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From: Chief of Naval Operations

Subj: ENHANCED TERMINAL VOICE SWITCH (ETVS), NAVY TRAINING SYSTEMS PLAN (NTSP), N88-NTSP-A-50-9701/A

Ref: (a) OPNAVINST 1500.76

1. Subject NTSP is approved and forwarded per reference (a).

2. Subsequent NTSP review will examine both the effectiveness and efficiency of training outlined in this document.

3. OPNAV point of contact is AZC (AW) M. S. Dean (N889H7), DSN 664-7714, Comm: (703) 604-7714.

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APPROVED

NAVY TRAINING SYSTEM PLAN

FOR THE

ENHANCED TERMINAL

VOICE SWITCH

N88-NTSP-A-50-9701/A

APRIL 1999

ENHANCED TERMINAL VOICE SWITCH

EXECUTIVE SUMMARY

The Enhanced Terminal Voice Switch (ETVS) program is a joint procurement with the Federal Aviation Administration (FAA) for a voice switching system. The ETVS will replace the OJ-314/FSC voice switch, the AN/FSA-58 voice switch, the OA-7621/FSA-52 used for landline connectivity, and the AN/FSA-47 used for air and ground transfer control. The FAA has the acquisition lead for the ETVS contract awarded to Denro, Incorporated, on 26 July 1995. The ETVS is currently in Phase Two (Engineering and Manufacturing Development) of the Weapon System Acquisition Process.

The ETVS performs all control functions needed for Air Traffic Control (ATC) voice communications. It provides air-to-ground communications between controllers and aircraft under their control, as well as inter/intra-facility communications. Three types of communications access are available: Radio, Intercom, and Telephone Links. ETVS is mounted in a canopy, much like the existing voice switch, and will provide the required flexibility to manage voice requirements for any size Department of Defense (DoD) ATC facility.

The ETVS is a combined Non-Developmental Item (NDI) and developmental effort Pre-Planned Product Improvement (P^3I) system. ETVS underwent the equivalent of a Developmental Test and Evaluation (DT&E) and began Operational Test and Evaluation (OT&E) in April 1998. DT&E testing of the NDI system was a comprehensive First Article Test (FAT) and Production Acceptance Test (PAT) on the first article system. It was conducted at Denro, Incorporated, in January 1997.

Following FAT and PAT, the first article system was shipped to the Federal Aviation Administration Technical Center (FAATC) in April 1997, where it underwent site installation, Site Acceptance Testing (SAT), and reliability and stability testing. OT&E began at the FAATC in April 1998 and completed shakedown OT&E at Air Traffic Control Tower (ATCT) Santa Barbara in May 1998. Integrated OT&E at ATCT Colorado Springs began in May 1998 and is scheduled for completion July 1999. The FAA In-Service Decision (ISD), or Milestone III, is scheduled for July 1999. This will give the FAA and United States Department of the Navy (DoN) the required production decision for full-scale production and delivery. Each P^3I subsystem will undergo lower level DT&E to the degree necessary to ensure consistent compliance with requirements.

DoN Air Traffic Controllers will operate the ETVS. The ETVS will be maintained using the same skills necessary to maintain existing ATC communications equipment. The maintenance concept is two level, organizational to depot. Organizational level maintenance will be performed by USN Electronics Technicians (ETs) with Navy Enlisted Classification (NEC) 1570, Marine Corps Electronics Technicians with Military Occupational Specialty (MOS) 5954 working out of

the ground electronics maintenance division, and Civil Service personnel. ETVS will not require additional operator or maintainer billets. The ETVS training program consists of:

- Initial on-board training for operator and maintenance personnel provided by the installation contractor.
- A Class "G1" ETVS Hardware Maintenance Course embedded into the existing Electronics Technician (ET) Communication Technician NEC 1570 pipeline.
- Follow-on training for operators provided through ATC Facility Training Programs.

ENHANCED TERMINAL VOICE SWITCH

TABLE OF CONTENTS

ENHANCED TERMINAL VOICE SWITCH

LIST OF ACRONYMS

AC	Air Traffic Controller
ACDU	Active Duty
AFB	Air Force Base
A/G	Air-to-Ground
AOB	Average On Board
ASC	Air Surveillance Center
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
ATIR	Annual Training Input Requirement
BIOT	British Indian Ocean Territory
BS	Basic System
CD ROM	Compact Disk-Read Only Memory
CFY	Current Fiscal Year
CIN	Course Identification Number
CINCLANTFLT	Commander-In-Chief, United States Atlantic Fleet
CINCPACFLT	Commander-In-Chief, United States Pacific Fleet
CNET	Chief of Naval Education and Training
CNO	Chief of Naval Operations
CTD	Communications Traffic Data
DoD	Department of Defense
DoN	Department of the Navy
DT&E	Developmental Test and Evaluation
EMI	Electro-Magnetic Interference
ET	Electronics Technician
ETVS	Enhanced Terminal Voice Switch
FAA	Federal Aviation Administration
FAALC	Federal Aviation Administration Logistics Center
FAATC	Federal Aviation Administration Technical Center
FACSFAC	Fleet Area Control and Surveillance Facility
FAT	First Article Test
FY	Fiscal Year

ENHANCED TERMINAL VOICE SWITCH

LIST OF ACRONYMS

G/G	Ground-to-Ground
HS	Head Set or Hand Set
ILSP	Integrated Logistics Support Plan
ISD	In-Service Decision
LCD	Liquid Crystal Display
LRU	Line Replaceable Unit
LS	Loud Speaker
MCAF	Marine Corps Air Facility
MCAS	Marine Corps Air Station
MIS	Management Information System
MOJT	Managed On-the-Job Training
MOS	Military Occupational Specialty
MRU	Military Radar Unit
NA	Not Applicable
NAF	Naval Air Facility
NALF	Naval Auxiliary Landing Field
NAS	Naval Air Station
NATTC	Naval Air Technical Training Center
NAVAIRSYSCOM	Naval Air Systems Command
NAVPERSCOM	Navy Personnel Command
NDI	Non-Developmental Item
NEC	Navy Enlisted Classification
NOLF	Naval Outlying Field
NS	Naval Station
NTSP	Navy Training System Plan
NWC	Naval Weapons Center
ORD	Operational Requirements Document
OT&E	Operational Test and Evaluation
OVR	Override
P^3I	Pre-Planned Product Improvement
PAT	Production Acceptance Test

ENHANCED TERMINAL VOICE SWITCH

LIST OF ACRONYMS

PEM	Position Electronics Module
PFY	Previous Fiscal Year
PM	Preventive Maintenance
PMOS	Primary Military Occupational Specialty
PMRF	Pacific Missile Range Facility
PNEC	Primary Navy Enlisted Classification
RFT	Ready For Training
SAT	Site Acceptance Testing
SELRES	Selected Reserve
SMCR	Selected Marine Corps Reserve
SMOS	Secondary Military Occupational Specialty
SNEC	Secondary Navy Enlisted Classification
SPAWAR	Space and Naval Warfare
SRU	Shop Replaceable Unit
TAR	Training and Administration, Reserve
TBD	To Be Determined
TD	Training Device
TED	Touch Entry Device
TTE	Technical Training Equipment
UIC	Unit Identification Code

ENHANCED TERMINAL VOICE SWITCH

PREFACE

This Approved Navy Training System Plan (NTSP) is an update to the Proposed NTSP dated December 1998. This document has been updated to reflect the revised installation schedule, current manpower and training, and operator and organizational maintenance training. It also includes updated technical and operational evaluation schedules, functional descriptions of planned ETVS upgrades, initial training dates, and qualitative manpower requirements.

