

ACQUISITION PROGRAM BASELINE AGREEMENT
FOR
DISTANCE LEARNING (DL)

With the objective of enhancing program stability and controlling cost growth, we the undersigned, approve this baseline document. Our intent is that the program be managed within the programmatic, schedule and financial constraints identified. We agree to support the required funding in the Planning, Programming and Budgeting System (PPBS).

This baseline document is a summary and does not provide detailed program requirements or content. It does, however, contain key performance, schedule and cost parameters that are the basis for being managed within the framework established by this baseline, in-phase reviews will not be held.

 16/02/00

Program Manager
Training Systems

 2/22/00

MCCDC (C46)
Head, Distance Learning Branch
Training and Education Division

 3/2/00

Commander, MARCORSSYSCOM

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DISTANCE LEARNING

System Purpose. Distance Learning, as the Marine Corps' Education and Training Information Infrastructure (ETII), will provide Marines a vastly improved opportunity to learn via the appropriate interactive media, when and where the learning is needed.

Detailed Description:

DESCRIPTION:

DISTANCE LEARNING is a Marine Corps wide, Defense Information Infrastructure (DII) compatible, distributed intra net that will enable Marines to receive training via the appropriate interactive media, when and where the learning is needed. DISTANCE LEARNING will provide a greater population of Marines access to learning resources and performance support tools. The efficiencies generated by the system will enable the Marine Corps to increase manning in the operation forces by shortening the "Street to Fleet" process through just-in-time distance learning. Additionally, DISTANCE LEARNING will help reduce the manning of the active duty training structure.

The DISTANCE LEARNING architecture consists of a number of data communication gateways, routers, and servers; interconnected with one another and their subscribers via a combination of wide area networks (WAN); metropolitan area networks (MAN), and local area networks (LAN). Learning Centers will consist of hardware and software applications that allow the Marine user to access interactive multimedia instruction (IMI), video teleconferencing (VTC), video teletraining (VTT) and external multimedia training resources via the DII. A functional structure consisting of existing networked workstations and base, station, or reserve center Learning Resource Centers (LRCs) will be linked utilizing civilian commercial communications infrastructure and, aboard Marine Corps Bases, the Marine Corps Base Telephone Infrastructure (BTI) to one or more Area Learning Centers (ALC). The BTI is currently under extensive modernization with its completion integral to the implementation of the DL architecture.

DISTANCE LEARNING is composed of the following functional components:

- (1) DLC. The DLC provides Marine Corps-wide standardization, certification and quality control for all distance learning courseware. The DLC will provide a consolidated Corps-wide on-line catalog of distance learning offerings to include a VTT broadcast listing. Finally, the DLC will manage master distance

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learning data ensuring complete and accurate information is passed to the Marine Corps Total Force System (MCTFS).

(2) FLC. The formal schools serving as FLCs will manage all electronic distance learning courses related to their functional areas of expertise. Course development and maintenance will occur at regional IMI development centers located at selected formal schools.

(3) ALC. The ALC is the primary base-level/site metropolitan area network for delivering distance learning courseware to Marines. The ALC is comprised of a Training and Education Point of Presence (TEPOP) server suite and one or more interconnected Learning Resource Centers (LRCs) and VTT Centers depending upon the size of the geographic area of the base, station or site. The ALC is linked to the Defense Information System Network (DISN), the Defense Communication Telecommunications Network (DCTN) and when required the internet. The ALC provides a centralized training and education point of presence that will efficiently store and deliver electronic courseware to any authorized user who is either internal or external to the base/site ALC.

(a) TEPOP. The TEPOP server suite provides instructional material storage, distribution, and security services. One TEPOP is required per ALC (region) and will service many "tenant" FLCs and LRCs. The storage resource will provide the storage for all electronic training material to be accessed through workstations aboard the base, as well the necessary management tools to monitor student progress, monitor network utilization, determine courseware availability, and maintain statistical information.

(b) LRC. The LRC is the primary location to access distance learning courseware for those Marines who do not have access to computer workstations. The LRC is a client-server local area network system connected to the base network backbone and accesses courseware stored on the regional TEPOP server suite. An LRC can accommodate approximately 25 simultaneous users.

