

Enhanced Medium-Altitude Reconnaissance and
Surveillance System (EMARSS)
(version 1.0)

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ICoE - Mil Intelligence School

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This System Training Plan (STRAP) is preliminary.
Front end analysis (mission, task, job) is ongoing. ICoE - Mil Intelligence School will amend and update this STRAP as details solidify.

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1.0 System Description

Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is a manned multi-intelligence Aerial Intelligence, Surveillance, and Reconnaissance (A-ISR) platform that provides the capability to detect, locate, classify, identify, and track surface targets day or night in nearly all weather conditions with a high degree of timeliness and accuracy. EMARSS consists of a high-definition Electro-Optical/Infrared (EO/IR) sensor, a remotely-operated Communications Intelligence (COMINT) collection suite, an Aerial Precision Geo-location (APG) system, and a robust communications suite installed on an Army fixed-wing aircraft. The aircraft is equipped with line-of-site (LOS) and beyond line-of-site (BLOS) data links, communication suites, and a self protection suite. EMARSS will be assigned to Aerial Exploitation Battalions (AEB) and provide direct support reconnaissance and surveillance to brigade combat teams or other tactical units.

EMARSS will operate as a single platform with two on-board payload operators in support of tactical missions. Mission altitude and flight tracks will optimize collection against targets or areas of interest while avoiding known threats to the platform. Specific flight profiles may be selected to strike a balance among the capabilities of multiple sensors, or to optimize collection from an individual sensor based upon the daily collection tasking. Individual sensors will communicate with the Distributed Common Ground Station - Army (DCGS-A) enterprise and the supported tactical unit via appropriate LOS/BLOS data links and communications equipment. EMARSS will also provide Full-Motion Video (FMV) and other products directly to tactical users via One System Remote Viewing Terminal (OSRVT). Soldiers will use DCGS-A systems and software as the primary exploitation and dissemination capabilities, both on and off the aircraft.

The Army will equip the first unit with EMARSS in the 4th quarter of fiscal year 14 with the Initial Operational Capability complete no later than one year from the date of the first fielding.

2.0 Target Audience

Personnel with the following military occupational specialties (MOS) assigned to EMARSS duty positions will require EMARSS training.

- Pilots: Aviation Officers (15) and Fixed Wing Aviators (155)
- On-board GEOINT Payload Operators: Geospatial Intelligence Imagery Analyst (35G)

- On-board SIGINT Payload Operators: Cryptologic Linguist (35P), Signals Intelligence Analyst (35N), and Signals Collector / Analyst (35S)
- Remote COMINT Operators: Cryptologic Linguist (35P), Signals Intelligence Analyst (35N), and Signals Collector Analyst (35S)
- Maintainers: Military Intelligence (MI) Systems Maintainer/Integrator (35T) and Intelligence/Electronic Warfare (IEW) Systems Maintenance Technician (353T)
- Mission Managers: Traffic Analysis Technician (352N), Non-Morse Intercept Technician (352S), Imagery Intelligence Technician (350G), and senior (SFC and above) operators.

Prerequisites for attending the EMARSS pilot qualification training are:

- Be qualified and current as an Army fixed wing aviator
- Possess a Top Secret clearance with access to Sensitive Compartmented Information (TS/SCI) clearance

Prerequisites for attending EMARSS training for on-board payload operators are:

- Be qualified in their respective MOS
- Possess a TS/SCI clearance (SIGINT Payload operators require a Counterintelligence Scope Polygraph)
- Be trained on position-specific Distributed Common Ground Station-Army (DCGS-A) operations
- Complete a Class III flight physical
- Complete altitude chamber training

Prerequisites for attending EMARSS training for remote operators and mission managers are:

- Be qualified in their respective MOS [except when training is delivered during Advanced Individual Training (AIT)]
- Possess a TS/SCI clearance with Counterintelligence Scope Polygraph
- Be trained in position-specific Distributed Common Ground Station-Army (DCGS-A) operations

Prerequisites for attending EMARSS training for maintainers are:

- Be qualified in their respective MOS [except when training is delivered during AIT]
- Possess a TS/SCI clearance (system administrators will require a Counterintelligence Scope Polygraph)

3.0 Assumptions

Manpower:

- EMARSS functional courses will require additional personnel as defined in the Programs of Instruction (POI), Memoranda of Transmittal (MOT), and through the Structure and Manning Decision Review/Training Requirements Analysis Process (SMDR/TRAP).
- EMARSS will require 35G personnel trained in Geospatial Intelligence (GEOINT) collection in direct support of kinetic operations assigned to EMARSS-equipped AEBs.

Additional Skill Identifiers (ASI):

- TRADOC will develop a new ASI to identify EMARSS-qualified aviators.
- TRADOC will modify ASI 1A - JSTARS E8-A Systems Operator and assign it to Soldiers qualified as EMARSS GEOINT Payload Operators.
- TRADOC will assign ASI V3 - APG to Soldiers qualified as EMARSS SIGINT Payload Operators.

Facilities:

- Certified Sensitive Compartmented Information Facility (SCIF) classrooms will be available for training.
- Hangar space will be available to park and maintain the airframes used for EMARSS training.

Equipment:

- Product Manager (PdM) MARSS will coordinate resources for and maintenance of operational equipment required to support EMARSS training.
- Program Executive Office Fixed Wing will coordinate resources for and maintenance of the EMARSS airframe.
- TRADOC will coordinate the resources for all DCGS-A sub-systems and operational equipment (e.g. vehicles, radios) required to support EMARSS institutional training.

4.0 Training Constraints

Constraint	Impact	Solutions
<p>Lack of EMARSS aircraft for training. The total number of fielded systems and the fielding schedule limit the availability of training aircraft.</p>	<p>Aircrew members will not be able to train on live EMARSS aircraft.</p>	<p>TRADOC, Intelligence and Security Command (INSCOM), and Program Executive Office (PEO) Intelligence, Electronic Warfare, and Sensors (IEW&S) will coordinate separate training paths for the separate roles in the target audience. Solutions will leverage simulators, simulations, and surrogates as necessary to train students.</p> <p>Aviators: Until sufficient production aircraft are fielded to the institution, aviators will train on simulators and mission aircraft according to the units' Aircrew Training Programs (ATP). The Army plans to field sufficient aircraft for rated aviator training to the institution by the end of the FY17.</p> <p>Onboard payload operators:</p>

		<p>Onboard payload operators will train on simulators and use surrogate aircraft for flight training. Both onboard payload operator positions share common tasks and payloads with other platforms.</p> <p>Remote operators and maintainers: Remote operators and maintainers do not require EMARSS aircraft for institutional training. Remote operators and maintainers will train on common payloads and Human-Machine Interfaces (HMI) in AIT, and receive EMARSS delta training at the unit.</p>
<p>A-ISR institutional training strategy has not been approved.</p>	<p>EMARSS pilots and onboard operators will not have a venue for institutional/functional and reach-back capability training.</p>	<p>TRADOC, INSCOM, and PEO IEW&S will develop an integrated training solution to provide training for the entire Aerial Layer.</p>

5.0 System Training Concept

EMARSS system training will include NET, institutional training, and unit sustainment training. PdM MARSS will provide NET at each fielding with a TRADOC-approved Training Support Package (TSP) hosted on the TRADOC-approved data repository. Both the Intelligence Center of Excellence (ICoE) and the Army Aviation Center of Excellence (AAEC) must approve the aircrew Programs Of Instruction (POI) to ensure they meet regulatory and doctrinal guidance; ICoE retains full authority for approving the content and design of the manager, maintainer, and remote payload operator TSPs.

Institutional training for EMARSS Soldiers will consist of a separate functional course for each duty position. Aviators who graduate from the Aircraft Qualification Course (AQC) will be awarded a yet to be identified ASI. Onboard SIGINT payload operators will attend the ICoE Aerial Precision Geolocation course and receive ASI V3 upon graduation. Onboard GEOINT payload operators will attend the ICoE Aerial GEOINT Payload Operator course and receive the modified 1A ASI upon graduation. Mission managers will attend the A-ISR Manager's course en route to an AEB; ICoE will not award an ASI for this course. Appropriate EMARSS critical tasks on common payloads will be incorporated into 35N, 35P, 35S, and 35T AIT courses as those payloads are fielded across multiple platforms.

Unit sustainment training will consist of the commander's Aircrew Training Program and formal On-the-Job Training (OJT) program developed from the TRADOC-approved NET TSP to maintain mission-specific proficiencies. ICoE's New Systems Training and Integration Directorate (NSTID) will host distributed Learning (dL) products on appropriately classified networks for self-development training.

The EMARSS Target Signature Arrays (TSA) interface to the Intelligence and Electronic Warfare Tactical Proficiency Trainer (IEWTPT) will provide operators and maintainers with realistic mission training through the simulation of EMARSS capabilities in all training domains. PdM MARSS will provide part task trainers (PTT) to lessen the impact of aircrew training on mission-configured airframes.

5.1 New Equipment Training Concept (NET)

PdM MARSS will develop the NET plan (NETP) and conduct NET concurrently with EMARSS fieldings and upgrades. PdM MARSS will resource the NET to include instructors, logistics support, and complete Programs of Instruction (POI) for each role/duty position in TRADOC-approved format. PdM MARSS and TRADOC will ensure NET teams train students on all EMARSS critical tasks in a learner-

centric, scenario-driven training environment that incorporates simulators, simulations, and operational EMARSS equipment. NSTID will integrate role-specific Doctrine and Tactics Training (DTT) in each NET POI and execute the DTT during each fielding event. The NET TSP and all associated material will serve as the leave behind package for unit sustainment training.

- Aviator (pilot) training will focus on EMARSS airframe operations, mission, and mission equipment. The mission equipment phase will include crew coordination drills with onboard payload operators. PdM MARSS and the fielded unit must coordinate the schedule for aviator training to ensure a full complement of aircrew is available to employ the system.
- Onboard payload operator training for both SIGINT and GEOINT positions will include aircrew tasks, MOS-specific payload operations, reporting procedures, and tactical reconnaissance tasks. Operators will receive classroom, hands-on, and in-flight instruction using simulators, simulations, and actual EMARSS equipment.
- Maintainers will receive classroom and hands-on training on and system integration, equipment maintenance, fault diagnostics, troubleshooting, and repair tasks.
- Remote payload operators will train on the critical tasks relevant to operating the COMINT payloads and coordinating with the aircrew during mission.
- Mission managers will be selected by the unit and will receive training in mission planning, system configuration, sensor management, communications links, tasking, and reporting.

5.2 Displaced Equipment Training (DET)

PM Airborne Reconnaissance and Exploitation Systems (ARES) will resource and coordinate displaced equipment training for displaced Guardrail Common Sensor (GRCS) aircraft according to the training strategy outlined in the GRCS System Training Plan (STRAP).

5.3 Doctrine and Tactics Training (DTT)

PdM MARSS will resource development and execution of the DTT. NSTID will develop and execute DTT that integrates EMARSS capabilities, organizational impacts, and current TTPs into the Intelligence Warfighting Function at the fielded AEB. NSTID will maintain and update the DTT in the leave behind TSP in an appropriately classified repository for Army wide access. NSTID and AACE will review the DTT when system or doctrine modifications are made and update

the TSP as necessary. NSTID will disseminate all TSP modifications to fielded units and update all EMARSS data repositories. NSTID will coordinate with AACE to ensure DTT meets aviation regulatory requirements throughout the full system lifecycle.