PART I - TECHNICAL PROGRAM DATA

A. TITLE-NOMENCLATURE-PROGRAM

1. Nomenclature-Title-Acronym. Enhanced Terminal Voice Switch (ETVS)

2. Program Element. Not assigned

B. SECURITY CLASSIFICATION

1. System Characteristics ..... Unclassified
2. Capabilities ..... Unclassified
3. Functions..... Unclassified

C. NAVY TRAINING SYSTEM PLAN PRINCIPALS

OPNAV Principal Official (OPO) Program Sponsor..... CNO (N885F)

OPO Resource Sponsor ..... CNO (N885F)

Developing Agency..... NAVAIRSYSCOM (PMA213)

Training Agency ..... CINCLANTFLT
CINCPACFLT
CNET

Training Support Agency..... NAVAIRSYSCOM (PMA205)

Manpower and Personnel Mission Sponsor ..... CNO (N12)
NAVPERSCOM (NPC-40, NPC-404)

Director of Naval Training ..... CNO (N7)

Marine Corps Combat Development Command
Manpower Management .....TFS Division

D. SYSTEM DESCRIPTION

1. Operational Uses. The Enhanced Terminal Voice Switch (ETVS) provides reliable connectivity of Air-to-Ground (A/G) and Ground-to-Ground (G/G) communications for Air Traffic Control (ATC) personnel in the following terminal airspace environments:

a. Air Traffic Control Tower Cab. The Air Traffic Control Tower (ATCT) Cab is used for the control of air traffic landing at or departing from the airport (including ground traffic).

b. Radar Air Traffic Control Facility. The Radar Air Traffic Control Facility (RATCF) is used for radar control of aircraft on approach, departure, and en route within radar range of the airport. Frequently, these facilities are located immediately below an ATCT Cab and are usually in closed rooms to facilitate visibility of radar displays.

c. Fleet Area Control and Surveillance Facility. Fleet Area Control and Surveillance Facilities (FACSFACs) are operated by USN ATC personnel to provide control and management of offshore and inland operating areas designated as special use airspace and dedicated to military use. They accomplish this mission through coordination, scheduling, and control of surface, subsurface, and airborne platforms operating within and transiting to and from these areas.

d. Military Radar Unit. Military Radar Units (MRUs) are operated by the USN to provide flight following and bomb scoring service to military aircraft operating in special use airspace.

2. Foreign Military Sales. There are no Foreign Military Sales planned for the ETVS. ETVS will be installed in government owned air traffic control facilities operated by the FAA, USN, United States Army (USA), and United States Air Force (USAF).

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST. The ETVS is a combined Non-Developmental Item (NDI) and developmental effort Pre-Planned Product Improvement (P^3I) system. ETVS underwent the equivalent of a Developmental Test and Evaluation (DT&E) and began Operational Test and Evaluation (OT&E) in April 1998. DT&E testing of the NDI system was a comprehensive First Article Test (FAT) and Production Acceptance Test (PAT) on the first article system conducted at Denro, Incorporated, in January 1997.

Following FAT and PAT, the first article system was shipped to the Federal Aviation Administration Technical Center (FAATC) (World Wide Web: http://www.tc.faa.gov/) in April 1997 where it underwent site installation, Site Acceptance Testing (SAT) and reliability and stability testing. During testing, several software and hardware problems were discovered that created the need for incorporation of Engineering Change Proposals prior to entering into full OT&E. OT&E began at the FAATC in April 1998, and completed shakedown OT&E at ATCT Santa Barbara in May 1998. Integrated OT&E at ATCT Colorado Springs began in May 1998 and is scheduled for completion July 1999. The FAA In-Service Decision (ISD), or Milestone III, is scheduled for July 1999. This will give the FAA and DoN the required production decision for full-scale production and delivery. Each P^3I subsystem will undergo lower level DT&E to the degree necessary to ensure consistent compliance with requirements.

F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED. The ETVS will replace the OJ-314/FSC and AN/FSA-58 for shore based activities. These existing systems

are essentially electronic key systems and do not contain any processor-managed components or software. The ETVS will provide modular operator positions for USN land based installations. The communications functions provided include A/G radio, intercom, and telephone or landline communications. The functions of two ancillary systems, the OA-7621/FSA-52 and the AN/FSA-47, have been incorporated into the ETVS and, therefore, will be eliminated.

Operational features include direct and indirect access intercom and interphone communications, with or without override (the ability to connect to and communicate with a position, regardless of whether that position has an A/G or G/G call already in progress). The ETVS will also interface to analog G/G carriers and analog A/G radio equipment. Digital G/G interfaces are planned for the near future and will be implemented as P^3I. Digital G/G interfaces will be retrofitted to all ETVS switches already fielded when they are available.

Supervisory features of the ETVS include the capability for the supervisor position to record from various operating positions onto ETVS cassette tape recorders, located at the supervisor position, for controller training. These recorders are independent of the legal recorders. Additional supervisory features include the display of maintenance alarms and an audible alarm for unmonitored frequencies. A Management Information System (MIS) will provide supervisors with routine administrative and personnel data (position utilization, training, and supervision). Communications Traffic Data (CTD) and system event collection and reporting will provide a summary of communications utilization, and more detailed position activity information, to both supervisory and maintenance personnel. Both the MIS and the CTD are P^3I items and will be incorporated into a final baseline product.

The ETVS will provide software controlled functional reconfiguration capabilities to air traffic supervisors for changing interphone, intercom, and radio frequency connectivity within a facility. One or more designated interactive terminals will provide computer-based reconfiguration for single positions or all ETVS positions.

Maintenance personnel can accomplish physical reconfiguration by the addition of single positions, or single external interfaces to the system, allowing expansion of the base ETVS system without the loss of communication capabilities. The ETVS equipment includes automated diagnostic equipment that provides real-time monitoring of critical system components. Audible and visual alarms located at all system terminals, a maintenance position, and at designated operational positions will alert personnel of failures. A diagnostic display terminal will identify the defective component(s) to the Line Replaceable Unit (LRU) level.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. The ETVS is an integrated voice switching system that provides ATC personnel with access to both A/G and G/G connectivity to support the ATC function. The ETVS will permit simultaneous operation of all operational positions to either place calls, receive calls, or both. ETVS will consist of position equipment located at each operational position, which will control the communication switching equipment located in nearby equipment rooms. The system will be modular in design to allow the same Basic System (BS) to be used in facilities ranging in size from fewer than eight positions to as many as 80. There are

four BS configurations that support varying ATC requirements. Maximum configurations for the four BSs are shown in the following table:

SYSTEM CLASS	OPERATOR POSITIONS	SUPERVISORY POSITIONS	A/G INTERFACES	G/G INTERFACES
BS-1	9	1	12	12
BS-2	16	2	20	20
BS-3	40	4	50	50
BS-4	80	4	100	100

2. Physical Description

a. Operator Position. The ETVS Touch Entry Device (TED) is a backlit active matrix color Liquid Crystal Display (LCD). A high-bright, electro-magnetic interference (EMI) hardened version will be used in control towers. The TED is software-controlled to display position call activity and selection. Operators are provided with a method for selecting intercom, interphone, radios, and special functions. Pagination, colors, flashing-winking-steady indications, and other controls provide the operator with a status of ongoing communications. ETVS TED sizes are shown in the following table.

POSITION COMPONENT SIZES (IN INCHES)			
TOUCH ENTRY DEVICE (TED) POSITION	**HEIGHT**	**WIDTH**	**DEPTH**
LCD Terminal Radar Approach Control	10.10	10.00	2.28
LCD Position (Tower High-Bright/EMI)	9.50	11.25	3.00
TED PEM	8.72	4.32	16.80
TED Control Module	5.72	4.57	2.45
Jackbox Module	1.00	7.00	4.78
Speaker Module	5.72	4.57	2.42

b. Equipment Room. The equipment room contains multiple components housed in equipment racks. Components include card cages; fuse panels, power, operator, and radio distribution panels; power supplies; reserve power; a maintenance position; and duplex convenience outlets. The equipment room consists of cabinet and frame construction. The equipment room cabinets and frames will not exceed 72 inches in height, 36 inches in width, and 30 inches in depth. The loading conditions of each fully equipped cabinet and frame will not

exceed an average weight distribution greater than 125 pounds per square foot. Maximum floor space for the four BSs is as follows:

SYSTEM CLASS	MAXIMUM FLOOR SPACE (INCHES)	NUMBER OF CABINET FRAMES	REQUIRED FLOOR SPACE (INCHES)		TOTAL REQUIRED FLOOR SPACE (SQUARE FEET)
			WIDTH	DEPTH	
BS-1	72 x 48	2	42	78.75	23.0
BS-2	96 x 96	3	63	78.75	34.4
BS-3	96 x 144	4	84	78.75	45.9
BS-4	144 x 156	7	147	78.75	80.4

c. Weight Limits. Removable components will not exceed weight limits specified below so as to permit removal and replacement by one person.

