

**Tactical Airspace Integration System  
(TAIS) Increment 2  
(version 3.0)**

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USAACE - Aviation School

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

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## 1.0 System Description

The TAIS Increment 2 function on the modern battlefield is to provide the Joint Force Commander or Combatant Commander a highly mobile, self-contained, interoperable, integrated, and reliable airspace management information system platform for airspace deconfliction, aircrew force protection, airspace command and control (AC2), tactical airway route structure management, and an airspace information center (AIC) that provides enroute flight management to airborne platforms operating in unified land operations airspace environments. The TAIS Increment 2 primary focus is to promote full situational awareness and understanding of the 3rd dimension of the area of operations for Army echelon commanders and supporting staffs. Specifically, the TAIS Increment 2 performs two major missions for the Army: 1) Airspace Information Center (AIC) operations, and 2) AC2 for Army organizational echelons, both currently performed by Increment 1 TAIS systems. Corps and Division HQs, AOBs, and CABs currently operate TAIS Increment 1 systems and will operate TAIS Increment 2 systems from the same force organization.

The primary missions of the TAIS are to manage AC2 at all Army operational levels, provide total airspace environment synchronization, and provide air traffic service/air traffic control (ATS/ATC). Major airspace users include aviation, air defense, fire support, intelligence, combined arms, and special operations units. During Defense Support of Civil Authorities (DSCA) and select garrison applications, the TAIS may be used as; range control airspace services, flight service stations interface, air picture situational awareness, traffic management services, and inter/intra ATS/ATC organization coordination services.

TAIS vehicles are self-deployable to field locations, often at the company/division-level Tactical Operation Centers (TOCs). The deployment configuration is an M1113, M1152, or M1152A1 High Mobility Multipurpose Wheeled Vehicle (HMMWV) with mounted shelter and trailer-mounted PU-801 generator. A cargo vehicle (M1152) is provided to transport the TAIS external equipment such as antennas, tent, remote workstations, etc. The cargo vehicle (M1152) is equipped with a towing pintle for towing the trailer-mounted PU-801 generator.

The TAIS will be operated by military occupational specialty (MOS) 15Q and maintained by (MOS) 94D.

New Equipment Training Plan (NETP) number: Not Available at this time

First unit equipped (FUE) date: TAIS was fielded 4Q FY00. Increment 2 fielding schedule is unknown at this time.



**2.0 Target Audience**

TARGET AUDIENCE		
Category	Job	Area of Concentration (AOC) Military Occupational Specialty (MOS)
<b>Operator</b>		
Air Traffic Control Operator	Air Traffic Controller	15Q
<b>Subject Matter Expert (SME)</b>		
Air Traffic and Airspace Management Technician	Technician	150A
Electronic Systems Maintenance	Systems Maintenance Officer	948B
<b>Supply</b>		

<b>Repairer</b>		
Air Traffic Control Equipment Repairer	Electronic Maintenance	94D
Power Generation Repairer	Generator Maintenance	91D
Wheeled Vehicle Repairer	Wheeled Vehicle Maintenance	91B
Utilities Equipment Repairer	Air Conditioning Repair and Maintenance	91C
<b>Trainer</b>		
Aviation Enlisted Training Institute (AETI), Fort Rucker, AL	15Q Advanced Individual Training	Tactical Systems
Unit Training	Command Directed Training	TAIS Proficiency and Certification
US Army Communication and Electronics School, Fort Gordon, GA	94D ATC Equipment Repair School	TAIS Proficiency and Certification
<b>Additional Information/Requirements:</b>		

### 3.0 Assumptions

- The Army requires no new Military Occupational Specialties (MOSs) or Additional Skill Identifiers (ASIs) to operate, maintain, or support the system.
- TAIS Increment 2 resident training will not require an increase in overall course length for MOS 15Q. The TAIS Increment 2 resident training will also not require an increase in overall course length for MOS 94D.
- The system will not require a change in skill or aptitude requirements, as described in Army Regulation (AR) 611-1 Military Occupational Classification Structure Development and Implementation, 30 Sep 1997.
- TAIS Increment 2 will not add additional manpower to the force structure.
- The TAIS Increment 2 must have the capability of being trained across all training domains (Institutional, Operational and Self-development).
- TAIS stimulators in the institutional training base must be updated to replicate in form and function of flight following (FF).
- Introduction of The TAIS Increment 2 into US Army Aviation units will not require any increase in the physical, sensory, or mental abilities of the personnel who have responsibility for its operation, maintenance, or support.
- Department of the Army, Active Army, Army National Guard and U. S. Army Reserve will provide the necessary resources, personnel, and equipment required to implement and support the TAIS.
- There will not be an increase in total Army force structure to support the manning of the TAIS.
- Training resources will be programmed, budgeted, developed and available as required to implement the training program identified/designed in this STRAP and its annexes.
- All Technical Manuals (TMs) and Interactive Electronic Technical Manuals (IETMs) which conform to applicable military specifications, will be validated and verified.
- The TAIS must have the capability of being trained across all training domains (Institutional, Operational and Self-development).
- All Interactive Multimedia Instruction (IMI) software will be developed in accordance with TRADOC REG 350-70, TRADOC Pam 350-70-2 Multimedia Courseware Development Guide, TRADOC Pam 350-70-10 Systems Approach to Training Course and Courseware Validation, TRADOC Pam 350-70-12 Distributed Learning—Managing Courseware Production and Implementation, Military Handbook (MIL-HDBK) 29612-4A Department of Defense Handbook Glossary for Training (Part 4) 31 Aug 2001, and DoD Instruction 1322.20 Development and Management of Interactive Courseware (ICW) for Military Training.
- U.S Army Aviation Center of Excellence (USAACE), Directorate of Training and Doctrine (DOTD) with assistance from the Directorate of Evaluation and

Standardization (DES) at Fort Rucker, AL, will conduct a Post Fielding Training Effectiveness Analyses (PFTEA) 18 Months after FUE of TAIS Increment 2.

- The MATDEV will also provide changes and new training material, hardware, and software that are identified as needed to resolve any issues documented in the PFTEA and other studies and evaluations.

4.0 Training Constraints

Constraint Type	Probable Impact	Mitigating Efforts
<i>Budgetary</i>		
Funding	If funding to develop field training to the Soldier becomes limited, this can have a severe impact on Soldier training and combat effectiveness regarding TAIS Increment 2	Capitalize training efforts for the TAIS Increment 2 NET to manage costs of training implementation
<i>Equipment</i>		
<i>Training Equipment</i>		
	Availability of funds for training, equipment, instructional material, multimedia training	

	support package, will impact training requirements	
<i>Personnel</i>		
<i>Facilities</i>		
<i>Human Factors Engineering</i>		
<i>System Safety</i>		

<i>Doctrine</i>		
<i>Environmental</i>		
<i>Support Services</i>		
	<p>Ability to ensure planning and system reviews involve logistical planning for out years of the TAIS Increment 2</p>	<p>The Program Manager (PM) is responsible for establishing the service and support contract for the initial fielding years and then will ensure that proper logistical support is established through the normal Army logistics system</p>

*Command Guidance*

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*Soldier Survivability*

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*Other*

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*Public Law*

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## 5.0 System Training Concept

- USAACE, as proponent for the TAIS, in Cooperation with U. S. Army Combined Arms Support Command (CASCOM) Systems Integration Division (SID) Sustainment Center of Excellence is responsible for the development and submission of this STRAP.
- Material Developer (MATDEV) training material will be in compliance with and developed using the Analysis, Design, Development, Implementation, Evaluation (ADDIE) methodology, be input using the Training Development Capability (TDC) program, apply the concept of Distributed Learning (DL), and be Shareable Object Content Reference Model (SCORM) compliant. Interactive Multimedia training will also be provided with the TAIS system once developed. All Interactive Multimedia Instruction (IMI) software will be developed in accordance with Army Learning Policy and Systems (ALPS) TR 350-70 Army Learning Policy and Systems, TRADOC Pam 350-70-2 Multimedia Courseware Development Guide, TRADOC Pam 350-70-12 The Army Distributed Learning (DL) Guide, Military Handbook (MIL-HDBK) 29612-4A Department of Defense Handbook Glossary for Training (Part 4), and DoD Instruction 1322.20 Development and Management of Interactive Courseware (ICW) for Military Training. The system will not require a change in skill or aptitude requirements, as described in Army Regulation (AR) 611-101.
- TAIS tasks will be added to existing user course within TDC for 15Q (Air Traffic Control Operator) and 150A (Air Traffic and Airspace Management Technician Warrant Officer) conducted at Ft. Rucker, AL and for the maintainer course 94D (Air Traffic Control Equipment Repairer) and 948B (Electronic Systems Maintenance Technician) conducted at Ft. Gordon, GA. Procedures for the operation and maintenance of the TAIS will also be described in approved technical manuals issued with each TAIS. TAIS Technical Manuals will also be available for download from the Defense Logistics Support Agency (LOGSA).
- USAACE, DOTD and U. S. Army Combined Arms Support Command (CASCOM) Systems Integration Division (SID) Sustainment Center of Excellence are responsible for the integration of training into USAACE and CASCOM proponent schools, resident/nonresident training programs, and for integration strategies into this STRAP.
- USAACE has accepted the use of a non-embedded System TADSS device for use with the TAIS as an incremental approach to the fully embedded training requirements of the CPD. This portable TADSS simulation device may be used in the institutional and operational training domains to support TAIS Operator Air Traffic Control proficiency and training.
- The TAIS with the assigned TADSS simulation capability is capable for use in

Live, Virtual, Constructive, Gaming-Integrated Training Environment (LVCG-ITE).