5.4 Training Test Support Package (TTSP)

NSTID will develop, validate, and approve the TTSP in conjunction with PdM MARSS and TCM IS. The TTSP will describe the methods, procedures, and resources required to evaluate and certify individual and collective pretest training. The TTSP will include the training for system operation, doctrine, tactics, and maintenance. NSTID will provide the initial TTSP to the Army operational tester 9 months (270 days) before test; the final TTSP will be provided 60 days before test player training.

The initial TTSP will include:

- Approved STRAP
- Test Training Certification Plan (TTCP)
- Training data requirements (instructional material to be revised before beginning training)
- Test resource support (manpower, etc.)

The final TTSP will consist of:

- Training schedule
- POI for each affected MOS/SSI/AOC (officer, warrant officer, and enlisted)
- List of training devices and embedded training components
- Target audience description
- Draft Soldiers' Training Publications (STP) consistent with analysis data
- Lesson plans
- Critical task list
- Aircrew Training Manual (ATM)
- Flight Training Guide (FTG)
- Safety Review
- Environmental Review
- Foreign disclosure review and rating

6.0 Institutional Training Domain

ICoE will analyze EMARSS capabilities, concepts, and operations and incorporate critical skill sets into appropriate AIT, professional military education, or functional courses.

6.1 Institutional Training Concept and Strategy

ICoE will train Soldiers on EMARSS operational concepts in officer and non-commissioned officer education system courses, AIT, and functional courses according to AOC/MOS and role/duty position. Aircrew members will attend the role-appropriate functional course held by the Special Equipment Mission Aircraft (SEMA) school at Libby Army Airfield, Ft. Huachuca, Arizona. Managers will attend the A-ISR Manager's course, while remote payload operators and maintainers will be trained in AIT.

EMARSS aviators will attend the A-ISR Aircraft Qualification Course (AQC). The EMARSS AQC will train officers and warrant officers in EMARSS flight characteristics, mission planning, and mission operations through a combination of instructional methods including conference, practical exercises, and in-flight instruction. Students will train on EMARSS or EMARSS-representative aircraft and an EMARSS Partial Task Trainer (PTT) that emulates the EMARSS cockpit and simulates the flight characteristics of the EMARSS aircraft (Cockpit Procedural Trainer). Graduates of the EMARSS AQC will receive an ASI yet to be determined.

Onboard GEOINT payload operators will attend the A-ISR GEOINT Payload Operator (AGPO) course at ICoE. The AGPO course will train Soldiers on common GEOINT payloads, Aircrew Coordination Training - Enhanced (ACT-E), and the reconnaissance and aerial observation tasks required to operate EMARSS. Students will train in flight on a mission-configured EMARSS or EMARSS-representative aircraft and on the ground using an EMARSS PTT that emulates the GEOINT crew position and simulates GEOINT payload operations (GEOINT operator procedural trainer). Graduates of the AGPO course will receive a modified ASI 1A.

Onboard SIGINT payload operators will attend the A-ISR SIGINT Payload Operator (ASPO) course at ICoE. The ASPO course will train Soldiers on common Aerial Precision Geo-location payloads, Aircrew Coordination Training - Enhanced (ACT-E), and the reconnaissance and aerial electronic observation tasks required to operate EMARSS SIGINT payloads. Students will train in flight on a mission-configured EMARSS or EMARSS-representative aircraft and on the ground using an EMARSS PTT that emulates the SIGINT crew position and simulates SIGINT payload operations (SIGINT operator procedural trainer). Graduates of

the ASPO course will receive ASI V3 - APG.

EMARSS mission managers will attend the A-ISR Manager's course at ICoE. The AIC/RS Manager course will train Soldiers in the skills required to coordinate airspace, dynamically re-task aerial assets, and manage direct support reconnaissance and surveillance missions. Graduates of the A-ISR Manager's course will not receive an ASI.

ICoE will incorporate all remotely-operated EMARSS payloads into the appropriate AIT courses. All EMARSS payloads are Technology Readiness Level (TRL) 7 and common across multiple collection platforms. Students will train on payload interface software stimulated by an EMARSS Target Signature Array emulating the collection capabilities of the appropriate EMARSS payload.

ICoE will incorporate maintenance procedures for common EMARSS payloads into the 35T AIT course. Maintainers will train on actual EMARSS payloads and a PTT that includes installation and payload equipment emulating the physical constraints of an EMARSS aircraft with a fault injection capability.

ICoE will incorporate an overview of EMARSS Concepts of Operations (CONOPS) and characteristics into appropriate Intelligence Center officer, warrant officer, and senior NCO professional development courses using current doctrine and lessons learned. NSTID will develop leader training from the NET TSP and host training materials on the Intelligence Knowledge Network (IKN) at the appropriately classified level for Army-wide access.

6.1.1 Product Lines

EMARSS institutional product lines will include the training equipment, courseware, training manuals, TSPs, training facilities, and land necessary to train Soldiers on EMARSS capabilities. EMARSS institutional training will leverage other training capabilities where possible to realize efficiencies for the Army.

6.1.1.1 Training Information Infrastructure

Institutional EMARSS Training Information Infrastructure (TII) will consist of a DCGS-A constructive simulation architecture, the TRADOC-approved data repository, the Army Training Requirements and Resource System (ATRSS), and the necessary hardware and software to conduct training. EMARSS TII will conform to both joint and Army architectures and standards (i.e. CTIA, ATIA-M, Live Virtual Constructive-Integrated Architecture (LVC-IA)) to enable the development, storage, retrieval, delivery, and management of Training Support System (TSS) products and information.

6.1.1.1.1 Hardware, Software, and Communications Systems

PdM MARSS will resource and coordinate for the availability of all system hardware and software supporting EMARSS institutional training. TRADOC will coordinate the availability of any additional communications systems associated with EMARSS. Systems and sub-systems will include but not be limited to:

- DCGS-A Multi-function Workstations (MFWS)
- Mission-configured EMARSS aircraft
- EMARSS Simulation suite (to include the EMARSS Target Signature Array)
- Cockpit Procedural Trainer (CPT)
- EMARSS onboard operator procedural trainer
- Tactical Common Data Link (TCDL)
- EMARSS Maintenance Vehicle (EMV)
- EMARSS Payload Interface Software
- Non-classified Internet Protocol Router Network (NIPRNET)
- Secret Internet Protocol Router Network (SIPRNET)
- National Security Agency (NSA) Net
- Joint Worldwide Intelligence Communications System (JWICS)
- COMSEC keys and keying material for all subsystems
- DCGS-A server architecture
- Single Channel Ground and Airborne Radio System (SINCGARS)

6.1.1.1.2 Storage, Retrieval, and Delivery

The Army will maintain EMARSS training information at one or more of the following:

- TRADOC data repositories
- Central Army Registry (CAR)
- Army Training Network (ATN)
- Intelligence Knowledge Network (IKN)
- IKN-S (Secret)
- Army Knowledge Online (AKO)
- AKO-S (Secret)

- Center for Army Lessons Learned (CALL) Repository
- Standard Army After Action Review System (STAARS)
- Army Learning Management System (ALMS)
- Battle Command Knowledge System (BCKS)

6.1.1.1.3 Management Capabilities

ICoE will manage EMARSS institutional TII using the Digital Training Management System (DTMS), Army Training Requirements and Resource System (ATRRS), and TRADOC-approved data repositories.

6.1.1.1.4 Other Enabling Capabilities

TRADOC will resource additional aeromedical flight physicians with support personnel and coordinate altitude chamber requirements to sustain instructor and student flight readiness requirements.

6.1.1.2 Training Products

EMARSS institutional training products will include courses, courseware, and training publications. ICoE will incorporate EMARSS course materials into appropriate functional and AIT courses and coordinate training material updates when PdM MARSS updates EMARSS sub-systems and payloads.

6.1.1.2.1 Courseware

EMARSS courseware for institutional training will consist of lesson plans and interactive courseware. EMARSS lesson plans will include instructional methodology, training content, and digital multimedia presentations using the Army Learning Model. EMARSS PTTs will present interactive courseware to train students on the Tactics, Techniques, and Procedures (TTP) required to employ and operate EMARSS during decisive action operations.

6.1.1.2.2 Courses

Role-specific EMARSS critical tasks will be trained in four functional courses, three AIT courses, and all Military Intelligence (MI) branch Professional Military Education (PME). Detailed descriptions and the full scope of the courses listed below are available through the ICoE database in the TRADOC-approved data repository on the appropriately classified network.

AIT courses:

- 35G - Geospatial Intelligence Imagery Analyst - Motion imagery analysis and introductory motion imagery collection (using TCDL to connect to aerial motion imagery collection platforms used in training at ICoE)
- 35P - Cryptologic Linguist - Remote COMINT Operations (common payload interface software to connect to IEWTPT TCC through portions of the EMARSS TSA)
- 35T - MI Systems Maintainer / Integrator - Common payload maintenance procedures and theories (using select EMARSS payloads and software interfaces)

Functional courses:

- A-ISR AQC - Aviation Officers (AOC 15) and Fixed-wing Aviation Warrant Officers (155)
- ASPO Course - on-board SIGINT payload operators (35N, 35P, and 35S)
- AGPO Course - on-board GEOINT payload operators(35G)
- A-ISR Managers Course - EMARSS Mission Managers (Sergeant First Class and above, including Warrant Officers 352N, 352S and 350F)

PME courses:

- Officer Education System (OES) courses: Officers attending MI Basic Officer Leaders Course (BOLC) and MI Captains Career Course (MICCC) will receive training on the capabilities and employment of EMARSS during the IEW Operations portion of the course.
- Warrant Officer Education System (WOES) courses: MI Warrant Officers will receive training on the capabilities and employment of EMARSS during the common core portion of WOBC and during Warrant Officer Advance Course (WOAC).
- Noncommissioned Officer Education System (NCOES) courses: MI Senior Leaders Course (SLC) and Advanced Leaders Courses (ALC) will include training on the capabilities and employment of EMARSS.

6.1.1.2.3 Training Publications

PdM MARSS will develop an ATM, FTG, Interactive Electronic Technical Manual (IETM), System User's Manual (SUM), and Software User's Guide (SUG) for EMARSS. TRADOC will incorporate PdM-provided materials into the BCT and AEB Combined Arms Training Strategies, Soldier Training Publications (STP) for affected MOSS, Field Manuals (FM), and doctrinal Tactics, Techniques, and Procedures (TTP) publications.

6.1.1.2.4 Training Support Package (TSP)

EMARSS institutional training will consist of a to be determined number of TSPs targeted to specific audiences at selected training sites. TRADOC will tailor each TSP to train Soldiers according to MOS, role/duty position, training location, and training equipment. TRADOC will base all institutional TSPs on the training products and materials from the PdM-provided NET TSP.

As PdM MARSS updates the NET TSP with new or improved training products or materials, TRADOC will update institutional TSPs to reflect changes in system capabilities or TTPs. TRADOC will validate that all EMARSS TSPs reflect the Army Learning Model and are hosted on the approved training data repository in the correct format. PdM MARSS and TRADOC will store all TSP data and information in distributed knowledge repositories supported by the Army Knowledge Environment (AKE) for retrieval via DCGS-A reach capabilities. PdM MARSS and TRADOC will develop all TSPs in compliance with Army Enterprise Architecture (AEA) under the Joint Technical Architecture-Army (JTA-A). Training developers will implement Army Training Information Architecture (ATIA), Common Training Instrumentation Architecture (CTIA), and accepted DoD standards (i.e. Army Distributive Learning [ADL], SCORM) in the design and development of embedded and distributive learning products.