- For components up to three feet from the floor, 40 pounds.
- For components between three feet and five feet from the floor, 33 pounds.
- No equipment, other than small parts or miscellaneous hardware, above five feet from the floor.

3. New Development Introduction. Introduction of new developments will be accomplished through new production to meet procurement scheduling as outlined in paragraph K.1.

4. Significant Interfaces. The ETVS provides interfaces for up to 100 A/G frequencies (one frequency equals one main and standby pair). Each frequency interface will support one of the following, based on airport requirements.

- Receive only with single (main) receiver.
- Receive only with main and standby receivers (requiring main and standby transfer capability).
- Transmit and receive with single main transmitter and receiver.
- Transmit and receive with main and standby transmitters and receivers, requiring main and standby transfer capabilities.

In addition to the above, the ETVS will accommodate paired frequencies in which Ultra High Frequency and Very High Frequency equipment are operated from the same control circuits and audio lines. The ETVS provides interfaces for up to 100 individual G/G circuits, trunks, or channels. As designated by the USN requirement, each interface shall support:

- One of the two-wire; or four-wire analog circuits.
- One Digital Signal Zero level digital voice channel on a terminal carrier.
- One Integrated Services Digital Network bearer channel with access to the "D" channel of a Primary Rate Interface carrier.

5. New Features, Configurations, or Material. New features that control Head Set and Hand Set (HS) and Loud Speaker (LS) routing of A/G communications will adhere to the following order of precedence:

- Unattended position transfer to LS (highest precedence)
- Master LS transfer (if assigned)
- Group A/G LS during G/G call (if assigned)
- Automatic A/G transfer to LS during G/G call (if enabled)
- Per-frequency HS and LS routing

New features that control HS and LS routing of non-override (OVR) G/G communications will adhere to the following order of precedence:

- Unattended position transfer to LS (highest precedence)
- Master LS transfer (if assigned)
- G/G LS transfer

New features that control HS and LS routing of OVR G/G communications will adhere to the following order of precedence:

- Unattended position transfer to LS (highest precedence)
- Master LS transfer (if assigned)
- OVR LS transfer (if assigned)

ETVS segregates any on-line functions performed at the maintenance and supervisory positions from each other and from those performed at the operational positions. These positions require password entry to gain access to the supervisory and maintenance functions.

ETVS provides a maintenance logging function to allow users of the maintenance position and remote maintenance terminals to access information on the recent maintenance history of the ETVS.

ETVS automatically detects and localizes faults to the Line Replaceable Unit (LRU) level and reports results to the maintenance position, supervisory position, any remote maintenance terminals, and the maintenance logging function.

ETVS provides additional audible and visible alarms to signal the detection of system faults or system overheat conditions that could lead to equipment damage or fire. Alarms will be installed within 500 cable feet of the central equipment.

ETVS provides a Management Information System (MIS) at the supervisory workstation, protected by password, allowing supervisors to enter and update the following data.

- Full name of each operator
- Identifying code (e.g., digit sequence) for each operator
- Position(s) at which each operator is authorized to work without direct supervision (by virtue of having been trained and certified)
- Name of function (e.g., "ground control") fulfilled by each position (stored by position identification)
- Identification of function or activity represented by locally defined MIS log on codes

At the supervisory workstation, ETVS provides a MIS data reporting facility that can write reports both on screen and in hard copy upon request. Each report will use operator names and position names (extracted from the MIS database) along with their identification codes. Each report covers the range of dates entered by the supervisor and identifies the following as selected by the supervisor.

- Time that each position was in use
- Hours spent by each operator in each position
- Hours spent by each operator in each function (normal shift, Managed On-the-Job-Training (MOJT), over-the-shoulder, local functions, etc.)

H. CONCEPTS

1. Operational Concept. The ETVS will support continuous round-the-clock demand or 100 percent of the duty cycle for ATC tower and radar rooms.

2. Maintenance Concept. The maintenance concept for ETVS is a two-level concept of organizational and depot.

a. Organizational. The ETVS will be maintained using the same skills necessary to maintain existing ATC communications equipment. Organizational level maintenance will be performed by USN Electronics Technicians (ETs) with Navy Enlisted Classification (NEC) 1570, Marine Corps Electronics Technicians with Military Occupational Specialty (MOS) 5954 working out of the ground electronics maintenance division, and Civil Service personnel.

(1) Preventive Maintenance. Preventive Maintenance (PM) includes adjustments, cleaning, lubrication, and periodic inspections including corrosion inspections and preservation to be carried out on a periodic basis. The design of the ETVS is such that the minimum interval for PM will not be less than quarterly and should not require service interruption on more than one position, or external interface, at a time. Excluding administrative and logistical time (time spent on activities such as dispatch time, travel time, paperwork, etc.), PM of the ETVS should not require more than two hours per inspection, regardless of system size.

(2) Corrective Maintenance. Corrective Maintenance (CM) includes on-equipment and off-equipment maintenance actions. On-equipment maintenance consists of fault isolation and removal and replacement at the LRU level to restore prime mission equipment in an

operational environment. Off-equipment maintenance includes fault isolation and removal and replacement at the Shop Replaceable Unit (SRU) level. Minor modifications; wire, cable, and/or connector repair; removal and replacement of minor bits and pieces of hardware such as fuse holders, lamp holders, batteries, and other expendable line items are performed. Troubleshooting at this level (to the defective LRU) is accomplished using fault diagnostics and Built-In Test (BIT) equipment supplied with or provided for the system. The ETVS is designed to have a mean time to repair of not more than 30 minutes for any single maintenance action, including time required for fault localizing, repair, test, and restoration to service.

(3) Software Maintenance. The FAA National Airspace System and its subsystems are highly dependent on the sustained operation of their automation programs. To ensure sustainability, a coordinated centrally directed approach to maintenance of operational, support, and diagnostic programs is necessary. The FAA National Airspace System software support concept requires centralized control and configuration management. The FAA Logistics Center (FAALC) will manage and ensure system integration, interoperability, software configuration control, verification, and testing. The FAALC will provide the technical skills necessary to analyze and resolve system-wide problems. Software support will also include the correction and resolution of site unique problems, and the development, control, and maintenance of modifications. The FAALC will also maintain the baseline system, prepare releases of software updates, distribute them to the field, and respond to trouble reports. The global database, which includes each site's specific adaptation parameters, will be maintained at the FAALC.

b. Intermediate. Not Applicable (NA)

c. Depot. Depot maintenance will be performed by the FAA and consist of repairing failed LRUs and SRUs down to the piece part level at the contractor facility. Depot maintenance will also include emergency maintenance, second level engineering support, and other logistics support not available at the organizational level.

d. Interim Maintenance. Interim maintenance is not required for the ETVS.

e. Life-Cycle Maintenance Plan. The DoN is developing a Life-Cycle Maintenance Plan for the ETVS. The design of the system is such that, when properly maintained, ETVS supports continuous, round-the-clock functional and performance requirements throughout a service life of at least ten years.

3. Manning Concept. The ETVS will be operated by existing Air Traffic Controllers (ACs) and maintenance will be performed by USN Electronics Technicians (ETs) with NEC 1570, Marine Corps Electronics Technicians with MOS 5954 working out of the ground electronics maintenance division, and Civil Service personnel. ETVS will not require additional operator or maintainer billets.

4. Training Concept. The ETVS training program consists of:

- Initial on-board training for operator and maintenance personnel provided by the installation contractor.

- Class “G1” ETVS Hardware Maintenance Course embedded into the existing Electronics Technician (ET) Communication Technician Navy Enlisted Classification 1570 pipeline.
- Follow-on training for operators provided through ATC Facility Training Programs.

Factory ETVS Orientation acceptance training was completed in September 1996. Factory ETVS Operation/System Administration and ETVS Hardware Maintenance acceptance training was completed in May 1997 and July 1997, respectively. OT&E training was held in April 1997 at Denro, Inc., for four DoD personnel (two operators and two maintenance technicians).

A Computer-Based Instruction (CBI) course developed by the contractor will be presented on Compact Disk (CD)-Read Only Memory (ROM) media, which will include interactive instruction and testing of ETVS hardware, software, and functional characteristics associated with operator or system administrator positions on the computer display. Instructions, which describe CBI courseware and its use, will be furnished with the software. The software will be provided without restrictions and will be reproducible by the government.