- TAIS training will be developed and conducted under the oversight, direction, and time-phased approvals of the USAACE Directorate of Training and Doctrine (DOTD) and Systems Integration Division (SID), CASCOM. TAIS training products will be prepared in accordance with the SAT process. Task analysis and individual task development will be performed using the US Army Training Development Capability (TDC) program, provided as Government Furnished Equipment (GFE).
- The Aviation Proponent along with the TAIS Program Management Office will ensure the TSP remains current throughout the TAIS program life cycle and that any revisions are provided to the Army Training Support Center (ATSC) in addition to the regular TAIS distribution requirements.
- The introduction of the TAIS upgrade into the Army will require New Equipment Training (NET) and institutional and unit level training to include the use of Interactive Multimedia Instruction (IMI)/Computer-Based Instruction (CBI), extension training materials and TMs for certification and sustainment training. A New Equipment Training Team (NETT) will provide the necessary training for operators and maintainers in units/institutions.
- Training for Active and Reserve Component units will be identical.
- USAACE and CASCOM Training Developers (TNGDEVs) will update institutional training of the TAIS when verified and validated training materials are received from the Program Management Office and instructor personnel have been trained and qualified on the system upgrades and capabilities of the TAIS System.
- The instructor personnel will be trained on the TAIS during Operator and Maintainer Instructors and Key Personnel Training (IKPT). The IKPT Instructor must provide instructor personnel a copy of the Master courseware to assist in identifying changes in existing institutional training.
- The Unit/Sustainment training will be accomplished using a combination of the TAIS NET and an Exportable Training Package (ETP) that will be left with the units identified in the New Equipment Training Plan (NETP).
- PM-TAIS is responsible for Funding of all NET Fielding events.



## 5.1 New Equipment Training Concept (NET)

Initial transfer of knowledge for the TAIS Increment 2 will be conducted in the form of IKPT. IKPT will be provided by the MATDEV for the CECOM NETT and Institutional Trainers (15Q and 94D). The MATDEV will provide courseware for the NETT IAW the SAT process. The MATDEV will develop a course of instruction to be used in the ETP, which the NETT will leave with the units as they are trained IAW the NETP. The Program Manager, PM ATC, will provide the funding for the NETT, to include travel funds. The MATDEV will deliver a copy of all courseware materials to USAACE DOTD and CASCOM Training Directorate for review, revision (if needed), and approval prior to IKPT.

The NET for the TAIS Increment 2 will only include training for the modifications and/or updates to the TAIS Increment 1 system. The NET concept is implemented through the materiel developer's requirement to provide a Training Support Package (TSP) for NET, unit sustainment, and institutional training and is the basis for all training. NETT will use a train the trainer approach. NET will leverage computer based training, Interactive Multimedia Instruction, and Soldiers will train on the newly fielded systems, and TADSS.

NET requirements include:

- TAIS Increment 2 NET is a materiel developer responsibility. It will be conducted by PM ATC or a PM selected contractor. It will be monitored by the USAACE DOTD Training Directorate and CASCOM Training Directorate.
- NET will be conducted at the receiving units when the system is delivered. The units will be responsible to conduct sustainment and ATC qualification and proficiency training on the system after receiving the NET. NET details will be in the NETP.
- NET will be conducted in conjunction with the fielding of the TAIS Increment 2. The TAIS Increment 2 will require operator and maintainer NET for IKPT. PM ATC will provide USAACE and CASCOM with the training materials required to train operator and maintainer tasks IAW the training strategy developed for TAIS Increment 2. PM ATC will use the training material to train test players for the Initial Operational Test and Evaluation (IOT&E). The TNGDEV at CASCOM is responsible for the selection of the critical tasks to support the (94D) training at the proponent school. The TNGDEV at USAACE is responsible for selection of the critical tasks to support the (15Q) training at the proponent school. PM ATC is responsible for the development of all NETP materials and ensures that they are IAW TRADOC Regulation 350-70, Army Learning Policy and Systems.
- New Equipment Training Team (NETT). A NETT will be provided by PM ATC to conduct all NET training requirements.

- The NET strategy is based on Army Regulation 350-1, Army Training and Leader Development, 18 Dec 2009 RAR in conjunction with the NET requirements and is the responsibility of PM ATC. The strategy will be coordinated with USAACE and CASCOM schools. NET development will, as a minimum, include a Total Task Inventory (TTI), NET Training Support Package (TSP) that includes multimedia in addition to POI's, lesson plans, technical manuals, student and instructor guides, and a course management plan. The TSP will include a tutorial "how to" module that permits identification of Soldier training proficiency by module. The TAIS equipment and training subsystem, all devices and products must be available for NET. The following NET courses are required: **(1)** Test Player Training, **(2)** Instructor and Key Personnel (I&KP) Course, and **(3)** Unit NET.
- The Instructor and Key Personnel Course should be conducted at least a year prior to the first fielding to allow training developer for USAACE and CASCOM to develop and submit lesson plans IAW TRADOC timelines.
- Once the unit has been fielded and received NET, the materiel developer will remain on call, and continue to support the system until fielding is completed throughout the entire MACOM. Fielding and training to Reserve and National Guard units, will be conducted in the same manner and at the same time as active army, and provided at selected locations determined to be the most cost effective and feasible.

## **5.2 Displaced Equipment Training (DET)**

There will be no displaced equipment during the TAIS Increment 2 upgrade. Since TAIS Increment 2 systems will not displace TAIS systems, all currently established training (individual, crew, sustainment, professional development, leadership) will require modification only to reflect Increment 2 functional capability enhancements.

### **5.3 Doctrine and Tactics Training (DTT)**

Doctrine and Tactics Training (DTT) will be adjusted in current POI's to reflect any changes to DTT provided by new capabilities of the Increment 2 upgrade.

IAW AR 350-1 Army Training and Leader Development

The requirement for DTT will be based on two determinations - does the new/improved system significantly change the unit's how-to-fight doctrine, and does the unit need help learning how to employ the new/improved system to accomplish its wartime/design mission?

a. USAACE TNGDEV will identify the requirement for DTT upon receipt of the draft NETP or displaced equipment training plan (DETP). This will be accomplished by:

(1) Conducting reviews of the applicable operational concepts generated by the requirements determination process and the organizational and operational plan prepared by the combat developer (CBTDEV) for the specific system.

(2) Ensuring timely submission to MATDEV and PM of identification of requirements and the concept for DTT for inclusion in NETP.

b. If, required, TNGDEV will develop a training strategy to accomplish DTT. In cases where NET may not require DTT, TNGDEV will ensure that NETP is annotated to show "DTT not required."

#### 5.4 Training Test Support Package (TTSP)

The USAACE TD with assistance of PM ATC will develop a Test Training Support Package (TTSP). USAACE and CASCOM proponents will review and approve the TTSP. The Lesson Plans (LPs) developed by PM ATC for the NET TSP will be put in the Training Development Capability (TDC) at least one year prior to FUE.

The final TTSP consists of:

- Training schedule for player personnel.
- POI for each affected MOS
- List of training devices and embedded training components.
- Army training and evaluations program, draft mission training plan (MTP) or changes to the MTP.
- Target audience description
- Draft Soldiers' Training Publications (STPs) or changes
- Lesson Plans (LP)
- Critical Task List (CTL)
- Field manuals (FM) or changes to FM's (when not provided with the Doctrine and Organization Test Package) Technical Manuals (TM), which conform to applicable military and commercial specifications, will be validated and verified, prior to initial NET and delivered to the user not later than 60 days prior to first system delivery.

