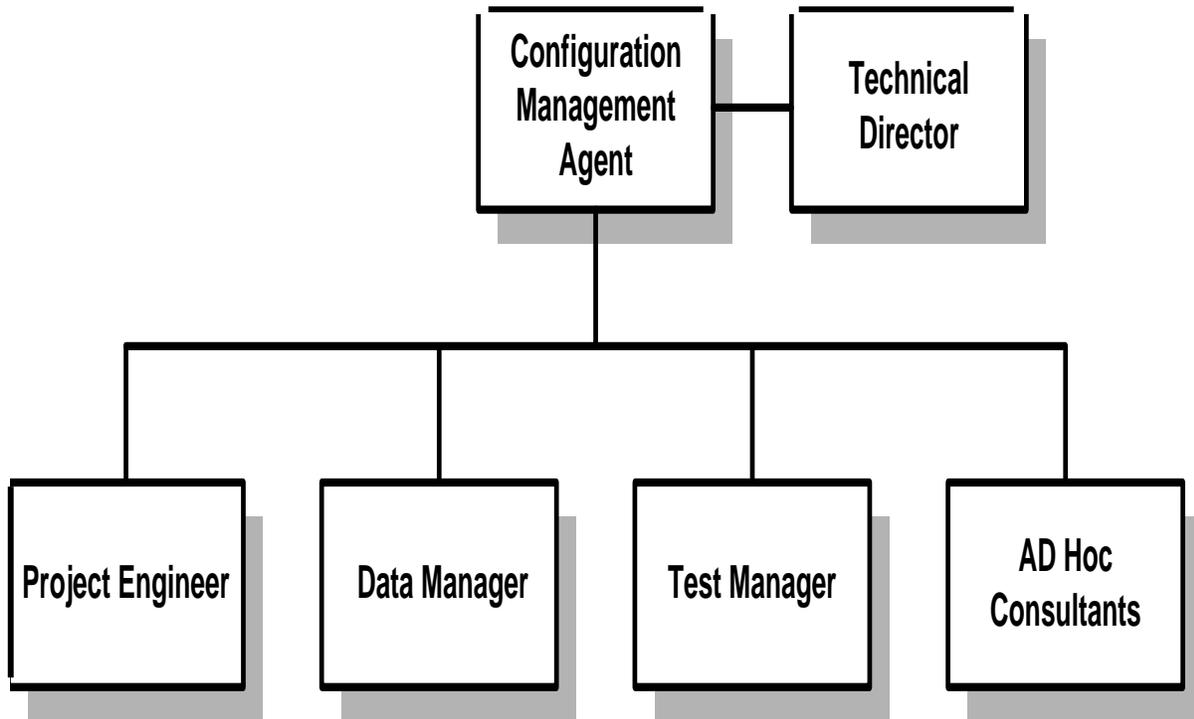


FIGURE 3-2: CCWG ORGANIZATION

3.2.1 Purpose

CCWG responsibilities include:

Conduct initial technical assessment of proposed changes. (This assessment consists of the summary review and evaluation of proposed changes checking technical validity, compatibility with other CIS, and impact on logistics support, program schedules, and life cycle costs.)

- Review Engineering Change Requests (ECRs) prepared by the PE prior to submission to the PM.
- Review the ECPs before submission to the CCB.
- Provide oversight to the entire ECR and ECP processes.



3.2.2 Membership

CCWG membership consists of the CMA, TD, PE, DM, TM, and various consultant members (as required).

3.3 POSITION RESPONSIBILITIES

3.3.1 Technical Director (TD)

TD responsibilities include:

- Serve as the MCDLP Technical Advisor
- Review emerging requirements and technology insertion initiatives with regard to the impact on CM.
- Evaluate the impact of engineering changes across all program elements and stakeholders
- Coordinate CM issues with external DLC agencies such as Headquarters MC C4, the Marine Corps Information Technology Network Operations Center (MITNOC), and the Navy MC Intranet (NMCI) Customer Representatives.

3.3.2 Configuration Management Agent (CMA)

CMA responsibilities include:

- Advise the PM of the implementation status.
- Approve submission of the ECRs to the PM.
- Chairperson for the CCWG.
- Convene the CCWG meetings.
- Coordinate schedules to accomplish actions directed by the CCB.
- Coordinate tests and evaluations of required change implementations.
- Direct implementation of the approved changes.
- Ensure configuration audits are conducted and that the baselines are established.
- Ensure members attend the CCWG meetings.
- Ensure that the CSAS is monitored.
- Evaluate the feasibility of development of the ECR.
- Implement the approved engineering changes (upon receipt of approval and funding by the PM or a designated representative).
- Manage the life cycle sustainment funds for ECP implementation.
- Provide management oversight of ECR and ECP processes.
- Resolve issues at the CCWG meetings.



- Review and approve the Technical Directives for approved and funded ECP implementations.

3.3.3 Project Engineer (PE)

PE responsibilities include:

- Assist the CMA in evaluation of the feasibility of the development of an ECR.
- Coordinate with the MCDLP DM to ensure supportability impacts are identified and resolved as a result of the ECP implementation.
- Develop the ECRs when directed by the CMA.
- Develop Technical Directives for approved ECPs.
- Participate as a voting member on the CCWG.
- Provide oversight of ECP implementation.
- Support the CMA with the development of ECPs resulting from approved ECRs.

3.3.4 Data Manager (DM)

DM responsibilities include:

- Conduct configuration audits and establish configuration baselines.
- Coordinate the development of ECPs from approved ECRs.
- Coordinate the development of ECRs from approved feedback sheets.
- Coordinate directly with the CMA for on all CM policy issues.
- Document the CCWG actions on the CCWG decision and action form (see Appendix B, Form 3).
- Ensure that the appropriate CCWG members review proposed changes.
- Monitor the technical data repository.
- Participate as a voting member on the CCWG.
- Promulgate TDs for implementation.
- Provide the ECP completion letters to the PM after ECP implementation processes are complete.
- Provide oversight and management of the CSAS data.
- Serve as the alternate CMA.
- Track ECP implementation in the CSAS.
- Track MCDLP assets and warranties.

3.3.5 Test Manager (TM)

TM responsibilities include:



- Participate as a voting member on the CCWG.
- Resolve problems found during testing.
- Review and evaluate proposed changes for testing impacts.

3.3.6 Ad Hoc Consultants

Though not a voting member, consultants may be invited to be the technical advisors and to review the proposed changes as determined by the CMA.

The consultant member responsibilities include:

- Ensure timely responses to the CCWG requests for inputs on proposed ECRs and ECPs from within their organization or activity.
- Evaluate technical information for accuracy and completeness.
- Provide ECR and ECP recommendations for changes to the ECRs and ECPs within their area of expertise.



4.0 CONFIGURATION CONTROL SECTION

4.1 CHANGE CONTROL PROCESS

The primary objective of the Configuration Control Process (CCP) is to manage changes to the established configuration baseline and the designated Continuous Improvements within that baseline.

4.2 CHANGE INITIATION AND SUBMITTAL

Any program participant may propose a change to the MCDLP system. Proposed changes considered for implementation are limited to those that are necessary or that offer significant benefits. Necessary or beneficial changes may include:

- Correction to the performance or design deficiencies.
- Correction to the workmanship and material deficiencies.
- Effect substantial life cycle cost savings.
- Implement significant technological advancements.
- Improve the system or the equipment.
- Prevent the project schedule from stoppage or slippage.
- Resolve non-availability of parts, components, and logistics support.

4.2.1 MCDLP Configuration Management Feedback Sheet (CMFS)

The CMFS (see Appendix B, Form 1) is the preferred form for submitting proposed changes. Proposed changes are to be forwarded to the following address:

*Distance Learning Center
Attn: Technology Section (C468)
TECOM
MC Combat Development Command
2006 Hawkins Avenue
Quantico, VA. 22134-5001
Email: dlctech@tecom.usmc.mil*

4.2.2 Other Forms

There are a variety of available forms for identifying discrepancies and making recommendations. The user may employ locally prescribed forms in lieu of the MCDLP CMFS or e-mail.



4.3 ORGANIZATIONS RESPONSIBLE FOR PROCESSING PROPOSALS

4.3.1 Configuration Control Board (CCB)

The CCB has final approval authority for changes impacting the program. As the CCB Chairperson the PM is responsible for securing funding for any or all approved ECPs.

4.3.2 Configuration Control Working Group (CCWG)

The CCWG evaluates change proposals based on the technical input from the PEs, support personnel, and any presentations by the proposal originators. As the CCWG Chairperson the CMA is responsible for making recommendations to the CCB concerning proposed changes. The CCWG considers change proposal impacts in regard to the following:

- Ability to produce.
- Age dependency.
- Cooling.
- Cost.
- Design.
- Human factors engineering.
- Interpretability and interchangeability.
- Logistics support.
- Operational effectiveness.
- Performance.
- Power.
- Reliability and maintainability.
- Safety.
- Schedule.
- Space and weight.
- System or equipment interfaces.
- Testing and proofing.
- Other.

4.4 ENGINEERING CHANGE REQUEST (ECR)

An ECR (see Appendix B, Form 2) is prepared by the PE to provide the PM with an initial summary and an evaluation of a proposed change. Upon approval of an ECR an ECP package is developed.



4.5 ENGINEERING CHANGE PROPOSAL (ECP)

An ECP is required for any change to an approved configuration baseline. Upon receiving authorization by the MCDLP PM the formal ECP is prepared then submitted by the PE to the CCB on DD Form 1692-1692/5. See Appendix B, Form 4 this is in accordance with procedures delineated. (See 4.9, Configuration Control Process.)

4.5.1 Class I ECPs

Class I ECPs are limited to necessary proposals that offer significant benefit to the Federal Government. Class I ECPs are required to perform the following functions:

- Add or modify interface or interoperability requirements.
- Affect substantial life cycle cost savings.
- Correct deficiencies.
- Impact the evolutionary acquisition strategy.
- Make significant and measurable effectiveness changes to logistics supportability.
- Make significant and measurable effectiveness changes to the operational capabilities.
- Prevent slippage of an approved production schedule.

4.5.2 Class II ECPs

Class II ECPs are proposals that do not meet the requirements of a Class I change.

4.5.3 ECP Priorities

When preparing the ECR the PE will recommend one of the following:

- EMERGENCY - 48 hours (The ECP package will follow within 30 days).
- ROUTINE - 90 days.
- URGENT - 30 days.

Time limits established for each priority will govern the ECP process from the ECR preparation to the ECP implementation. A detailed criterion for assigning these priorities is provided in MIL-HDBK-61.

4.5.4 Safety ECPs

A Safety ECP will be generated to correct deficiencies and to eliminate hazardous conditions. A system hazard analysis should be included with all Safety ECPs. All Safety ECPs are prioritized:

- Urgent, or
- Emergency.



4.5.5 ECP Justification

ECPs are justified in accordance with the following criteria:

CODE	DEFINITION
B	Interface
C	Compatibility
D	Correction of deficiency
O	Operational or logistics support
P	Production stoppage
R	Cost reduction
S	Safety
V	Value Engineering

TABLE 4-1: ECP CRITERIA

4.6 SOFTWARE CHANGE PROPOSAL (SCP)

All applications to be hosted on the DL Course Delivery Network (CDN) must be first tested at the NAWCAD lab prior to deployment. All new courseware (in addition to courseware changes) are tested at the NAWCAD lab before fielding. The MC DL courseware testing request (see Appendix B, Form 6) will be used to request courseware testing. Organizations requiring additional software on AEC workstations are **strongly encouraged** to have software tested in the Naval Air Warfare Center Training Systems Division (NAWCTSD) lab prior to their installation.

A proposed software change affecting baseline documentation is prepared utilizing DD Form 1692/5 (see Appendix B, Form 4). Any changes to the approved software baseline for the LRCs, the VTTs, the LMS, the DLRC, or the CDN must be requested via the CCP (Paragraph 4.9.1 of this document). Testing is to be conducted with the NAWCAD before changes are made.

It is strongly recommended that AEC changes follow the same processes. If sites choose to modify systems without prior approval however, they will be doing so with an understanding that the MCDLP will not provide technical or logistical support for those changes. Risk, at this juncture, is fully assumed by the change site.

4.7 REQUEST FOR DEVIATION (RFD)

RFDs are used if a CI does not meet one or more of the applicable specified requirements that are scheduled for correction at a later date. RFDs are prepared on DD Form 1694 (see MIL-STD-973). RFDs are submitted by production. Integration activity items are submitted in production.



4.8 NOTICE OF REVISION (NOR)

NORs are used when the ECP originators do not hold the original master drawings, the lists, and other documents that comprise an Item Configuration Identification (ICI). The ECP originator is not permitted to revise documents thereby comprehensively redesigning the document. NORs permit the ECP to review and approval authority to direct document custodians in performing specific revisions to affected documents.

Pending the ECP approval a separate NOR utilizing DD Form 1695 (see MIL-STD-973) is prepared for each drawing, list, or other reference document that requires revision. NORs (when submitted) are attached to the relative ECP.

4.9 CONFIGURATION CONTROL PROCESS (CCP)

Error! Reference source not found. illustrates the CCP for proposed engineering changes and configuration discrepancies. Initial proposals are submitted on the MCDLP CMFS (see Appendix B, Form 1), or other suitable form. Change proposals are reviewed at the DLC level where they are approved and forwarded. If disapproved, they are sent back to the originator. Once the DLC review is completed the change proposal is forwarded to the CMA.

4.9.1 Approval Process

Change initiative and approval processes are as follows:

- 1) Request for an engineering change is submitted to the DLC for review.
- 2) Notification of receipt is sent to the originator who suggested the change.
- 3) Submission of the proposed engineering change is forwarded to the CMA for an initial technical review if it is approved by the DLC.
- 4) Performance of a technical assessment is completed by the CMA and the CCWG at this time; this review determines the technical feasibility and whether or not the proposed impact of the change is feasible for the program's scope.)
- 5) Preparation of an ECR (including technical data, logistics information, rough order of magnitude (ROM) costs and proposed engineering schedule impacts) is completed by the PE.
- 6) Review of the completed ECR is performed by the CMA, then it is forwarded to the PM for review.
- 7) Review of the ECR is performed by the PM and then a Technical Direction Letter (TDL) that approves or disapproves the ECR is completed and processed.
- 8) Notification of the ECR disapproval ends the ECR process. (If it was disapproved by the DLC the originator is notified by the DLC.)
- 9) Initiation of the formal ECP process is completed once the ECR is approved. (CMA directs the PE to initiate the formal ECP process at that time.)
- 10) Development of the formal ECP package is completed and then it is forwarded to the



CMA. (The PE, along with the assistance of the DM develops the ECP package to forward to the CMA.)

- 11) Convention of the CCWG is performed by the CMA.
- 12) Review of the ECP requirement package is performed by the CCWG and submitted to the PM.
- 13) Convention of the CCB is performed approving or disapproving the ECP at the direction of the MCDLP PM.
- 14) Disapproval of the ECP by the CCB requires the PM to send the ECP back to the CMA along with the rationale for disapproval. (The DLC then provides an update to the proposal originator.)
- 15) Approval of the ECP by the CCB requires the PM to provide the DM with his or her Decision Memorandum that will contain the following:
 - Implementation instructions,
 - A funding source, and
 - Statement of Work (SOW).

[**Note:** ECP implementation will not commence until funding and authority are received.]

- 16) Provision by the CMA to the PM of a memorandum containing the ECP implementation schedule and cost data will be achieved within 30 days of the PM's Decision Memorandum receipt.
- 17) Approval of funding requires the CMA to initiate an implementation process by directing the PE to prepare a Technical Directive for the actual implementation of changes.
- 18) Promulgation of the Technical Directive to the DM fields the activities for implementation.
- 19) Tracking of the ECP implementation in the CSAS is performed by the DM.
- 20) Preparation of an ECP completion letter is completed by the DM and forwarded to the CMA.
- 21) Submission of the completion letter is performed by the CMA and forwarded to the PM.
- 22) Update of the CSAS to reflect the DM performs the TD completion.
- 23) Completion of the ECP process.



Definitions
 CCWG = Configuration Control Working Group
 CMA = Configuration Management Agent
 CSAS = Configuration Status Accounting System
 DM = Data Manager
 PE = Project Engineer
 PM = Program Manager

FIGURE 4-1: CCB



5.0 CONFIGURATION ITEM IDENTIFICATION SECTION

5.1 GENERAL REQUIREMENTS

The MCDLP CIS are controlled and then managed via baseline documents. The CMA is responsible for document management. An approved set of CI documents identifies and controls every MCDL configuration as follows:

- Engineering drawings (e.g., conceptual design, development design, and product design).
- Equipment specification.
- ORD.
- Software specification.
- Vendor drawing.
- Vendor specifications.
- Other documents (as required).

5.2 CONFIGURATION ITEMS

Selected items of system hardware, software, or combinations of hardware and software (where MCDLP has CM concerns) are designated as CIS. For MCDLP, many subsystems and components are Commercial Off-the-Shelf (COTS) items. Therefore, it is necessary COTS items be selected as CIS. This ensures that sufficient CM control is applied to MCDLP systems. Points to be considered are as follows:

- Original Equipment Manufacturer (OEM) may perform the change of configuration without permission of the Federal Government; that is, unless it is otherwise required by a contract with the COTS OEM.
- Specifications for COTS equipment are performance-based specifications that minimize effects of OEM changes. (Detailed specifications defining form, fit, and function critical to the variant are requirements.)
- Documentation of COTS products is unregulated. (Therefore, its availability, consistency, and information content may be inconsistent and unpredictable. Provided the item meets the verifiable performance requirements and is supportable in the field, the CM details are left to the OEM.)
- Market analysis surveys in preparation of COTS item acquisition shall include CM related questions, where appropriate. (These questions will provide the MCDLP CM insight into the vendor's CM practices and an understanding of such vendor practices as serial and part number marking schemes.)
- Recommended changes to COTS equipment are sent to the OEM for consideration. (The MCDLP PM office does not have the right to direct any change if OEM is not in agreement with them.)