The CBI courseware will operate on a 486/33 computer equipped with 16 megabytes (MB) Random Access Memory (RAM), CD-ROM player, and sound card. The CBI courseware will be divided into two distinct modules: Operation module and System Administration module.

The Operation courseware will permit the student, via computer keyboard manipulation or mouse activation as appropriate, to selectively display on the computer monitor TED position equipment, and to operate the controls displayed on the screen. The software will respond to student control adjustments by simulating expected equipment responses, e.g., microphone activation, audible responses, visual displays, etc.

The System Administration courseware will build on the training provided in the Operation module and will incorporate generic Supervisor Control Terminal (SCT) software and map sets to replicate typical system responses and visual displays the student would normally observe at a supervisor’s console. Configuration changes executed by the student in the capacity of system administrator will result in expected changes to the designated operator position(s). The System Administration course will emphasize the mechanics of progressing through the initial configuration events and understanding the flow of data input needed to get on-line.

a. Initial Training. The following three contractor-developed courses were used to provide initial training for acceptance inspection and for development of the ETVS Hardware Maintenance course C-103-2017.

**Title.....……..... **	**ETVS Orientation Course**
Description	Describes installation and testing procedures. Identifies the responsibility of all personnel involved in the installation and testing efforts. Describes the functions of all assemblies and subassemblies.

Location	Denro, Inc., 9318 Gaither Road, Gaithersburg, Maryland
Length	3 days
RFT date	March 1996 (completed)
TTE/TD	ETVS was used as TTE. TD was NA.
Prerequisites	AC or ET with NEC 1570; MOS 7251 or 5954

Title…….	**ETVS Operation / System Administration**
Description	Operate the system positions for inter- and intra-facility, A/G, and G/G communication. Configure, perform system power-up, power-down, start-over, and recovery of operational modes. Identify error messages/indications and take the appropriate action to correct.
Location	FAATC (William J. Hughes Technical Center), Atlantic City, New Jersey
Length	2 days
RFT date	May 1997 (completed)
TTE/TD	ETVS was used as TTE. TD was NA.
Prerequisite	ETVS Orientation Course

Title	**ETVS Hardware Maintenance**
Description	Install, operate, and maintain the equipment per the technical instruction book. Identify and follow instruction book procedures applicable to all periodic maintenance requirements. Use functional and flow diagrams and test equipment, as required, to localize malfunctions to the appropriate LRU. Remove and replace faulty LRUs. Perform required adjustments to the equipment to restore the equipment performance to specific parameters.
Location	Denro, Inc., 9318 Gaither Road, Gaithersburg, Maryland
Length	15 days
RFT date	July 1997 (completed)
TTE/TD	ETVS was used as TTE. TD was NA.
Prerequisite	ETVS Operation/System Administration

The above contractor-developed maintenance course (hardcopy and software) was provided by Denro, Inc. to Naval Air Technical Training Center (NATTC) Pensacola (World Wide Web: http://www.cnet.navy.mil/cnet/nattc/) instructors in May 1998. NATTC personnel will provide training of maintenance personnel at NATTC Pensacola. This course was also provided to 12 DoD personnel at FAATC in March 1999.

b. Follow-on Training. The following ETVS maintenance training will be embedded into the existing Air Traffic Control Communications Technician NEC 1570 pipeline, C-103-2115.

Title	**ETVS Hardware Maintenance**
CIN	C-103-2017
Description	Install, operate, and maintain the equipment per the technical instruction book. Identify and follow instruction book procedures applicable to all periodic maintenance requirements. Use functional and flow diagrams and test equipment, as required, to localize malfunctions to the appropriate LRU. Remove and replace faulty LRUs. Perform required adjustments to the equipment to restore the equipment performance to specific parameters.
Location	NATTC Pensacola, Florida
Length	15 days
RFT date	First quarter FY00
Skill identifier..	ET
TTE/TD	ETVS is used as TTE. TD is NA.
Prerequisite	One or more of the following: ° A-100-0140, Electronics Technician Strand A School ° C-103-2090, Marine Air Traffic Control (MATC) Communications Technician Pipeline ° Other service equivalent course(s)

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
AC MOS 7251	C-222-2010, Air Traffic Controller

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
ET 1570	A-100-0138, Electronics Technician Core A School A-100-0140, Electronics Technician Strand A School C-103-2115, Ground to Air Communications Technician Pipeline
MOS 5954	C-103-2090, Marine Air Traffic Control Communications Technician Pipeline
Civil Service	Any of the above courses/pipelines or other service equivalent course(s)

d. Training Pipeline. The ETVS Hardware Maintenance course will be embedded into the existing ET Communications Technician NEC 1570 pipeline, C-103-2115, Ground To Air Communications Technician Pipeline. USMC and Civil Service personnel will attend only the ETVS Hardware Maintenance course vice the complete communications pipeline.

I. ON-BOARD (IN-SERVICE) TRAINING

1. Proficiency or Other Training Organic to the New Development. The following in-service training and CBI courses will be provided to each ATC facility for incorporation in the ATC Facility Training Program.

Title ..... ETVS Operation / System Administration

Description ..... Operate the system positions for inter- and intra-facility, A/G, and G/G communication. Configure, perform system power-up, power-down, start-over, and recovery of operational modes. Identify error messages and indications and take the appropriate action to correct.

Length ..... 2 days

Title ..... ETVS Operation / System Administration Computer Based Instruction

Description ..... Operate the system positions for inter- and intra-facility, A/G, and G/G communication. Configure, perform system power-up, power-down, start-over, and recovery of operational modes. Identify error messages and indications and take the appropriate action to correct.

Length ..... 2 days

a. Maintenance Training Improvement Program. NA

b. Aviation Maintenance In-Service Training. NA

2. Personnel Qualification Standards. NA

3. Other On-Board or In-service Training Packages. NA

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Number

CONTRACT NUMBER	MANUFACTURER	ADDRESS
DTFA01-95-C-00027	Denro, Incorporated http://www.denro.com	9318 Gaither Road, Gaithersburg, MD

2. Program Documentation. Technical documents include the Integrated Logistics Support Plan (ILSP), dated July 1994, and Operational Test and Evaluation Test Plan approved January 1997.

3. Technical Data Plan. A Technical Data Package (Revision one) dated 6 June 1996 was approved by the FAA. A Technical Instruction book to support installation, operation, and maintenance of the ETVS hardware, software, and firmware will be provided by Denro, Inc., upon installation of the ETVS.

4. Test Sets, Tools, and Test Equipment. There are no unique requirements for special test sets, special tools, or special test equipment. Software support for operational and training activities will be provided by the FAALC and will include correction and resolution of site unique problems and development, control, and maintenance of modifications.

5. Repair Parts. The only spare repair parts identified at this time are card extenders. Minor bits and pieces of hardware (i.e., fuse holders, lamp holders, and batteries) will also be required. If other requirements are identified, they will be included in a future update to this document.

6. Human Systems Integration. A Human Systems Integration Plan will not be developed for the ETVS system.

K. SCHEDULES

1. Installation Schedule. The following ETVS activity installation schedule does not necessarily reflect activities where maintenance personnel are assigned due to the uniqueness of

ATC facilities. Many air stations include operational sites that do not have permanently assigned maintenance personnel. Refer to Part II for billet information and location.