(c) VTT Centers. The VTT centers will provide the capability to conduct distance learning using the latest Video Teleconferencing (VTC) technologies. The centers will have a 2-way video and 2-way audio (2V/2A) capability and accommodate 15-20 simultaneous users. The system will conform to all DoD standards and guidelines including H.320 and H.120 standards and will be capable of multi-point conferencing with all VTT centers DoD-wide.

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(4) Deployable LRC. The deployable LRC will provide operational units with the capability to access distance learning resources while deployed. This small self-contained, ruggedized client-server network will emulate the capability of the fixed site LRC. Further, it will have the capability to connect to shipboard or external TCP/IP networks. The system is composed of a server and ten client workstations. Courseware will be uploaded onto the deployable server prior to deployment and updated through a "reach back" capability to the host unit TEPOP where adequate long haul communications links exist.

(5) Automated Electronic Classrooms (AEC). The AEC will provide Service's formal schools at selected bases the capability of conducting and receiving real time classroom instruction leading to military occupational specialty assignment, advanced education instruction, Marine Corps University instruction and the instruction from colleges and universities. The system consists of seven servers and thirty workstations with peripheral (printers, scanners) equipment. The AEC is networked into existing Marine network communications.

This Marine Corps Education and Training Information Infrastructure (ETII) will provide physical connectivity and computer hardware via the Marine Corps Common Hardware Suite (MCHS), and software resources necessary to accomplish the goal of the modernization effort.

OPERATIONAL IMPACT: Distance Learning will be an extensive network, providing more Marines a greater access to formal school skill training and professional military educational information. Through the use of advanced instructional technology, Marines will be able to acquire essential knowledge quicker. The distance learning knowledge network concept also allows for more frequent remediation and self-development opportunities than traditional forms of resident instruction. Also, once fully installed Corps wide, the DISTANCE LEARNING architecture offers the potential to reduce course lengths of selected resident training and education programs resulting in a reduction of time lost by personnel in transit or training (T2).

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SECTION A: PERFORMANCE

PRODUCTION BASELINE
MS 0 Approval 4 JUN 97
OBJECTIVE / THRESHOLD

A. Program Concept. Distance Learning hardware and software will operate in a garrison and deployable mode, in a variety of climatic conditions within the range of temperatures and environmental conditions specified for the Marine Corps Common Hardware Suite (MCHS). Marines will be able to access learning resources at home base using work stations available at LRCs or at their work space. Numerous courses sponsored by Marine Corps schools will be available on-line through conventional world wide web (www) technology. The latest interactive multimedia technologies will be used to support distance learning, including computer-based training modules, collaborative computing, audiographics, and video teletraining. This will provide a full range of training activities from formal classroom to individual self-paced instruction.

B. Networking. Distance Learning requires a three tier network arrangement. The network topology will use LANs, MANs, and WANs to interconnect workstations, LRCs, ALCs, FLCs, and the DLC. LANs will provide connectivity for work stations accessing the IMI, supporting a minimum (threshold) of 10 Mbps. LANs will support a threshold of 100 Mbps for those LRC locations requiring extensive use of multimedia data streaming and VTT. LRCs will be interconnected to ALCs using MANs, with a threshold bandwidth of 3.1 Mbps between each LRC and its supporting ALC server. The ALCs will interconnect with the FLCs and the DLC using WANs. The WANs will use DISN for courseware data transfer. A threshold transfer rate of 1.5 Mbps is required to support training and education activities. DCTN or equivalent network supporting multipoint conferencing will be used for VTT.

C. Parameters

(1) Course materials will be accessible, via the internet, 24 hours per day, seven days per week, and 365 days per year. Garrison LRCs will operate a minimum of 10 hours per day, six days per week.

(2) Courses, user and development work stations, multimedia system administration tools, and network capabilities must be provisioned to accommodate technology advancements.

(3) To the maximum extent possible the Marine Corps ETII must be compatible with the other Services and Department of Defense (DoD) training technology and distance learning programs.

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(4) Hardware and networking solutions must comply with the MCHS and with Marine Corps common software (where applicable).