5.2.1 CI Determination

The CMA in conjunction with the DM and the PE develops a recommended CI list for each DL asset (i.e.: CDN, LMS, LRC, VTT, DLRC, and AEC—see Appendix C). Recommendations are based on the following:

- The items at each level (i.e.: CDN, LMS, LRC, VTT, DLRC, and AEC) must be controlled by CI to meet mission requirements.
- The physical and functional interfaces among items.
- The principal support resources required at each item level (i.e.: technical manuals, mission essential repair parts, and training materials).
- The level necessary for effective life cycle management, logistics support, and competitive re-procurement.

5.3 INTERFACE MANAGEMENT

All interfaces between items have to be identified and documented so integrity will be maintained throughout the CCP. A formal interface management process must be employed, in some cases, in order to define and document interfaces.

Interface management ensures that functional and physical characteristics of CIS within the system are compatible to one another and with existing telecommunications infrastructure systems. Interface management purposes include:

- Detailed designs of each item containing necessary information assuring that when individually designed and produced items will work together.

If, for any reason, a CI requires a change in its performance—functional or physical attributes involved in the interface act as the constraints on design changes. Each interface must be designed and documented as follows:

- Assembly or installation drawings.
- Interface control documents and drawings.
- Performance or detailed specifications.

Interfaces in MCDLP are managed during developmental phases and incorporation of ECPs and Evolutionary Technology Insertions (ETIs). When applicable, an Integrated Product Team (IPT) is established to assist in management of interface requirements. This IPT is comprised of the MCDLP PEs and appropriate members from each external activity or vendor. The amount of interface management is based on the complexity of the integration requirements and contractual relations of activities that are involved.



6.0 DATA MANAGEMENT SECTION

6.1 ESTABLISHMENT OF FUNCTIONAL AND PRODUCT BASELINES

The DM maintains an automated Baseline Listing File (BLF) of CSAS details of the most recently approved version of each CI. BLF is maintained throughout the system life cycle. It consists of CI documentation and the approved changes since the initial Functional Baseline (FBL) documentation was processed.

6.1.1 Functional Baseline

FBL is the document or the set of documents initially approved that describe a system or item functional interoperability, interface characteristics, and verifications required to demonstrate the achievement of specified characteristics. The Functional Requirements Description (FRD) is established to meet the needs of a Mission Needs Statement (MNS) and ORD. They are defined by the system specification. FBL will be completed during the Functional Configuration Audit (FCA). After development is completed and accepted through Physical Configuration Audit (PCA), FBL documentation is no longer used in connection with procurement. The Product Baseline (PBL) documentation defines the system or equipment. PBL is used for reprourement of the system, equipment spares, and configuration control. FBL is not required in all programs.

6.1.2 Product Baseline

The Product Baseline (PBL) defines the system's form, fit, function, interface requirements, and acceptance test criteria. Review and audit of the equipment and computer program documentation ensures that the approved drawings and technical documents correctly describe CIS. The PBL establishes requirements for hardware fabrication software coding. PBL defines the "as built" configuration of CI in the form of product, material, process specifications, product drawing packages, and referenced documentation. The PBL for each system is established by successful completion of a PCA. PBL documentation contains details that required follow-on acquisition and logistic support.

6.2 SYSTEM IDENTIFICATION

CI identification consists of PBL documentation (e.g., engineering drawings), plus approved changes, and item physical markings or identification plates. MCDLP component software identification consists of the computer program baseline documentation plus approved changes and software media physical markings or nameplates.



6.3 SYSTEM BASELINE DOCUMENTATION

Engineering drawings and associated data lists are prepared to support hardware procurement and fabrication, interface control, equipment installation, and provisioning. This documentation includes, but is not limited to:

- Engineering drawings, associated lists, and specifications.
- Installation control drawings.
- Interface control drawings.
- Maintenance plans.
- Parts lists.
- Technical manuals.
- Technical repair standards.
- Test requirement documents.

The computer program baseline documentation includes, but is not limited to:

- Interface requirements specification.
- Program source code.
- Software product specification.
- Software requirements specification.
- System operator's manual.

Selected CIS, configuration baselines, and changes are recorded in CSAS.

6.4 DOCUMENT NUMBERING

TD document control procedures specification identification numbers, engineering drawing identification numbers, and associated lists are assigned. Other technical documentation is assigned identification numbers that consists of CI numbers and unique identifiers.

6.5 SYSTEM ITEM IDENTIFICATION MARKING

Identification marking of systems and individual components is a key element of CM. Specific requirements are established from the system, or equipment level, down to the repair part level, for the physical identification of each item. Specific data elements are used to uniquely identify each item. These data elements may include:

- Acquiring activity.
- Contract number.
- Name of design activity and Commercial and Government Entity (CAGE) code.



- Name of manufacturing activity and CAGE code.
- National Stock Number (NSN) if assigned.
- Noun name and modifiers (as applicable).
- Part number.
- Reference designation.
- Serial number (if serialized).

Specific requirements are established for identification of software media, these identifiers include:

- Name of developer and CAGE code.
- Name.
- Part or Item Identification Number (PIN).
- Version identifier.

All DL hardware and software items are to be procured through MARCORSYSCOM PM Information Technology Infrastructure (PM-IT). PM-IT requires (via contracts issued to vendors) all Central Processing Units (CPUs) of servers and personal computers to be labeled with the information that follows:

- Date Shipped.
- NSN (7010-01-450-5055).
- OEM system serial number and CAGE code.
- Reseller or distributor name.
- Table of Authorized Material Control Number (TAMCN) (H8200).
- Target site (first Marine buyer).
- Warranty expiration date.
- Warranty help desk telephone number and web page.



7.0 CONFIGURATION AUDITS SECTION

7.1 PURPOSE

Configuration audits compare a CI with its technical documentation to verify development requirements have been achieved and product configuration was identified. Two types of audits performed are:

- FCA.
- PCA.

7.2 AUDIT PLAN

An audit plan will be prepared for each DL segment. If the FCA and PCA are held concurrently one audit plan addressing both audits is sufficient. The audit plan, at a minimum, identifies the following:

- Audit team members.
- Data requirements.
- Objectives.
- Schedule.
- Scope.
- The type of audit (FCA, PCA, or combined).

Upon completion of the audit plan, copies are sent to all audit participants for review and comment. The final version is provided to the designated site to assist in preparation of the audit.

7.3 AUDIT RESPONSIBILITIES AND PROCEDURES

The PM has the overall responsibility for configuration audits. The PM may incorporate requirements for audits into project tasking documents. If required, the PM may direct the CMA to conduct additional audits.

7.4 FUNCTIONAL CONFIGURATION AUDIT

The FCA is conducted during system engineering and manufacturing development phase. Additional FCAs may be performed on a progressive basis throughout the CIS life cycle.



7.5 PHYSICAL CONFIGURATION AUDIT (PCA)

The PCA is conducted to verify the "as-built" configuration of each CI. The PCA is performed during engineering and manufacturing development after successful acceptance testing of the first production article. PCAs will be conducted in accordance with an approved PCA Plan. Additional PCAs may also be conducted to verify correction of discrepancies identified in a previous audit.

7.6 AUDIT APPROVAL CRITERIA

Upon completion of a configuration audit the CM formally acknowledges concurrence or non-concurrence, with stated results. The results of each configuration audit are evaluated according to the following criteria:

- **Approval** – indicates the audit was satisfactorily completed.
- **Contingent Approval** – indicates the audit is not considered closed until there is a satisfactory completion of assigned action items and re-execution of the appropriate tests.
- **Disapproval** – indicates that the audit was seriously inadequate and that corrective action must be taken. The audit must then be re-executed.

7.7 AUDIT REPORTS

Upon audit completion the auditing activity issues an Audit Report (AR). Discrepancies are reviewed to determine specific actions that are required to correct discrepancies. Audit Reports are reviewed by the CMA and forwarded with comments to the PM. PCA reports are submitted to the MCDL PM within 30 days after audit completion, the report includes:

- Action(s) recommended post-audit with projected completion dates.
- Impact on the MC MCDL DL CM records.
- Listing of discrepancies found.
- Listing of drawings and specifications audited and the results of tests conducted.
- Purpose of the audit and the CI(s) audited.



8.0 CONFIGURATION STATUS ACCOUNTING SECTION

8.1 PURPOSE

Configuration Status Accounting (CSA) records and reports the information that is required for effective systems and equipment management. The CSAS records proposed changes along with the implementation status of all approved changes. The database ensures accurate engineering configuration baseline information is available in support of the CCP, program management, engineering, logistics, and testing efforts.

8.2 CONFIGURATION STATUS ACCOUNTING SYSTEM (CSAS)

The DM is responsible for establishing and maintaining the CSAS that consists of CI lists, baseline listings, and engineering change documentation (see Figure 8-1).

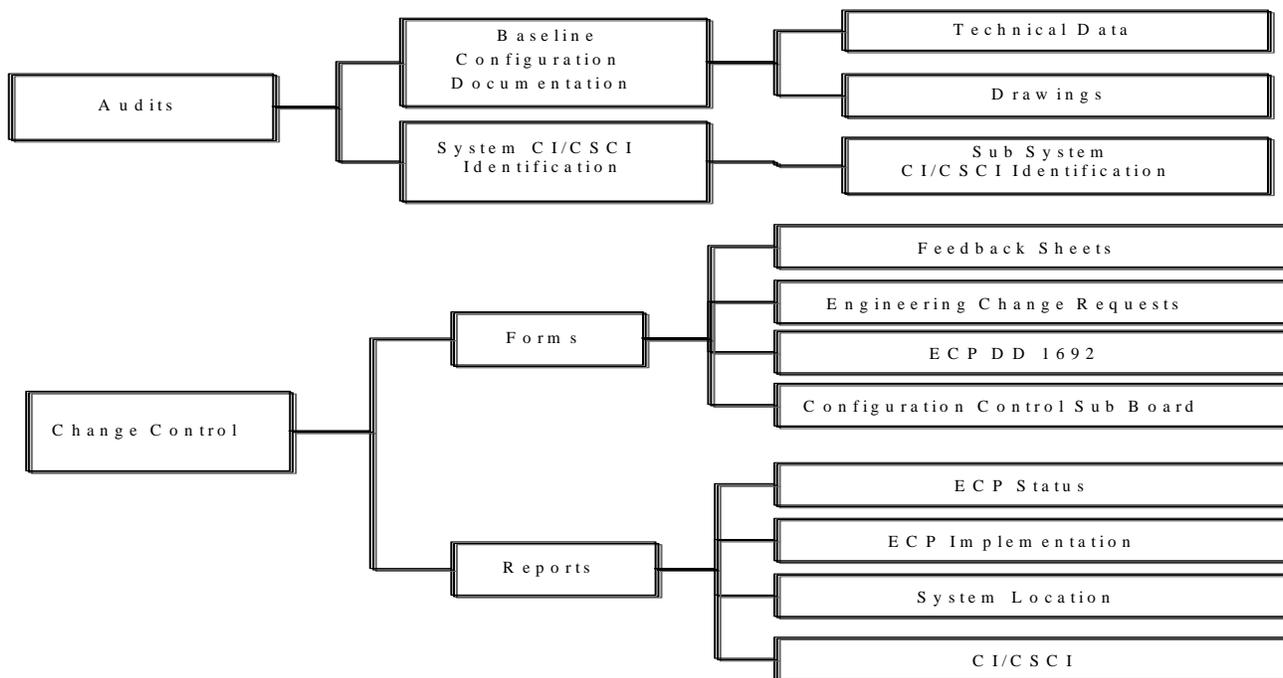


FIGURE 8-1: CSAS

8.3 CSAS REPORTS DISTRIBUTION

Upon request, CMA directs the DM to provide the CSAS reports to the MCDLP PM or other appropriate organizations.



9.0 ASSET MANAGEMENT SECTION

9.1 PURPOSE

Asset management allows comprehensive tracking, monitoring and maintenance of procured and fielded DL assets. It provides a centralized source for the MCDLP users to receive information on resolution of maintenance issues with DL resources.

9.2 ACQUISITION CONTROL

Via establishment of MARCORSYSCOM PM-IT all DL hardware and software is procured through PM-IT. This approach is cost effective. It allows standardization of information technology (IT) equipment within the MC. It provides a centralized source for tracking and maintenance of IT equipment. PM-IT tracks only CPU serial numbers. The MCDLP maintains an electronic database material inventory control system (MICS) that contains all the MCDLP assets procured by the PM-IT. Assets include items beyond servers and personal computers (e.g., VTT, switches, and printers). In many cases, DL assets in MICS are tracked by the CPU serial number down to the component level (e.g., servers). The MCDLP works closely with the PM-IT to ensure that the database is updated with the MC target sites. This process occurs after configuration and testing at DL Integration Facilities and when equipment is fielded. When equipment is fielded DD Form 1149 (see Appendix B, Form 5) is completed transferring control of the equipment to the target site (for the MCDLP acquisition, integration, fielding, and interaction with PM-IT—see Figure 9-1).

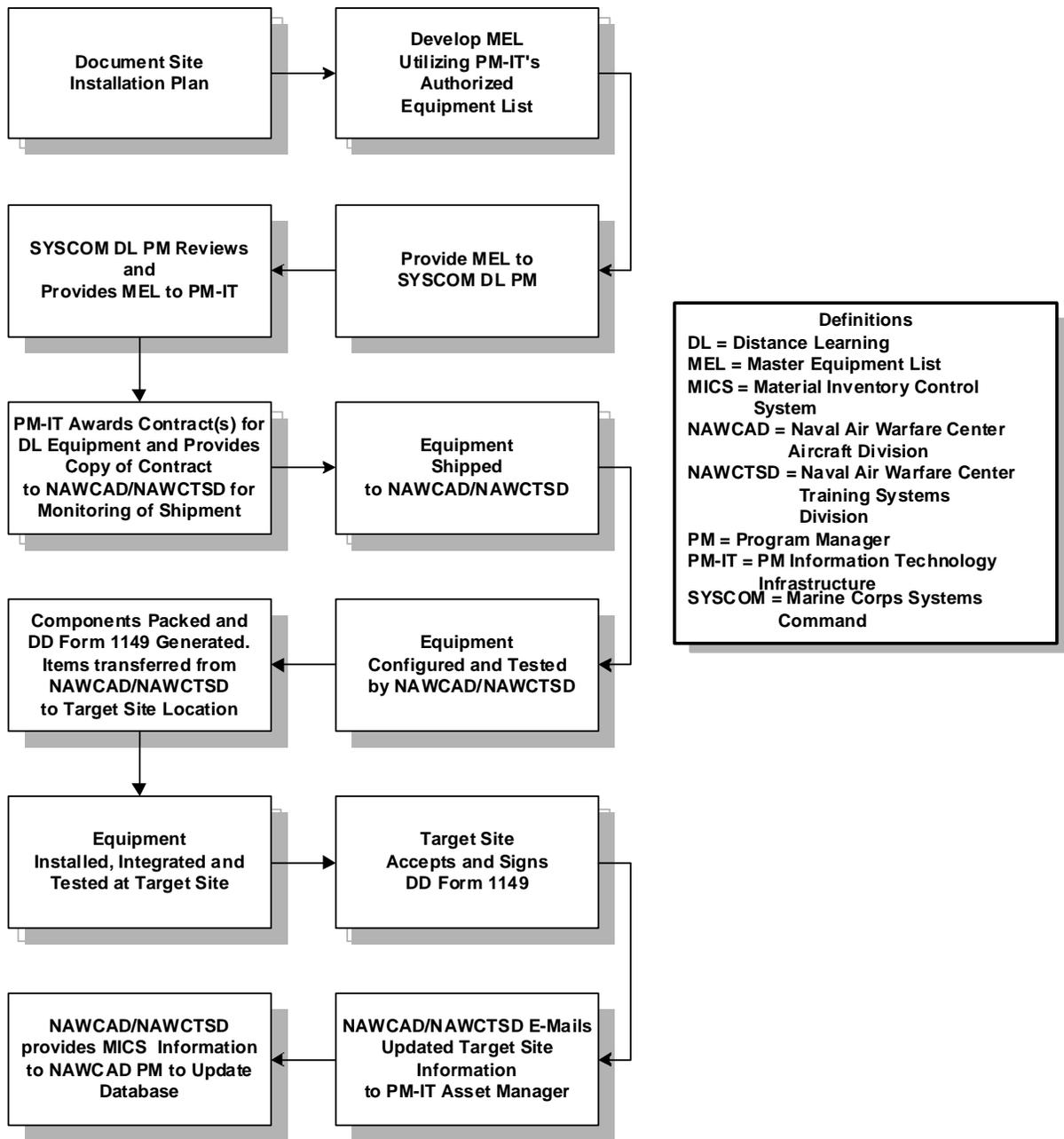


FIGURE 9-1: ACQUISITION FLOW PROCESS



9.3 MAINTENANCE CONCEPT

The MCDLP currently has a two-tier maintenance concept. Figure 9-2 provides a summary of the MCDLP two-tier maintenance process for the LRCs, Figure 9-3 presents the AEC two-tier process; Figure 9-4 presents the VTT process, and Figure 9-5 presents the CDN process.