PdM MARSS and TRADOC will cooperate to develop and maintain a robust set of institutional TSPs that include:

- Complete programs of instruction that include EMARSS critical tasks
- System software and hardware IETMs
- Software User Manuals
- Realistic training data and information supporting practical exercises; training vignettes with increasingly challenging enemy and environmental complexities allowing Soldiers to train under realistic conditions
- Distributed and Computer Based Training (CBT) modules supporting Interactive Multimedia Instruction (IMI) for all system user interfaces both operator and maintainer as applicable, at the appropriate IMI level as described in TP 350-70-2, Training Multimedia Courseware Development Guide

6.1.1.3 TADSS

EMARSS institutional training relies on Virtual and Constructive training simulations to reduce the risk and cost of training Soldiers to operate and maintain EMARSS. PdM MARSS will provide the resources to develop EMARSS TADSS according to the standards defined in TRADOC Regulation 350-70, TRADOC Pamphlet 350-70-2 dated 26 June 2003 and TRADOC Pamphlet 350-37 Objective

Force Embedded Training (OFET) Users E-functional Description dated 9 June 2003.

ICoE will use the EMARSS Target Signature Array (TSA) as the primary TADSS to enable system training through the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) training capability described in the IEWTPT Capability Production Document. The EMARSS TSA will provide modular payload/sensor interfaces to EMARSS operational software applications to present a virtual collection environment for practical exercises during training. The TSA will support role-specific institutional in a collaborative environment and operational individual and collective training where feasible.

6.1.1.3.1 Training Aids

PdM MARSS will resource the development of digital training aids for EMARSS institutional training based on guidance from ICoE. At a minimum, training aids will include an ATM, IETMs, SUMs, student handouts, job aids, role/position checklists, and an aircraft systems interactive multimedia instruction (IMI) product for use in the AQC. Both ICoE and AAWCE must approve training aids for aircrew roles.

6.1.1.3.2 Training Devices

ICoE will use the suite of PTTs and the EMARSS TSA to provide a training simulations capability that replicates the aspects of EMARSS selected by the training development team to train Soldiers on role-specific system critical tasks and target systems to augment flight training missions.

PdM MARSS will resource EMARSS PTTs that consist of non-motion Cockpit Procedural Trainers (CPT), onboard payload Operator Procedural Trainers (OPT), maintainer mock-ups, and TSAs that emulate the look and feel of all mission equipment trained in the institution. The IEWTPT Technical Control Cell (TCC) will support EMARSS training by providing an overarching simulated Decisive Action Threat Environment (DATE) or virtual Operational Environment battlespace to augment the TSA signals and data presented to the EMARSS payload control software.

Live target systems and environments at ICoE will support institutional training on select GEOINT and SIGINT capabilities in a realistic exercise format during live flight training for pilots and onboard payload operators.

6.1.1.3.3 Simulators

PEO Simulations, Training, and Instrumentation (STRI) and PM Fixed-Wing (FW) will provide a CPT with a non-motion EMARSS flight model to simulate routine and emergency procedures during flight for the institutional EMARSS AQC. The CPT will consist of a virtual and constructive cockpit with displays and controls in an EMARSS-representative configuration and significantly reduce both risk and cost of the EMARSS AQC.

PdM MARSS will provide a virtual and constructive simulator representative of each onboard workstation. The onboard GEOINT payload operator PTT will include both a flight model controlled from the instructor workstation and a method of receiving flight position data from the EMARSS CPT. The GEOINT PTT will include all EMARSS mission interface software and virtual or tactile representations of critical hardware functions on the GEOINT workstation. The GEOINT PTT will also interoperate with IEWTPT through the EMARSS TSA GEOINT module to stimulate the virtual environment presented to the on-board mission software.

The onboard SIGINT payload operator PTT will include all EMARSS mission interface software and virtual or tactile representations of critical hardware functions on the SIGINT workstation. The SIGINT PTT will interoperate with IEWTPT through the relevant EMARSS SIGINT TSAs required to stimulate the virtual electronic environment presented to the on-board mission interface software. The SIGINT and GEOINT PTTs will reference the same constructive simulation through the IEWTPT TCC/TSA to train Soldiers on crew coordination tasks and onboard cross-cueing.

PdM MARSS will also provide a modular EMARSS TSA and mission interface software to simulate remotely-operated payloads. TRADOC will incorporate the EMARSS TSA into institutional training at the appropriate AIT or functional course. The modular EMARSS TSA should consist of a sub-TSA for each payload to stimulate the appropriate mission interface software at disparate training locations.

6.1.1.3.4 Simulations

EMARSS institutional training will incorporate Live, Virtual, and Constructive (LVC) simulations to reduce the risks and costs associated with training on live aviation platforms. EMARSS simulations will include non-motion flight simulation, three dimensional virtual environments, and virtual electronic battlespace that interface with the JLCCTC and IEWTPT for threat modeling. These simulations will provide realistic vignettes for use in AIT and functional courses in practical exercises and Situational Training Exercises (STX).

6.1.1.3.5 Instrumentation

ICoE and PdM MARSS will assess the full scope of training instrumentation at a later date; at a minimum, instrumentation will provide TRADOC with the ability to evaluate student performance and monitor exercise activities. The onboard payload operator courses will require range instrumentation to that digitally reports target location and characteristics and embedded instrumentation to record student activities during live mission training. ICoE and PdM MARSS will coordinate with PEO STRI to include the Live Tactical Engagement System (Live-TES) as part of the institutional training.

6.1.1.4 Training Facilities and Land

EMARSS institutional training will use existing classrooms and will require prescribed airspace and target emitter ranges during live mission training flights. ICoE will provide classroom space based on student throughput and classification requirements. The SEMA school will teach the EMARSS AQC in existing hangar, ramp, and classroom space at Libby Army Airfield, AZ. EMARSS onboard SIGINT operator tasks will require classroom space in a certified Sensitive Compartmentalized Information Facility and a robust target emitter range for mission training flights. Onboard GEOINT operator tasks will require classroom space and a maneuver training area with airspace for mission training flights. Additional resources include facilities for billeting, frequency allocation requests, and maintenance support systems.

6.1.1.4.1 Ranges

ICoE and PdM MARSS will analyze existing ranges against the onboard payload operator training requirements and update, upgrade, or improve ranges as necessary to support institutional EMARSS training exercises. Range requirements will include training airspace, SIGINT gunnery ranges, and GEOINT gunnery ranges for mission training flights.

6.1.1.4.2 Maneuver Training Areas (MTA)

ICoE will conduct a study to identify MTA requirements for air and ground operations that support institutional EMARSS training. MTA requirements will include electronic battlespace, airspace, and light force training areas for mission training flights.

6.1.1.4.3 Classrooms

EMARSS institutional training will require classrooms large enough to support the throughput of each A-ISR functional course; ICoE and PdM MARSS will update AIT classrooms with role-specific software as necessary. All classrooms will be standard TRADOC classrooms with the addition of DCGS-A workstations with EMARSS software and applications networked at the appropriately classified level (NIPR, SIPR, NSA Net, and/or JWICS).

The EMARSS AQC will use existing SEMA classrooms, hangar areas, ramp space, and EMARSS aircraft at Libby Army Airfield, AZ. Onboard SIGINT payload operators will train in the A-ISR SIGINT Payload Operator course in existing SCIF classrooms, the EMARSS simulator classroom, airfield areas, and EMARSS aircraft as required. Onboard GEOINT payload operators will train in the A-ISR GEOINT Payload Operator course in existing classroom space, the EMARSS simulator classroom, airfield areas, and EMARSS aircraft as required. EMARSS managers will train in the A-ISR Manager's course in existing classroom space.

6.1.1.4.4 CTCs

Not Applicable

6.1.1.4.5 Logistics Support Areas

The majority of EMARSS training equipment and systems will be stored, staged, and maintained at Libby Army Airfield, Fort Huachuca, AZ. ICoE will provide additional storage facilities for SIGINT equipment at the TS/SCI level as necessary. EMARSS training aircraft will supplant existing RC-12D and RC-12H aircraft as the Guardrail Common Sensor fleet is modernized, and re-purpose Guardrail Common Sensor logistics support areas. Any additional aircraft will require expanded parking facilities and maintenance areas.

6.1.1.4.6 Battle Command Training Centers (BCTC)

The ICoE Intelligence Combat Training Center (ICTC) provides a virtual training center through constructive simulations, select digital intelligence systems, and a white cell.

White cell members will attend appropriate portions of the A-ISR functional courses as necessary after PM ARES develops and fields the simulation capability to the institution.

6.1.1.5 Training Services

ICoE will use existing organic support services to prepare, replicate, distribute, and sustain EMARSS institutional training.

6.1.1.5.1 Management Support Services

Existing ICoE management support services will support EMARSS institutional training. ICoE Chief Information Officer / G6 (CIO/G6) will provide information management services to support network integration and maintenance of information systems used in EMARSS courses. ICoE will coordinate for the resources and services necessary to sustain EMARSS training equipment and devices.

6.1.1.5.2 Acquisition Support Services

ICoE will coordinate the acquisition support services required for:

- Simulator maintenance
- Aircraft maintenance and fuel
- Airfield facilities maintenance and upgrades
- Operational software maintenance