ETVS INSTALLATION SCHEDULE			
ACTIVITY	**STATE**	**SIZE**	**DELIVER AND INSTALL**
Air Surveillance Center (ASC) China Lake	California	BS-3	Jun 2001
FACSFAC Hawaii (Pearl Harbor)	Hawaii	BS-3	Oct 2001
FACSFAC Jacksonville	Florida	BS-4	Sep 2000
FACSFAC San Diego	California	BS-3	Feb 2000
FACSFAC Vacapes	Virginia	BS-4	May 2001
MCAF Quantico	Virginia	BS-2	Feb 2002
MCAS Camp Pendleton	California	BS-3	Sep 1999
MCAS Futenma	Japan	BS-3	Oct 2004
MCAS Iwakuni	Japan	BS-3	Mar 2003
MCAS Kaneohe Bay	Hawaii	BS-2	Sep 2001
MCAS Miramar	California	BS-3	Aug 2004
MCAS New River	North Carolina	BS-3	Jun 2002
MCAS Yuma	Arizona	BS-3	Mar 2003
NAF El Centro	California	BS-1	Feb 2000
NALF Orange Grove (Kingsville)	Texas	BS-2	Jul 2002
NALF San Clemente (North Island)	California	BS-2	Feb 2003
NALF San Nicholas Island (Point Mugu)	California	BS-1	Apr 2001
NAS Brunswick	Maine	BS-3	May 2002
NAS Corpus Christi	Texas	BS-3	Aug 2003
NAS Jacksonville	Florida	BS-3	Jun 1999
NAS Keflavik	Iceland	BS-3	Mar 2002
NAS Key West	Florida	BS-3	Feb 2001
NAS Lemoore	California	BS-3	Jul 2003
NAS New Orleans	Louisiana	BS-2	Dec 2001
NAS Norfolk	Virginia	BS-3	Apr 2000
NAS Norfolk Helicopter Tower	Virginia	BS-1	Jun 2000

ETVS INSTALLATION SCHEDULE			
ACTIVITY	**STATE**	**SIZE**	**DELIVER AND INSTALL**
NAS North Island	California	BS-3	Oct 2000
NAS Oceana	Virginia	BS-3	Jul 2001
NAS Whiting Field (North)	Florida	BS-1	Oct 2002
NAS Whiting Field (South)	Florida	BS-2	Aug 2002
NAS Willow Grove	Pennsylvania	BS-2	Mar 2001
NATTC Pensacola (2 units)	Florida	2/BS-1	Feb 1999
NOLF Cabaniss (Corpus Christi)	Texas	BS-1	Nov 2003
NOLF Choctaw Field	Florida	BS-1	Apr 2004
NOLF Imperial Beach (North Island)	California	BS-1	Nov 2000
NOLF Joe Williams Field (Meridian)	Mississippi	BS-1	Mar 2004
NOLF Waldron (Corpus Christi)	Texas	BS-1	Sep 2003
NOLF Webster Field (Patuxent River)	Maryland	BS-1	Sep 2004
NOLF Whitehouse (Jacksonville)	Florida	BS-1	Nov 2000
NS Guantanamo Bay	Cuba	BS-1	Feb 2004
NS Mayport	Florida	BS-2	Mar 2000
NS Roosevelt Roads	Puerto Rico	BS-3	Jan 2002
NS Rota	Spain	BS-2	Dec 2003
NSF Diego Garcia	BIOT	BS-1	Jul 2000
PMRF Barking Sands	Hawaii	BS-1	Jun 2004
SPAWAR Systems Center Charleston	South Carolina	BS-2	Jan 1999
Transportable ATC Facility	South Carolina	BS-3	Jan 2000
Transportable ATC Facility	South Carolina	BS-2	May 2004
Transportable ATC Facility	South Carolina	BS-2	Aug 2000

2. Ready For Operational Use Schedule. All ETVS systems are considered Ready For Operational Use (RFOU) upon installation.

3. Time Required to Install at Operational Sites. The ETVS will require up to three weeks for installation.

4. Foreign Military Sales and Other Source Delivery Schedule. NA

5. Training Device and Technical Training Equipment Delivery Schedule. TTE is listed below for "C" School application. TD is NA.

TE	ACTIVITY	DELIVERY DATE	TIME TO INSTALL
ETVS (two units)	NATTC Pensacola, Florida	April 1999	Three weeks

L. GOVERNMENT FURNISHED EQUIPMENT AND CONTRACTOR FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Operational Test and Evaluation Test Plan	NA	ACT-340	Approved Jan 97
ETVS ILSP	94-700-001	ALM-700	Approved Jul 94
DoD Air Traffic Control and Landing System Interoperability with the National Airspace System (DAIN) Mission Needs Statement	JROCM-019-89	HQ AFFSA	Approved May 89
The National Environmental Policy Act	Pubic Law 91-190, 42 U.S.C. 4321 4347, 1 Jan 70 as amended by Public Laws 94-52 and 94-83	NA	Approved 1979
DoD Air Traffic Control and Landing Systems (ATCALS) in the National Airspace System	Operational Requirements Document (ORD) II	HQ AFFSA	Approved Apr 87

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the ETVS and, therefore, are not included in Part II of this NTSP.

II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule

II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities

II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities

PART II - BILLET AND PERSONNEL REQUIREMENTS

II.A. BILLET REQUIREMENTS

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: NAVAIRSYSCOM DATE: 14 October 1998

ACTIVITY, UIC		PFY	CFY99	FY00	FY01	FY02	FY03	FY04	FY05
OPERATIONAL ACTIVITY									
ASC China Lake	47609	0	0	0	1	0	0	0	0
FACSFAC Hawaii	43583	0	0	0	1	0	0	0	0
FACSFAC Jacksonville	53895	0	1	0	0	0	0	0	0
FACSFAC San Diego	09528	0	0	1	0	0	0	0	0
FACSFAC Vacapes	42239	0	0	0	1	0	0	0	0
MCAF Quantico	00262	0	0	0	0	1	0	0	0
MCAS Camp Pendleton	67604	0	1	0	0	0	0	0	0
MCAS Futenma	63026	0	0	0	0	0	0	1	0
MCAS Iwakuni	62613	0	0	0	0	0	1	0	0
MCAS Kaneohe Bay	00318	0	0	0	1	0	0	0	0
MCAS Miramar	60259	0	0	0	0	0	0	1	0
MCAS New River	62573	0	0	0	0	1	0	0	0
MCAS Yuma	62974	0	0	0	0	0	1	0	0
NAF El Centro	60042	0	0	1	0	0	0	0	0
NALF Orange Grove	30776	0	0	0	0	1	0	0	0
NALF San Clemente Island	31466	0	0	0	0	0	1	0	0
NALF San Nicholas Island	30614	0	0	0	1	0	0	0	0
NAS Brunswick	60087	0	0	0	0	1	0	0	0
NAS Corpus Christi	42094	0	0	0	0	0	1	0	0
NAS Jacksonville	00207	0	0	1	0	0	0	0	0
NAS Keflavik	63032	0	0	0	0	1	0	0	0
NAS Key West	00213	0	0	0	1	0	0	0	0
NAS Lemoore	63042	0	0	0	0	0	1	0	0
NAS New Orleans	00206	0	0	0	1	0	0	0	0
NAS Norfolk	00188	0	0	1	0	0	0	0	0
NAS Norfolk (Helo Tower)	00188	0	0	1	0	0	0	0	0
NAS North Island	00246	0	1	0	0	0	0	0	0
NAS Oceana	60191	0	0	0	1	0	0	0	0
NAS Whiting Field North	60508	0	0	0	0	1	0	0	0
NAS Whiting Field South	60508	0	0	0	0	1	0	0	0
NAS Willow Grove	00158	0	0	0	1	1	0	0	0
NATTC Pensacola (2 Units)	35348	0	1	0	0	0	0	0	0
NOLF Cabaniss	00216	0	0	0	0	0	1	0	0
NOLF Choctaw	00204	0	0	0	0	0	0	1	0
NOLF Imperial Beach	76096	0	1	0	0	0	0	0	0
NOLF Joe Williams Field	42105	0	0	0	0	0	0	1	0
NOLF Waldron	42095	0	0	0	0	0	1	0	0
NOLF Webster Field	47608	0	0	0	0	0	0	1	0
NOLF Whitehouse	60200	0	0	1	0	0	0	0	0
NS Guantanamo Bay	60514	0	0	0	0	0	0	1	0
NS Mayport	60201	0	0	1	0	0	0	0	0
NS Roosevelt Roads	00389	0	0	0	0	1	0	0	0
NS Rota	62863	0	0	0	0	0	1	0	0
NSF Diego Garcia	68539	0	0	1	0	0	0	0	0

ACTIVITY, UIC		PFY	CFY99	FY00	FY01	FY02	FY03	FY04	FY05
PMRF Barking Sands	0534A	0	0	0	0	0	0	1	0

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

ACTIVITY, UIC		PFY	CFY99	FY00	FY01	FY02	FY03	FY04	FY05
OPERATIONAL ACTIVITY									
SPAWAR Systems Center Charleston	48553	0	1	0	0	0	0	0	0
Transportable ATC Facility	48553	0	0	1	0	0	0	0	0
Transportable ATC Facility	48553	0	0	1	0	0	0	0	0
Transportable ATC Facility	48553	0	0	0	0	0	0	1	0
TOTALS:		0	6	10	9	9	8	8	0