On-site CSL personnel conduct initial troubleshooting of the LRC, the AEC, the DLRC, and the VTT equipment to determine types of problems (i.e.: hardware, software, or user). All problems should be entered into the MarineNet Help Desk. If a hardware problem occurs on-site personnel contact the appropriate vendor or designated help desk and follow instructions received from the helpdesk. Contracts issued by the PM-IT for servers and personal computers utilize a toll free telephone support hotline for all locations staffed 24 hours per day, seven days per week. Additionally, warranty responses are within 24 hours of submission for the Continental United States (CONUS) and 72 hours for submission outside the Continental United States (OCONUS). The MCDLP obtains three-year warranties on PCs procured through the PM-IT. The CDN problems are forwarded back to the MCDLP NOC for resolution. On-site CLS support may be required for initial troubleshooting or switch out of the CDN equipment.

All software on the DLRC and the LRCs must be tested and approved by the MCDLP before being loaded on DL assets. Software and courseware on CDNs is centrally managed at the NAWCAD MCDLP NOC. All CDN software and courseware is tested at this central site before downloading to the CDE. Commands having AECs are strongly urged to have all application or courseware software tested at the Naval Air Warfare Center Training Systems Division (NAWCTSD) before loading on the AEC classroom equipment. MCDLP is not responsible for providing technical support to maintain and resolve problems with application courseware beyond the MCDLP software baseline.

If a software problem occurs on-site personnel evaluate whether the problem is attributable to the system software, user application, LMS or courseware. If the problem is courseware-related, on-site personnel elevate the problem to the Naval Air Warfare Center Aircraft Division (NAWCAD). The NAWCAD MCDLP NOC analyzes the problem and determines whether it requires further elevation to the DLC. The lab determines if courseware problems are related to the content or the software. If there is a content problem, the DLC Content Manager contacts the appropriate school for the course. If the problem is software related, the DLC Content Manager contacts the courseware developer through appropriate contracting offices.

The MarineNet Help Desk evaluates problems related to the LMS. The Help Desk determines if the problem should be escalated to the THINQ help desk. If there is a known fix for the problem, THINQ direct help desk personnel to implement the fix. If help desk personnel cannot implement the fix the help desk notifies the NAWCAD PM of the issue. A problem that cannot be corrected without modifying the software baseline will be documented by the MarineNet help desk personnel on a MCDLP CMFS (Form 1) and the NAWCAD PM is notified. The NAWCAD PM notifies the DLC.



Regarding the VTT centers, the MCSEN equipment is covered under an extended warranty funded by the DLC through the CNET contract. After the initial submission of the trouble ticket, with the MarineNet help desk and VCAS the VTT Technician or designated person contacts, or is contacted by, the help desk. If the problem or outage cannot be resolved via phone, the Regional Technical Expert (RTE) is dispatched to the site to for issue resolution. The RTE may repair or replace suspected faulty components, as needed, bringing the system to an operational status. The RTE completes SF 1149 depicting a maintenance transaction and provides a signed copy to the IDLC or the designated property book holder for appropriate property book accountability.

DL on-site personnel record all major hardware and software problems of the MarineNet help desk application and database for historical and statistical analysis. If on-site personnel experience problems with receiving warranty support for the LRC or the DLRC equipment, they are to notify the warranty manager at MC Logistic Base (MCLB), Albany.

All the VTT equipment related warranty issues are to be directed and reported to the CNET via the VCAS. Points-of-Contact (and associated phone numbers) for all the MCSEN sites are provided in the VCAS.

All the DLRC assets assigned to the MCB will be owned and controlled by the base Training and Education/Operations and Training (T&E/O&T) office. The base will store the equipment in a storage or work area equipped with lights, power, and HVAC. The DL Contracted Logistics Support (CLS) contractor will use this area to maintain and configure the DLRC equipment.

Prior to deployment, the deploying unit will coordinate with the base T&E/O&T office to reserve DLRC systems, receive training at the base on the DLRC operations, and identify the number of user workstations that are required (10-20). Upon deployment notification, the CLS contractor will power up the system, test each equipment component, and ensure that the latest complement of courseware is loaded on the server. If faulty equipment components are found, the CLS contractor will take steps to have the equipment repaired as defined in the MCDL Integrated Logistics Support Plan. Once an operational DLRC system has been tested and approved by the CLS contractor it will be re-packed in the transit cases for transport.

The base T&E/O&T office will receive the DLRC system from the MEF returning from a deployment. The CLS contractor will set up and power on the system. Each equipment component will be tested. If faulty equipment components are found, the CLS contractor will take steps to have the equipment repaired as defined in the MCDL Integrated Logistics Support Plan (ILSP). Once an operational DLRC system has been tested and approved by the CLS contractor it will be re-packed in the transit cases and stored.



The maintenance process for AECs are similar to the processes used for the MCDL, except when a problem is attributable to the AEC specific software (courseware or application), then the NAWCTSD works to resolve the problem. The NAWCTSD help desk can be reached at:

- DSN 960-8620.
- Commercial 407-380-8620.

The email address is:

- helpdesk_etesso@navair.navy.mil.

The NAWCAD MarineNet help desk may be reached by phone at:

- DSN 995-6049.
- Commercial 301-995-6049.
- (888) 4DL-USMC (435-8762)

Hours of operation are:

- 0800 - 1900 EST.

Via email at:

- lmshelp@scrb.navy.mil.



Video Teletraining Equipment Maintenance Process

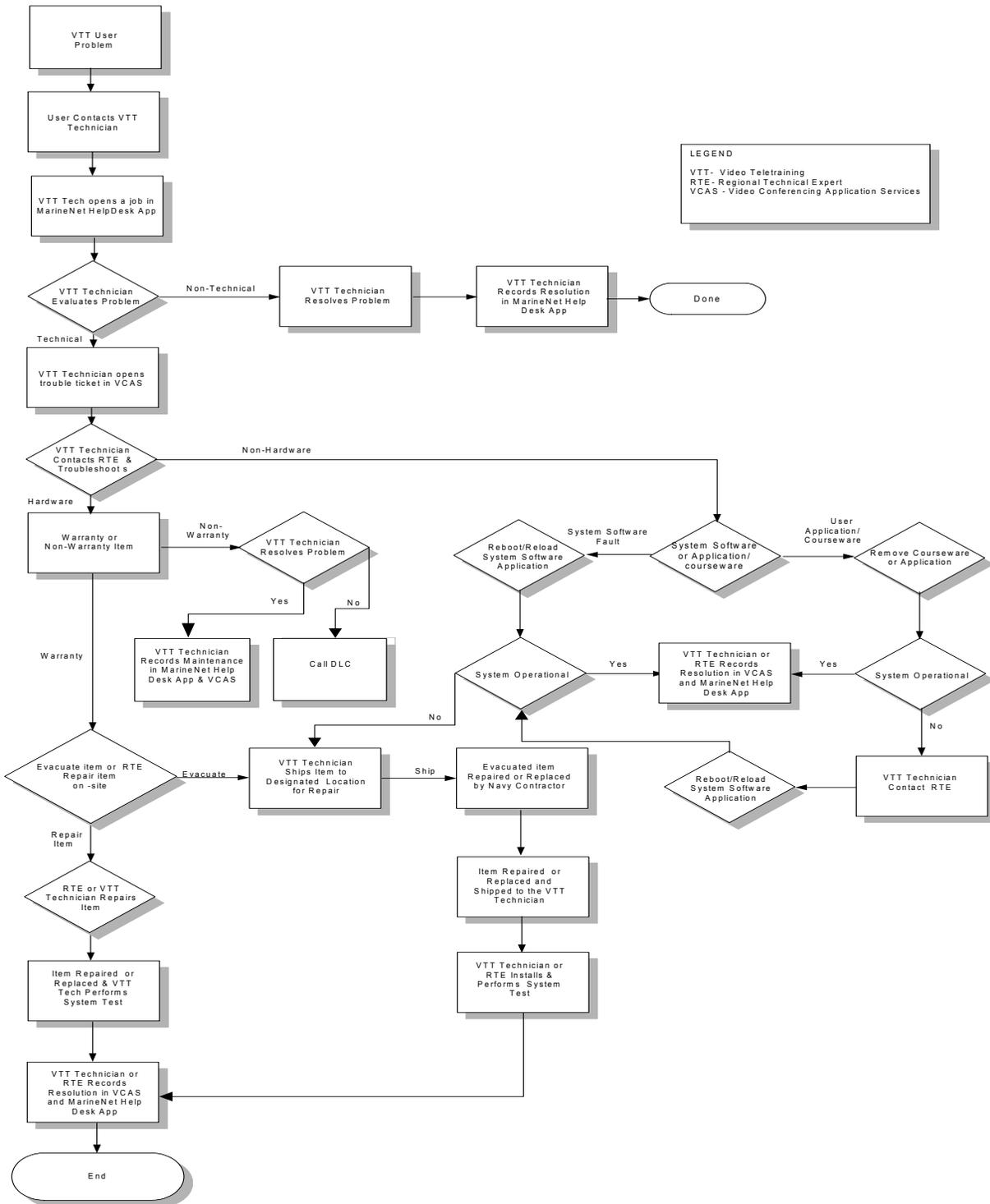


FIGURE 9-4: VTT TWO-TIER MAINTENANCE PROCESS

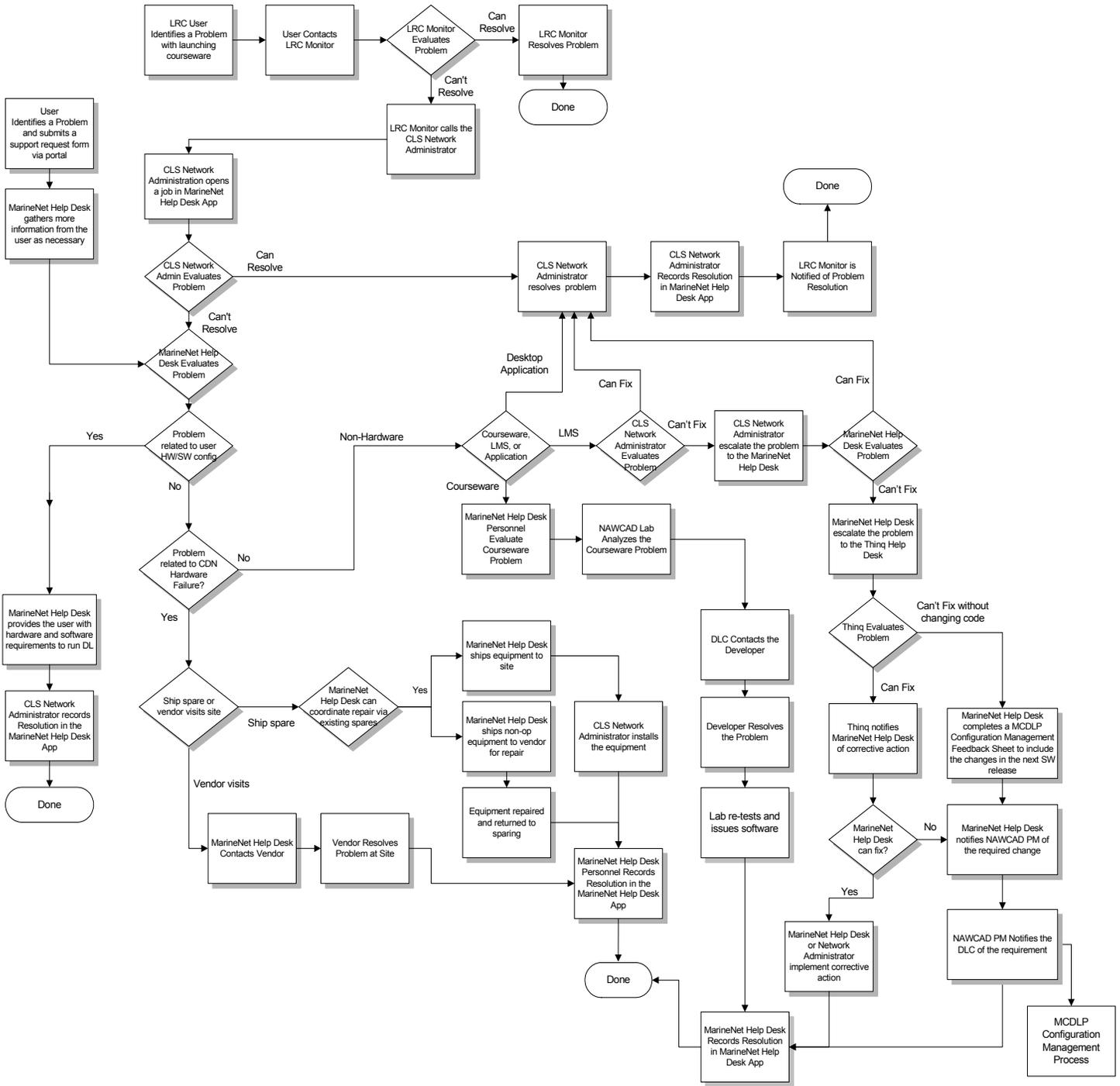


FIGURE 9-5: CDN TWO-TIER MAINTENANCE PROCESS

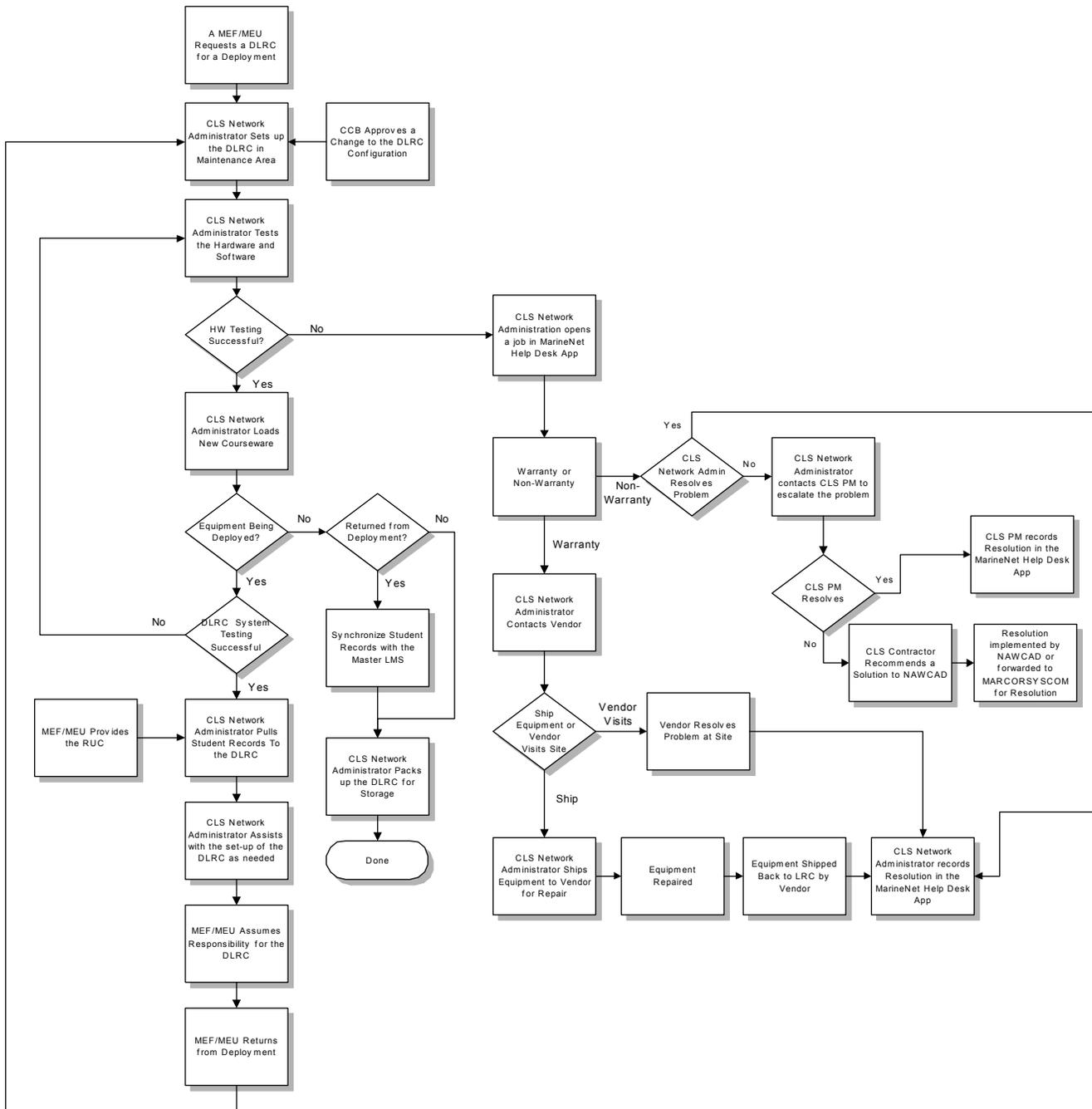


FIGURE 9-6: DLRC MAINTENANCE PROCESS



APPENDIX A



TERMS, ACRONYMS, AND ABBREVIATIONS

ACRONYM	DEFINITION
BOIP	Basis of Issue Plan
CAGE	Commercial and Government Entity
CAMP	Configuration and Asset Management Plan
CCB	Configuration Control Board
CCWG	Configuration Control Working Group
CC	Content Commander
CD	Content Director
CDE	Content Delivery Engine/Content Distribution Engine
CDN	Content Delivery Network
CI	Configuration Item
CLS	Contractor Logistics Support
CM	Configuration Management
CMA	Configuration Management Agent
CONUS	Continental United States
COTS	Commercial Off-the-Shelf
CPU	Central Processing Unit
CSA	Configuration Status Accounting
CSAS	Configuration Status Accounting System
DL	Distance Learning
DLC	Distance Learning Center
DM	Data Manager
DoD	Department of Defense
ECP	Engineering Change Proposal
ECR	Engineering Change Request
ETI	Evolutionary Technology Insertion
FBL	Functional Baseline
FCA	Functional Configuration Audit