6.1.1.5.3 General Support Services

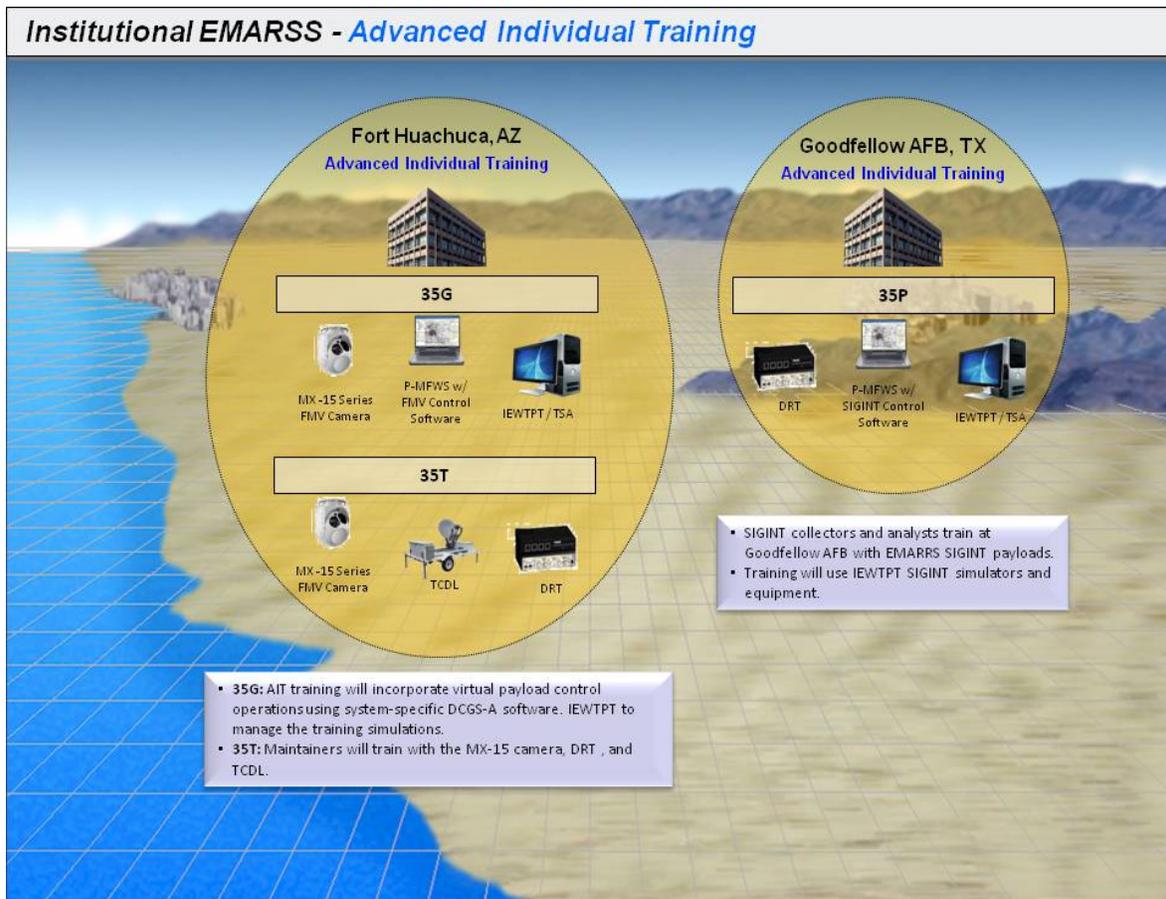
PdM MARSS, ICoE, PEO STRI and Installation Management Command will coordinate to provide the general support services necessary for distribution and replication services, facility support, training devices, airfield maintenance, hangars, and ramp space upgrades that will support EMARSS training in the institution.

6.1.2 Architectures and Standards Component

6.1.2.1 Operational View (OV)

ICoE functional courses will train Soldiers on EMARSS operations using simulators, simulations, and live mission flights. Training will include crew coordination exercises using simulators and EMARSS equipment in an integrated training approach which exercises all system critical tasks. Courses will use robust, high-fidelity constructive simulations integrated with operational system software to simulate a virtual maneuver battle-space. FMV training will

use MUSE capabilities to model aircraft characteristics and associated EO/IR collection attributes. The aircraft PTTs will replicate portions of the aircraft interior to introduce pilots and sensor operators to operational constraints. AIT classrooms will incorporate virtual payload control operations using system-specific DCGS-A software on commercial white boxes with an instructor "white cell" to manage the training simulations. Maintenance training will use a fuselage mock-up for training and practical exercises. Training will leverage existing facilities and capabilities from ICTC and SEMA Pilot training, and build on skills learned in MOS-producing courses.

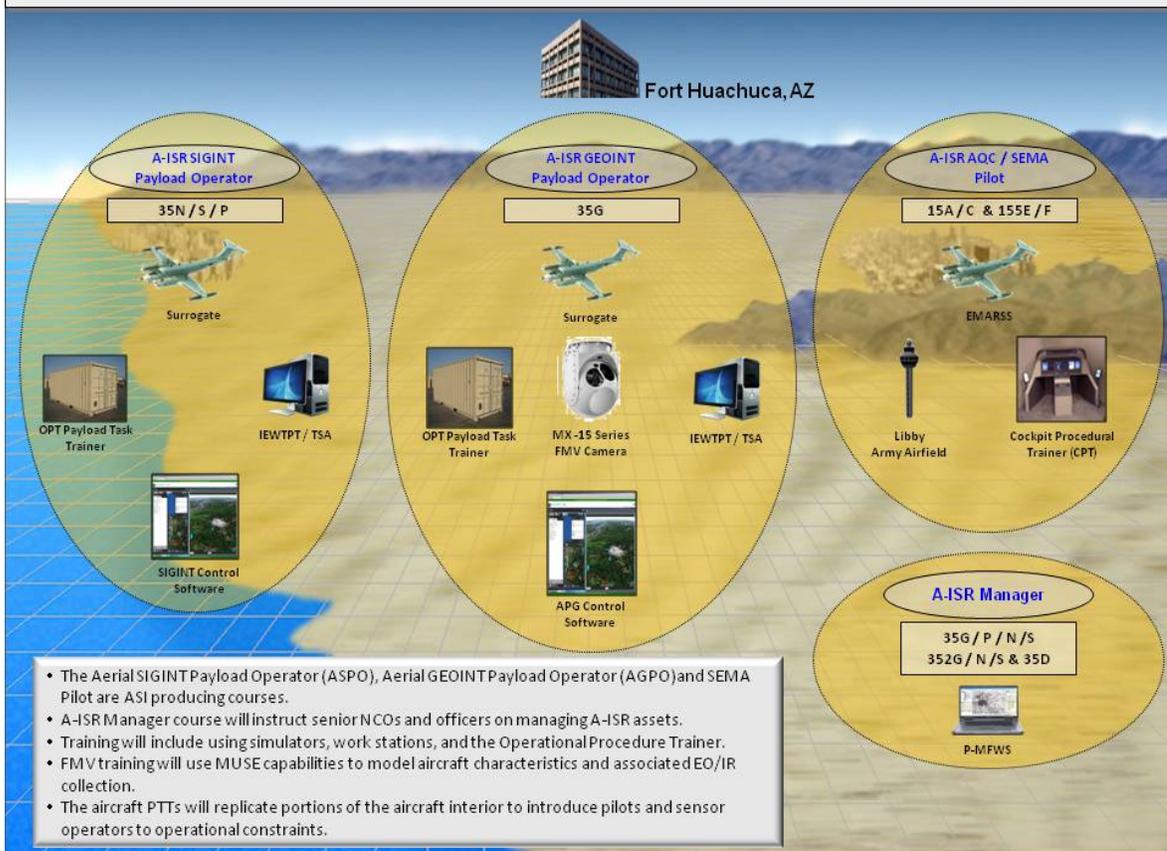


6.1.2.2 Systems View (SV)

Institutional EMARSS training systems and connections will consist of:

- EMARSS
- EMARSS Maintenance Vehicle (EMV)
- EMARSS TSA
 - EMARSS MX-15 TSA

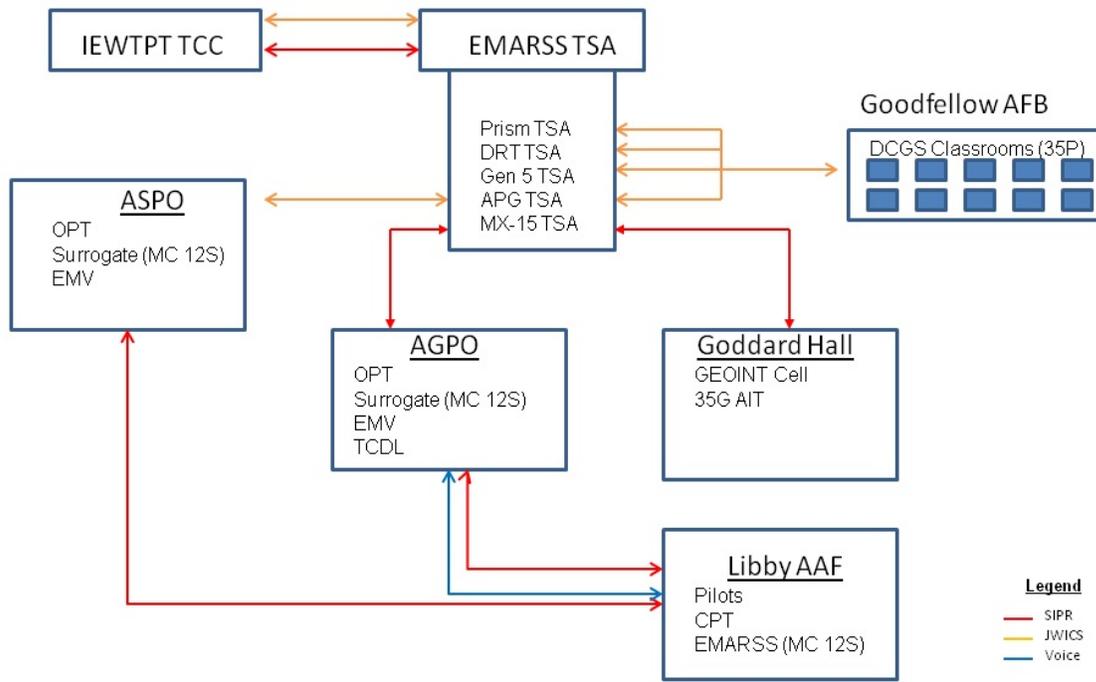
Institutional EMARSS - Functional Courses - Fort Huachuca, AZ



- EMARSS DRT TSA
- EMARSS Prism TSA
- EMARSS Gen5 TSA
- EMARSS BAE TSA
- IEWTPT
- EMARSS CPT
- EMARSS GEOINT PTT
- EMARSS SIGINT PTT
- DCGS-A
- TCDL
- NSANet
- JWICS
- SIPRNet
- NIPRNet

ICoE will manage simulations and class content from an ICoE simulations enclave. Networked simulations and simulators will provide communications, data, and simulation scenarios from ICTC to the training workstations and PTTs. ICTC will provide white cell and simulations management support.

Institutional EMARSS Training SV-1



6.1.2.3 Technical View (TV)

TBD.

6.1.3 Management, Evaluation, and Resource (MER) Processes Component

6.1.3.1 Management

ICoE will use established and approved TRADOC management processes to manage the training curricula, training facilities, and associated training devices with the support of PdM MARSS PM Fixed Wing, and PEO STRI.

6.1.3.1.1 Strategic Planning

ICoE will determine the EMARSS institutional training strategy to ensure the total training package meets the requirements set forth in the JDSAISR Initial Capabilities Document. ICoE will design the institutional strategy in accordance with Army policy and strategic visions included in the following documents:

- Intelligence 2020 Strategic plan
- TP 525-8-2 w/ Change 1 (C1) The United States Army Learning Model (6 June 2011)
- The United States Army Operating Concept 2016-2028 (19 August 2010)
- TRADOC Campaign Plan
- TRADOC Commander's training guidance
- ICoE Commander's training guidance

6.1.3.1.2 Concept Development and Experimentation (CD&E)

Not Applicable

6.1.3.1.3 Research and Studies

- Aerial Reconnaissance and Surveillance Integrated Capabilities Development Team chartered October 2011
- Task Force Observe, Detect, Identify, Neutralize Training Needs Analysis approved January 2011
- Task Force Observe, Detect, Identify, Neutralize Job Analysis approved January 2011
- A-ISR TNA September 2009
- Mission Area Analysis (MAA) February 2008
- A-ISR Training Study December 2007
- Training Needs Analysis for an A-ISR training center approved April 2007
- AEB DOTMLPF evaluation January 2007
- ACS TDFA completed September 2005

6.1.3.1.4 Policy and Guidance

The following Army Regulations (AR)s and TRADOC Regulation (TR) describe the policies regulating the implementation of the TSS for EMARSS:

- AR 350-1 Army Training and Leader Development (18 December 2009)
- AR 350-38 Training Device Policies and Management (15 October 1993)
- TR 350-70 Systems Approach to Training Management, Processes, and Products (6 December 2011)
- TP 525-8-2 with C1 The United States Army Learning Model (6 June 2011)
- TP 525-3-1 The United States Army Operating Concept 2016-2028 (19 Aug 2010)
- TRADOC Commander's training guidance
- USAICoE Commander's training guidance

6.1.3.1.5 Requirements Generation

- EMARSS Milestone B Acquisition Decision Memorandum (15 November 2010)
- JDSAISR ICD (10 September 2010)
- EMARSS Directed Requirement (October 2009)
- ACS CDD (9 September 2009)

6.1.3.1.6 Synchronization

ICoE will synchronize EMARSS training development requirements with DCGS-A, AACE, and other Centers of Excellence training efforts. ICoE will incorporate EMARSS TTPs and mission profiles into the A-ISR training strategy to maximize training opportunities and leverage existing initiatives.