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT		BILLETS OFF	BILLETS ENL	DESIG RATING	PNEC/SNEC PMOS/SMOS
ASC China Lake	47609				
ACDU		0	1	ET	1570
		0	2	ET	1570 9527
ACTIVITY TOTALS:		0	3		
FACSFAC Hawaii	43583				
ACDU		0	2	ET	1570 9527
ACTIVITY TOTALS:		0	2		
FACSFAC Jacksonville	53895				
Note: Civilian technicians perform ETVS maintenance.					
FACSFAC San Diego	09528				
ACDU		0	5	ET	1570 9527
ACTIVITY TOTALS:		0	5		
FACSFAC Vacapes	42239				
Note: Civilian technicians perform ETVS maintenance.					
MCAF Quantico	00262				
USMC		0	5		5954
ACTIVITY TOTALS:		0	5		
MCAS Camp Pendleton	67604				
USMC		0	7		5954
ACTIVITY TOTALS:		0	7		
MCAS Futenma	63026				
USMC		0	4		5954
ACTIVITY TOTALS:		0	4		
MCAS Iwakuni	62613				
USMC		0	3		5954
ACTIVITY TOTALS:		0	3		
MCAS Kaneohe Bay	00318				
USMC		0	10		5954
ACTIVITY TOTALS:		0	10		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT		BILLETS OFF	ENL	DESIG RATING	PNEC/SNEC PMOS/SMOS
MCAS Miramar	60259				
Note: Civilian technicians perform ETVS maintenance.					
MCAS New River	62573				
USMC		0	4		5954
ACTIVITY TOTALS:		0	4		
MCAS Yuma	62974				
USMC		0	9		5954
ACTIVITY TOTALS:		0	9		
NAF El Centro	60042				
Note: Civilian technicians perform ETVS maintenance.					
NALF Orange Grove	30776				
ACDU		0	1	ET	1570
ACTIVITY TOTALS:		0	1		
NALF San Clemente Is.	31466				
ACDU		0	1	ET	1570 9527
ACTIVITY TOTALS:		0	1		
NALF San Nicholas Is	30614				
ACDU		0	1	ET	1570 1471
		0	1	ET	1570 9527
ACTIVITY TOTALS:		0	2		
NAS Brunswick	60087				
ACDU		0	1	ET	1570
		0	4	ET	1570 9527
ACTIVITY TOTALS:		0	5		
NAS Corpus Christi	42094				
ACDU		0	1	ET	1570 1413
ACTIVITY TOTALS:		0	1		
NAS Jacksonville	00207				
Note: Civilian technicians perform ETVS maintenance.					

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT		BILLETS OFF	BILLETS ENL	DESIG RATING	PNEC/SNEC PMOS/SMOS
NAS Keflavik	63032				
Note: Civilian technicians perform ETVS maintenance.					
NAS Key West	00213				
ACDU		0	1	ET	1570
		0	1	ET	1570 9526
		0	1	ET	1570 9527
ACTIVITY TOTALS:		0	3		
NAS Lemoore	63042				
ACDU		0	3	ET	1570
		0	1	ET	1570 9526
		0	4	ET	1570 9527
ACTIVITY TOTALS:		0	8		
NAS New Orleans	00206				
ACDU		0	1	ET	1570
ACTIVITY TOTALS:		0	1		
NAS Norfolk	00188				
ACDU		0	5	ET	1570
		0	2	ET	1570 9527
ACTIVITY TOTALS:		0	7		
NAS Norfolk (Helo Twr)	00188				
Note: ETVS Maintenance and upkeep will be performed by NAS Norfolk ET personnel.					
NAS North Island	00246				
ACDU		0	10	ET	1570
		0	1	ET	1570 9527
ACTIVITY TOTALS:		0	11		
NAS Oceana	60191				
ACDU		0	6	ET	1570
		0	2	ET	1570 1480
		0	1	ET	1570 9527
ACTIVITY TOTALS:		0	9		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT		BILLETS OFF	BILLETS ENL	DESIG RATING	PNEC/SNEC PMOS/SMOS
NAS Whiting Field	60508				
ACDU		0	1	ET	1570
		0	1	ET	1570 1480
		0	1	ET	1570 9527
ACTIVITY TOTALS:		0	3		
NAS Willow Grove	00158				
ACDU		0	2	ET	1570 1480
USMC		0	9		5954
ACTIVITY TOTALS:		0	11		
NOLF Cabaniss	00216				

Note: NAS Corpus Christi ET personnel will perform ETVS maintenance and upkeep.

NOLF Choctaw	00204				
ACDU		0	2	ET	1570
		0	2	ET	1570 1480
ACTIVITY TOTALS:		0	4		
NOLF Imperial Beach	76096				
ACDU		0	3	ET	1570
ACTIVITY TOTALS:		0	3		
NOLF Joe Williams Field	42105				
ACDU		0	8	ET	1570
		0	1	ET	1570 9527
ACTIVITY TOTALS:		0	9		
NOLF Waldron	42095				
ACDU		0	3	ET	1570
ACTIVITY TOTALS:		0	3		
NOLF Webster Field	47608				
ACDU		0	4	ET	1570
		0	2	ET	1570 1480
		0	2	ET	1570 9526
ACTIVITY TOTALS:		0	8		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT		BILLETS OFF	BILLETS ENL	DESIG RATING	PNEC/SNEC PMOS/SMOS
NOLF Whitehouse	60200				
ACDU		0	4	ET	1570
		0	2	ET	1570 9526
ACTIVITY TOTALS:		0	6		
NS Guantanamo Bay	60514				
ACDU		0	2	ET	1570
ACTIVITY TOTALS:		0	2		
NS Mayport	60201				
ACDU		0	1	ET	1570 1480
ACTIVITY TOTALS:		0	1		
NS Roosevelt Roads	00389				
ACDU		0	8	ET	1570
ACTIVITY TOTALS:		0	8		
NS Rota	62863				
ACDU		0	1	ET	1570
		0	1	ET	1570 9527
ACTIVITY TOTALS:		0	2		
NSF Diego Garcia	68539				
ACDU		0	1	ET	1570
ACTIVITY TOTALS:		0	1		

PMRF Barking Sands 0534A

Note: Civilian technicians perform ETVS maintenance.

SPAWAR Systems Center Charleston 48553

Note: Civilian technicians perform ETVS maintenance.

Transportable ATC Fac 48553

Note: Civilian technicians perform ETVS maintenance.

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF	PFYs ENL	CFY99 OFF	CFY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL
OPERATIONAL ACTIVITY	ACDU												
ET	1570	0	66	0	0	0	0	0	0	0	0	0	0
ET	1570 1413	0	1	0	0	0	0	0	0	0	0	0	0
ET	1570 1471	0	1	0	0	0	0	0	0	0	0	0	0
ET	1570 1480	0	10	0	0	0	0	0	0	0	0	0	0
ET	1570 9526	0	6	0	0	0	0	0	0	0	0	0	0
ET	1570 9527	0	26	0	0	0	0	0	0	0	0	0	0
OPERATIONAL ACTIVITY	USMC												
	5954	0	51	0	0	0	0	0	0	0	0	0	0
SUMMARY TOTAL													
OPERATIONAL ACTIVITY	- ACDU	0	110	0	0	0	0	0	0	0	0	0	0
OPERATIONAL ACTIVITY	- USMC	0	51	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	- ACDU	0	110	0	0	0	0	0	0	0	0	0	0
	- TAR	0	0	0	0	0	0	0	0	0	0	0	0
	- SELRES	0	0	0	0	0	0	0	0	0	0	0	0
	- USMC	0	51	0	0	0	0	0	0	0	0	0	0
	- SMCR	0	0	0	0	0	0	0	0	0	0	0	0

II.A.3. TRAINING ACTIVITIES INSTRUCTOR AND SUPPORT BILLET REQUIREMENTS

INSTRUCTOR BILLETS

TRAINING ACTIVITY, LOCATION, UIC: NATTC Pensacola, 35348

DESIG RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF	PFYs ENL	CFY99 OFF	CFY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL
ACDU ET	1570 9502	0	4	0	6	0	6	0	6	0	6	0	6
USMC	5954	0	15	0	15	0	15	0	15	0	15	0	15