## **6.0 Institutional Training Domain**

Institutional training courses for controllers (15Q) will be taught at USAACE and the training courses for maintainers (94D) will be taught at the Ordnance Electronic Maintenance Training Department (OEMTD)/CASCOM , in accordance with the Army Campaign Plan. Training is developed in compliance with the requirements identified in this STRAP, per the guidance in TRADOC Regulation 350-70 and designed to be safe, mission focused, and based on aviation doctrine. Institutional training and instruction will be in accordance with TRADOC Regulation 350-70 para 3-9. ALC [Army Learning Concept] instructional guidelines such as: performance oriented, emphasizing hands-on practical exercises, and prepares aviation soldiers to achieve and sustain proficiency of individual tasks. Standards are determined from the Mission Essential Task List (METL) and Soldier Training Publications (STPs). Training will be designed to be sequential by steps/procedures. Institutional and unit training programs should capitalize on TADSS technology that support efficient and effective training. Institutional Training products will be updated as need it.

## **6.1 Institutional Training Concept and Strategy**

TAIS Increment 2 Operator training will be integrated into the existing 15Q School at USAACE to the greatest extent possible. The TAIS Increment 2 capabilities will also be integrated into the 15Q Professional Development (PD) Courses (ALC and SLC) for familiarization/sustainment. Product Manager (PM) TAIS is required to develop TSP changes to TAIS Increment 2 training as the system matures IAW TR 350-70 Army Learning Policy and Systems. All training and training development will be IAW AR 350-1 Army Training and Leader Development and TR 350-70. Training development will include institutional training, PD courses, exportable TSPs, IMI and other forms of Distributed Learning. Training for the 15Q MOS 20, 30 and 40 levels will be to incorporate leader tasks on the proper techniques and tactics of the TAIS. There will not be an additional skill identifier (ASI) for the 15Q CMF. TAIS Maintenance training will be integrated into the existing 94D School at Ft. Gordon, GA to the greatest extent possible. Instructors from the 15Q and 94D School will be trained during IKPT with sufficient time to support and assist in the development of all institutional training requirements. The system individual training will include all tasks associated with the operation and maintenance of the TAIS Increment 2 which will be derived from the TSP. A full complement of training support products is required to support training of the TAIS Increment 2 systems in the institutions. The complete TAIS Increment 2 training support package (TSP) will be placed on the Central Army Registry (CAR) for unit use in certification and sustainment training after approval by the USAACE DOTD and CASCOM Training Directorates. Initial operator and maintainer training Skill Level 10 (SL10) for the TAIS Increment 2 consists of performance oriented, hands-on training. This training program shall include the necessary training to install, operate and prepare the TAIS for movement for the operator; and the required training to repair the TAIS for maintainers. Employment and leader training will cover characteristics and capabilities of the TAIS System.

The Strategy for Air Traffic and Airspace Management Warrant Officer Course (150A) conducted at Ft. Rucker, AL will be to give the 150A a full understanding of Air Traffic Control Radar Operations, Airspace Planning and Approach Planning IAW FAA Standards and Requirements.

The Strategy for Electronic Systems Maintenance Technician Warrant Officer (948B) conducted at Ft. Gordon, GA will be to give the 948B a full understanding of TAIS Theory of operations, sustainment strategies and unique capabilities repair operations of the TAIS.

### **6.1.1 Product Lines**

All institutional courses must be available in Interactive Multimedia Instruction (IMI) as either Computer Based Training (CBT) in a standalone digital media format or as web-based training hosted on the Army Learning Management System (ALMS). Courseware will comply with the Shareable Content Object Reference Model (SCORM). IMI modules will support individual training in the institution. Three training modules, Operate, Maintain, and Employment will be provided as standalone computer based training as well as web-based training over the Internet. Technical manuals (TMs) for Operators and Maintainers will be produced to military standards (MIL STD) and undergo a contractor validation and Government verification process to ensure accuracy and completeness. Courseware, Courses, Training Support Packages and Training Publication estimates are to be determined.

#### **6.1.1.1 Training Information Infrastructure**

TAIS Increment 2 training infrastructure will require use of the following items:

1. Training Development Capability (TDC) system.

2. Department of Defense (DOD) standards such as Army Distributive Learning (ADL), Sharable Content Object Reference Model (SCORM) and Army Training Information Architecture-Migrated (ATIA-M) will be implemented in the design and development of the DL products.

TAIS Life Cycle Support will include training, training software and courseware design that will be developed in a reusable and maintainable format, i.e., SCORM compliant. PM ATC is responsible for the funding of support tools, personnel training, training equipment, and Associated Support Items of Equipment (ASIOE) to support the training base for CASCOM and USAACE. The amount is dependent upon availability and accuracy of Qualitative and Quantitative Personnel Requirements Information (QQPRI). Training Development Capability (TDC) or its TRADOC approved replacement will be used in this effort.

The TAIS will be equipped with state-of-the-art secure and jam-resistant voice and data communications systems to coordinate and disseminate air information. The communication system must comply with the JTA, JTA-A, and DISR with DII COE (Level 6 - Threshold and Level 8 - Objective) and NCES.

#### **6.1.1.1.1 Hardware, Software, and Communications Systems**

The use of the Army Learning Management System (ALMS) will support the distributed learning (DL) concept and facilitate the dissemination and delivery of training support information. Army Knowledge Online (AKO) may be used by all soldiers for authentication into the ALMS Web Access site. Additional material and updated items are to be made available for dissemination at institutional training as well as for download.

The TAIS will provide digital connectivity to ATNAVICS, Mobile Tower System (MOTS) and Battle Command (BC) systems for institutional training through existing Local Area Network, and data capable radios. PM will provide life-cycle software support for TAIS.

#### **6.1.1.1.2 Storage, Retrieval, and Delivery**

Access and storage of TAIS and TAIS Increment 2 training and information will be made available through one or more of the following locations:

- Training Development Capability (TDC) Database
- Army Distribution Learning (DL)
- Army Knowledge Online (AKO)
- Army Learning Management System (ALMS)
- Computer Based Training (CBT)- in a standalone digital format
- Army Training Network (ATN)
- The Central Army Registry (CAR)

#### **6.1.1.1.3 Management Capabilities**

TAIS Increment 2 training products and information will be managed through the Standard Army Training System (SATS), Digital Training Management System (DTMS), distributed learning (DL), Training Development Capability (TDC) system, and the Resident Individual Training Management System (RITMS).

#### **6.1.1.1.4 Other Enabling Capabilities**

PM ATC Training Support Center

Toll Free: 1-866-585-8544

Comm: (256) 890-8763

DSN: 282-1048

Email: [atcsupport@qdc4s.com](mailto:atcsupport@qdc4s.com)

Interoperability and data exchange as required by the Training Support System (TSS) will exist with the Live, Virtual, Constructive-Integrating Architecture (LVC-IA).

#### 6.1.1.2 Training Products

a. Providing training devices and other essential training products to training centers and schools in time to prepare Soldiers for initial system fielding is the key to successful training. These devices and products must maintain interoperability with the future modular force training systems. The Materiel Developer will provide exportable Interactive Multimedia Instruction (IMI), Distributed Learning (DL) and train-the-trainer products.

b. For the institutions, there will be adequate IMI and computer based training (CBT) to provide students with virtual hands on experience, while at the same time reducing the number of Training Aids, Devices, Simulators and Simulations (TADSS) required in the school as training devices. Items provided to the training base include, but are not limited to: Interactive Electronic Technical Manuals, and other equipment. Desktop trainers, largely software solution, will allow training on individual operator tasks on the TAIS on a typical personal computer or laptop. The system will use the actual operator controller unit interfaced with the computer to provided simulated TAIS operations in varied scenarios and missions.

c. For the live field training exercise (FTX) portion of institutional training, and for unit and sustainment training, components will employ embedded training capabilities, be multimedia based, and/or use distance-learning technologies. The subsystem will contain (as a minimum) doctrinal manuals, system ETM, TMs, TADSS, IMI Training Support Package (TSP) and courses (complete with a digitized POI, lesson plans, student and instructor guides, and course management plan). The package will be coordinated with institutional training developers. This process will facilitate the production of training support products for delivery with the Training Support System and the ability to rapidly update tasks and their instructional products using digital information systems.

d. The following are additional items that need to be considered during the training development phase:

1. TAIS Increment 2 training will encompass all hardware and software specific to the operation and maintenance of the equipment. The TAIS institutional training strategy must be IAW the Capabilities Development Document (CDD) and Capabilities Production Document (CPD) and will be developed/designed to produce TAIS trained Soldiers.