6.1.3.1.7 Joint Training Support

ICoE will assess for any joint training requirements upon receipt of pending Department of Defense decisions.

6.1.3.2 Evaluation

The USAICoE Quality Assurance Office (QAO) provides oversight on all institutional training curriculums by evaluating classroom instruction and all associated training documentation and courseware. The Aviation Resource Management System (ARMS) and the Department of Evaluation and Standards, Fort Rucker, Alabama will concurrently evaluate and provide oversight of all rated and non-rated aviation crew training curriculums.

6.1.3.2.1 Quality Assurance (QA)

PM ARES or PM Fixed Wing will provide funding for the USAICoE Quality Assurance Office (QAO) to conduct Post Fielding Training Effectiveness Analysis (PFTEA). Immediately after the training and one year after the fielding, QAO will solicit feedback on the system. Quality Assurance for the proponent will receive feedback from the users to ensure the training meets the user's need. Feedback will assist the proponent in correcting institutional training domain deficiencies as well as revising the training courses and materials. Users will also provide results from field training exercises (FTX) and/or operational experiences in addition to institutional training evaluation data.

6.1.3.2.2 Assessments

The USAICoE QAO performs assessments of all institutional courses by individual surveys, special surveys and classroom monitoring. USAICoE survey results are provided to the Deputy Commander of Training and all relevant command sections related to a given survey.

6.1.3.2.3 Customer Feedback

Surveys prior to and after training and follow up surveys sent to the unit 6-9 months after leaving the institution are used by the USAICoE QAO to ensure student feedback is considered when evaluating training, training documentation, and courseware.

6.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)

ICoE will use lessons learned and AAR data to support efficient and effective EMARSS institutional training by identifying and incorporating relevant TTPs from the operational environment. Data is available from:

- ICoE lessons learned team and the Center for Army Lessons Learned (CALL) collect and analyze data from current and historic Army operations and training events.
- Command-driven AARs conducted after training events and deployments provide feedback that can be used to improve training at the institution.
- IEWTPT's AAR capability will be used to assess the effectiveness of the training.

6.1.3.3 Resource

Institutional Training and Training Development

	FY13 Yrs or \$	FY14 Yrs or \$	FY15 Yrs or \$	FY16 Yrs or \$	FY17 Yrs or \$	FY18 Yrs or \$
Contractor	1.0MY	1.0MY	1.0MY	1.0MY	1.0MY	1.0MY
Civilian	1.0MY	1.0MY	7.0MY	7.0MY	9.0MY	9.0MY
Enlisted	1.0MY	1.0MY	9.0MY	9.0MY	10.0MY	10.0MY
Warrant			2.0MY	2.0MY	2.0MY	3.0MY
Officer	0.2MY	1.2MY	2.2MY	2.2MY	2.2MY	2.2MY
Contract/Sp t	\$150K	\$157.5K	\$165K	\$173K	\$181K	\$192K
Trvl/Per Diem	\$33.2K	\$40.4K	\$41.7K	\$43K	44.4K	\$45.6K

Rationale: Fielding 6 EMD in FY15 and 6 every year after during the course of the year until the maximum fleet of 24 is reached. Student throughput in FY15 is 18 pilots, 9 GEOINT operators, 9 COMINT/APG operators, 6 A-ISR Managers. Student throughput in FY 16 is 24, 12, 12, and 9. Student throughput in FY17 is 29, 15, 15, and 12. Student throughput in FY 18 is 35, 18, 18, and 12. In FY19, student throughput will drop to 22, 11, 11, and 12 to sustain the EMARSS fleet.

ICoE requires instructors and training developers to implement and maintain the course documentation, programs of instruction, and other outputs of the SAT process. Personnel mix requires further analysis to determine the most effective division of work between Soldiers, Civilians, and Contractors. Travel/Per Diem represents cost to attend training and reviews; and for four instructor/key personnel to evaluate training prior to operational testing. TDY costs for required reviews and meetings are based on four 5-day meetings per year and four personnel spending 4 weeks at the contractor location for training development purposes.

NSTID Training and Training Development

	FY13 Yrs or \$	FY14 Yrs or \$	FY15 Yrs or \$	FY16 Yrs or \$	FY17 Yrs or \$	FY18 Yrs or \$
Contractor	3.0MY	4.0MY	2.0MY	2.0MY	2.0MY	2.0MY
Civilian	1.0MY	1.0MY	1.0MY	1.0MY	1.0MY	1.0MY
Enlisted	3.0MY	4.0MY	2.0MY	2.0MY	2.0MY	2.0MY
Officer	0.2MY	0.2MY	0.2MY	0.2MY	0.2MY	0.2MY
Contract/Sp t	\$450K	\$630K	\$330K	\$346K	\$362K	\$378K
Trvl/Per Diem	\$30.7K	\$121.9K	\$80.8K	\$84.9K	\$89.1K	\$93.6
Classrooms	\$4.5K	\$9.3K				
Equipment	\$15K	\$31K				
Printing	\$4.6K	\$9.3K				

Rationale:Initial NET training requirement includes the IKPT, and verification and validation of contractor-provided training materials. As the institutional training grows with the EMARSS fieldings, the institutional training will provide the majority of training to support the expanding fleet. Manpower estimates for FY14 include assistance in transitioning the NET TSP to an institutional TSP. The work effort includes training development and evaluation, input/development/updates of requirement documentation pertaining to training, attendance at IPTs, IPRs, TIMs, etc., and verification of technical manuals. Travel/Per Diem amounts represent costs to attend required reviews/meetings mentioned above. Personnel mix requires further analysis to determine the most effective division of work between Soldiers, Civilians, and Contractors. TDY costs for initial year NET are based on six personnel attending one 7 week NET and four 5 day meetings per year.

Training Products

	FY13 Yrs or \$	FY14 Yrs or \$	FY15 Yrs or \$	FY16 Yrs or \$	FY17 Yrs or \$	FY18 Yrs or \$
Training Pubs	\$300K	\$75K	\$30K	\$31.5K	\$33.1K	\$34.7K
TSP	\$600K	\$315	\$165K	\$174K	\$182K	\$189K
IMI			\$82.5K	\$31.5K	\$33.1K	\$34.7K
STP	\$200K	\$200K	\$200K	\$200K	\$200K	\$200K
IETM	\$40K	\$40K	\$40K	\$45K	\$50K	\$50K
Printing	\$6K	\$6K	\$12K	\$12.7K	\$13.2K	\$13.7K

Rationale: Cost to develop, revise, maintain, and distribute Training Products. This includes cost to develop TSP that will be used for NET, institutional, operational, and self-development domains.

TADSS

	Sunk Costs	FY13 Yrs or \$	FY14 Yrs or \$	FY15 Yrs or \$	FY16 Yrs or \$	FY17 Yrs or \$	FY18 Yrs or \$
EMARSS Aircraft				1x AC	1x AC	1x AC	1x AC
Aircraft O&M				\$XXX	\$XXX	\$XXX	\$XXX
EMV				1xEMV			
EMV O&M				\$XXX	\$XXX	\$XXX	\$XXX
Operator Simulators			\$2000K	\$70K	\$73.5K	\$77.1K	\$81K

CPT	\$601K		\$1098K	\$70K	\$73.5K	\$77.1K	\$81K
Software			\$250K	\$250K	\$267K	\$275K	\$275K
Licenses			\$120K	\$126K	\$133K	\$140K	\$147K
TMDE				\$60K	\$63K	\$67K	\$72K
Printing				\$2K	\$2.2K	\$2.4K	\$2.6k
TSA: Contractor		\$460K	\$920K	\$920K	\$690K	\$690K	\$690K
Software Licenses			\$60K	\$60K	\$60K	\$60K	\$60K
COTS/GOTS Hardware			\$20k	\$40k	\$60k	\$80k	\$20k
Maintenance				\$400K	\$400K	\$400K	\$400K

Rationale:Cost to procure and sustain TADSS. Includes cost to develop and maintain the simulation environment for institutional training.

Initial Target Signature Array (TSA) resource requirements for EMARSS based on an informal ROM assessment by ICoE proponent rep and PEO STRI (actual resource requirements may vary). During EMD phase engineering and technical exchanges will be required to ensure training device development supports system CTL training. Once system TSA development is initiated, it will primarily affect software engineering and integration. A Commercial "white box" solution will be used as the foundation for EMARSS software training (supporting combined system CTL "knob-ology" training and comprehensive system application training). This "white box" solution will include all relevant EMARSS collection and payload software and associated PED software. The funding for this will be split between the responsible system PMs. PM ARES is expected to fund and develop/integrate those software applications associated with EMARSS specific payloads, sensors and processes. FY13 is estimated at (2) engineers with successive years increased during critical development/integration timelines. Software licenses estimated based on reoccurring license cost of (3)

existing applications at (2) AEB locations. Hardware estimated for high powered laptop, (10) per site for software CTL training (\$2k each). Maintenance estimated for (2) maintainers to support training device maintenance and updates for locations, plus travel. Manpower estimate per contract man year equivalent (CME) engineer is \$230k (includes travel); for Maintainer \$200k per year (includes travel).

Facilities and Land

	FY13 Yrs or \$K	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K
Facilities	\$2,000K	\$4,000K				
Classrooms	\$66K	\$68K	\$70K	\$72K	\$74K	\$76K

Rationale:Cost to modify existing facilities to accommodate new power and shielding requirements of new system concrete pad and electrical power needed to support the simulation environment.

Training Services and TII

	FY13 Yrs or \$K	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K
LMS	\$60K	\$61.8K	\$63.6K	\$65.6K	\$67.5K	\$69.6K
Servers	\$0K	\$0K	\$75K	\$4K	\$4.1K	\$4.24K
Licenses	\$120K	\$123.6K	\$127.3K	\$131.1K	\$135K	\$139K
IT Support	\$110K	\$113K	\$115K	\$118K	\$121K	\$124K
Other	\$4K	\$4.1K	\$4.24K	\$4.37K	\$4.5K	\$4.63K

Rationale:Software license renewal fees and 1 MY for IT support will be required. An inflation rate of 3% was used to factor out years. Note: Servers will not be needed until FY15and after initial purchase will only need maintenance and ancillary supplies/upgrades.