II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY, LOCATION, UIC	USN/ USMC	PFYs OFF	PFYs ENL	CFY99 OFF	CFY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL
NATTC Pensacola, 35348													
	NAVY	0	0	0	0.3	0	1.7	0	1.7	0	1.7	0	1.7
	USMC	0	0	0	0.2	0	0.7	0	0.7	0	0.7	0	0.7
SUMMARY TOTAL													
		0	0	0	0.5	0	2.4	0	2.4	0	2.4	0	2.4
GRAND TOTAL													
		0	0	0	0.5	0	2.4	0	2.4	0	2.4	0	2.4

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG RATING	PNEC/SNEC	BILLET BASE	CFY99 +/-	CFY99 CUM	FY00 +/-	FY00 CUM	FY01 +/-	FY01 CUM	FY02 +/-	FY02 CUM	FY03 +/-	FY03 CUM
a. OFFICER - NA												
b. ENLISTED - USN												
Operational Billets		ACDU										
ET	1570	0	66	0	66	0	66	0	66	0	66	0	66
ET	1570 1413	0	1	0	1	0	1	0	1	0	1	0	1
ET	1570 1471	0	1	0	1	0	1	0	1	0	1	0	1
ET	1570 1480	0	10	0	10	0	10	0	10	0	10	0	10
ET	1570 9526	0	6	0	6	0	6	0	6	0	6	0	6
ET	1570 9527	0	26	0	26	0	26	0	26	0	26	0	26
Operational Billets TAR and SELRES - NA												
Instructor and Support (Staff) Billets		ACDU										
ET	1570 9502	4	2	6	0	6	0	6	0	6	0	6
Chargeable Student Billets ACDU and TAR		0	1	1	1	2	0	2	0	2	0	2
TOTAL USN ENLISTED BILLETS												
Operational		127	0	129	0	129	0	129	0	129	0	129
Fleet Support		NA										
Staff		4	2	6	0	6	0	6	0	6	0	6
Student		0	1	1	1	2	0	2	0	2	0	2
SELRES		NA										

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG RATING PMOS/SMOS	BILLET BASE	CFY99 +/-	CFY99 CUM	FY00 +/-	FY00 CUM	FY01 +/-	FY01 CUM	FY02 +/-	FY02 CUM	FY03 +/-	FY03 CUM
a. OFFICER - NA											
b. ENLISTED - USMC											
Operational Billets USMC 5954	51	0	51	0	51	0	51	0	51	0	51
Fleet Support Billets NA											
Instructor and Support (Staff) Billets USMC 5954	15	0	15	0	15	0	15	0	15	0	15
Chargeable Student Billets USMC	0	1	1	0	1	0	1	0	1	0	1
TOTAL USMC ENLISTED BILLETS											
Operational	NA										
Staff	NA										
Student	0	1	1	0	1	0	1	0	1	0	1
SELRES	NA										

PART II.B. PERSONNEL REQUIREMENTS

II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

ACTIVITY TOTALS:
CIN, COURSE TITLE: C-103-2017, ETVS Hardware Maintenance
COURSE LENGTH: 3 weeks **TOUR LENGTH:** Navy: 36 Months
ATTRITION FACTOR: Navy 10 % USMC 0% **BACKOUT FACTOR:** Navy 0.06 USMC 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY99 OFF	CFY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL
NATTC Pensacola												
	NAVY	ACDU	0	8	0	44	0	44	0	44	0	44
	USMC	USMC	0	4	0	17	0	17	0	17	0	17
ACTIVITY TOTALS:												
NATTC Pensacola			0	12	0	61	0	61	0	61	0	61

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the ETVS and, therefore, are not included in Part III of this NTSP.

III.A.2.a. Existing Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

PART III - TRAINING REQUIREMENTS

III.A.1. INITIAL TRAINING REQUIREMENTS

COURSE TITLE: ETVS Orientation Course
COURSE DEVELOPER: Denro, Inc.
COURSE INSTRUCTOR: Denro, Inc.
COURSE LENGTH: 3 days

LOCATION, UIC	DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
Denro, Inc.	Mar 96	0	0	5	INPUT	SPAWARSYSCEN,
	(Completed)	0	0	0	AOB	38th EIG Tinker AFB,
		0	0	0	CHARGEABLE	Hanscom JPO, Washington JPO, Fort Ritchie, MD (US Army)

COURSE TITLE: ETVS Operation/System Administration
COURSE DEVELOPER: Denro, Inc.
COURSE INSTRUCTOR: FAA Academy
COURSE LENGTH: 2 days

LOCATION, UIC	DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
William J. Hughes Technical	May 97	2	3	4	INPUT	Andrews AFB, Eglin AFB,
Center (FAA Technical Center)	(Completed)	0	0	0	AOB	CCOM (US Army),
Atlantic City, NJ		0	0	0	CHARGEABLE	ISEC (US Army)

COURSE TITLE: ETVS Hardware Maintenance
COURSE DEVELOPER: Denro, Inc.
COURSE INSTRUCTOR: Denro, Inc.
COURSE LENGTH: 15 days

LOCATION, UIC	DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
Denro, Inc.	Jul 97	0	2	0	INPUT	Dover AFB
	(Completed)	0	0.1	0	AOB	
		0	0	0	CHARGEABLE	

Note: The above contractor-developed maintenance course (hardcopy and software) was provided by Denro, Inc. to Naval Air Technical Training Center (NATTC) Pensacola (World Wide Web: http://www.cnet.navy.mil/cnet/nattc/) instructors in May 1998. NATTC personnel will provide training of maintenance personnel at NATTC Pensacola. This course will also be provided to 12 DoD personnel at FAATC in April 1999.

III.A.1. INITIAL TRAINING REQUIREMENTS

COURSE TITLE: ETVS Hardware Maintenance for Instructors
COURSE DEVELOPER: Denro, Inc.
COURSE INSTRUCTOR: FAA Academy
COURSE LENGTH: 15 days

LOCATION, UIC	DATE BEGIN	STUDENTS OFF	STUDENTS ENL	STUDENTS CIV		ACTIVITY DESTINATION
FAA Academy Instructors Oklahoma City, Okla.	Sep 98 (Completed)		2		INPUT AOB CHARGEABLE	NATTC Pensacola

COURSE TITLE: ETVS Operation / System Administration
COURSE DEVELOPER: Denro, Inc.
COURSE INSTRUCTOR: Denro, Inc.
COURSE LENGTH: 2 days

LOCATION, UIC	DATE BEGIN	STUDENTS OFF	STUDENTS ENL	STUDENTS CIV		ACTIVITY DESTINATION
Denro, Inc.	See Note		TBD		INPUT AOB CHARGEABLE	Each ETVS installation site

COURSE TITLE: ETVS Hardware Maintenance
COURSE DEVELOPER: NATTC Pensacola
COURSE INSTRUCTOR: NATTC Pensacola
COURSE LENGTH: 15 days

LOCATION, UIC	DATE BEGIN	STUDENTS OFF	STUDENTS ENL	STUDENTS CIV		ACTIVITY DESTINATION
NATTC Pensacola, 35348	See Note		TBD		INPUT AOB CHARGEABLE	Each ETVS installation site

Note: Training will be provided when ETVS installed on-site.

III.A.2.b. PLANNED COURSES

CIN, COURSE TITLE: E-103-2017, ETVS Hardware Maintenance
TRAINING ACTIVITY: NATTC Pensacola
LOCATION, UIC: NATTC Pensacola, 35348

SOURCE: Navy **STUDENT CATEGORY:** ACDU

CFY99		FY00		FY01		FY02		FY03		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
0	8	0	44	0	44	0	44	0	44	ATIR
0	7	0	40	0	40	0	40	0	40	Output
0	0.3	0	1.7	0	1.7	0	1.7	0	1.7	AOB
0	0.3	0	1.7	0	1.7	0	1.7	0	1.7	Chargeable

SOURCE: USMC **STUDENT CATEGORY:** USMC

CFY99		FY00		FY01		FY02		FY03		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
0	4	0	17	0	17	0	17	0	17	ATIR
0	4	0	17	0	17	0	17	0	17	Output
0	0.2	0	0.7	0	0.7	0	0.7	0	0.7	AOB
0	0.2	0	0.7	0	0.7	0	0.7	0	0.7	Chargeable

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the ETVS and, therefore, are not included in Part IV of this NTSP.