ACRONYM	DEFINITION
FCI	Functional Configuration Identification
ILS	Integrated Logistics Support
IMI	Interactive Multimedia Instruction
IPT	Integrated Product Team
IT	Information Technology
LORA	Level of Repair Analysis
LRC	Learning Resource Center
LMS	Learning Management System
LSA	Logistics Support Analysis
MARCORSYSCOM	Marine Corps Systems Command
MCB	Marine Corps Base
MCCDC	Marine Corps Combat Development Command
MCDLP	Marine Corps Distance Learning Project
MCEA	Marine Corps Executive Agent
MCI	Marine Corps Institute
MCLB	Marine Corps Logistic Base
MEL	Master Equipment List
MICS	Material Inventory Control System
NAWCAD	Naval Air Warfare Center Aircraft Division
NAWCTSD	Naval Air Warfare Center Training Systems Division
NOR	Notice of Revision
NSN	National Stock Number
OCONUS	Outside Continental United States
OEM	Original Equipment Manufacturer
ORD	Operational Requirements Document
PBL	Product Baseline
PCA	Physical Configuration Audit
PCI	Product Configuration Identification
PE	Project Engineer
PIN	Part / Item Identification Number



ACRONYM	DEFINITION
PM	Program Manager
PMCS	Preventive Maintenance Checks and Services
PME	Professional Military Education
PM-IT	PM Information Technology Infrastructure (p/o MARCORSYSCOM)
RFD	Request For Deviations/Request for Document
ROM	Rough Order of Magnitude
SCP	Software Change Proposal
SOW	Statement of Work
SYSCOM	Systems Command (same as MARCORSYSCOM)
TAMCN	Table of Authorized Material Control Number
TD	Technical Director
TDL	Technical Direction Letter
TMDE	Test Measurement and Diagnostics Equipment
TRASYS	Training System (p/o MARCORSYSCOM)
VTT	Video Tele-training



NAV  AIR

APPENDIX B



NAVY AIR

FORMS

MARINE CORPS DL CM FEEDBACK SHEET	
1. Originator's Name and Address	Date of Report: Report Number:
PROBLEM	
2a. Description of Problem	<input type="checkbox"/> Proposed Change <input type="checkbox"/> Configuration Discrepancy
2b. Lowest Assembly Affected	
2c. Effect on System/Equipment Operation	
2d. Effect on Associated System(s)/Equipment	
2e. Effect on Production Delivery Schedule	
SOLUTION	
3a. Description of Solution	
3b. Impact on System/Equipment Operation	
3c. Added Work (Include Retest)	
3d. Deleted Work (Include Work Already Performed)	
3e. Interface with other Systems/Equipment and Activities	
OTHER CONSIDERATIONS	
4a. Estimated Cost Savings (If Known)	
4b. Logistics Supportability and Material Availability Problems	
APPROVAL	
5a. Submitting Activity Signature	5b. Title
5c. Using Unit Recommendation	
Forwarded Recommending Approval ___ Disapproved ___ Date: _____	
5d. User Representative Recommendation	
Forwarded Recommending Approval ___ Disapproved ___ Date: _____	
5e. CCWG Recommendation	
Recommend Approval ___ Recommend Disapproval ___ Date: _____	
5f. CCB Approval/Disapproval	
Approved ___ Disapproved ___ Date: _____	

FORM 1: MCDL CMFS



NAV AIR

ENGINEERING CHANGE REQUEST (ECR) SUMMARY		
1. Change Number		2. Title of Change
3. System/Equipment.		4. Recommended Class of Change
5. Originator Activity/Code		6. Priority
7.a. Point of Contact	7.b. Phone	7.c. Date
8. Description of Problem		
9. Recommended Solution		
10. Technical Supportability Impact		
11. Logistics Supportability Impact		
12. ROM Cost Impact		
13. Schedule Impact		
SIGNATURES		
Variant Project Engineer Signature/Date		Logistics Manager Signature/Date
Test Manager Signature/Date		Configuration Manager Signature/Date
Life Cycle Sustainment Manager/CMA Signature/Date		
Technical Director/Lead Engineer Signature/Date		
<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Approved with Comments		
Comments.		

FORM 2: ENGINEERING CHANGE REQUEST (ECR) SUMMARY

ENGINEERING CHANGE PROPOSAL (ECP) PAGE 1						1. DATE (YYMMDD)		Form Approved OMB No. 0704-0188					
Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSES. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT / PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THIS FORM.								2. PROCURING ACTIVITY NO.					
								3. DODAAC					
4. ORIGINATOR		b. ADDRESS (Street, City, State, Zip Code)				5. CLASS OF ECP							
a. TYPED NAME (First, Middle Initial, Last)						6. JUST. CODE		7. PRIORITY					
8. ECP DESIGNATION				9. BASELINE AFFECTED									
a. MODEL/TYPE		b. CAGE CODE		c. SYSTEM DESIGNATION		<input type="checkbox"/> FUNCTIONAL		<input type="checkbox"/> PRODUCT					
						<input type="checkbox"/> ALLOCATED							
d. ECP NO.				e. TYPE		f. REV		10. OTHER SYS. / CONFIG. ITEMS AFFECTED					
11. SPECIFICATIONS AFFECTED								<input type="checkbox"/> YES <input type="checkbox"/> NO					
				12. DRAWINGS AFFECTED									
		CAGE Code		Specification / Document No.		R e v		S C N					
a. SYSTEM													
b. DEVELOPMENT													
c. PRODUCT													
13. TITLE OF CHANGE													
14. CONTRACT NO. AND LINE ITEM				15. PROCURING CONTRACT OFFICER									
				a. NAME (First, Middle Initial, Last)		c. TELEPHONE NO.							
				b. CODE									
16. CONFIGURATION ITEM NOMENCLATURE								17. IN PRODUCTION					
								<input type="checkbox"/> Y <input type="checkbox"/> N					
								<input type="checkbox"/> E <input type="checkbox"/> O					
								<input type="checkbox"/> S <input type="checkbox"/> O					
18. ALL LOWER LEVEL ITEMS AFFECTED													
a. NOMENCLATURE				b. PART NO.			c. NSN						
19. DESCRIPTION OF CHANGE													
20. NEED FOR CHANGE													
21. PRODUCTION EFFECTIVITY BY SERIAL NUMBER					22. EFFECT ON PRODUCTION DELIVERY SCHEDULE								
23. RETROFIT													
a. RECOMMENDED ITEM EFFECTIVITY					b. SHIP / VEHICLE CLASS AFFECTED								
c. ESTIMATED KIT DELIVERY SCHEDULE					d. LOCATIONS OR SHIP / VEHICLE NUMBERS AFFECTED								
24. ESTIMATED COSTS / SAVINGS UNDER CONTRACT					25. ESTIMATED NET TOTAL COSTS / SAVINGS								
26. SUBMITTING ACTIVITY					b. TITLE								
a. AUTHORIZED SIGNATURE													
27. APPROVAL / DISAPPROVAL													
a. CLASS I		b. CLASS II			c. CLASS III								
<input type="checkbox"/> APPROVAL RECOMMENDED		<input type="checkbox"/> DISAPPROVAL RECOMMENDED		<input type="checkbox"/> APPROVED			<input type="checkbox"/> DISAPPROVED		<input type="checkbox"/> CONCUR CLASSIFICATION CHANGE				
							IN OF		DO NOT CONCUR IN CLASSIFICATION OF CHANGE				
d. GOVERNMENT ACTIVITY				e. SIGNATURE				f. DATE SIGNED (YYMMDD)					
g. APPROVAL		h. GOVERNMENT ACTIVITY		i. SIGNATURE				j. DATE SIGNED (YYMMDD)					
<input type="checkbox"/> APPROVED													
<input type="checkbox"/> DISAPPROVED													

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 2

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ECP NUMBER

EFFECTS ON FUNCTIONAL / ALLOCATED CONFIGURATION DOCUMENTATION

28. OTHER SYSTEMS AFFECTED

29. OTHER CONTRACTORS / ACTIVITIES AFFECTED

30. CONFIGURATION ITEMS AFFECTED

31. EFFECTS ON PERFORMANCE ALLOCATIONS AND INTERFACES IN SYSTEM SPECIFICATION

32. EFFECTS ON EMPLOYMENT, INTEGRATED LOGISTICS SUPPORT, TRAINING, OPERATIONAL EFFECTIVENESS, OR SOFTWARE

33. EFFECTS ON CONFIGURATION ITEM SPECIFICATIONS

34. DEVELOPMENTAL REQUIREMENTS AND STATUS

35. TRADEOFFS AND ALTERNATIVE SOLUTIONS

36. DATE BY WHICH CONTRACTUAL AUTHORITY IS NEEDED (YYMMDD)

DD FORM 1692/1, APR 92 Previous editions are obsolete.

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 3

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ECP NUMBER

EFFECTS ON PRODUCT CONFIGURATION DOCUMENTATION, LOGISTICS, AND OPERATIONS

(X)	FACTOR	ENCL	PAR	(X)	FACTOR	ENCL.	PAR		
	37. EFFECT ON PRODUCT CONFIGURATION DOCUMENTATION OR CONTRACT				39. EFFECT ON OPERATIONAL EMPLOYMENT				
	a. PERFORMANCE				a. SAFETY				
	b. WEIGHT-BALANCE-STABILITY (<i>Aircraft</i>)				b. SURVIVABILITY				
	c. WEIGHT-MOVEMENT (<i>Other equipment</i>)				c. RELIABILITY				
	d. CDRL, TECHNICAL DATA				d. MAINTAINABILITY				
	e. NOMENCLATURE				e. SERVICE LIFE				
					f. OPERATING PROCEDURES				
	38. EFFECT ON INTEGRATED LOGISTICS SUPPORT (ILS) ELEMENTS				g. ELECTROMAGNETIC INTERFERENCE				
	a. ILS PLANS				h. ACTIVATION SCHEDULE				
	b. MAINTENANCE CONCEPT, PLANS, AND PROCEDURES				i. CRITICAL SINGLE POINT FAILURE ITEMS				
	c. LOGISTICS SUPPORT ANALYSES				j. INTEROPERABILITY				
	d. INTERIM SUPPORT PROGRAMS								
	e. SPARES AND REPAIR PARTS				40. OTHER CONSIDERATIONS				
	f. TECH MANUALS/PROGRAMMING TAPES				a. INTERFACE				
	g. FACILITIES				b. OTHER AFFECTED EQUIPMENT/GFE/GFP				
	h. SUPPORT EQUIPMENT				c. PHYSICAL CONSTRAINTS				
	i. OPERATOR TRAINING				d. COMPUTER PROGRAMS AND RESOURCES				
	j. OPERATOR TRAINING EQUIPMENT				e. REWORK OF OTHER EQUIPMENT				
	k. MAINTENANCE TRAINING				f. SYSTEM TEST PROCEDURES				
	l. MAINTENANCE TRAINING EQUIPMENT				g. WARRANTY / GUARANTEE				
	m. CONTRACT MAINTENANCE				h. PARTS CONTROL				
	n. PACKAGING, HANDLING, STORAGE, TRANSPORTABILITY				i. LIFE CYCLE COSTS				
41. ALTERNATE SOLUTIONS									
42. DEVELOPMENTAL STATUS									
43. RECOMMENDATIONS FOR RETROFIT									
44. WORK-HOURS PER UNIT TO INSTALL RETROFIT KITS				45. WORK-HOURS TO CONDUCT SYSTEM TESTS AFTER RETROFIT					
a. ORGANIZATION		b. INTERMEDIATE		c. DEPOT		d. OTHER			
46. THIS CHANGE MUST BE ACCOMPLISHED				47. IS CONTRACTOR FIELD SERVICE ENGINEERING REQUIRED?		48. OUT OF SERVICE TIME			
<input type="checkbox"/>	BEF ORE	<input type="checkbox"/>	WITH	<input type="checkbox"/>	AFTER THE FOLLOWING CHANGES	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
49. EFFECT OF THIS ECP AND PREVIOUSLY APPROVED ECPs ON ITEM				50. DATE CONTRACTUAL AUTHORITY NEEDED FOR (YYMMDD)					
				a. PRODUCTION					
				b. RETROFIT					

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 4

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ECP NUMBER

51. ESTIMATED NET TOTAL COST IMPACT *(Use parentheses for savings)*

FACTOR	COSTS/SAVINGS UNDER CONTRACT				Total (e)	Other Costs/ Savings to the Government (f)
	Non-	RECURRING				
	Recurri g (a)	Unit (b)	Quant ity (c)	Total (Recurring) (d)		
a. PRODUCTION COSTS/SAVINGS						
(1) CONFIGURATION ITEM						
(2) FACTORY TEST EQUIPMENT						
(3) SPECIAL FACTORY TOOLING						
(4) SCRAP						
(5) ENGINEERING, ENGINEERING DATA REVISION						
(6) REVISION OF TEST PROCEDURES						
(7) QUALIFICATION OF NEW ITEMS						
(8) SUBTOTAL OF PROD COSTS / SAVINGS						
b. RETROFIT COSTS						
(1) ENGINEERING DATA REVISION						
(2) PROTOTYPE TESTING						
(3) KIT PROOF TESTING						
(4) RETROFIT KITS FOR OPERATIONAL SYSTEMS						
(5) PREP OF MWO/TCTO/SC/ALT/TD						
(6) SPECIAL TOOLING FOR RETROFIT						
(7) INSTALLATION CONTRACTOR PERSONNEL						
(8) INSTALLATION GOVERNMENT PERSONNEL						
(9) TESTING AFTER RETROFIT						
(10) MODIFICATION OF GFE / GFP						
(11) QUALIFICATION OF GFE / GFP						
(12) SUBTOTAL OF RETROFIT COSTS/SAVINGS						
c. INTEGRATED LOGISTICS SUPPORT COSTS/ SAVINGS						
(1) SPARES / REPAIR PARTS REWORK						
(2) NEW SPARES AND REPAIR PARTS						
(3) SUPPLY / PROVISIONING DATA						
(4) SUPPORT EQUIPMENT						
(5) RETROFIT KITS FOR SPARES						
(6) OPERATOR TRAINING COURSES						
(7) MAINTENANCE TRAINING COURSES						
(8) REVISION OF TECH MANUALS						
(9) NEW TECH MANUALS						
(10) TRAINING / TRAINERS						
(11) INTERIM SUPPORT						
(12) MAINTENANCE MANPOWER						
(13) COMPUTER PROGRAMS / DOCUMENTATION						
(14) SUBTOTAL OF ILS COSTS / SAVINGS						
d. OTHER COSTS / SAVINGS						
e. SUBTOTAL COSTS / SAVINGS						
(1) SUBTOTAL UNDER CONTRACT						
f. COORDINATION OF CHANGES WITH OTHER CONTRACTORS						
g. COORDINATION CHANGES BY GOVERNMENT						
h. ESTIMATED NET TOTAL COSTS / SAVINGS						

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 5

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ECP NUMBER

52. ESTIMATED COSTS/SAVINGS SUMMARY, RELATED ECPs (Use parentheses for savings)

	CAGE CODE (a)	ECP NUMBER (b)	COSTS/SAVINGS UNDER CONTRACTS (c)	OTHER COSTS/SAVINGS TO GOVERNMENT (d)
a. PRODUCTION COSTS/SAVINGS (Subtotal of Costs / Savings Elements from Page 4, Item 4 a. applicable to aircraft, ship, tank, vehicle, missile, or its subsystem)				
(1) SUBTOTAL PRODUCTION COSTS / SAVINGS				
b. RETROFIT COSTS (Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)				
(1) SUBTOTAL RETROFIT COSTS				
c. INTEGRATED LOGISTICS SUPPORT COSTS / SAVINGS REVISED REQUIREMENTS				
(1) ITEM RETROFIT (If not covered under "b") (Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)				
(2) ILS SUBTOTAL (Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)				
(3) OPERATOR TRAINER (Net total cost / saving from each ECP covering operator trainer)				
(4) MAINTENANCE TRAINER (Net total cost / saving from each ECP covering maintenance trainer)				
(5) OTHER TRAINING EQUIPMENT				
(6) SUPPORT EQUIPMENT (Net total cost / saving from each ECP on support equipment)				
(7) ILS PLANS				
(8) MAINTENANCE CONCEPT, PLANS, SYSTEM DOCUMENTS				
(9) INTERIM SUPPORT PLAN				
NEW REQUIREMENTS	CAGE CODE	NON-RECURRING COSTS	RECURRING COSTS	
			UNIT TOTAL	QTY
(10) PROVISIONING DOCUMENTATION				
(11) OPER TRNR / TRNG DEVICES / EQUIP				
(12) MANUALS / SPARES, REPAIR PARTS (For (11))				
(13) MAINTENANCE TRNR / TRNG DEVICES / EQUIPMENT				
(14) MANUALS / SPARES, REPAIR PARTS (For (13))				
(15) SUPPORT EQUIPMENT				
(16) MANUALS (For (15))				
(17) PROVISIONING DOCUMENTATION (For (15))				
(18) REPAIR PARTS (For (15))				
(19) SUBTOTAL ILS COSTS / SAVINGS (Sum of c(1) through c(18))				
d. OTHER COSTS / SAVINGS (Total from Page 4, item 4 d., or related ECPs)	CAGE CODE	ECP NUMBER		
(1) TOTAL OTHER COSTS / SAVINGS				
(2) SUBTOTALS OF COLUMNS				
(3) SUBTOTAL UNDER CONTRACT				
e. ESTIMATED NET TOTAL COSTS / SAVINGS (a + b + c + d)				

DD FORM 1692/4, APR 92 Previous editions are obsolete.