2. Lesson plans (LPs) developed by the contractor for the NET TSP will be put in the Training Development Capability (TDC) system or the updated TDC database using TDC software provided by the Army Training Support Center (ATSC). This authoring software provides the capability of producing LPs in Adobe PDF format. PM TAIS will

develop an Interactive Multimedia TSP consisting of instructor/operator and user training, to include Digital Operator Guides (DOGS) and manuals.

e. The interactive multimedia TSP will include tutorial "how to" modules that permit audiences to be self-taught, where feasible. In addition, it will include a diagnostic module that permits identification of dL in accordance with the Army Analysis, Design, Development, Implementation, and Evaluation (ADDIE) process, referenced in TRADOC Regulation 350-70, that the government will validate during developmental and operational testing. PM TAIS will update all training materials when a software update/upgrade occurs so that the training and training materials support the update/upgrade.

f. Unit sustainment will be accomplished through the Commander's Unit Training Plan.

#### **6.1.1.2.1 Courseware**

Product Manager (PM) TAIS will develop Interactive Multimedia Instruction (IMI) which includes: computer aided instruction, computer managed instruction, interactive courseware, electronic publications, electronic testing, electronic guides and simulations. IMI products must comply with the latest TRADOC Technical Media Standards and Sharable Content Object Reference Model (SCORM). IMI must be able to support institutional training at the USAACE and the CASCOM SCoE. The PM will plan and program resources for the modification or upgrade of Training Aids, Devices, Simulations and Simulators (TADSS), IMI, and embedded training impacted by modifications, upgrades, or block improvements to the TAIS.

6.1.1.2.2 Courses

Course Name	Course Number
<b>Initial Military Training</b>	
Air Traffic Control Operator	222-15Q10
Air Traffic Control Equipment Repairer	102-94D10
Air Traffic and Airspace Management Technician	2G-150A
Electronic Systems Maintenance Technician	4F-948B

**Professional Military Education (PME)**

ATC Operator Advanced Leaders Course (ALC)	222-15Q30-C45
Air Traffic Control Operator Senior Leaders Course (SLC)	222-15Q40-C46
<b>Functional And ASI</b>	




### 6.1.1.2.3 Training Publications

All doctrinal and training publications may be in printed and/or electronic format, used for training individuals or units. The term "training publications" includes *training literature*, both official and unofficial. The training literature is a body of writing published to provide information and training on the training, doctrine, operational doctrine, and tactics, techniques, and procedures (TTP) adopted for use in training individuals assigned to ATC units. The following are examples of Field Manuals and Soldier Training Publications that are required to support the TAIS training program and should be updated and included (If appropriate) in the Multimedia TSP:

Publications	Publication Date
<b>Field Manuals</b>	
ADP and ADRP 1-02 Operational Terms and Military Symbols w/change 1	26 Sep 12
FM 1-100 Army Aviation Operations	21 Feb 97
FM 3-04.111 Aviation Brigades	07 Dec 07
FM 3-04.120 Air Traffic Services Operations	16 Feb 07

FM 3-04.126 Attack, Reconnaissance Helicopter Operations	16 Feb 07
FM 3-04.300 Airfield and Flight Operations Procedures w/C1 and C2	08 Dec 08
FM 3-52 Airspace Control	08 Feb 2013
ATP 5-19 Composite Risk Management	01 Apr 2014
<b>Technical Manuals</b>	
TC 3-04.81 Air Traffic Control Facility Operations, Training, Maintenance and Standardization	29 Oct 2010
TM 11-5895-1887-10	05 Oct 2009
TM 11-5895-1887-10-HR	01 Mar 2011
TM 11-5895-1887-23	05 Oct 2009

TM 11-5895-1887-23P	01 Mar 2010
<b>Soldier Training Publications</b>	
STP 1-93C1-SM-TG Soldiers Manual and Trainers Guide, MOS 93C, Air Traffic Control, Skill Level 1	01 Apr 02
STP 1-93C24-SM-TG Soldiers Manual and Trainers Guide, MOS 93C, Air Traffic Control, Skill Levels 2/3/4	04 Jun 02
STP 9-94D12-SM-TG SOLDIER'S MANUAL AND TRAINER'S GUIDE, MOS 94D, AIR TRAFFIC CONTROL EQUIPMENT REPAIRER, SKILL LEVELS 1 AND 2	08 Jun 06
STP 9-94D34-SM-TG SOLDIER'S MANUAL AND TRAINER'S GUIDE, MOS 94D, AIR TRAFFIC CONTROL	06 Apr 06



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#### **6.1.1.2.4 Training Support Package (TSP)**

The TAIS TSP will provide training products, materials, and information that supports individual and collective task that will be integrated into a training and management exercise. The multimedia TSP will be a tutorial 'how to' module that permits audiences to be self-taught, wherever feasible, and will include a diagnostic test module that permits identification of Soldier training proficiency by module. Certification and sustainment training will be facilitated by the multimedia TSP left with the unit following NET. Any new updates to the TSP that will impact maintainer MOS (94D) will be reviewed by the maintainer proponent CASCOM prior to conducting training to institution and unit.

### 6.1.1.3 TADSS

Training Aids will be used to the maximum extent possible to include, but not limited to, the following: training equipment, mock-ups, diagrams, and computers. Items provided to the institutions include, but are not limited to: Interactive Electronic Technical Manuals, and other equipment. Desktop trainer, largely software solution, would allow training on individual operator tasks on the TAIS on a typical personal computer or laptop. Multiple Integrated Laser Engagement System (MILES)(receiver only) will be required to integrate into the training units and Institutional training scenarios and assessments. TAIS Mission Simulator would use the actual operator controller unit interfaced with the computer to provide simulated TAIS operations in varied scenarios and missions. This may be self-contained within the TAIS System or software. There will be three simulators developed to support TAIS increment 2 Training primarily supporting the operational training domain.

The PM is responsible for development, integration, and life cycle management of TADSS IAW AR 350-38.

#### **6.1.1.3.1 Training Aids**

The training aids used at the institution are: Projectors, laptops and mock-ups of the TAIS system. Material Developer will develop 3-D objects that are fully interactive Free Play/Exploration mode, allowing user to attach/detach parts as desired. View internal components, rotate the equipment in all directions, view parts in context through semi transparency, view equipment in line drawing or X-Ray mode, disassemble and reassemble the equipment while experiencing constraints on parts, get detailed information, etc.

User can pause animation and move 3D model around freely, including any camera angle and part movements in real time. To perform a task, the user must be able to select parts and actually perform the actions to be done on the 3D model, such as removing/replacing parts in real time and perform multi-direction cross-sectioning in real time.

Movement constraints can be associated with parts (such as hinges, bolts, gauges) and user can move parts in constrained manner in real time. Parts can be linked to other 3D simulations, documents, and web pages. It may have the capability of being inserted into Microsoft Word, PowerPoint and Adobe PDF via "insert" menus.

#### **6.1.1.3.2 Training Devices**

A CD ROM based IMI ETP will be the only requirements for a separate training device for TAIS. The CD ROM ETP will be used during NET and Unit/Sustainment training and may be used for institutional training. The CD ROM ETP will have Electronic Technical Manuals to be used in Maintenance training. The system itself will function for all operational training scenarios to include individual and collective training. Training will be conducted using a combination of the TAIS system, faulted components, embedded training, and associated required Test Measure and Diagnostic Equipment (TMDE) and current training devices. The SAT process shall determine the most efficient and effective mix of equipment. Embedded training will result from features designed and built into the TAIS, which will not adversely affect the operational capabilities of the system.

Soldiers will use the TAIS for training in ATS units and the school house. The TAIS requirement for embedded training used for controller skill task qualification and proficiency training when live air traffic is not present has been satisfied in the interim by providing a stand-alone ATC Common Simulator (ACS) that will be issued to each ATC Unit by the PM for each system. The Training Simulator can be used inside the TAIS shelter or as a stand-alone training device during downtime at home-station or during training exercises. The PM is responsible for development, integration, and life cycle management of TADSS IAW AR 350-38.

#### **6.1.1.3.3 Simulators**

The PM in cooperation with CRD Combat Developers have agreed to an incremental approach to a fully embedded training capability. In this incremental approach the ATC Common Simulator (ACS) will be used as Stand Alone TADSS Device assigned to the system. The ACS has the capability to train on Tower, ATNAVICS Radar and TAIS operations. The system will be capable of being interlinked with other aviation simulators to run scenarios with all facilities involved.