IV.C.1. Facility Requirements Summary (Space/Support) by Activity

IV.C.2. Facility Requirements Detailed by Activity and Course

IV.C.3 Facility Project Summary by Program

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

IV.A. TRAINING HARDWARE

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

TRAINING ACTIVITY: NATTC Pensacola
LOCATION, UIC: Pensacola, Florida, 35348

CIN, COURSE TITLE: C-103-2017, ETVS Hardware Maintenance

ITEM NUMBER	EQUIPMENT	TYPE OR RANGE OF REPAIR PARTS	QTY REQUIRED	DATE REQUIRED	STATUS
TTE					
001	ETVS (BS-1)		2	5/99	
SPETE					
002	Card Extender (4U)		1	5/99	
003	Card Extender (5U)		1	5/99	
004	Impedance Matching Test Adapter (Supplied by Denro, Inc.)		1	5/99	
GPETE					
005	CRX-5200-17 Transmission Test Set		1	5/99	
006	CRX-5200-17 Transmission Test Set Leads		4	5/99	
007	Fluke 77 Digital VOM		2	5/99	

IV.A.2. TRAINING DEVICES

Note: A mobile trainer-simulator is being developed to support ETVS operator training. The simulator will augment the existing CBI course available on CD-ROM.

IV.B. COURSEWARE REQUIREMENTS

IV.B.1. TRAINING SERVICES

COURSE/TYPE OF TRAINING	SCHOOL LOCATION/UIC	NO. OF PERSONNEL	MAN WEEKS REQUIRED	DATE BEGIN
ETVS Orientation course	Denro Inc. Gaithersburg, Md.	1	0.6	3/96
ETVS Operation/System Administration	Denro Inc. Gaithersburg, Md.	1	0.4	5/96
ETVS Hardware Maintenance	Denro Inc. Gaithersburg, Md.	1	2.2	7/96
ETVS Orientation course	FAATC	4	2.4	10/98
ETVS Operation/System Administration	FAATC	4	1.6	10/98
ETVS Hardware Maintenance	NATTC Pensacola, 35348	6	3.0	1/00

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

TRAINING ACTIVITY: NATTC Pensacola
LOCATION, UIC: Pensacola**,** 35348
CIN, COURSE TITLE: C-103-XXXX, ETVS Hardware Maintenance

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Student Evaluation Forms	100	1/00	Pending
Student Guides	100	1/00	Pending
Instructor Guides	5	1/00	Pending

IV.B.3. TECHNICAL MANUALS

TRAINING ACTIVITY: NATTC Pensacola
LOCATION, UIC: Pensacola, 35348
CIN, COURSE TITLE: C-103-XXXX, ETVS Hardware Maintenance

TECHNICAL MANUAL TITLE, NUMBER	MEDIUM	QTY REQD	DATE REQD	STATUS
Technical Instruction Book – Volume 1 – for the ETVS FCC Regulation Number B4TUSA-75540-MF-E	Hard Copy	10	5/99	Pending

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
FAA	Awarded Contract	7/95	Completed
FAA	Conducted Post Award Conference	8/95	Completed
FAA	Conducted First Technical Interchange Meeting	8/95	Completed
FAA	Performed Preliminary System Review	9/95	Completed
FAA	Performed Final System Review	10/95	Completed
FAA	Conducted First Project Management Review	10/95	Completed
FAATC	Conducted First Article Test	3/97	Completed
FAATC	Conducted Operational Test & Evaluation	3/97	Completed
PMA205	Developed Draft NTSP	6/97	Completed
USAF	Established First IOC Activity for DoD, Dover AFB	6/97	Completed
USAF	Conducted Operational Test & Evaluation, Eglin AFB	9/97	Completed
PMA205	Developed Proposed NTSP	12/98	Completed
PMA213	First Delivery of test system for USN, SPAWAR Systems Center Charleston	2/99	Completed
PMA213	FAA MS III	7/99	Pending
PMA205	Distributed Approved NTSP	4/99	Completed

PART VI - DECISION ITEMS/ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS

No actions or decisions are required.

PART VII - POINTS OF CONTACT

NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL	TELEPHONE NUMBERS
CDR David Kelch Resource Sponsor / Program Sponsor CNO, N885F kelch.david@hq.navy.mil	**COMM:** (703) 604-7711 **DSN:** 664-7711 **FAX:** (703) 604-6969
CAPT Frank Smith Head, Aviation Technical Training Branch CNO, N889H smith.frank@hq.navy.mil	**COMM:** (703) 604-7730 **DSN:** 664-7730 **FAX:** (703) 604-6969
AZC Scott Dean NTSP Manager CNO, N889H7 dean.scott@hq.navy.mil	**COMM:** (703) 604-7714 **DSN:** 664-7714 **FAX:** (703) 604-6939
CDR Brian Mack Aviation Manpower CNO, N122C1 n122c1@bupers.navy.mil	**COMM:** (703) 695-3247 **DSN:** 225-3247 **FAX:** (703) 614-5308
ACCM Howard McGrath Training Systems Manager NAVAIRSYSCOM, PMA2053B1 mcgrathhj@navair.navy.mil	**COMM:** (301) 757-8126 **DSN:** 757-8126 **FAX:** (301) 757-6945
Mr. Kevin Wood ATC Production Systems NAVAIRSYSCOM, PMA2132B woodtk@navair.navy.mil	**COMM:** (301) 862-6321 **DSN:** NA **FAX:** (301) 862-6328
CDR Earnest Hawkins Aviation NTSP Manager CINCLANTFLT, N-721 hawkinsel@clf.navy.mil	**COMM:** (757) 836-0101 **DSN:** 836-0101 **FAX:** (757) 836-0141
Mr. Robert Long Deputy Director for Training CINCPACFLT, N70 u70@cpf.navy.mil	**COMM:** (808) 471-8513 **DSN:** 315-471-8513 **FAX:** (808) 471-8596
CAPT Jerry Rea Director, Enlisted Assignment Division NAVPERSCOM, NPC 40 p40@persnet.navy.mil	**COMM:** (901) 874-3548 **DSN:** 882-3548 **FAX:** (901) 874-2642
CDR Fredrick Lineberg Branch Head, Aviation Ratings NAVPERSCOM, NPC 404 p404@persnet.navy.mil	**COMM:** (901) 874-3691 **DSN:** 882-3691 **FAX:** (901) 874-2642

PART VII - POINTS OF CONTACT

NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL	TELEPHONE NUMBERS
MAJ Frank Simonds Total Force Structure Division Officer MCCDC, C5325A zoid@mindless.com	**COMM:** (703) 784-6241 **DSN:** 278-6241 **FAX:** (703) 784-6072
CDR Eric Blunt Aviation Technical Training CNET, ETE32 cdr_eric.blunt@smtp.cnet.navy.mil	**COMM:** (850) 452-4915 **DSN:** 922-4915 **FAX:** (850) 452-4901
Ms. Sue Gospill JPO/Apex Technology Joint Program Office susan.gospill@faa.gov	**COMM:** (202) 267-3756 **DSN:** NA **FAX:** (202) 267-5153
Mr. Fred Britton JPO/Horizon Technology Training Program Office brittonf@hanscom.af.mil	**COMM:** (617) 377-8479 **DSN:** NA **FAX:** (617) 377-7447
Mr. Phil Szczyglowski Competency Manager NAVAIRSYSCOM, AIR 3.4.1 szczyglowspr@navair.navy.mil	**COMM:** (301) 757-9182 **DSN:** 757-9182 **FAX:** (301) 342-4723
AVCM Roger Lovern NTSP Manager NAVAIRSYSCOM, AIR 3.4.1 lovernre@navair.navy.mil	**COMM:** (301) 757-9183 **DSN:** 757-9183 **FAX:** (301) 342-4723
AVCM Stephen Worthen NTSP Coordinator NAVAIRSYSCOM, AIR 3.4.1 worthensw@navair.navy.mil	**COMM:** (301) 757-9194 **DSN:** 757-9194 **FAX:** (301) 342-4723
ATC Ray Gaskill MPT Analyst NAVAIRSYSCOM, AIR 3.4.1 gaskillre@navair.navy.mil	**COMM:** (301) 757-9193 **DSN:** 757-9194 **FAX:** (301) 342-4723