SHIPPING CONTAINER TALLY→

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

REQUISITION AND INVOICE / SHIPPING DOCUMENT

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1. FROM: (Include ZIP Code)	SHEET NO. 12	NO. OF SHEETS 92	5. REQUISITION DATE	6. REQUISITION NUMBER
	7. DATE MATERIAL REQUIRED (YYMMDD)			8. PRIORITY
2. TO: (Include ZIP Code)	9. AUTHORITY OR PURPOSE			11a. VOUCHER NUMBER & DATE (YYMMDD)
	10. SIGNATURE			
3. SHIP TO - MARK FOR:	12. DATE SHIPPED (YYMMDD)			b.
	13. MODE OF SHIPMENT			14. BILL OF LADING NUMBER
	15. AIR MOVEMENT DESIGNATOR OR PORT REFERENCE NUMBER			

4. APPROPRIATIONS SYMBOL AND SUBHEAD	OBJECT CLASS	EXPENDITURE ACCOUNT (from)	(to)	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT
--------------------------------------	--------------	----------------------------	------	---------------------	-----------------------------	--------------------	--------

ITEM NO. (a)	FEDERAL STOCK NUMBER, DESCRIPTION, AND CODING OF MATERIEL AND/OR SERVICES (b)	UNIT OF ISSUE (c)	QUANTITY REQUESTED (d)	SUPPLY ACTION (e)	TYPE CONTAINER (f)	CONTAINER NOS. (g)	UNIT PRICE (h)	TOTAL COST (i)
PLEASE SIGN, DATE AND RETURN COPY TO ADDRESS IN ITEM 1 ABOVE OR FAX TO _____. SIGNATURE _____ DATE _____								

16. TRANSPORTATION VIA MATS OR MSTs CHARGEABLE TO						17. SPECIAL HANDLING					
18.	ISSUED BY	TOTAL CONTAINERS	TYPE CONTAINER	DESCRIPTION	TOTAL WEIGHT	TOTAL CUBE	19.	CONTAINERS RECEIVED EXCEPT AS NOTED	DATE (YYMMDD)	BY	SHEET TOTAL
	CHECKED BY							QUANTITIES RECEIVED EXCEPT AS NOTED	DATE (YYMMDD)	BY	GRAND TOTAL
	PACKED BY						POSTED	DATE (YYMMDD)	BY	20. RECEIVER'S VOUCHER NO.	

DD Form 1149, Jan 93 → 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 S/N 0102-LF-015-8500

FORM 5: SHIPPING CONTAINER TALLY

MARINE CORPS DL COURSEWARE TESTING REQUEST	
1. Originator's Name and Address	Date of Report: Request Number:
COURSEWARE	
2a. Title of Course	<input type="checkbox"/> Prototype Beta Final
2b. Contractor (Name, Address)	
2c. Contractor Technical POC (Name, Phone Number)	
ACCOMPANYING DOCUMENTS	
3a. Statement of Work	
3b. Course Design Plan (Date/Version)	
3c. Course Flow Chart	
3d. Special Instructions from Contractor	
SPECIAL CIRCUMSTANCES	
4a. Waivers from Style Guide V. 2.0 (If any)	
4b. Comments	
APPROVAL	
5a. Task Initiation	
PM Signature	Date: _____
5b. CCB Approval/Disapproval	
Approved ____ Disapproved ____	Date: _____
5c. Installation Completed	
CMA Signature	Date: _____

FORM 6: MARINE CORPS DL COURSEWARE TESTING REQUEST



NAV  AIR

APPENDIX C



CONFIGURATION ITEMS

The MCDLP has eight (8) combined hardware and software CIS. These items are as follows:

- Content Delivery Network (CDN)
- Learning Management System (LMS) – Production
- LMS - Stage
- Learning Resource Center (LRC)
- Video Teletraining Training (VTT) Center
- Advanced Electronic Classroom (AEC - Introductory I)
- AEC- Advanced (A)
- DLRC

The CDN, LMS-Production and LMS-Stage are maintained at the DL Network Operations Center (DL NOC). Figure 9-6 and Figure C-1 depict these CIS. A component of the CDN, the CDE, is located at MC installations worldwide. Figure C-2, Figure C-3, Figure C-4, Figure C-5, Figure C-6, Figure C-7, and Figure C-8 are the LRC, the VTT, the AEC, and the DLRC CIS that are located at MC installations worldwide.

CONTENT DELIVERY NETWORK (CDN)

CDN - Content Commander

The Content Commander (CC) is the management infrastructure component of the CDN. It provides centralized control over the CDN.

HARDWARE TYPE	MINIMUM SPECIFICATIONS
CPU	1 Intel Pentium III Processor at 1 GHz
RAM	512 MB RAM
Network Interface Card	10/100 (Cat 5 Copper Cabling) NIC
CD-ROM	IDE CD-ROM drive
3.5 Floppy Disc	3.5" 1.44MB diskette drive
Chassis	1 power supply 60GB of hard drive space running RAID 5

TABLE C-1: CONTENT COMMANDER HARDWARE TYPE AND SPECIFICATIONS



The minimum software suite for the CC consists of:

SOFTWARE TYPE	SOFTWARE/VERSION
Operating System	Microsoft Windows 2000 SP2 InfoLibria COS Version 5.3
Web Server Software	Microsoft IIS 5.0

TABLE C-2: CONTENT COMMANDER SOFTWARE TYPE AND VERSION

Content Director

The Content Director (CD) directs each MCDL user to the CDE closest to their location (i.e.: to their local base).

HARDWARE TYPE	MINIMUM SPECIFICATIONS
	18GB of hard drive space running RAID 5
3.5 Floppy Disc	3.5" 1.44MB diskette drive
CD-ROM	IDE CD-ROM drive
Chassis	1 power supply
CPU	1 Intel Pentium III Processor at 1 GHz
Network Interface Card	10/100 (Cat 5 Copper Cabling) NIC
RAM	512 MB RAM

TABLE C-3: CONTENT DIRECTOR HARDWARE TYPE AND MINIMUM SPECIFICATIONS

The minimum software suite for the CD consists of:

SOFTWARE TYPE	SOFTWARE/VERSION
Operating System	Microsoft Windows 2000 SP2 InfoLibria COS Version 5.3
Web Server Software	Microsoft IIS 5.0
Misc. Utilities	MySQL 3.23.40

TABLE C-4: CONTENT DIRECTOR SOFTWARE TYPE AND VERSION



CDN-Content Delivery Engine (CDE)

Each CDE is a secure server that stores and delivers courseware and manages end-user connectivity.

HARDWARE TYPE	MINIMUM SPECIFICATIONS
	90GB of striped hard drive space
3.5 Floppy Disc	3.5" 1.44MB diskette drive
CD-ROM	IDE CD-ROM drive
Chassis	1 power supply
CPU	2 Intel Pentium III Processor at 1 GHz
Network Interface Card	10/100/1000 (Cat 5 Copper Cabling) NIC
RAM	1 GB RAM

TABLE C-5: CONTENT DELIVERY ENGINE HARDWARE TYPE AND SPECIFICATIONS

The minimum software suite for the CD consists of:

SOFTWARE TYPE	SOFTWARE/VERSION
Operating System	Windows 2000 SP2 InfoLibria COS Version 5.3
Web Server Software	Microsoft IIS 5.0
Streaming Media	Windows Media Services 4.1

TABLE C-6: CONTENT DELIVERY ENGINE SOFTWARE TYPE AND VERSION



LMS - PRODUCTION

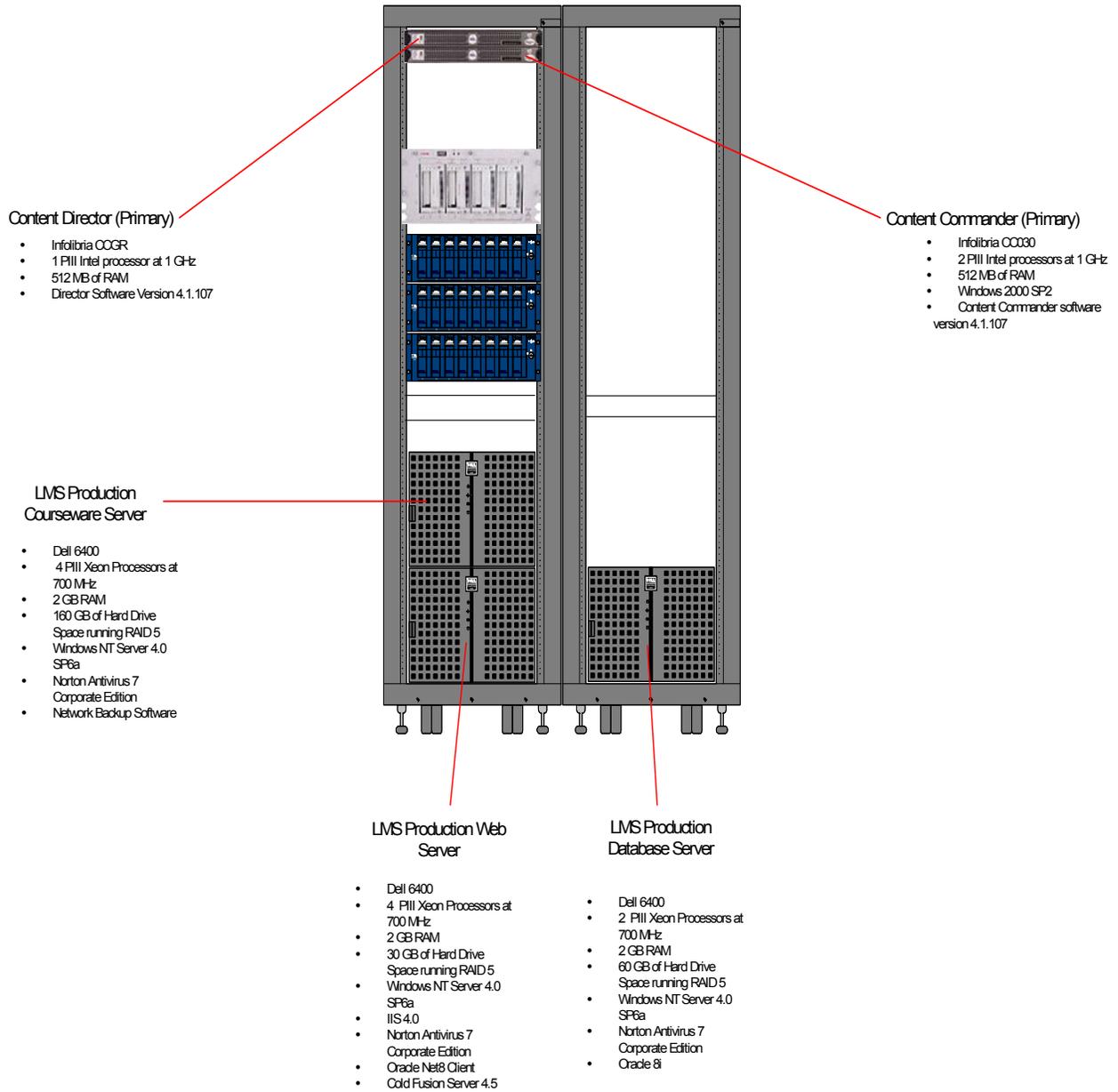


FIGURE C-1: LMS PRODUCTION SUITE



LMS - Production Courseware Server

The minimum hardware suite for the LMS Production Courseware Server consists of a XEON rackmount server with the following capabilities:

HARDWARE TYPE	MINIMUM SPECIFICATIONS
CPU	4 Intel Pentium III Xeon Processors at 700 MHz 32KB level 1 cache (16KB instruction cache and 16KB two-way write-back data cache)
RAM	2GB RAM 8GB ECC SDRAM DIMM memory WITH 16 DIMM SOCKETS
Network Interface Card	10/100 (Cat 5 Copper Cabling) NIC
CD-ROM	24X IDE CD-ROM drive
3.5 Floppy Disc	3.5" 1.44MB diskette drive
Chassis	Three standard 320W redundant hot-pluggable power supplies 7 PCI slots Integrated, dual-channel Ultra3 (Ultra160) SCSI 160 GB of hard drive space running RAID 5 1U integrated monitor and keyboard unit

TABLE C-7: LMS PRODUCTION COURSEWARE SERVER HARDWARE TYPE AND SPECIFICATIONS

The minimum software suite for the LMS Production Courseware Server consists of:

SOFTWARE TYPE	SOFTWARE/VERSION
Operating System	Microsoft Windows NT Server 4.0 SP6a
AntiVirus	Norton AntiVirus 7.60
Misc. Utilities	Diskeeper 7.0
Backup Software	Veritas Backup Exec 8.6 Backup Agent for Open Files

TABLE C-8: LMS PRODUCTION COURSEWARE SERVER SOFTWARE TYPE AND VERSION



LMS - Production Web Server

The minimum hardware suite for the LMS Production Web Server consists of a XEON rackmount server with the following capabilities:

HARDWARE TYPE	MINIMUM SPECIFICATIONS
CPU	2 Intel Pentium III Xeon Processors at 700 MHz
	32KB level 1 cache (16KB instruction cache and 16KB two-way write-back data cache)
RAM	2GB RAM
	8GB ECC SDRAM DIMM memory
	WITH 16 DIMM SOCKETS
Network Interface Card	10/100 (Cat 5 Copper Cabling) NIC
CD-ROM	24X IDE CD-ROM drive
3.5 Floppy Disc	3.5" 1.44MB diskette drive
Chassis	Three standard 320W redundant hot-pluggable power supplies
	7 PCI slots
	Integrated, dual-channel Ultra3 (Ultra160) SCSI
	30 GB of hard drive space running RAID 5
	1U integrated monitor and keyboard unit

TABLE C-9: LMS PRODUCTION WEB SERVER HARDWARE TYPE AND SPECIFICATIONS

The minimum software suite for the LMS Production Web Server consists of:

SOFTWARE TYPE	SOFTWARE/VERSION
Operating System	Microsoft Windows NT Server 4.0 SP6a
AntiVirus	Norton AntiVirus 7.60
Web Server Software	Microsoft IIS 4.0
Database Software	Oracle Client 8.1.7
Backup Software	Backup Agent for Open Files
Misc. Utilities	Diskeeper 7.0
Application Software	MarineNet ThinQ LMS version 1.0
	Cold Fusion Server 4.5.1 SP2

TABLE C-10: LMS PRODUCTION WEB SERVER SOFTWARE TYPE AND VERSION



LMS - Production Database Server

The minimum hardware suite for the LMS Production Database Server consists of a XEON rackmount server with the following capabilities:

HARDWARE TYPE	MINIMUM SPECIFICATIONS
CPU	4 Intel Pentium III Xeon Processors at 700 MHz
RAM	32KB level 1 cache (16KB instruction cache and 16KB two-way write-back data cache)
Network Interface Card	2GB RAM 8GB ECC SDRAM DIMM memory WITH 16 DIMM SOCKETS
CD-ROM	10/100 (Cat 5 Copper Cabling) NIC
3.5 Floppy Disc	24X IDE CD-ROM drive
Chassis	3.5" 1.44MB diskette drive
	Three standard 320W redundant hot-pluggable power supplies
	7 PCI slots
	Integrated, dual-channel Ultra3 (Ultra160) SCSI
	60 GB of hard drive space running RAID 5
	1U integrated monitor and keyboard unit

TABLE C-11: LMS PRODUCTION DATABASE SERVER HARDWARE TYPE AND SPECIFICATIONS

The minimum software suite for the LMS Production Database Server consists of:

SOFTWARE TYPE	SOFTWARE/VERSION
Operating System	Microsoft Windows NT Server 4.0 SP6a
AntiVirus	Norton AntiVirus 7.60
Database Software	Oracle 8.1.7
Backup Software	Veritas Backup Exec 8.6
	Backup Agent for Oracle
	Backup Agent for Open Files
Misc. Utilities	Diskeeper 7.0

TABLE C-12: LMS PRODUCTION DATABASE SERVER SOFTWARE TYPE AND VERSION



LMS STAGE

LMS Stage Server Support Suite

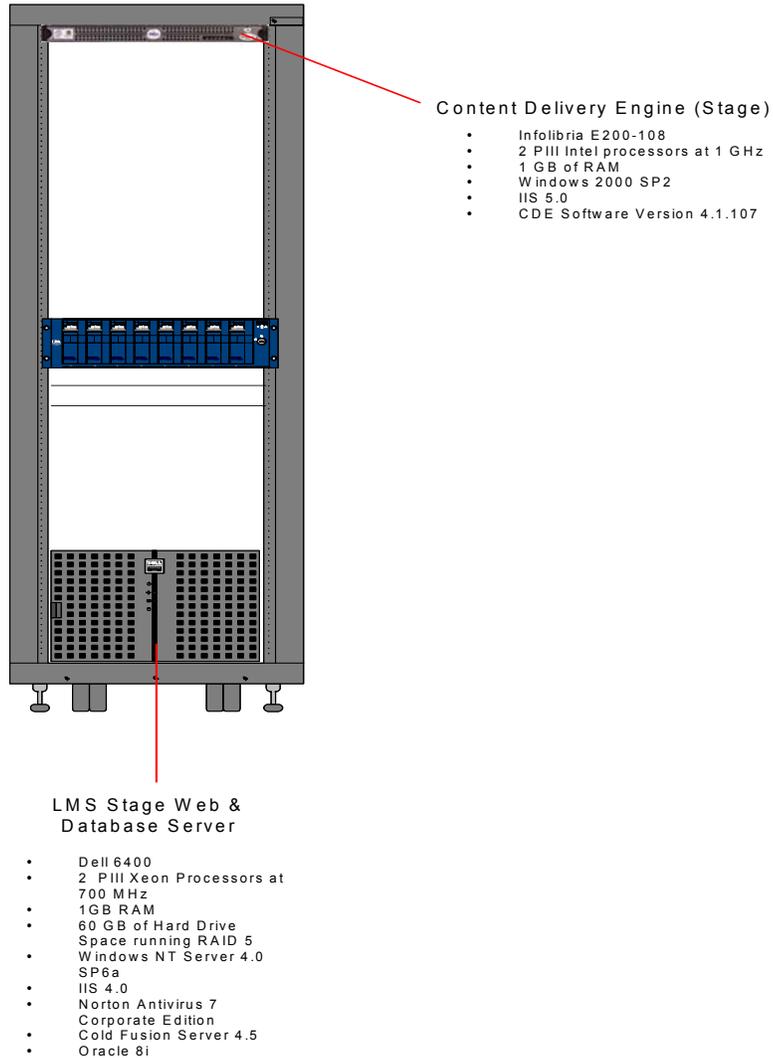


FIGURE C-2: LMS STAGE SUITE



LMS - Web and Database Servers

The minimum hardware suite of the LMS Stage Web Server consists of a XEON rackmount server with the following capabilities:

HARDWARE TYPE	MINIMUM SPECIFICATIONS
CPU	2 Intel Pentium III Xeon Processors at 700 MHz 32KB level 1 cache (16KB instruction cache and 16KB two-way write-back data cache)
RAM	1 GB RAM 8GB ECC SDRAM DIMM memory WITH 16 DIMM SOCKETS
Network Interface Card	10/100 (Cat 5 Copper Cabling) NIC
CD-ROM	24X IDE CD-ROM drive
3.5 Floppy Disc	3.5" 1.44MB diskette drive
Chassis	Three standard 320W redundant hot-pluggable power supplies 7 PCI slots Integrated, dual-channel Ultra3 (Ultra160) SCSI 60 GB of hard drive space running RAID 5 1U integrated monitor and keyboard unit

TABLE C-13: LMS WEB AND DATABASE HARDWARE TYPE AND SPECIFICATIONS

The minimum software suite for the LMS Stage Web Server consists of:

SOFTWARE TYPE	SOFTWARE/VERSION
Operating System	Microsoft Windows NT Server 4.0 SP6a
AntiVirus	Norton AntiVirus 7.60
Web Server Software	Microsoft IIS 4.0
Database Software	Oracle Client 8.1.7
Backup Software	Backup Agent for Open Files
Misc. Utilities	Diskeeper 7.0
Application Software	MarineNet ThinQ LMS version 1.0 Cold Fusion Server 4.5.1 SP2

TABLE C-14: LMS WEB AND DATABASE SOFTWARE TYPE AND VERSION

LRC CONFIGURATION

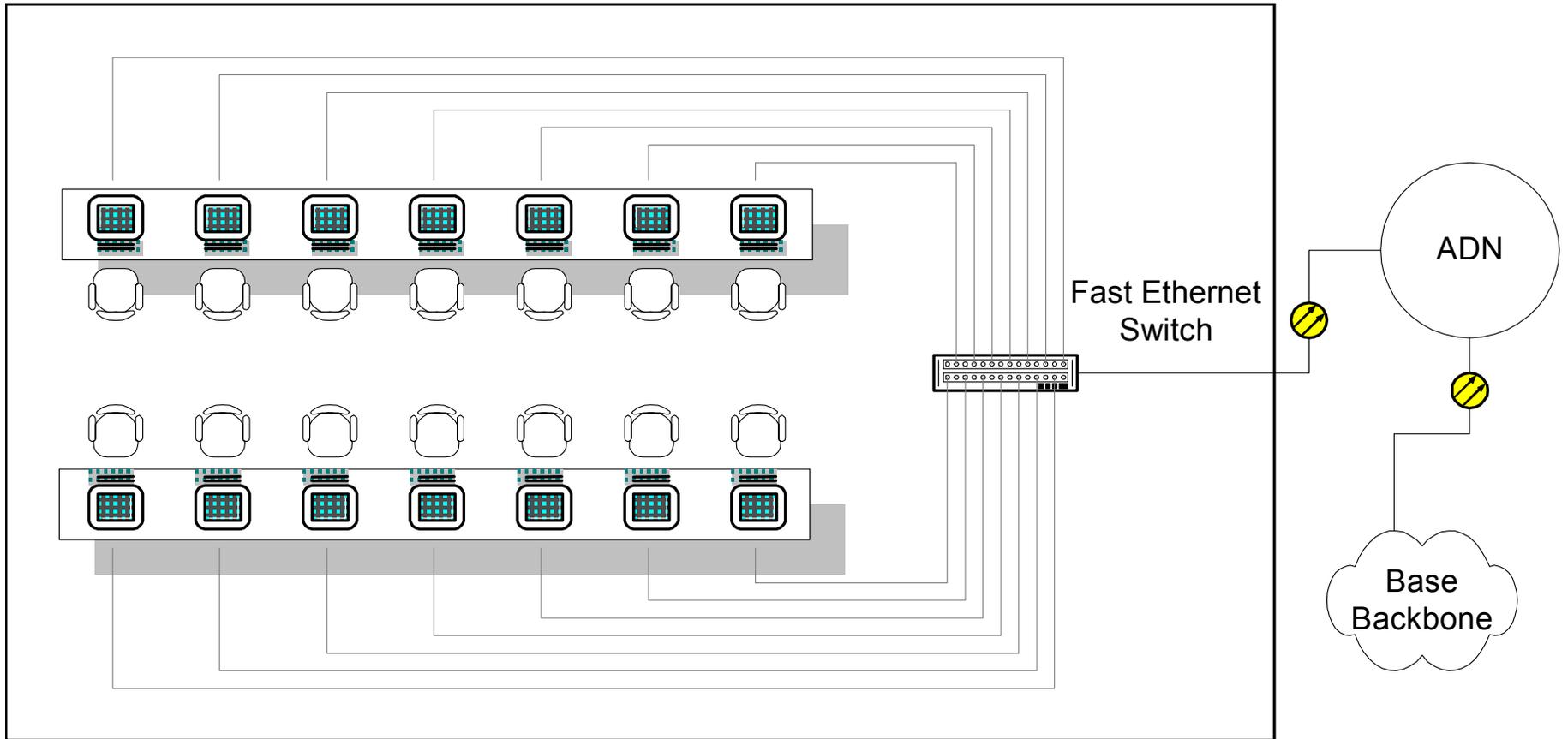


FIGURE C-3: STANDARD LRC CONFIGURATION



The minimum hardware suite for the LRC workstation (1-50 stations) consists of the Mini Tower with the following capabilities:

HARDWARE TYPE	MINIMUM SPECIFICATIONS
CPU	266MHz Pentium III processor
Hard drive	10 GB EIDE Hard Drive (7200RPM)
RAM	128MB ECC RAM
3.5 Floppy Disc	3.5" 1.44MB Floppy Drive
CD-ROM	17/40X CD-ROM Drive
Video Card	AGP Graphics accelerator and 8MB VRAM
LAN Card	10/100Mbps Network Interface Card
	Microsoft Intellimouse
	Keyboard
Sound Card	16 bit Sound Blaster audio - no speakers
	17" monitor
PC Card Reader	Front accessible 5.25" Dual PCMCIA Type II/III Reader
	Headphones

TABLE C-15: STANDARD LRC CONFIGURATION HARDWARE TYPE AND SPECIFICATIONS

LRC peripheral equipment is listed below:

HARDWARE TYPE	MINIMUM SPECIFICATIONS
Printer	Print Speed Black, Best Quality- 17 ppm
	Processor - 133 MHz RISC
	Memory - 16 MB
	Connectivity - IEEE 1284-compliant bi-directional parallel, RS-232 9-pin serial, 2 PCI-based EIO slots, Fast Infrared, HP Jet Direct card for Ethernet 10/100Base-TX in 1 EIO slot, Fast Infrared receiver
	Drivers Included - Windows 95, 98, NT 4.x; IBM OS/2 Warp; MS-DOS; HP-UX, Solaris
	Windows 2000 compatible
10/100 Ethernet Switch	24 ports of 10Mbps switched Ethernet connectivity through fixed RJ45 interfaces
	One Fast Ethernet Port Interface Module (FEPIM)
	One High Speed Interface Module (HSIM)

TABLE C-16: STANDARD LRC CONFIGURATION HARDWARE TYPE AND SPECIFICATIONS

The minimum software suite for the LRC workstation is software baseline 5 listed below:



SOFTWARE TYPE	PRODUCT NAME
Operating System	Microsoft Windows 2000 Professional, 5.00.2195 SP2
AntiVirus	Norton AntiVirus 7.60
Browser	Microsoft Internet Explorer 6.0
Portable Document Format (PDF) Software	Adobe Acrobat (Reader) 4.0
Productivity Software	Microsoft Office 2000 SR1A w/SP2
Plug-Ins	Windows Media Player Version 6.4.09.1112 or
	7.01.00.3055
	Shockwave 8.5
	Flash 5.0
	Microsoft Virtual Machine

TABLE C-17: STANDARD LRC CONFIGURATION HARDWARE TYPE AND SPECIFICATIONS



VTT Configuration

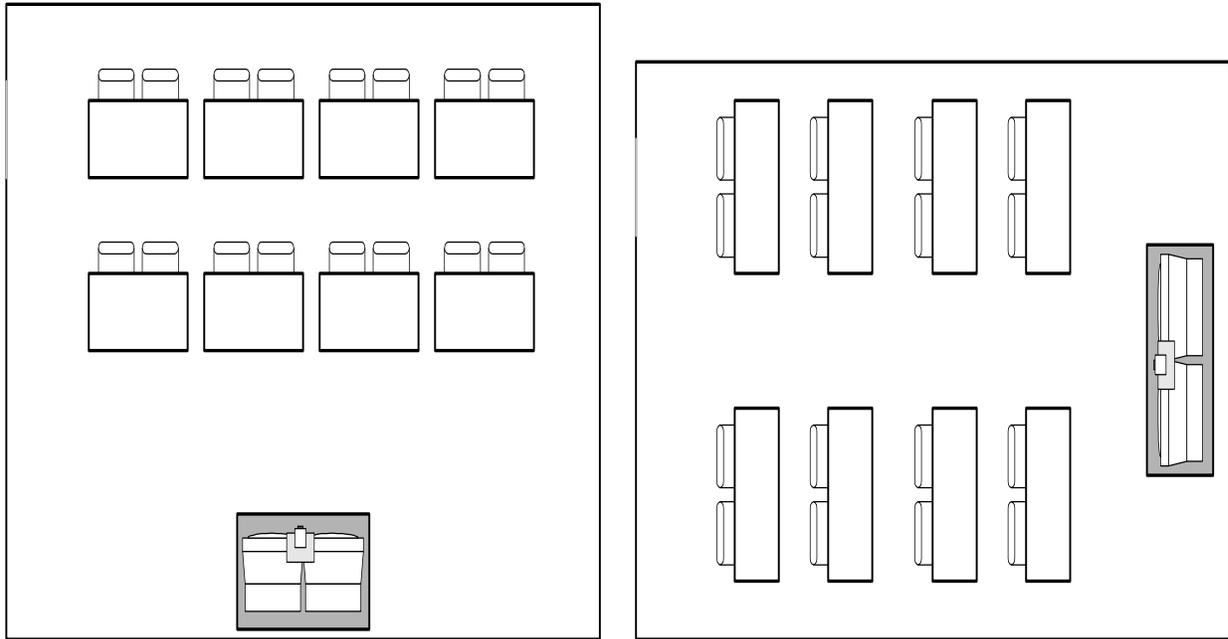


FIGURE C-4: STANDARD VTT CONFIGURATIONS

Key features include:

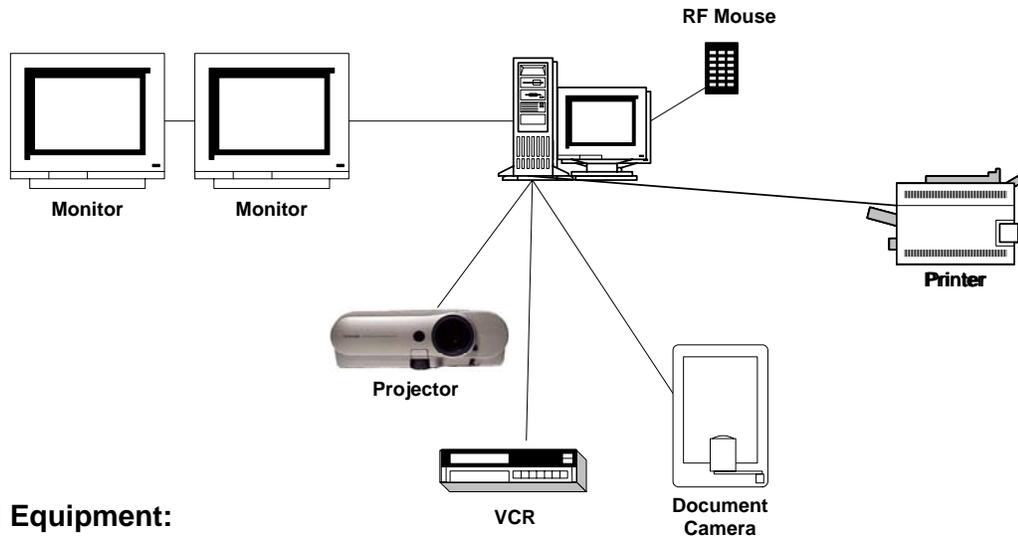
HARDWARE TYPE	MINIMUM SPECIFICATIONS
Monitor system Communications Line VTC System Podium	High-quality dual 32" monitor system T1 (1536 Kbps) line rate True 30-frames-per-second video Picture-in-Picture Still image capture Full-duplex with adaptive echo cancellation VCR support Integrated PC sound Drag-and-Drop file transfer Single-button-launch application sharing LAN, WAN or Internet capable Document stand with Smart View software

TABLE C-18: VTT KEY FEATURES



AEC Configuration Introductory Level

**Instructor
Podium
Equipment**



Optional Equipment:

- Smartboard
- Fleetwood Wireless Keypads

FIGURE C-5: INTRODUCTORY LEVEL AEC CONFIGURATION

The minimum hardware suite for the introductory level AEC consists of the following capabilities:

Instructor Station

HARDWARE	HARDWARE TYPE / MINIMUM SPECIFICATIONS
CPU	Pentium IV
RAM	256K Cache
	256Mb RAM
	10/100 Network Interface Card
	Sound Card
CD-ROM	CD/RW ROM Drive
3.5 Floppy Disc	3.5" floppy drive
	40 GB ATA100 7200 RPM Hard Drive
	17" Color Monitor



<p>Projector</p>	<p>21" Color Monitor APPIAN Dual 2 port video card APC 700 Power backup Microsoft Office 2000 Windows 2000 Professional Norton AntiVirus S/W <u>Native Resolution:</u> XGA (1024 x 768) <u>Resolution Supported:</u> XGA (1024 x 768) <u>Fit-to-View display of:</u> VGA (640 x 480) SVGA (800 x 600) SXGA (1280 x 1024) Mac (640 x 480,1280 x 1024) <u>Brightness:</u> 1500 ANSI lumens <u>Contrast Ratio:</u> 100:1 ANSI <u>Computer Compatibility:</u> IBM PC or compatibles, Apple Macintosh <u>Input Sources:</u> 2 computer, 2 audio, 1 video, 1S-video, 1 USB mouse <u>Output Computer:</u> RGB (HD-15), Stereo audio (mini-jack) <u>Keystone Correction:</u> 20°, 20:1 upward, digital keystone Correction, Projection Lens Motorized Zoom and focus</p>
<p>Document Camera</p>	<p><u>Lighting:</u> Upper Lighting Unit (6w fluorescent x 2) Backlight (6w fluorescent x 2) <u>Optics:</u> Lens f=5.4-64.8mm, f1.8-2.8 <u>Shooting Area:</u> 13 3/8" x 10" to 1 3/32" x 13/16" <u>Zooming:</u> 12X Power zoom, 2-step speed <u>Focusing:</u> One-push auto/manual Iris Adjustment: Auto/Manual (fine-adjustable +/-2 EV) <u>Video/Audio:</u> Signal – NTSC Pick-up Element – 1/3 inch CCD Picture Element – 811(H) x 508(V) Total Pixels – 410,000 Horizontal/Vertical Resolution: 450 / 350 TV Lines White Balance – Auto/one-push-auto/manual Nega/Posi conversion – Built –in (C-video, S-video) Color/B&W selection - Built –in (C-video, S-video) <u>Input sources:</u> Camera head, external input <u>Input Terminals:</u> C-Video input – BNC connector x 1 S-Video input – 4 pin mini DIN x 1 Ext. Sync. Input – BNC connector x 1 Mic. Input – mini jack x 1 Audio Input – RCA jack x 2 (stereo)</p>