#### **6.1.1.3.4 Simulations**

Simulations will support Equipment Training (ET), institutional and sustainment training and will include both individual and unit level training exercises which can be linked into an Army, Joint and combined training environment. This will allow all levels of operator and system managers to conduct training and evaluation. PEO-STRI will be incorporated into the process and upgrade developments of all simulation systems to meet the needs of the Integrated Training and T&E environments. The PM is responsible for development, integration, and life cycle management of TADSS IAW AR 350-38.

#### **6.1.1.3.5 Instrumentation**

The Materiel Developer will ensure that the TAIS will have the capabilities to integrate with ABCS systems as well as CTC facilities. This will allow the system to be placed into operation during battle simulations and virtual training centers use as well as CTC exercises. Interactive Multimedia Instruction (IMI) on the TAIS will be developed to support Institutional, Operational and Self Development Training.

#### **6.1.1.4 Training Facilities and Land**

The TAIS and its associated equipment is the primary training device. Training may be conducted indoors, outdoors, or a combination of the two, using existing facilities common to Army airfields worldwide. A classroom with interactive multimedia instruction capabilities is required to teach the computer-based portions of training. A building large enough to house the TAIS will be required to conduct hands-on practical exercises if indoor training is selected.

Institutional training for the TAIS will utilize existing classroom space that will support a class size of at least 12 students USAACE and 8 students at CASCOM for lecture type instruction. Existing hanger space will be used for institutional FTX staging area, hands-on system maintenance training, and storage of the TAIS. CASCOM will require additional power, ground connections and, cabling for the TAIS.

NOTE: Existing open Field Training Areas (FTA's) will be utilized to run full operational testing and operator training.

#### **6.1.1.4.1 Ranges**

It is anticipated that the current Army's training areas will support training for the TAIS Increment 2.

#### **6.1.1.4.2 Maneuver Training Areas (MTA)**

The TAIS user will utilize existing ranges/maneuver areas during Field training Exercises (FTX) that are cost efficient and training effective. These maneuver areas provide realistic representations (scenario's designed by the user) and will provide realistic representation of the existing and projected threat, duplicate or replicate the time movement, and counter-measures.

#### **6.1.1.4.3 Classrooms**

TAIS Increment 2 will be instructed in the current classrooms existing at the United States Army Aviation Center of Excellence (USAACE) and Combined Arms Support Command (CASCOM). Lessons learned from the execution of the TAIS Increment 2 Operational Testing (OT) may cause a modification to the classroom requirements for New Equipment Training (NET), unit sustainment training, and institutional training. If classroom modifications are deemed necessary for NET, unit sustainment or institutional training, the Product Manager for TAIS will provide funding to cover the cost of the modifications.

#### **6.1.1.4.4 CTCs**

TAIS Increment 2 will be integrated into Combat Training Center (CTC) instrumentation. Live Force-on-Force (FOF) training at home station, local training areas, maneuver CTC, and deployed training sites will be required to validate the ability of units to employ TAIS Increment 2 within the force, and to conduct mission rehearsals. CTC TAIS Increment 2 training can be enhanced with inclusion of operating unit TAIS Increment 2 system interface with real-life established airspace and air traffic control planning and operational procedures at the respective CTC. Vehicular TAIS Increment 2 systems will require MILES equipment to integrate into the training units operational scenario.

#### **6.1.1.4.5 Logistics Support Areas**

Training institutions are responsible for storing Training Aids, Devices, Simulators and Simulations (TADSS), and associated equipment, both classified and unclassified, that are delivered with the TAIS Increment 2 Training Support Package.

#### 6.1.1.4.6 Battle Command Training Centers (BCTC)

TBD

#### 6.1.1.5 Training Services

PM TAIS is responsible for the New Equipment Training Plan (NETP):

- PM TAIS must provide resources for the most cost-effective training program and strategies for leaders, staff, crews, and maintainers. These must be determined as early as possible in the program, and ensure that the training enables those Soldiers to achieve the performance levels required for the TAIS and as specified in the requirement documents.
- Funding for training development of TAIS equipment, TADSS for the training bases and the field is a PM TAIS responsibility IAW AR 350-1.
- Embedded training will not adversely impact the operational requirements or capabilities of the system. The requirement should be identified early enough in the Life Cycle Management Model (LCMM) to be incorporated into prototype designs that analyze its capability to train individual tasks through force-level collective tasks, as required.
- PM TAIS, with active participation by the DOTD/CASCOM training developers, will require the contractor to develop or update a complete training system, e.g., institutional training devices, simulators, IKPT, and NET. The system will contain (as a minimum) ETM's, and TSPs and courses (complete with digitized lesson plans, student and instructor guides).
- PM TAIS will develop an Interactive Multimedia TSP consisting of instructor/operator and user training and manuals. The interactive multimedia TSP will include tutorial "how to" modules that permit audiences to be self-taught, where feasible, and include a diagnostic module that permits identification of DL in accordance with the SAT process that the government will validate during developmental and operational testing. PM TAIS will update all training materials when a software update/upgrade occurs.
- The TAIS NETP shall be developed via the Government Provided AMTAS Software IAW AR 350-1 and DA Pam 350-40.
- In accordance with (IAW) AR 350-1 Army Training and Leader Development, funding for training development of TAIS equipment and Training Aids, Devices, Simulators, and Simulations (TADSS) for institutional, unit and sustainment training is a PM responsibility.

#### **6.1.1.5.1 Management Support Services**

The TAIS training subsystems will require management support services. These support services will be those that support or contribute to improved program management and sustainment for training programs. These services will include:

- Information management services (Army Training Information Management Program (ATIMP), and library and information repository services).
- Courseware management services (Intermediate Level Education (ILE) management, multimedia courseware management, and distributed learning management).
- Communicative technologies management (Department of the Army Multimedia Visual Information Production and Distribution Program (DAMVIPDP), Electronic Multimedia Information Capability (EMIC), and Visual Information/ Training Support Center VI/TSC management).
- Video Tele Training (VTT) program management.

The PM must coordinate funding for the life cycle of the TAIS program management and sustainment for training programs. Standard Army management support services are available throughout the Army support system related to these requirements.

#### **6.1.1.5.2 Acquisition Support Services**

Acquisition support services will be needed to procure the TAIS using appropriate contract vehicles. Contract management services and other contract vehicles are a standard provided system for support. TAIS Product Manager must coordinate funding for the life cycle of the system.

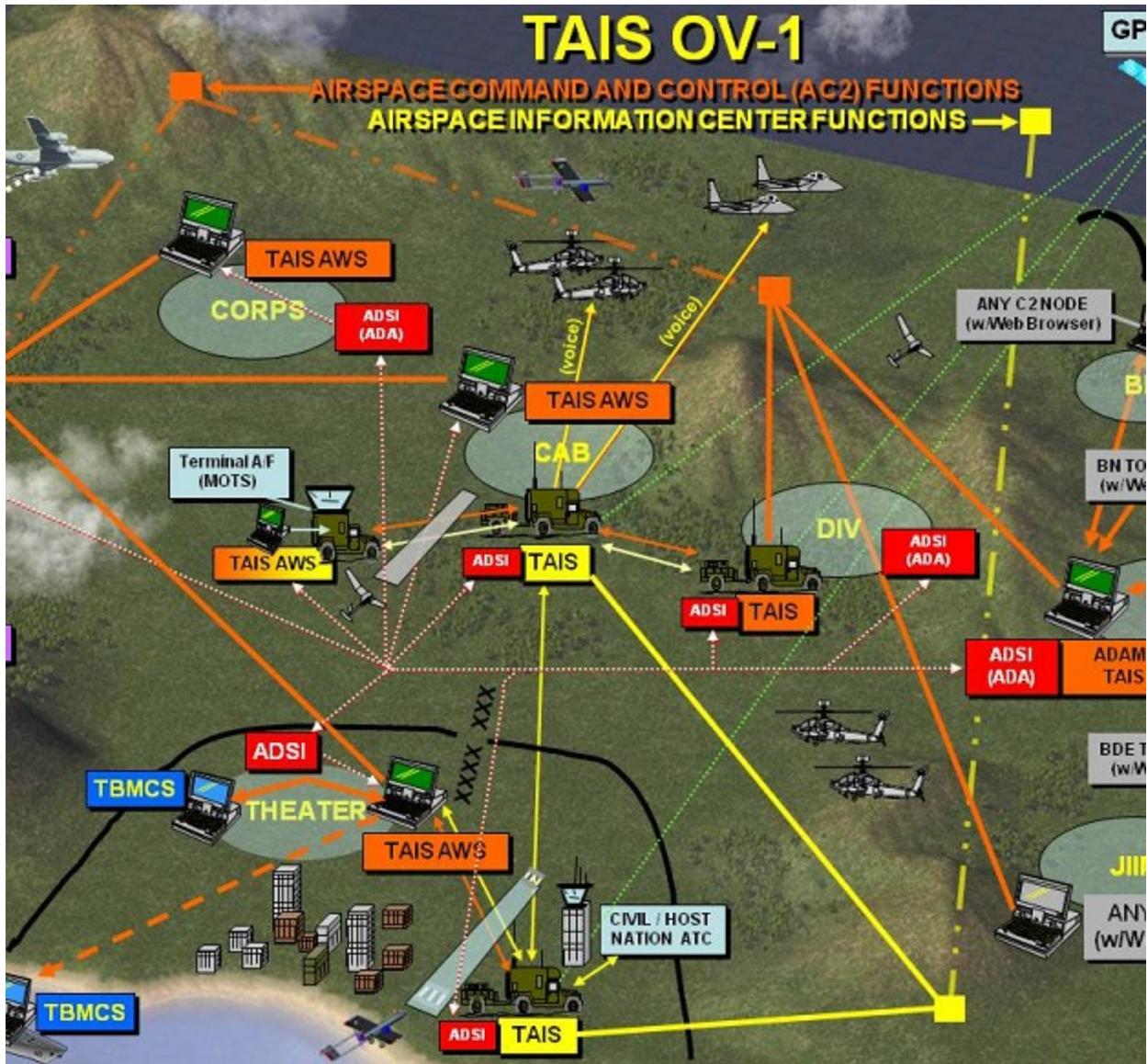
#### **6.1.1.5.3 General Support Services**