Evaluation and Quality Assurance

	FY13 Yrs or \$K	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K
Civilian	0.2MY	0.2MY	0.2MY	0.2MY	0.2MY	0.2MY
Enlisted	0.2MY	0.2MY	0.2MY	0.2MY	0.2MY	0.2MY

Rationale: Personnel will be required to conduct evaluation/quality assurance of training.

7.0 Operational Training Domain

EMARSS-equipped AEBs must be trained and ready to provide direct support to Brigade Combat Teams (BCT) conducting decisive action in support of Unified Land Operations (ULO). Commanders will use the EMARSS TSS products to train mission essential collective and supporting individual tasks before, during, and after deployment to a theater of operations. ICoE will support EMARSS operational training through the Global Joint Training Infrastructure.

7.1 Operational Training Concept and Strategy

EMARSS training in the operational domain will consist of NET, the Commander's ATP (for all aircrew members), a formal OJT program (for PED operators), and unit collective training. ICoE will provide support to all operational training product lines through the GJTI on the appropriately classified network to ensure EMARSS unit personnel are ready and able to perform the complex critical individual and collective tasks required for mission success.

NET: PdM MARSS and NSTID will conduct NET/DTT consisting of role-specific programs of instruction to prepare the fielded unit to successfully employ EMARSS capabilities in direct support to tactical operations. At each fielding event, PdM MARSS and NSTID will deliver an up-to-date NET TSP in approved TRADOC and DoD formats, sufficient to train a full complement of Soldiers to employ EMARSS across the full spectrum of ULO. NSTID will develop and execute DTT as an integral part of the NET POIs. The leave behind NET TSP will include all POIs consisting of lesson plans (LP) with integrated DTT, user's manuals and references (IETMs), TADSS (TSA), and all dL developed for system training. For further details, see paragraph 5.1 - New Equipment Training Concept.

ATP: The ATP is the commander's program for training combat-ready rated and nonrated crewmembers. The ATP applies to all Army aviators in operational flying positions, Non-rated Crew Members (NCMs) (onboard payload operators), and non-crewmembers that perform crewmember duties per AR 600-106. Other individuals authorized to perform crewmember duties in EMARSS aircraft will comply with Chapter 9 of AR 95-1, all appropriate supplements to AR 95-1, and the EMARSS ATM. EMARSS-equipped units will incorporate material from the NET TSP and the ATM to ensure training covers the entire spectrum from task proficiency at the individual level, to crew proficiency, and finally to unit proficiency in executing mission-essential tasks. As a minimum, the ATP will include -

- A description of the benefits to be gained through standardization.
- Objectives to be achieved.

- The procedures or actions to be standardized described in detail.
- A specific plan for implementation.
- An effective procedure for enforcement.
- Delineated responsibilities.

EMARSS-equipped unit commanders will use a series of readiness levels (training gates) to track implementation and accomplishment of the Army's crawl, walk, and run training methodology. RL training develops individual and crew proficiency in tasks that support collective tasks. RL 1 crewmembers train to sustain and improve collective task proficiency. RLs identify the training phase in which crewmembers are participating and measure crewmember readiness. Commanders evaluate each duty position to determine how it can best support the unit's Mission Essential Task List (METL). They develop commander's lists of base, mission and additional tasks to include the tasks in each flight mode required to accomplish the unit's mission. Commanders will specify annual training, flying-hour, and simulation device requirements according to the EMARSS ATM. Simulators and simulations are critical to the development and integration of the crawl-walk-run methodology of training EMARSS units.

As EMARSS is a nonstandard aircraft, Commanders must develop a training program that follows the guidelines and training concepts outlined in TC 3-04.11 and AR 95-1.

- The training program must be approved by the appropriate Army command and the training syllabus must be approved by USAACE.
- The task list developed for each duty position must establish minimum task iteration, flying hour, and evaluation requirements. Crewmembers flying such aircraft are not covered by CATS.
- Commanders will determine the frequency and number of task iterations required to maintain crewmember proficiency.
- Crewmembers must successfully complete ACT-E requirements prior to progressing to RL 1 (TC 3-04.11).

OJT: The fast-paced, tactical nature of the EMARSS mission demands a standardized method for integrating Soldiers into the fight. EMARSS units will establish a formal, mission-specific training program based on the NET TSP to train and sustain incoming and resident Soldiers on the perishable critical individual tasks that support the unit's METL. The OJT program will use the EMARSS TSA scenario-based training vignettes to present Soldiers with a realistic virtual operational environment through the payload control software.

Collective Training: EMARSS units will participate in Mission Training Complex exercises/collective training events through IEWTPT and the federated simulations environment as mission dictates and resources are available. These digital training exercises will provide EMARSS operators and tactical commanders the opportunity to practice employing EMARSS and EMARSS intelligence feeds to prosecute the tactical mission.

7.1.1 Product Lines

EMARSS operational product lines will include the training equipment, courseware, training manuals, TSPs, training facilities, and land necessary to train and sustain Soldiers on EMARSS capabilities and collective tasks. EMARSS operational training will leverage other training capabilities where possible to realize efficiencies for the Army. ICoE will develop a Combined Arms Training Strategy for AEBs that incorporates EMARSS training.

7.1.1.1 Training Information Infrastructure

Operational EMARSS Training Information Infrastructure (TII) will consist of a DCGS-A constructive simulation architecture, the TRADOC-approved data repository, the Military Intelligence Training System (MITS), and the necessary hardware and software to conduct training. EMARSS TII will conform to both joint and Army architectures and standards to enable the development, storage, retrieval, delivery, and management of Training Support System (TSS) products and information.

7.1.1.1.1 Hardware, Software, and Communications Systems

Units will access training support information and training exercise content using operational equipment including EMARSS aircraft, associated sub-system components, supporting systems, and the Global Information Grid (GIG). Specific equipment and network requirements are documented in paragraph 6.1.1.1.1.

7.1.1.1.2 Storage, Retrieval, and Delivery

See 6.1.1.1.2.

7.1.1.1.3 Management Capabilities

EMARSS TII will be managed by the Digital Training Management System (DTMS), ALMS, Army Distributed Learning Program (TADLP), MITS, and TRADOC-approved training databases.

7.1.1.1.4 Other Enabling Capabilities

Units must coordinate for aeromedical support and altitude chamber certification to maintain aviator and NCM readiness in support of mission requirements.

7.1.1.2 Training Products

ICoE will maintain all EMARSS training materials (including DTT) in knowledge centers on appropriately classified networks. PdM MARSS will provide updated training materials to ICoE and fielded units at each system increment. PdM MARSS will ensure new or updated training materials are clearly annotated to identify new, modified, or deleted content.

Units will incorporate content from the EMARSS NET TSP into the ATP and formal OJT program; ICoE will ensure unit training is consistent with the Military Intelligence and AEB Combined Arms Training Strategies. Units will select appropriate training materials for individual training programs, mission training plans, and collective training exercises to support the commander's mission.

7.1.1.2.1 Courseware

Units will develop an ATP and formal, role-specific OJT programs from the EMARSS NET TSP. Units will select mission-appropriate interactive courseware and interactive multimedia instruction from the NET TSP and modify as necessary to satisfy the commander's requirements. Units will provide all such modified courseware to ICoE to update the training database or incorporate into web-based instruction.

7.1.1.2.2 Courses

The unit's mission may dictate further training requirements such as Survival, Evasion, Resistance, and Escape training, water survival training, or Brigade Combat Training Center courses.

7.1.1.2.3 Training Publications

ICoE will maintain knowledge centers to host current IETMs, SUMs, STPs, ATMs, FTGs, and FMs, and superseded training publications until the legacy equipment is de-fielded.

7.1.1.2.4 TSP

PdM MARSS and the NET Team will use the TRADOC-approved NET TSP to deliver NET and as the leave-behind training package. Commanders will use elements of the NET TSP for unit sustainment training on critical collective tasks and supporting individual critical tasks. For a full description of the NET TSP, see paragraph 5.1 - New Equipment Training.

7.1.1.3 TADSS

EMARSS units will use the IEWTPT, EMARSS TSA, and other unique devices developed for NET and institutional training as the primary TADSS supporting the critical individual and collective tasks trained at home-station. For a full description of EMARSS TADSS, see paragraph 6.1.1.3 - TADSS and supporting sub-paragraphs.

7.1.1.3.1 Training Aids

PdM MARSS will resource training aids required for NET and unit sustainment training to include IETMs, SUMs, student handouts, job aids, and role/position checklists.

7.1.1.3.2 Training Devices

PdM MARSS will develop the EMARSS TSA to support individual and collective training. For a detailed description of the EMARSS TSA, see paragraph 6.1.1.3.2 - Training Devices. PdM MARSS will deliver an aircraft systems IMI as Government Off The Shelf (GOTS) equipment to ICoE; ICoE will issue copies to all aviators who graduate the EMARSS AQC for sustainment training.

7.1.1.3.3 Simulators

PdM MARSS will provide an EMARSS TSA to be the simulations interface through IEWTPT to the Army family of combined arms simulations. The EMARSS TSA will provide simulated sensor data to the EMARSS payload control software.

7.1.1.3.4 Simulations

The EMARSS TSA will connect to IEWTPT and provide operators with data from realistic scenarios for training. PdM MARSS will leverage existing sensors and activity models to replicate EMARSS in the virtual battle-space of the JLCCTC federation of simulations.

7.1.1.3.5 Instrumentation

ICoE, PEO STRI, INSCOM, and PdM MARSS will assess training instrumentation requirements during system development.

7.1.1.4 Training Facilities and Land

Units will train using existing facilities and land. Unit land requirements will depend heavily on mission operational tempo and supported unit training requirements.

7.1.1.4.1 Ranges

Live EMARSS training will require airspace for training flights and an electronic warfare range.

7.1.1.4.2 Maneuver Training Areas (MTA)

Live EMARSS training will require use of local Maneuver Training Areas to role-play supported units and targets.

7.1.1.4.3 Classrooms

Units will utilize pre-existing classrooms and training areas to conduct operational/sustainment training after the fielding of EMARSS.

7.1.1.4.4 CTCs

PdM MARSS will resource modeling of EMARSS capabilities in the constructive simulation for collective training at CTCs. CTCs will be able to stimulate EMARSS payload control software interfaces with the constructive simulation via the TSA and IEWTPT.

7.1.1.4.5 Logistics Support Areas

EMARSS operational training will not require logistics support areas beyond existing unit facilities.

7.1.1.4.6 Battle Command Training Centers (BCTC)

MTCs will use EMARSS capability models to present Soldiers and leaders with realistic responses to requests for support from EMARSS units before, during, and after simulated combat events.

7.1.1.5 Training Services

PdM MARSS will support all EMARSS training capabilities to include updates and sustainment through the end of EMARSS lifecycle.

7.1.1.5.1 Management Support Services

PdM MARSS will coordinate operational trainers' access to the information, courseware, requirements, devices, and communication technology management services necessary to conduct robust unit sustainment training with ICoE, AACE, or any other proponent body.

7.1.1.5.2 Acquisition Support Services

PdM MARSS will maintain and upgrade all system-specific TADSS when fielding product improvements. PdM MARSS will coordinate with PEO STRI PM Field Operations to develop and resource the CLS Management Decision Package (MDEP) commonly referred to as WCLS required for TADSS use at home station.

7.1.1.5.3 General Support Services

PdM MARSS will develop and distribute any other TADSS required to effectively conduct NET and unit sustainment training.