Printer	<p><u>Output Terminals:</u> C-Video output – BNC connector x 1 S-Video output – 4 pin mini DIN x 1 GB output – BNC connectors x 1 (R, G, B, Sync) Audio output – RCA jack x 2 (stereo)</p> <p>17 Page per minute; 8-MB Ram; Fast Infrared port; 2-Trays (100/500 sheet); Auto duplex; Windows 3.1x, 95, 98, NT4.0, MS-DOS, UNIX, OS/2 (2.0+), OS/2 Warp, AutoCAD, Mac compatible.</p>
RF Mouse	<p><u>System Requirements:</u> IBM or compatible system, Windows NT4.0, Win 2000 <u>Connectivity:</u> PS/2 Port <u>Warranty:</u> Three Year limited warranty <u>Power:</u> 2 AAA batteries <u>Software:</u> MouseWare Software (customize presentation commands/buttons)</p>
Y-Mouse Keyboard/Mouse Adapter	<p><u>Connection:</u> Standard PS/2 connector Allows for simultaneous use of standard and remote mouse or Keyboard <u>Operating Systems:</u> Win98, 2000, Millennium, MAC OS and HID Devices</p>
<p>Optional Equipment:</p>	
Smartboard	<p><u>Size:</u> 60" w x 48 1/4" H x 5 3/4" D (152.4cm x 122.6cm x 14.6cm), Active <u>Screen Area:</u> 57 1/2" W x 43" H (146.1cm x 109.2cm) 72" diagonal <u>Weight:</u> 41.2lbs (18.7kg) <u>Compatibility:</u> 486DX 66MHz or higher PC, minimum 16MB RAM 10MB, Free hard disk space, available serial port. <u>MAC:</u> System 7 or higher, 68030 or greater, minimum of 4MB RAM, 4MB free hard disk space, available serial port <u>Software:</u> Windows 95, 98, 2000 or NT4.0, Smart software/driver 5.61, Smart Notebook 2.2 Windows 3.1 or NT3.51, Smart software/driver 5.2, Smart Notebook 1.1a Macintosh, Smart software/driver 5.4 and Smart Notebook 1.2 <u>Features:</u> Pen Tray – optical sensors in the tray detect when a pen or eraser has been selected. LED indicators show the Active tool. Resolution – Touch resolution approximately 2000 x 2000, Support Projector resolution up to 1600 x 1200 Connection – 20' (6.1m) RS-232, DB9 (F) to DB9 (F) serial cable, Adapter included for Mac DIN 8 serial, Serial connection can be extended up to 50' Power Requirements – Power is obtained from the PC or MAC Computer through a keyboard port adapter <u>Warranty:</u> Two years parts and labor with a third year extended warranty option</p>
Fleetwood Response System	<p>Technical Specifications For Wireless Keypad Model CRS1200 <u>Enclosure:</u> A.B.S. plastic molded enclosure. <u>Dimensions:</u> 6.7" L x 3.1" W x 1.5" H. <u>Weight:</u> 6.5 ounces. <u>User Input:</u> Soft-touch sealed membrane switch panel with 12 tactile keys. Ten keys are numbered 1-10. Additional key markings include A-E on keys 1-5, and "Yes" and "No" on keys 1-2. "Clear" and user-defined "asterisk" keys provide additional functions. <u>Display:</u> Echoes user input <i>plus</i> shows when the Base Station has accepted the response. <u>Power and Power Management:</u> Powered by a 9-volt battery and internally</p>



	<p>regulated to 5 volts. Battery provides sufficient power for 10,000+ responses before requiring replacement.</p> <p><u>User Identification:</u> Each keypad has a unique radio frequency (RF) address between 1 and 250. Keypads operate independently of each other, and keypad addresses are programmable.</p> <p><u>RF Technology:</u></p> <ul style="list-style-type: none">- Proprietary radio communication system operation between keypads and their associated Base Station.- User entries are acknowledged when received by the Base Station.- Separate frequencies are used to address/control the keypad and communicate keypad presses to the Base Station.- A 216 - 220 MHz RF keypad receiver processes address/Control signals from the Base Station's transmitter- A 345 - 369 MHz RF keypad transmitter sends keypress information to the Base Station's receiver.- Eight (8) channels.- Internal loop antenna is enclosed and protected by the keypad housing. <p><u>Range:</u></p> <ul style="list-style-type: none">- The system is designed to provide reliable operation in an area 200 feet by 200 feet with standard omni-directional, quarter-wave whip antennas.- Note: Range can vary due to a room's geometry and its RF propagation characteristics. Greater range may be achieved by using the optional auditorium/hall antenna kit. This kit includes high-gain dipole antennas that replace the standard antennas. <p><u>Speed:</u> The Base Station scans each keypad in sequence. Scan duration is 1/100th of a second. Within each brief time slice, the Base Station is able to simultaneously determine a keypad's identification and process its response information. Polling cycles are adjustable to optimize speed to group size.</p> <p><u>Control:</u> Utilizes a high performance microprocessor and external permanent memory for storage of setup parameters and keypad addresses. Firmware is resident in the microprocessor chip, which can be replaced to facilitate easy upgrade during the life of the product.</p> <p><u>Capacity:</u></p> <ul style="list-style-type: none">- 250 keypads per radio channel.- 8 radio channels are available to support a maximum of 2,000 keypads per room/site. <p><u>System Configuration</u></p> <p><i>A basic Reply system consists of...</i></p> <ul style="list-style-type: none">- 1 CRS1200 Wireless Keypad per participant- 1 CRS920 Base Station for every 250 keypads of the same radio channel in a room- 1 copy of application software. <p>Base Station Model CRS930</p> <p><u>Dimensions:</u> 7.75" W x 6.375" D x 3.375" H.</p> <p><u>Unit Weight:</u> 2 pounds (3.5 pounds with cable and power supply).</p> <p><u>Includes:</u></p> <ul style="list-style-type: none">- Extendable whip antennas.- 2 user-selectable channels. (Note: Additional channels are available at a premium for special installations.)
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	- 35-foot long serial cable. Base Station connection: RJ45. PC connection: DB9. - UL/CSA rated low voltage power supply. <u>Input</u> : 110-220 VAC. Output: 12 VDC. <u>Current draw</u> : less than 0.5 A.
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TABLE C-20: INSTRUCTOR STATION HARDWARE, TYPE, AND SPECIFICATIONS

The minimum software suite for the Introductory AEC consists of:

SOFTWARE TYPE	PRODUCT NAME
Operating System	Microsoft Windows NT Workstation 4.0, SP6a
AntiVirus	Norton AntiVirus 7.60
Browser	Microsoft Internet Explorer 6.0
Office Suite	Microsoft Office XP Professional
Miscellaneous	Printer Software
	Smart board Software
	RF Mouse Software

TABLE C-21: INTRODUCTORY AEC SOFTWARE TYPE AND PRODUCT NAME

AEC Configuration Advanced Level

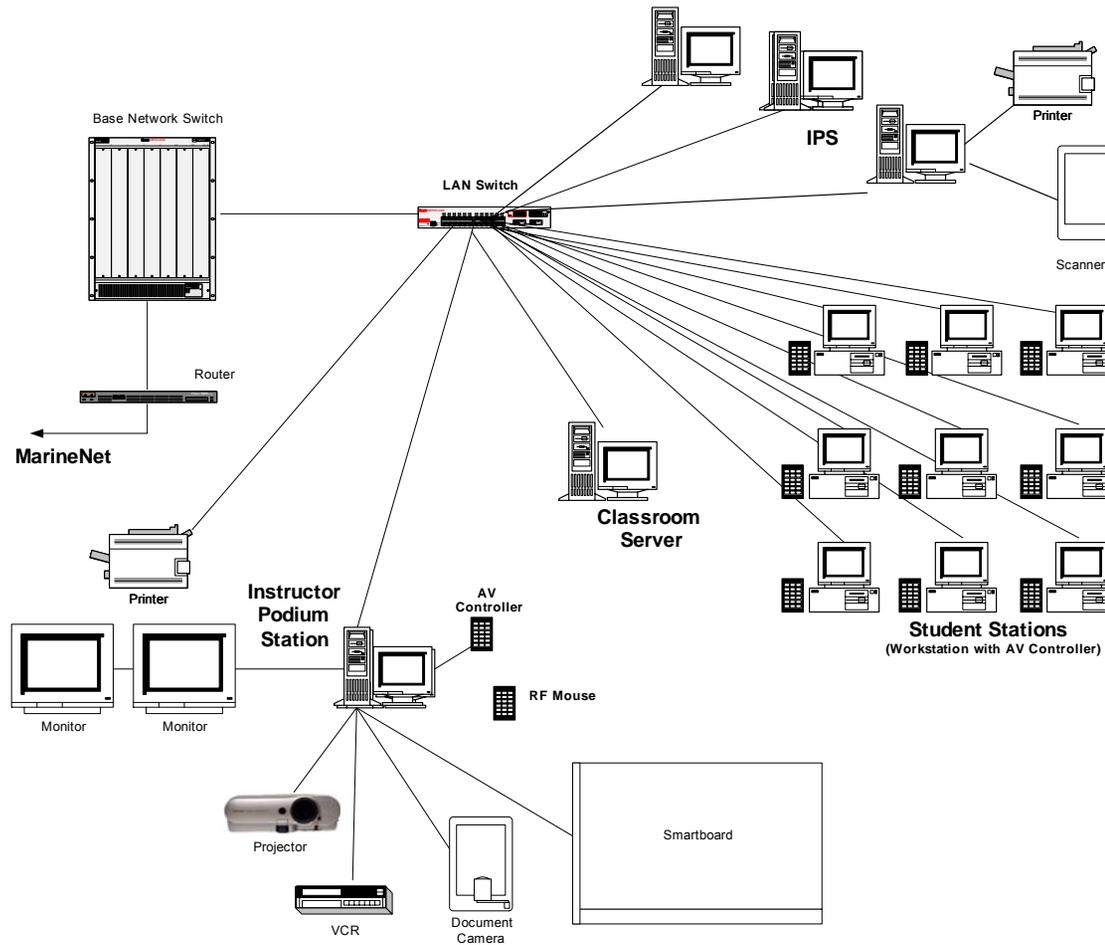


FIGURE C-6: AEC ADVANCED LEVEL CONFIGURATION



The minimum hardware suite for the AEC (1-36 Student Workstations, 1 server, and 1 Instructor Workstation) and Instructor Preparation Stations (1- 3 stations) consists of the following capabilities:

Server

HARDWARE	HARDWARE TYPE AND MINIMUM SPECIFICATIONS
CPU	Pentium IV
RAM	512K Cache
	512 Mb RAM
	10/100 Network Interface Card
CD-ROM	CD ROM Drive
3.5 Floppy Disc	3.5" floppy drive
	15" Color Monitor
Hard Drive	36 GB
Tape Backup Unit	20/40 GB Tape backup
	APC 700 Power backup
	Microsoft Office 2000
	Norton AntiVirus S/W

TABLE C-22: AEC SERVER HARDWARE, TYPE, AND SPECIFICATIONS

The minimum software suite for the AEC Server consists of:

SOFTWARE TYPE	PRODUCT NAME
Operating System	Microsoft Windows NT Workstation 4.0, SP6a
AntiVirus	Norton AntiVirus 7.60
Browser	Microsoft Internet Explorer 6.0

TABLE C-23: AEC SERVER SOFTWARE TYPE AND PRODUCT NAME



Instructor Podium Station hardware:

HARDWARE	HARDWARE TYPE AND MINIMUM SPECIFICATIONS
CPU	Pentium IV
	256K Cache
RAM	256 Mb RAM
	10/100 Network Interface Card
	Sound Card
CD-ROM	CD/RW ROM Drive
3.5 Floppy Disc	3.5" floppy drive
	17" Color Monitor
	21" Color Monitor
	APPIAN Dual port video card
	APC 700 Power backup
	Microsoft Office 2000
	Windows 2000 Professional
	Norton AntiVirus S/W
Projector	Native Resolution: XGA (1024 x 768)
	Resolution Supported: XGA (1024 x 768)
	Fit-to-View display of: VGA (640 x 480)
	SVGA (800 x 600)
	SXGA (1280 x 1024)
	Mac (640 x 480, 1280 x 1024)
	Brightness: 1500 ANSI lumens
	Contrast Ratio: 100:1 ANSI
	Computer Compatibility: IBM PC or compatibles, Apple Macintosh
	Input Sources: 2 computer, 2 audio, 1 video, 1S-video, 1 USB mouse,
	Output Computer: RGB (HD-15), Stereo audio (mini-jack)
	Keystone Correction: 20°, 20:1 upward, digital keystone Correction,
	Projection Lens Motorized zoom and focus



Document Camera	<p><u>Lighting:</u> Upper Lighting Unit (6w fluorescent x 2), Backlight (6w fluorescent x 2)</p> <p><u>Optics:</u> Lens f=5.4-64.8mm, f1.8-2.8</p> <p><u>Shooting Area:</u> 13 3/8" x 10" to 1 3/32" x 13/16"</p> <p><u>Zooming:</u> 12X Power zoom, 2-step speed</p> <p><u>Focusing:</u> One-push auto/manual</p> <p><u>Iris Adjustment:</u> Auto/Manual (fine-adjustable +/-2 EV)</p> <p><u>Video/Audio:</u> Signal – NTSC, Pick-up Element – 1/3 inch CCD, Picture Element – 811(H) x 508(V), Total Pixels – 410,000, Horizontal/Vertical Resolution: 450/350 TV, Lines, White Balance – Auto/one-push-auto/manual, Nega/Posi conversion – Built –in (C-video, S-video), Color/B&W selection – Built –in (C-video, S-video)</p> <p><u>Input sources:</u> Camera head, external input</p> <p><u>Input Terminals:</u> C-Video input – BNC connector x 1, S-Video input – 4 pin mini DIN x 1</p> <p>Ext. Sync. Input – BNC connector x 1, Mic. Input – mini jack x 1, Audio Input – RCA jack x 2 (stereo)</p> <p><u>Output Terminals:</u> C-Video output – BNC connector x 1, S-Video output – 4 pin mini DIN x 1, RGB output – BNC connectors x 1, (R, G, B, Sync), Audio output – RCA jack x 2 (stereo)</p>
Audio-Visual System	<p>Control</p> <p>Audio/Video/Computer Control System with User Interface devices.</p> <p>RS232 and R/G/B co-axial cables to interfaces</p> <p>Student Terminals w/Audio interface</p> <p>Keyboard/Mouse and Monitor control</p> <p>Smart Software for student testing</p> <p>Non-Operating System dependent</p>
Printer	<p>17 Page per minute; 8-MB Ram; Fast Infrared port; 2-Trays (100/500 sheet); Auto duplex; Windows 3.1x, 95, 98, NT4.0, MS-DOS, UNIX, OS/2 (2.0+), OS/2 Warp, AutoCAD, Mac compatible.</p>



Smartboard	<p><u>Size:</u> 60" w x 48 ¼" H x 5 ¾" D (152.4cm x 122.6cm x 14.6cm), Active <u>Screen Area:</u> 57 ½" W x 43" H (146.1cm x 109.2cm) 72" diagonal <u>Weight:</u> 41.2lbs (18.7kg) <u>Compatibility:</u> 486DX 66MHz or higher PC, minimum 16MB RAM 10MB, Free hard disk space, available serial port. <u>MAC:</u> System 7 or higher, 68030 or greater, minimum of 4MB RAM, 4MB free hard disk space, available serial port <u>Software:</u> Windows 95, 98, 2000 or NT4.0, Smart software/driver 5.61, Smart Notebook 2.2 Windows 3.1 or NT3.51, Smart software/driver 5.2, Smart Notebook 1.1a Macintosh, Smart software/driver 5.4 and Smart Notebook 1.2 <u>Features:</u> Pen Tray – optical sensors in the tray detect when a pen or eraser has been selected. LED indicators show the Active tool. Resolution – Touch resolution approximately 2000 x 2000, Support Projector resolution up to 1600 x 1200 Connection – 20' (6.1m) RS-232, DB9 (F) to DB9 (F) serial cable, Adapter included for Mac DIN 8 serial, Serial connection can be extended up to 50' Power Requirements – Power is obtained from the PC or MAC Computer through a keyboard port adapter <u>Warranty:</u> Two years parts and labor with a third year extended warranty option</p>
RF Mouse	<p><u>System Requirements:</u> IBM or compatible system, Windows 3.1, 95, 98, or NT4.0 <u>Connectivity:</u> Serial or PS/2 Port <u>Warranty:</u> Three Year limited warranty <u>Power:</u> 2 AAA batteries <u>Software:</u> MouseWare Software (customize presentation commands/buttons)</p>
Y-Mouse Keyboard/Mouse Adapter	<p><u>Connection:</u> Standard PS/2 connector Allows for simultaneous use of standard and remote mouse or keyboard <u>Operating Systems:</u> Win98, 2000, Millennium, MAC OS and HID Devices</p>

TABLE C-24: INSTRUCTOR STATION HARDWARE, TYPE, AND SPECIFICATIONS



The minimum software suite for the Instructor Podium Station consists of:

SOFTWARE TYPE	PRODUCT NAME
Operating System	Microsoft Windows NT Workstation 4.0, SP6a
AntiVirus	Norton AntiVirus 7.60
Browser	Microsoft Internet Explorer 6.0
Office Suite	Microsoft Office XP Professional
Miscellaneous	Printer Software Smartboard Software SMART Class (Robotel) Software SCVI (Smart Class Visual Interface) TA (Teacher Assistant) RF Mouse Software

TABLE C-25: INSTRUCTOR STATION SOFTWARE TYPE AND PRODUCT NAME

Student Station

HARDWARE	HARDWARE TYPE / MINIMUM SPECIFICATIONS
CPU	Pentium III
RAM	512K Cache
3.5 Floppy Disc	128 Mb RAM
CD-ROM	10/100 Network Interface Card
AudioVisual Control System	Sound Card
3.5 Floppy Disc	CD ROM Drive
AudioVisual Control System	3.5" floppy drive
AudioVisual Control System	4.5GB EIDE hard drive
AudioVisual Control System	17" Color Monitor
AudioVisual Control System	STB NVIDIA 4MB AGP video card
AudioVisual Control System	Student Terminals w/Audio interface
AudioVisual Control System	Keyboard/Mouse and Monitor control
AudioVisual Control System	Non-Operating Systems Dependent