The PM is responsible for coordinating Army or contractor support and funding for the required general support services throughout the life cycle of the TAIS, and to ensure coordination to include any and all support items and or systems.

### **6.1.2 Architectures and Standards Component**

The Institutional Architecture begins with the New Equipment Training Support Package (NETSP) developed by the Program Manager. The NETSP contains instruction on performing operator and maintainer tasks on the new item, as well as any Tactics, Techniques and Procedures (TTP) developed by the institution's Combat Developer/Training Developer, associated with the employment of the new item. The NETSP is handed off to the institution(s), where the United States Army Aviation Center of Excellence (USAACE), Directorate of Training and Doctrine (DOTD), provides the package to their Training Development Division for refinement and development of the training support system used in the institution. The NET TSP will be used to revise existing POIs. Soldier Training Products will be developed, given to the distributed Learning (DL) element, for media formatting, and then made available for Self-Development training. Collective Training products will be developed or updated, incorporating TTP, and revising any CATS. DOTD will incorporate the developed TTP in the updates to Aviation doctrinal manuals. Institutional training on TAIS Increment 2 will begin based upon the Basis of Issue Plan (BOIP) when developed.

#### 6.1.2.1 Operational View (OV)



TAIS Operational View

#### **6.1.2.2 Systems View (SV)**

The TAIS will be a key player in the US Army's net-centric battlefield and the products associated with this architecture depict the current operational activities, information exchanges, and systems functionality required in the tactical employment of TAIS.

#### **6.1.2.3 Technical View (TV)**

The TAIS will be Joint Technical Architecture (JTA) compliant. The TAIS embedded training should incorporate defined technical standards, implementation conventions, business rules and criteria that govern the architecture.

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

1. USAACE and CASCOM SID are responsible for managing the training requirements for the proponent schools.

2. Periodic reviews of course POI and lessons plans will be conducted to ensure the most up to date and relevant information is taught in training facilities. The proponent will ensure that unit supply personnel are familiar with the ALP warranty program (found in the Technical Manual) which is as follows:

- The TAIS warranty for the product purchased is detailed in full in the applicable Government contract. The TAIS is covered under a one year Manufactures Warranty from date of Issue. Following warranty period the TAIS will be maintained using either the current two level maintenance system or PBL. PM CBA is still being conducted.
- If the inspection or test reveals defects covered by the warranty, the manufacturer will repair or replace the unit at the discretion of the manufacturer.
- If the manufacturer determines that the unit is not defective or not covered by warranty, the Program Manager will be notified for action.
- The warranty does not extend to any unit which: (1) has been subject to misuse or neglect.
- The manufacturer will not be responsible for the costs of repairs performed by and/or replacement parts or material supplied by anyone other than the manufacturer.
- Warranty repairs are provided at no charge on qualified systems.

3. MACOM is responsible for reserving resources to cover the cost of non-warranty repairs and replacements, including shipping cost.

#### **6.1.3.1 Management**

Where possible, TAIS Increment 2 will use existing facilities and support infrastructure. The staff training estimate in support of TAIS Increment 2 will focus on the most efficient use of existing resources and precisely identify and quantify any expected shortfalls. Training development will focus on producing products that are capable of being used both in the institution and operationally. Students and evaluators will be routinely asked to evaluate training events and products to determine how best to improve the quality and efficiency of instruction while maximizing available resources.

#### **6.1.3.1.1 Strategic Planning**

Planning will be conducted in accordance with:

- National Defense strategies
- Joint Vision 2020
- Army Transformation Campaign Plan (ATCP)
- TRADOC plan
- USAACE Campaign Plan

#### **6.1.3.1.2 Concept Development and Experimentation (CD&E)**

The TAIS concept is already proven as this system.

#### **6.1.3.1.3 Research and Studies**

Training Support System (TSS) efforts have no impact on the research and studies of the TAIS.

#### **6.1.3.1.4 Policy and Guidance**

The following documents are to provide guidance and direction for the TSS:

- AR 350-1 and AR 350-38
- TRADOC Regulations 350-70 and 71-20
- TRADOC Pamphlet 525-8-2 w/C1 06Jun2011

#### **6.1.3.1.5 Requirements Generation**

The following documents support requirements generated during the Joint Capabilities Integration and Development System (JCIDS) process for TAIS Increment 2.

- Capability Production Document (CPD)
- System Training Plan (STRAP)

#### **6.1.3.1.6 Synchronization**

The fielding of TAIS Increment 2 will be synchronized with the following as applicable to ensure that New Equipment Training (NET) occurs as units are fielded and with the following considerations:

- TADSS Distribution Plans
- Power projection platforms
- Training institutions
- RSO sites

#### **6.1.3.1.7 Joint Training Support**

There are no initiatives that support the alignment of the Army TSS with joint training support emplaced at this time.

#### **6.1.3.2 Evaluation**

All centers/schools will conduct evaluations of their training/education on a continuing basis in accordance with AR 350-1 Army Training and Leader Development and TRADOC Regulation 350-70 Systems Approach to Training Management, Processes, and Products.

#### **6.1.3.2.1 Quality Assurance (QA)**

QA plans will be used in accordance with each installation's QA Plan to ensure proper course auditing is complete. The Standard Army After Action Review System (STAARS) will be used to provide feedback on each course's content and instruction. Feedback will assist each Center and School in understanding and correcting training deficiencies and will provide information that may affect the next set of equipment and or students

#### **6.1.3.2.2 Assessments**

a. Post-Fielding Training Effectiveness Analysis (PFTEA). The United States Army Aviation Center of Excellence (USAACE) will conduct a Product Manager (PM) TAIS funded PFTEA between 18 to 24 months after the initial fielded unit is operationally capable, or when problems are reported (e.g., high attrition course rates or MACOM complaints). The USAACE Directorate of Training and Doctrine (DOTD) will conduct the analysis, with assistance from the Directorate of Evaluation and Standardization at Fort Rucker, AL. Army Regulation 5-5, Army Studies and Analyses and TRADOC Regulation 350-32, The TRADOC Training Effectiveness Analysis (TEA) System will be used as references.

b. The PFTEA will address the following: The effectiveness of the fielded institutional Training Support Package; Comparison of actual costs to estimated life-cycle costs for all training systems; Relationship between sustainment training and soldier proficiency; Needed improvements to training in terms of cost, time, and effectiveness; Soldiers' perceptions of institutional training; Training Aids, Devices, Simulations and Simulators (TADSS) resource trade-offs (e.g., equipment and Operational Tempo (OPTEMPO)).

c. A portion of the analysis will be conducted using a written survey developed by the New Equipment Training Team (NETT) and selected TAIS subject matter experts. The analysis will include evaluations of Programs of Instruction, lesson plans, personnel selection criteria, and Situational Training Exercises (STXs). The NETT analysis of demonstrated skills by unit personnel will provide data for the evaluation. Data collected by the NETT and the results of the analysis will be staffed throughout institution conducting TAIS Increment 2 training. The PM will use the results of the PFTEA to improve or make changes to the TAIS Training Support Package as required.