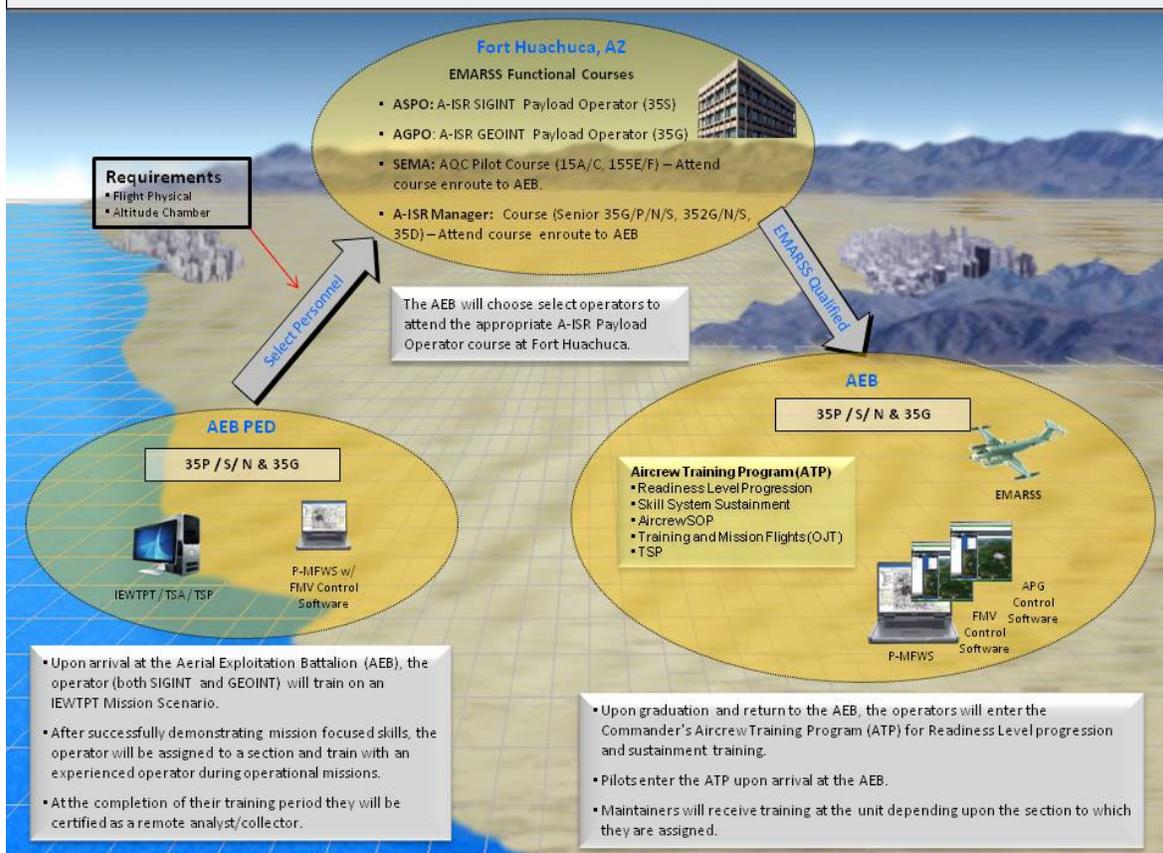
7.1.2 Architectures and Standards Component

7.1.2.1 Operational View (OV)

EMARSS operational training will consist of NET and sustainment training conducted at the AEB. PdM MARSS will provide NET using AEB facilities and the fielded system equipment. Sustainment training will consist of individual and collective training events that support the Commander's training strategy. Individual training will include the formal OJT program, the Commander's ATP, MTT rotations, and situational and field exercises as necessary to support the unit METL and the EMARSS Collective CTL. ICoE will host any classified dL products in an appropriate dL repository accessible from workstations in the AEB. The EMARSS TSA will link payload control software interfaces to simulated scenarios to train and sustain operator skills. The Mission Training Complexes (MTC) will support unit collective training events using a combination of entity resolution federated constructive and virtual simulations. AEBs do not deploy on the ARFORGEN cycle, so pre-deployment training will be conducted at the unit. Additional aircrew training requirements include but are not limited to:

Altitude chamber	Multiple Locations (CONUS/OCONUS)	(Every five years)
SERE 220	Fairchild AFB, WA	(One time requirement)
Water Survival	Fairchild AFB, WA/Pensacola, FL/ Ft. Rucker, AL	(One time requirement)
Flight refresher training	Dallas, TX/Ft. Rucker, AL	(18 months after initial qualification/every 24 months thereafter)

Operational EMARSS Training – AEB and Fort Huachuca, AZ



7.1.2.2 Systems View (SV)

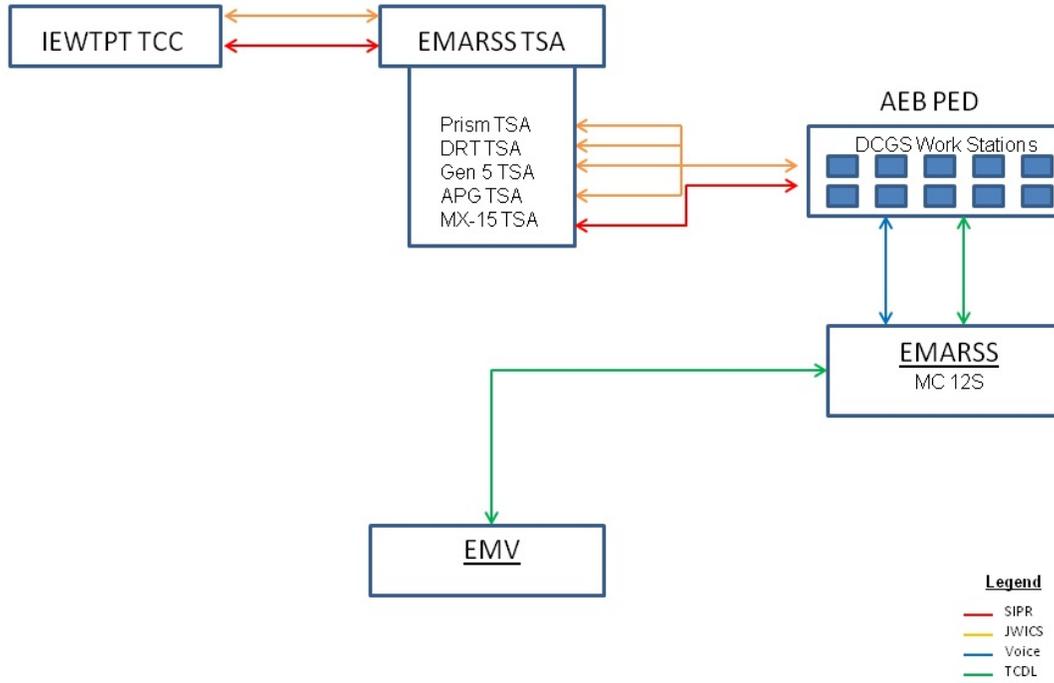
Operational EMARSS training will use the fielded system in a mission configuration and the EMARSS TSA connected to the IEWTP. Unit collective training may feed live, virtual, and constructive simulations at the BCTC or CTCs, while individual training to support collective tasks will access virtual and constructive simulations through the EMARSS TSA. ICoE will host all training content on appropriately classified learning management, knowledge, and dL repositories for access by unit Soldiers during unit training events.

7.1.2.3 Technical View (TV)

TBD.

7.1.3 Management, Evaluation, and Resource (MER) Processes Component

Operational EMARSS Training SV-1



7.1.3.1 Management

7.1.3.1.1 Strategic Planning

ICoE will design the EMARSS operational training strategy to ensure the total training package meets the requirements set forth in the JDSAISR Initial Capabilities Document and the Combined Arms Training Strategy. Commanders will consult the following Army policy and strategic visions when developing unit training plans:

- Intelligence 2020 Strategic plan
- TP 525-8-2 with C1 The United States Army Learning Model (6 June 2011)
- The United States Army Operating Concept 2016-2028 (19 August 2010)

7.1.3.1.2 Concept Development and Experimentation (CD&E)

Not Applicable

7.1.3.1.3 Research and Studies

Not Applicable

7.1.3.1.4 Policy and Guidance

The following Army Regulations (AR), TRADOC Regulation (TR), TRADOC Publications (TP) and Training Circulars (TC) describe the policies regulating the implementation of the TSS for EMARSS:

- AR 95-1 Flight Regulations
- AR 350-1 Army Training and Leader Development. (18 December 2009)
- AR 350-38 Training Device Policies and Management. (15 October 1993)
- TC 3-04.11 Commander's Aircrew Training Program for Individual, Crew, and Collective Training (19 November 2009)
- TR 350-70 Systems Approach to Training Management, Processes, and Products (6 December 2011)
- TP 525-8-2 with C1 The United States Army Learning Model (6 June 2011)
- TP 525-3-1 The United States Army Operating Concept 2016-2028 (19 August 2010)
- FORSCOM Commander's training guidance
- INSCOM Commander's training guidance

7.1.3.1.5 Requirements Generation

- JDSAISR ICD (10 September 2010)
- EMARSS Directed Requirement (October 2010)
- ACS CDD (9 September 2009)
- EMARSS Milestone B Acquisition Decision Memorandum (15 November 2010)

7.1.3.1.6 Synchronization

PdM MARSS, INSCOM, and ICoE will synchronization operational training efforts with other training initiatives to maximize the effectiveness of the EMARSS TSS. These synchronization efforts may include:

- Unit Set Fielding
- TADSS distribution plans

- Synchronizing EMARSS training development requirements with DCGS-A training requirements
- Coordinating EMARSS aircrew training requirements with USAACE
- Coordinating home-station training through the appropriate proponent (e.g. INSCOM, FORSCOM, IMCOM)

7.1.3.1.7 Joint Training Support

EMARSS operational training will support joint training as directed by the appropriate proponent authority.

7.1.3.2 Evaluation

7.1.3.2.1 Quality Assurance (QA)

PdM MARSS will provide funding for the ICoE Quality Assurance Office (QAO) to conduct a PFTEA one year after the FUE to validate that operational training meets mission training requirements. As part of the PFTEA, the QAO will conduct surveys, evaluations, and follow-up reporting using feedback from receiving units. The QAO will provide all information to the TD&S Directorate, NSTID, ICoE, TCM IS, and PdM MARSS. ICoE will use the feedback to identify and correct training deficiencies and during development of the next generation of equipment or product improvements.

7.1.3.2.2 Assessments

Commanders will use assessment support services to evaluate the EMARSS TSS and its relevance to the training process. Assessment tools include:

- Training evaluation and analyses
- Monthly status reports
- Risk Assessment
- Strategic Readiness System

7.1.3.2.3 Customer Feedback

ICoE and PdM MARSS will use customer feedback to evaluate and trigger corrections to the EMARSS TSS. Feedback tools include:

- Electronic media for surveys

- Interviews
- Questionnaires
- Critiques
- AARs

7.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)

ICoE, Commanders, and PdM MARSS will use lessons learned and AAR data to support efficient and effective EMARSS operational training by observing unit and individual performance in the operational environment to identify strengths and weaknesses.

The ICoE lessons learned team and the Center for Army Lessons Learned (CALL) collect and analyze data from a variety of current and historical sources, including Army operations and training events. CALL disseminates this information and other related research materials to Soldiers through a variety of print and electronic media.