TABLE C-26: AEC STUDENT STATION HARDWARE, TYPE, AND SPECIFICATIONS



The minimum software suite for the AEC Student Stations consists of:

SOFTWARE TYPE	PRODUCT NAME
Operating System	Microsoft Windows NT Workstation 4.0, SP6a
AntiVirus	Norton AntiVirus 7.60
Browser	Microsoft Internet Explorer 6.0
Office Suite	Microsoft Office XP Professional

TABLE C-27: AEC SOFTWARE TYPE AND PRODUCT NAME

Instructor Prep Station (IPS)

HARDWARE	HARDWARE TYPE / MINIMUM SPECIFICATIONS
CPU	Pentium IV
RAM	256K Cache
	256 RAM
	10/100 Network Interface Card
	Sound Card
CD-RW	24/48x CD ROM Reader/writer
3.5 Floppy Disc	3.5" floppy drive
	40 GB hard drive
	21" Color Monitor
	STB NVIDIA 4MB AGP video card
Video Capture Card	Fast PCI interface and video overlay
	Complete non-linear post-production video and audio editing with full screen (up to 704 x 480, 60 fields)
	Full motion video and audio capture and editing with motion-JPEG compression and S-video quality output to videotape through a convenient breakout box.
	Supports Windows 95, 98, NT 4.0 and includes Adobe Premiere 5.1 full version, MiroInstant video 5.0, and Pinnacle Systems Titledeko professional video titling software for television quality titles, rolls and crawls. Includes 300 eye-catching video SpiceRack special effects. Included in the DC30 Pro is the DC breakout box audio/video breakout module which connects to the DC30 pro card via a two-meter cable allowing the A/V connectors to be placed on the desktop for easy access. Also included is the Sonic Foundry ACID Music software for simple and professional license free music creation.
	<u>Requirements:</u>
	Pentium or compatible processor running Windows 95 or Better
	32MB RAM
	Fast or Wide SCSI-2 AV hard disk with at least 2GB of Available space
	1 free 32-bit PCI bus mastering slot
	24-bit graphics board



Printer	CD-ROM drive Video source (camcorder, VCR) Sound card Warranty: 30 days 17 Page per minute; 8-MB Ram; Fast Infrared port; 2-Trays (100/500 sheet); Auto duplex; Windows 3.1x, 95, 98, NT4.0, MS-DOS, UNIX, OS/2 (2.0+), OS/2 Warp, AutoCAD, Mac compatible.
Scanner	<u>Optical Resolution</u> : 1200 DPI <u>Enhanced Resolution</u> : Unlimited <u>Bit Depth</u> : 36-bit <u>Compatibility</u> : Windows 95, 98, 4.0 <u>Max Doc Size</u> : 8.5" x 14" in with ADF

TABLE C-28: IPS HARDWARE, TYPE, AND SPECIFICATIONS

The minimum software suite for the AEC Instructor Prep Stations consists of:

SOFTWARE TYPE	PRODUCT NAME
Operating System	Microsoft Windows NT Workstation 4.0, SP6a
AntiVirus	Norton AntiVirus 7.60
Browser	Microsoft Internet Explorer 6.0
Office Suite	Microsoft Office XP Professional
CD-Writer Software	Adaptec EZ-CD Writer
Miscellaneous	Printer Software Scanner Software

TABLE C-29: IPS SOFTWARE TYPE AND PRODUCT NAME

DLRC

**Deployable Learning Resource Center
 Stand Alone Configuration**

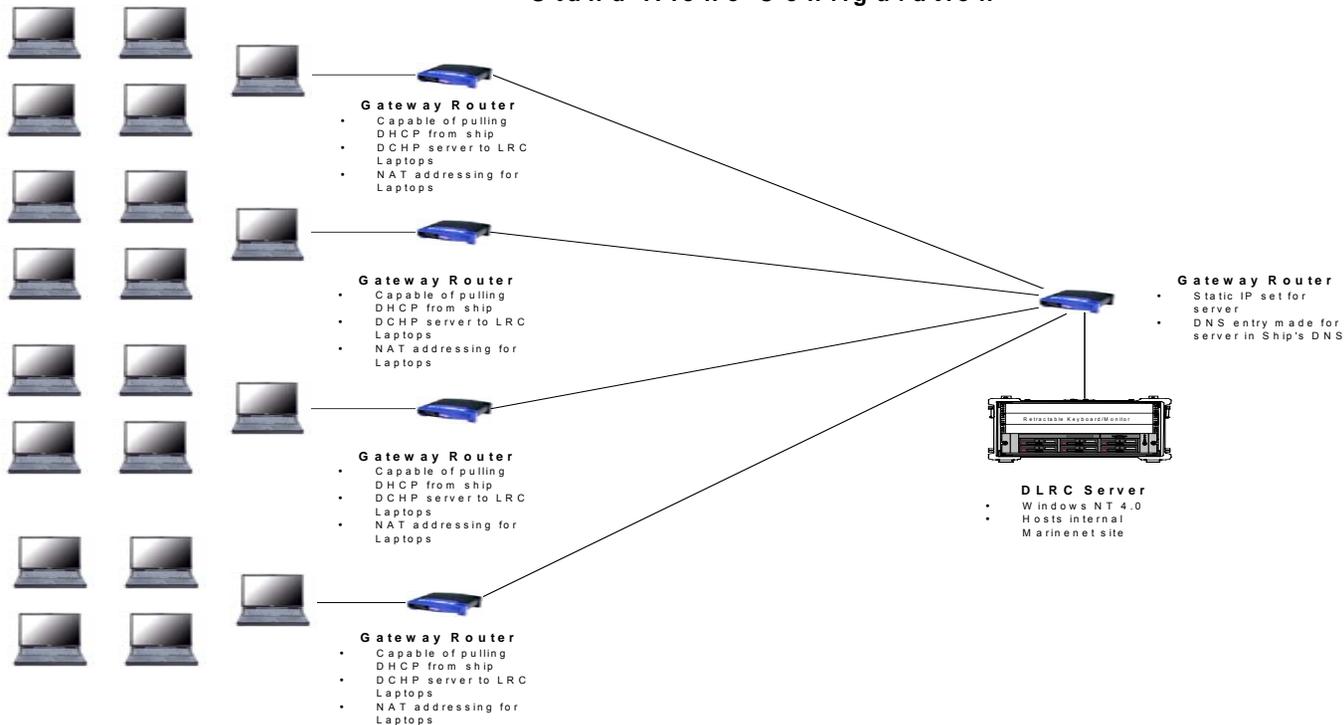


FIGURE C-7: DLRC STAND-ALONE CONFIGURATION

Deployable Learning Resource Center Shipboard Configuration

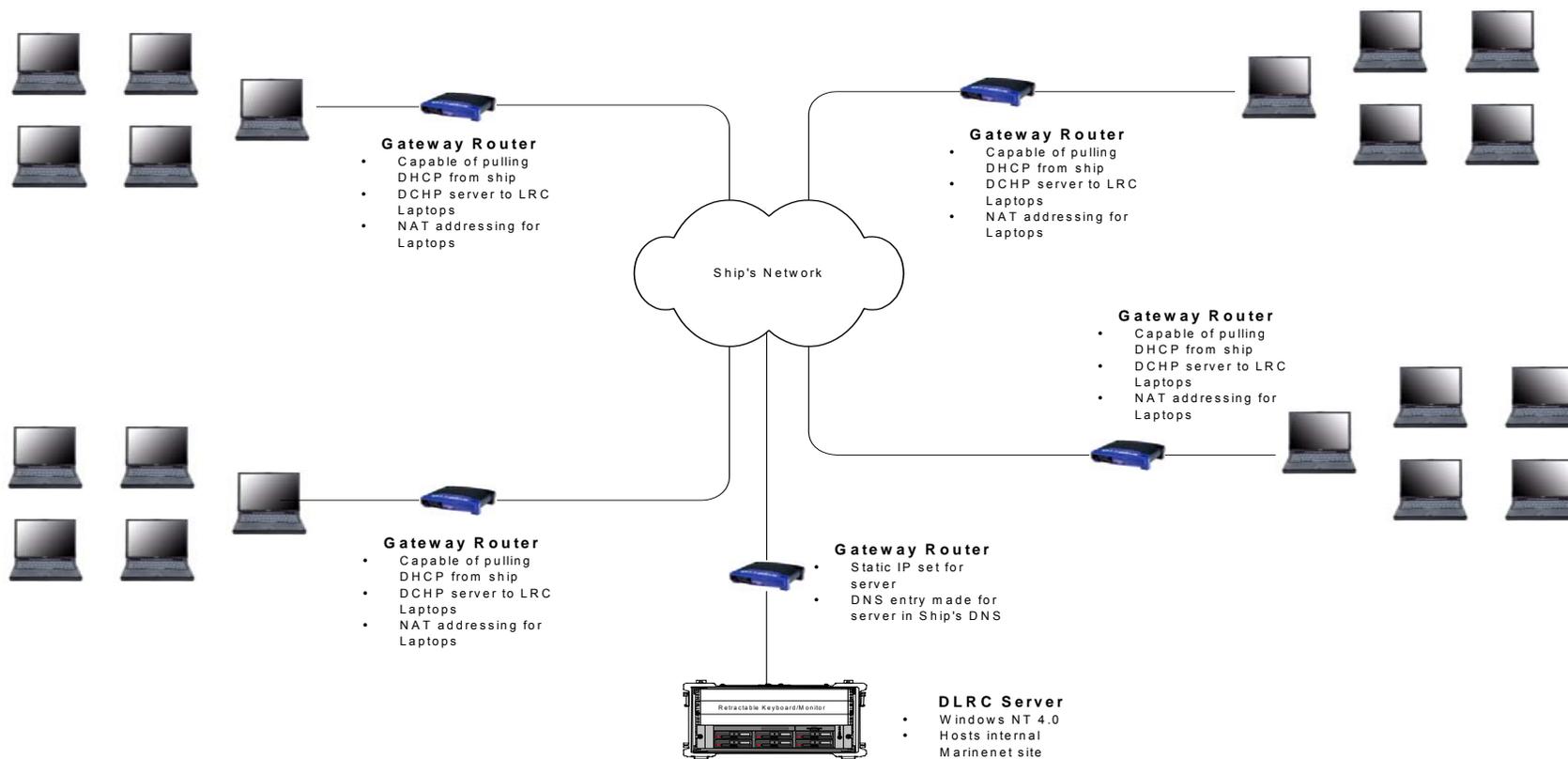


FIGURE C-8: DLRC SHIPBOARD CONFIGURATION

Deployable Learning Resource Center Landbased Configuration

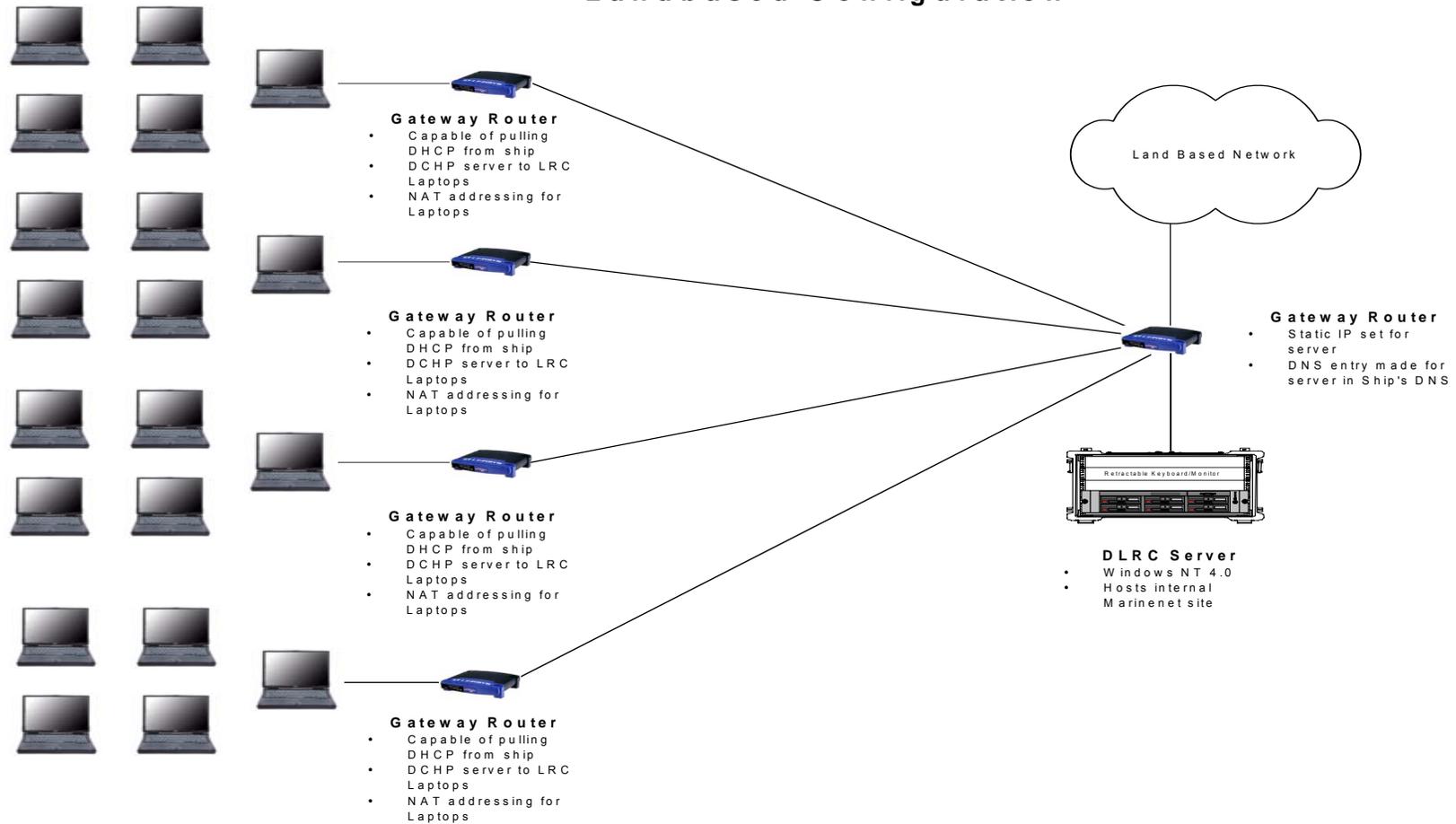


FIGURE C-9: DLRC LAND BASED CONFIGURATION



DLRC Server

The minimum hardware suite for the DLRC consists of the following capabilities:

HARDWARE	HARDWARE TYPE AND MINIMUM SPECIFICATIONS
CPU	Pentium III, 1.4 GHZ CPU
RAM	18.2GB Hot Plug Hard Disk
CD-ROM	2048 MB ECC SDRAM
3.5 Floppy Disc	Fast Ethernet PCI 10/100
	CD/RW ROM Drive
	3.5" floppy drive
	1-U Integrated Keyboard/Monitor
	Hot Plug Redundant Power Supply
	Hot Plug Redundant Fan

TABLE C-25: DLRC SERVER HARDWARE

The minimum software suite for the DLRC Server consists of:

SOFTWARE TYPE	PRODUCT NAME
Operating System	Microsoft Windows NT Server 4.0 SP6a
AntiVirus	Norton Anti-Virus Corporate Edition 7.60
Browser	Microsoft Internet Explorer 6.0
Portable Document Format (PDF) Software	Adobe Acrobat (Reader) 4.0
Web Server Software	Microsoft IIS 4.0
Database Software	SQL 7
Application Software	Oracle Client 8.1.7
Multi-media	MarineNet ThinQ LMS Version 1.0
Misc. Utilities	Cold Fusion 4.5.1 SP2
Plug-Ins	Windows Media Services 4.1 for NT
	Diskeeper 6.0
	Windows Media Player Version 6.4.09.1112 or 7.01.00.3055
	Shockwave 8.5
	Flash 5.0
	Microsoft Virtual Machine

TABLE C-26: DLRC SERVER SOFTWARE



DLRC Workstation

HARDWARE	HARDWARE TYPE / MINIMUM SPECIFICATIONS
CPU	Pentium III Processor, 1.13GHz
RAM	20GB Hard Disk Drive
	256MB SDRAM
	10/100 Network Interface Card
	Sound Card
DVD-ROM	DVD-ROM Drive
3.5 Floppy Disc	Removable 3.5" Floppy Disk Drive
	8MB Video SGRAM
	Internal MODEM-NIC Mini-PCI
	Rechargeable Battery & AC Adapter

TABLE C-27: DLRC WORKSTATION HARDWARE

The minimum software suite for the DLRC Workstations consists of:

SOFTWARE TYPE	PRODUCT NAME
Operating System	Microsoft Windows 2000 Professional, 5.00.2195 SP2
AntiVirus	Norton Anti-Virus 7.60
Browser	Microsoft Internet Explorer 6.0
Portable Document Format (PDF) Software	Adobe Acrobat (Reader) 4.0
Productivity Software	Microsoft Office XP
Plug-Ins	Windows Media Player Version 6.4.07.1112 or 7.01.00.3055
	Shockwave 8.5
	Flash 5.0
	Microsoft Virtual Machine (VM)

TABLE C-28: DLRC WORKSTATION SOFTWARE



Internet Gateway

HARDWARE	HARDWARE TYPE / MINIMUM SPECIFICATIONS
Ports	<u>LAN</u> : Eight 10/100 RJ-45 ports <u>WAN</u> : One 10BaseT Port DHCP Server Network Address Translation

TABLE C-29: INTERNET GATEWAY HARDWARE

The minimum software suite for the Internet Gateway consists of:

SOFTWARE TYPE	PRODUCT NAME
Configuration SW	Web GUI

TABLE C-30: INTERNET GATEWAY SOFTWARE