#### **6.1.3.2.3 Customer Feedback**

Training developers will use written surveys, interviews, focus groups, and questionnaires to received feedback on quality of training.

#### **6.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)**

Training developers will use AARs described above to provide course material, as well as, functional use evaluations. Training developers will use Center for Army Lessons Learned (CALL) documentation to analyze lessons learned from the field and will incorporate it into TAIS training as needed.

6.1.3.3 Resource

Item Resourced	Prior	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K	FY19 Yrs or \$K
<u>Manpower - TD</u>							
Contractor							
Civilian		2 MY					
Enlisted		2 MY					
Warrant							
Officer							
Contract/Spt							
Civ Pay							
Trvl/Per Diem							
Other							

Rationale: Both operator and maintainer TD actions are taken into account.

Item Resourced	Prior	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K	FY19 Yrs or \$K
<u>New Equipment Training</u>							
Contractor							
Civilian		5 MY					
Enlisted		2 MY					



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Rationale:

Item Resourced	Prior	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K	FY19 Yrs or \$K
<u>TADSS</u>		2K			2K		
Training Aids		2K			2K		
Devices							
Simulators		1,300	1,300	Dependent on Schedule and Procurement			
Simulations							
GTA		3K			3K		
Software							
Trng Equip							
Equipment							
Printing		1K	1K	Dependent on Schedule and Procurement			
Shipment		5K	5K	Dependent on Schedule and Procurement			
Sustainment							
Other							

Rationale:

Item Resourced	Prior	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K	FY19 Yrs or \$K
<u>Facilities/Land</u>							
Facilities							
Land							
Site Surveys							
Concrete Pad							
AC/DC Power							
Equipment							
Maintenance							
Other							

Rationale:

Item Resourced	Prior	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K	FY19 Yrs or \$K
<u>Training Services/TII</u>							
LMS							
Services							
Servers							
Licenses							
IT Support							

Other							

Rationale:

Item Resourced	Prior	FY14 Yrs or \$K	FY15 Yrs or \$K	FY16 Yrs or \$K	FY17 Yrs or \$K	FY18 Yrs or \$K	FY19 Yrs or \$K
<u>Eval/OA</u>							
Contractor							
Civilian							
Enlisted							
Warrant							
Officer							
Contract/Spt							
Civ Pay							
Trvl/Per Diem							
Facilities							
Equipment							
Printing							

## **7.0 Operational Training Domain**

The operational domain encompasses training activities that individuals, units and organizations undertake. These activities include training conducted at home station, during major training events (to include Joint exercises) at combat training centers and other locations (to include mobilization centers), and while operationally deployed. Unit leaders are responsible for the proficiency of their subordinates (Soldiers and Army civilians), subordinate leaders, teams/crews, and the unit as a whole. The objective of Operational Training continues to the combat readiness of the unit to provide lethal brigade combat teams to supporting units with versatile, agile, and knowledgeable battle staffs.

## **7.1 Operational Training Concept and Strategy**

a. Product Manager (PM) TAIS will provide and conduct initial TAIS Increment 2 training using NET Teams (NETT). Exportable training packets will be left with the unit so that the unit can develop its sustainment training program. Unit training personnel will annotate Soldier records showing completion of training and level of proficiency.

b. Training Aids, Devices, Simulators, and Simulations (TADSS) will be delivered to the unit prior to fielding of equipment to units. Items provided will include: Interactive Electronic Technical Manuals, and other equipment. Desktop trainer, largely software solution, will allow training on individual operator tasks on the TAIS on a typical personal computer or laptop. The system will use the actual operator controller unit interfaced with the computer to provide simulated TAIS operations in varied scenarios and missions.

c. The TAIS Increment 2 will use state-of-the-art DL capabilities and link into the Distributed Learning System (DLS), an infrastructure which has been put in place by the Department of Defense (DoD) to support initial and sustainment training in the home station and field environment. The DLS consists of modernized classrooms supporting Interactive Multimedia Instruction (IMI) and Video Tele-Training (VTT) which have been pre-positioned at all Army installations. Utilizing satellite up and down link technology, deployable classrooms are available to support training in forward areas. In addition to the classrooms, the DLS provides the Network Control Center (NCC) and Content Servers to make the IMI available to a Soldier when and where it is needed. DLS provides the capability to enhance and sustain Total Army readiness by delivering standardized training to Soldiers and units at the right place and time using multiple delivery means and techniques. It accomplishes this by leveraging technology and training design efficiencies to provide more cost effective and efficient training.

d. Sustainment training will be an integral part of the TAIS training and leader development strategies. Training developers and unit commanders will ensure that sustainment training requirements for the TAIS are integrated into the affected unit Combined Arms Training Strategy (CATS).

e. Each TAIS will have an on-board Embedded Training (ET) capability to allow sustainment training in either a garrison or field environment. Collective training skills will be acquired and sustained through

repetitious application of crew drills, STX, CPX, FTX, the Combined Arms Training Strategy (CATS) and similar exercises, achieving RL standard progression.

### **7.1.1 Product Lines**

Product lines will consist of hardware, software, publications, courses, lessons, training aids, training facilities and management services that will provide the capabilities that trainers and Soldiers need to train in the operational domain.

Required Unit Product lines are listed briefly below:

1. Training Devices: The system will be used in the training of Soldiers in the Unit.

2. Simulators: ATC Common Simulator (ACS).

#### **7.1.1.1 Training Information Infrastructure**

TAIS training infrastructure will require the use of the following items:

- Training Development Capability (TDC) or its TRADOC approved replacement

Department of Defense (DOD) standards such as Sharable Content Object Reference Model (SCORM), and Army Training Information Architecture-Migrated (ATIA-M) will be implemented in the design and development of the TSS products. TAIS Life Cycle Support will include training, training software and courseware design that will be developed in a reusable and maintainable format, i.e., SCORM compliant. PM A TNAVICS is responsible for the funding of support tools, personnel training, training equipment, and Associated Support Items of Equipment (ASIOE) to support the training base for CASCOM and USAACE. The amount is dependent upon availability and accuracy of Qualitative and Quantitative Personnel Requirements Information (QQPRI). Digital Training Management System (DTMS) Combined Arms Training Strategies (CATS) will also be used.

#### **7.1.1.1.1 Hardware, Software, and Communications Systems**

The TAIS will provide digital connectivity to the ATNAVICS and BC systems through LAN, Tactical Packet Network (TPN) access, fiber optics and data capable radios. The PM will provide life-cycle software support for TAIS.

#### **7.1.1.1.2 Storage, Retrieval, and Delivery**

Digital access and storage of TAIS operational training and information will be made available through one or more of the following locations:

- Army Training Network (ATN)
- The Central Army Registry (CAR)
- Army Learning Management System (ALMS)

#### **7.1.1.1.3 Management Capabilities**

TAIS training products and information will be managed through the Digital Training Management System (DTMS) , DL , and the Automated Instructional Management System Personal Computer (AIMS-PC), and the Training Development Capability (TDC) Software.

#### **7.1.1.1.4 Other Enabling Capabilities**

Additional capabilities for the Mobile Tower System include:

- Joint Training Information Management System (JTIMS)
- Command, Control, Communications, and Computers Intelligence, Surveillance, Reconnaissance (C4ISR)
- Lifelong Learning

#### **7.1.1.2 Training Products**

Training products associated with Operational training are centered on those items utilized during New Equipment Training (NET) and institutional training, simulations, and Distributed learning (DL). These training products will be delivered with the NET Training Support Package (TSP) during unit NET.

- The TAIS will DL capabilities to the maximum extent possible
- Computer-Based Instruction
- Distributed Interactive Simulation
- Video Tele-Training
- Desktop Simulation
- Exportable training packet

#### **7.1.1.2.1 Courseware**

Operational courseware developed for the TAIS will contain instructional packages such as Computer Aided Instruction (CAI), Computer Based Instruction (CBI), Computer Managed Instruction (CMI), Interactive Courseware, (ICW) and Interactive Multimedia Instruction (IMI) to support and sustain operational training at home-station or while deployed. These instructional packages will be accessible through Army DL, ALMS and Army Training Network (ATN), the Digital Training Management System (DTMS) and the Central Army Registry (CAR).