Commanders will conduct AARs after training events and deployments to collect feedback to improve operational training. Commanders and unit trainers will use IEWTPT TCC's AAR capability to assess the effectiveness of the training.

7.1.3.3 Resource Processes

PdM MARSS and ICoE will plan the integrated training investment strategy and submit training support requirements to the appropriate Program Evaluation Group to ensure the EMARSS TSS meets operational training requirements.

8.0 Self-Development Training Domain

8.1 Self-Development Training Concept and Strategy

Due to the classification of EMARSS and target information, training in all domains must be conducted inside a SCIF on classified computers. Therefore, EMARSS self-development training will consist only of Soldiers' self-directed usage of the operational TSS outside of mission hours. Soldiers must coordinate all self-development activities with the appropriate local authority prior to committing unit resources to unscheduled costs from simulator or simulations run-time. Aviators will use their issued copy of the MC-12S aircraft systems IMI for self-development. For details on the operational TSS, see paragraph 7 - Operational Training Domain in entirety.

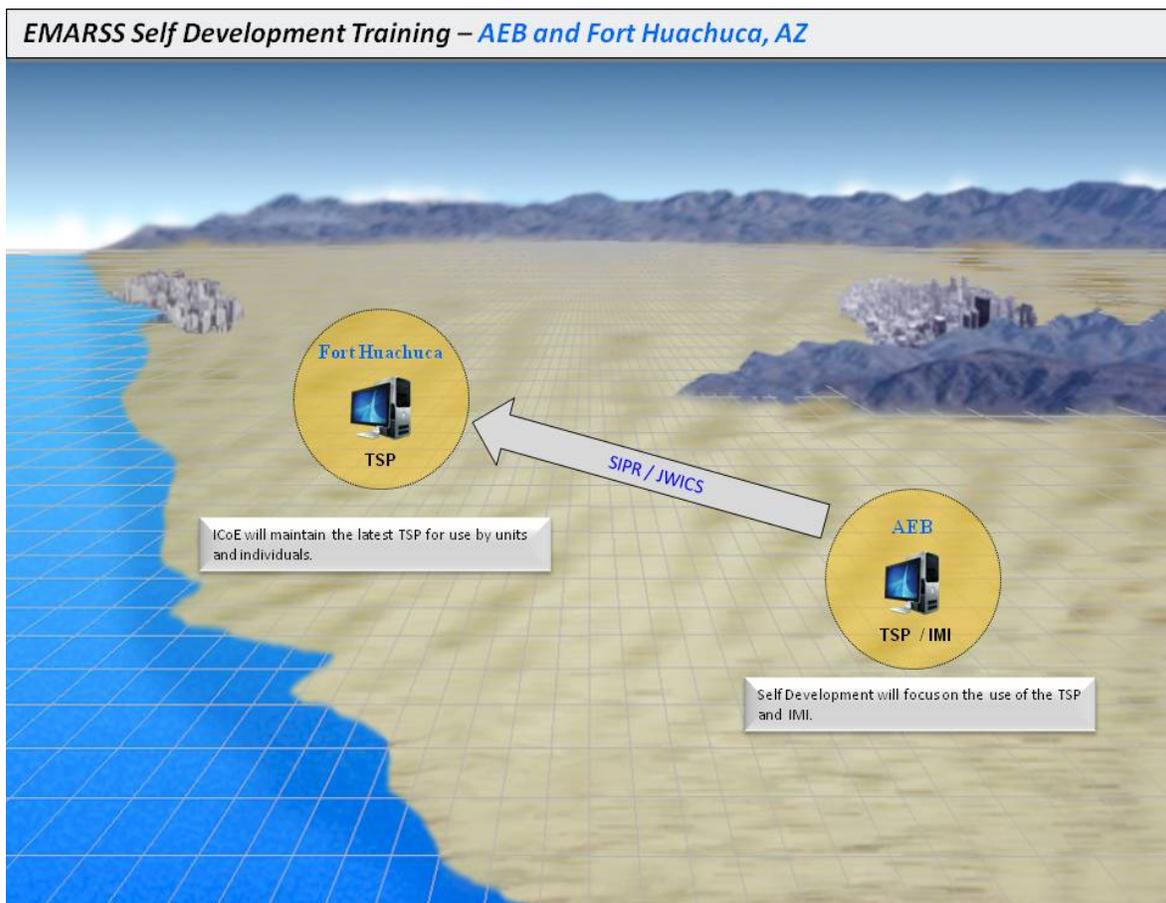
8.1.1 Product Lines

Not Applicable

8.1.2 Architectures and Standards Component

8.1.2.1 Operational View (OV)

EMARSS self-development training will consist of dL products developed for the operational domain.

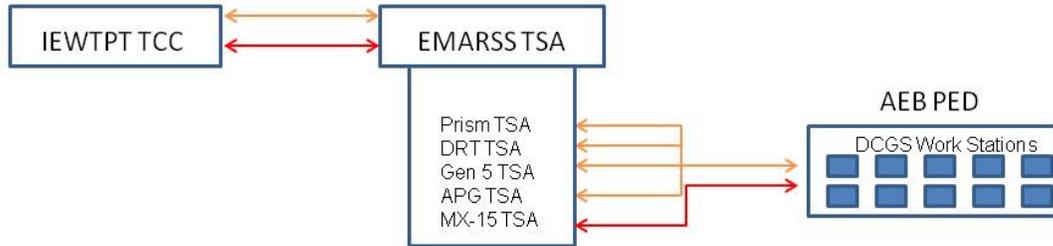


8.1.2.2 Systems View (SV)

Soldiers will conduct self-development training on operational workstations in a SCIF. Soldiers will access training content hosted locally on the EMARSS TSA or dL repositories available on classified networks.

8.1.2.3 Technical View (TV)

Self Development EMARSS Training SV-1



Legend

- SIPR
- JWICS
- Voice
- TCDC

Not Applicable

8.1.3 Management, Evaluation, and Resource (MER) Processes Component

Not Applicable

A Milestone Annex

TRAINING DEVELOPMENT MILESTONE		PAGE 1 OF		REQUIREMENTS CONTROL
SCHEDULE - SHEET A		1 PAGES		SYMBOL
SYSTEM: Enhanced Medium-Altitude Reconnaissance and Surveillance System (EMARSS)		ACAT II	OFFICE SYMBOL	AS OF DATE 13 SEP 2012
POINTS OF CONTACT		NAME	OFFICE SYMBOL	TELEPHONE
MATERIEL COMMAND		PdM MARSS LTC Dean Hoffman	SFAE-IEW&S- EMARSS	DSN 987-4151
TRADOC PROPONENT				
TCM INTELLIGENCE SENSORS:		Mr. Lee Ilse	ATZS-CDI- EMARSS-IS	DSN 879-0200
CD:				
TD:		SFC James S. Goss	USAICoE, NSTID	DSN 879-3203
ATSC:				
SUPPORTING PROPONENTS:				
ITEM	DATE	RESPONSIBLE AGENCY/POC		TELEPHONE
MNS:				
SMMP:				
MRD:				
ILSMP:				
TTSP:	D, 25 OCT 12	SFC James S. Goss	USAICoE, NSTID	DSN 879-3203
QQPRI:				
BOIP:				
NETP:				
JDSAIRS ICD:	A, 9	Mr. Adam Risner	USAICoE, TCM-IS	DSN 821-1108

	SEP 10			
CPD:	D, 13 SEP 12	Mr. Adam Risner	USAICoE, TCM-IS	DSN 821-1108
STRAP:	D, 13 SEP 12	Mr. Quentin Fuller	USAICoE, NSTID	DSN 821-6125
<p>COMMENTS:</p> <p>DATE:</p> <p>D = Draft</p> <p>A = Approved</p> <p>P = Pending</p>				

TRAINING DEVELOPMENT MILESTONE SCHEDULE - SHEET B				PAGE OF PAGES				REQUIREMENTS CONTROL SYMBOL			
SYSTEM EMARSS		TRADOC SYMBOL						AS OF DATE 21 May 2010			
TRAINING PACKAGE ELEMENT/PRODUCT											
MILESTONES BY QUARTER											
LEGE ND:											
STRAP (to ICoE CG)				X							
CPD (Staffed for Approval)			X								
TTS P				X							

IKP							X								
T															
TSA											X				
TMs							X								

NOTE: Identify **TRAINING DEVELOPMENT MILESTONES**. TRADOC FORM 569-1-R-E provides a detailed list of typical training development products required to support system training integration.

COMMENTS:

B References

1. EMARSS Milestone B Acquisition Decision Memorandum, approved 15 November 2010
2. JDAISR ICD, approved 10 September 2010
3. A-ISR TNA, approved 30 April 2007.
4. 305thMI Bn Training Deficiencies Memorandum, dated 7 December 2006.
5. DCGS-A STRAP, approved 11 January 2011.)
6. IEWTPT ORD, approved 23 Jul 2004.
7. IEWTPT STRAP, approved 5 December 2007.
8. SEMA MI Critical Task List, approved December 2010.
9. 35G CTL, approved 7 May 2010.
10. 35N CTL, approved 15 October 2008.
11. 352N CTL, approved 15 October 2008.
12. 35P CTL, approved 28 November 2007.
13. 35S CTL, approved 16 March 2007.
14. 35T CTL, approved 28 August 2007.
15. 353T CTL, approved 6 September 2007.

C Coordination Annex

Organization/POC (Date)	Summary of Comments Submitted (A/S/C)			Comments Accepted/ Rejected						Rationale for Non-Acceptance - S, C
				Accepted			Rejected			
	A	S	C	A	S	C	A	S	C	
v0.2.3 Richard P Athanas 2013/04/23 - 2013/05/03	Document Accepted As Written			0	0	0	0	0	0	-
v0.2.1 Approvals - James A Callahan 2013/04/18 - 2013/04/28	Document Accepted As Written			0	0	0	0	0	0	-
v0.2 Army - USASOC 2013/01/23 - 2013/02/08	No Comments Submitted			0	0	0	0	0	0	-
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v0.2 Army - Combined Arms Center 2013/01/23 - 2013/02/08	No Comments Submitted	0	0	0	0	0	0	0	-
v0.2 Army - CAC-T; Training Management Dir 2013/01/23 - 2013/02/08	1	10	0	1	10	0	0	0	0
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Key
Completed Review with Comments
Completed Review, No Comments
Active Review Occurring



DEPARTMENT OF THE ARMY
UNITED STATES ARMY INTELLIGENCE CENTER OF EXCELLENCE
1903 HATFIELD STREET
FORT HUACHUCA, ARIZONA 85613-7000

ATZS-DCT

16 April 2013

MEMORANDUM FOR Director, New Systems Training and Integration Directorate
(ATZS-CDI-N), 550 Cibique Street, Ft. Huachuca, AZ 85613-7017

SUBJECT: Approval of System Training Plan (STRAP) for the Enhanced Medium-
Altitude Reconnaissance and Surveillance System (EMARSS)

1. The EMARSS STRAP is approved. Approved STRAP will be posted to the Central Army Registry (CAR) website: www.adtdl.army.mil.

2. Point of contact for this STRAP is Mr. Stephen McFarland, NSTID STRAP Manager (520) 533-5387 (DSN 821). stephen.j.mcfarland.civ@mail.mil