(5) Networking solutions and fielding plans must be developed in concert with the Marine Corps Systems Command (MARCORSYSCOM) BTI Modernization Program.

(6) All user workstations connected to base/station/reserve site networks are considered training devices and will have access the IMI.

(7) User workstations not connected to the base/station/reserve site networks may access MarineNet via modem dial-up connections.

(8) VTT systems must comply with DoD VTC standards, including: H.320, H.231, and the T.120 series.

(9) Developers must use Marine Corps approved Commercial-Off-The-Shelf (COTS) tools for authoring IMI and sourcing/capturing VTC/VTT.

(10) Users must be able to access multimedia resources using COTS work station products with industry standard multimedia playback hardware and software.

(11) Course and media developer work stations must comply with industry and recommended DoD standards for multimedia authoring platforms. A minimum of 8GB local storage, and not less than 10 Mbps, 10BaseT data communications must be supported. Minimum SVGA display hardware must be included. Network client software, networks, and workstations must support multimedia data streaming.

(12) Course and media authoring tools must support Instructional Systems Development methodologies, and provide integrated performance support for training course developers.

(13) System administration tools will support configuration management and version control of a distributed digital library of heterogeneous IMI course modules. The distributed digital library must support content in all COTS, industry standard digital media formats, with physical data storage location transparent to developer and user workstations.

(14) Administrator workstations, based on COTS products, must fully support the system administration tools described, provide a minimum local storage capacity of 4GB, not less than 10 Mbps, 10BaseT data communications, and secure access to servers on the Marine Corps ETII.

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D. Key Performance Parameters (KPP). The following KPPs were tested and proven during the Systems Integration Test at the pilot locations.

MOE	Threshold	Objective	Results
An authorized user can register for distance learning on the first attempt.	90%	98%	98%
The system provides the correct test to the student upon completion of a course.	98%	98%	100%
Data is passed to the distance learning database upon successful completion of the test.	98%	98%	100%
Data is passed to the Marine Corps Total Force System upon successful completion of a course.	98%	98%	100%

SECTION B: **SCHEDULE**

	THRESHOLD OBJECTIVE/ORIGINAL/NEW	ACTUAL
Program Initiation		1 AUG 94
Milestone 0		4 JUN 97
Milestone I/II		5 NOV 98
Milestone III	Jul 99/Sep 99/Feb 00	
Initial Operational Capability	Jul 01/Sep 01	
Full Operational Capability	Jul 05/Sep 05	

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SECTION C: COST

OBJECTIVE / THRESHOLD

Then Year \$ (FY00) in thousands

Total RDT&E	none
Total Procurement Cost **	\$36.3M / \$39.9M
Total MILCON	none

** FY00 Escalator value is 1.0652
 Threshold cost is objective plus 10%

Base Year \$ (FY99) in thousands

Total RDT&E	none
Total Procurement Cost	\$38M / \$42M
TOTAL MILCON	none

Life Cycle Costs

Total LCC (FY 99 - 14)	\$246M / \$270M
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Average Unit Procurement Cost (FY99):

VTT	\$125,000
Dev Suite	\$49,000
LRC	\$130,895
FULL TEPOP	\$261,164
LIMITED TEPOP	\$190,617
DEP LRC	\$134,000
AEC	\$195,000

FY00-05 Procurement Quantities:

<u>FY00-05</u>	<u>TOTAL</u>	<u>ACTIVE</u>	<u>RESERVE</u>
VTT	23	13	10
Dev Suite	42	42	0
LRC	62	61	1
FULL TEPOP	11	9	2
LIMITED TEPOP	26	25	1
DEP LRC	54	45	9
AEC	36	36	0

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Program Investment Strategy:

In an effort to achieve maximum cost benefits from the purchase and operation of this computer network, it is necessary to replace equipment at the end of its anticipated technology/manufacturing life. For planning purposes, five years is considered the service life of a computer or server. Marine Common Hardware Suites are routinely purchased with a three year manufacturers warranty and an additional two years of extended warranty.

The initial procurement for the DISTANCE LEARNING Program occurs over a six year period (FY00-05). Starting in FY2004 and continuing through 2014 all DL sites will receive equipment upgrades in the sequence of the initial fielding.