7.1.1.2.2 Courses

Course Name	Course Number
Initial Military Training	
Air Traffic Control Operator	222-15Q10
Air Traffic Control Equipment Repairer	102-94D10
Air Traffic and Airspace Management Technician	2G-150A
Electronic Systems Maintenance Technician	4F-948B

**Professional Military Education (PME)**

ATC Operator Advanced Leaders Course (ALC)	222-15Q30-C45
ATC Operator Senior Leaders Course (SLC)	222-15Q40-C46
<b>Functional And ASI</b>	

Mobilization	


7.1.1.2.3 Training Publications

Publications	Publication Date
<b>Field Manuals</b>	
ADP and ADRP 1-02 Operational Terms and Military Symbols w/change 1	26 Sep 12
FM 1-100 Army Aviation Operations	21 Feb 97
FM 3-04.111 Aviation Brigades	07 Dec 07
FM 3-04.120 Air Traffic Services Operations	16 Feb 07
FM 3-04.126 Attack, Reconnaissance Helicopter Operations	16 Feb 07
FM 3-04.300 Airfield and Flight Operations Procedures w/C1 and C2	08 Dec 08
FM 3-52 Airspace Control	08 Feb 13

ATP 5-19 Composite Risk Management	APR 2014
<b>Technical Manuals</b>	
TC 3-04.81 Air Traffic Control Facility Operations, Training, Maintenance and Standardization	29 Oct 10
TM 11-5840-381-10	01 Dec 2012
TM 11-5840-381-10-HR	15 Jan 2013
TM 11-5840-381-23	01 Dec 2012
TM 11-5840-381-23P	15 Aug 2012

**Soldier Training Publications**

STP 1-93C1-SM-TG Soldiers Manual and Trainers Guide, MOS 93C, Air Traffic Control, Skill Level 1	01 Apr 02
STP 1-93C24-SM-TG Soldiers Manual and Trainers Guide, MOS 93C, Air Traffic Control, Skill Levels 2/3/4	04 Jun 02
STP 9-94D12-SM-TG SOLDIER'S MANUAL AND TRAINER'S GUIDE, MOS 94D, AIR TRAFFIC CONTROL EQUIPMENT REPAIRER, SKILL LEVELS 1 AND 2	08 Jun 06
STP 9-94D34-SM-TG SOLDIER'S MANUAL AND TRAINER'S GUIDE, MOS 94D, AIR TRAFFIC CONTROL EQUIPMENT REPAIRER, SKILL LEVELS 3 AND 4	06 Apr 06

<b>Special Texts</b>	

All doctrinal and training publications used for training individuals or units may be in printed and/or electronic format. The term "training publications " includes all official training literature. Proponent organizations should review Combined Arms Training Strategies (CATS) and update as required to incorporate new TAIS Increment 2 tasks, if appropriate. Proponent training developers will also ensure that new tasks are developed IAW TRADOC Regulation 350-70 via the Training Development Capability (TDC) system or the current approved training development

tool so they can be delivered through the Digital Training Management System (DTMS) to the operating forces.

#### **7.1.1.2.4 TSP**

The TAIS Increment 2 Training Support Plan (TSP) will provide training products, materials, and information that supports individual and collective task that will be integrated into a training and management exercise. The multimedia TSP will be a tutorial "how to" module that permits audiences to be self-taught, wherever feasible, and will include a diagnostic test module that permits identification of Soldier training proficiency by module. Certification and sustainment training will be facilitated by the multimedia TSP left with the unit following NET. A validated TAIS Increment 2 TSP will be loaded into the Training Development Capability (TDC) system database or the current approved Army automated data base for delivery through the Digital Training Management System (DTMS) to the operating forces and a complete TAIS Increment 2 TSP will be placed on the Army Doctrine and Training Digital Library (ADTDL) for unit use in certification and sustainment training after approval by the USAACE DOTD.

### **7.1.1.3 TADSS**

Soldiers will use the TAIS for training in ATS units and the institutional training base. MOS 15Q, ATC Operator Course, simulators in the institutional training base must be updated to replicate in form and function of the TAIS. The PM is responsible for development, integration, and life cycle management of TADSS IAW AR 350-38.

#### **7.1.1.3.1 Training Aids**

The training aids used at the institution are: Projectors, laptops and mock-ups of the TAIS system. Material Developer will develop 3-D objects that are fully interactive Free Play/Exploration mode, allowing user to attach/detach parts as desired. View internal components, rotate the equipment in all directions, view parts in context through semi transparency, view equipment in line drawing or X-Ray mode, disassemble and reassemble the equipment while experiencing constraints on parts, get detailed information, etc.

User can pause animation and move 3D model around freely, including any camera angle and part movements in real time. To perform a task, the user must be able to select parts and actually perform the actions to be done on the 3D model, such as removing/replacing parts in real time and perform multi-direction cross-sectioning in real time.

Movement constraints can be associated with parts (such as hinges, bolts, gauges) and user can move parts in constrained manner in real time. Parts can be linked to other 3D simulations, documents, and web pages. It may have the capability of being inserted into Microsoft Word, PowerPoint and Adobe PDF via "insert" menus.

#### **7.1.1.3.2 Training Devices**

Soldiers will use the TAIS for training in ATS units and the school house. The system will provide the ability to train controllers using the depiction of electronic scenarios, incorporating voice and audio interaction in an embedded ATC trainer. Additionally a maintenance trainer will be used that provides supervisor-selected, automatic insertion of maintenance faults into the actual sub-systems of the TAIS to develop the maintainers' troubleshooting skills and knowledge to correct real faults within the system. Collective training will be conducted using an interface with the TAIS and other aviation simulations, including MOTS, TAIS, and the Aviation Combined Arms Tactical Trainer (AVCATT). The PM is responsible for development, integration, and life cycle management of TADSS IAW AR 350-38.

#### **7.1.1.3.3 Simulators**

Simulations will support Equipment Training (ET), institutional and sustainment training and will include both individual and unit level training exercises which can be linked into an Army, Joint and Combined training environment. This will allow all levels of operator and system managers to conduct training and evaluation. PEO-STRI will be incorporated into the process and upgrade developments of all simulation systems to meet the needs of the Integrated Training and T&E environments. The PM is responsible for development, integration, and life cycle management of TADSS IAW AR 350-38.

#### **7.1.1.3.4 Simulations**

Simulations will support Equipment Training (ET), institutional and sustainment training and will include both individual and unit level training exercises which can be linked into an Army, Joint and combined training environment. This will allow all levels of operator and system managers to conduct training and evaluation. PEO-STRI will be incorporated into the process and upgrade developments of all simulation systems to meet the needs of the Integrated Training and T&E environments. The PM is responsible for development, integration, and life cycle management of TADSS IAW AR 350-38.

#### **7.1.1.3.5 Instrumentation**

The Materiel Developer will ensure that the TAIS will have the capabilities to integrate with ABCS systems as well as CTC facilities. This will allow the system to be placed into operation during battle simulations and virtual training centers use as well as CTC exercises. Interactive Multimedia Instruction (IMI) on the TAIS will be developed to support Institutional, Operational and Self Development Training.

#### **7.1.1.4 Training Facilities and Land**

At the operational level, TAIS Increment 2 training will be conducted at existing facilities at the training centers and unit locations. Expansion of existing classrooms, training areas, CTCs, and land is not foreseen with the introduction of Increment 2.

#### **7.1.1.4.1 Ranges**

The TAIS does not require any unique range, complex, course or areas to perform and train its mission.

#### **7.1.1.4.2 Maneuver Training Areas (MTA)**

The TAIS user will utilize existing maneuver areas that are cost efficient and training effective. These maneuver areas provide realistic representations (scenario's designed by the user) and will provide realistic representation of the existing and projected threat, duplicate or replicate the time movement, and counter-measures. Existing maneuver areas are environmentally non-destructive and support live or simulated fires. Every effort should be made to exercise/utilize the TAIS capabilities in a simulated environment, a live Situational Training Exercise (STX), or Field Training Exercise (FTX).

#### **7.1.1.4.3 Classrooms**

TAIS Increment 2 does not require the expansion of classroom space. The training aids and mockups (if needed) are not anticipated to require more space. Lessons learned from the execution of the TAIS Increment 2 Operational Testing (OT) may cause a modification to the classroom requirements for unit sustainment training. If classroom modifications are deemed necessary for unit sustainment training, the Product Manager for TAIS will provide funding to cover the cost of the modifications.

#### 7.1.1.4.4 CTCs

TAIS must have the operational capability to fully integrate with CTCs. This capability must ensure the system can participate in realistic joint and combined arms training within the four primary training centers.

- National Training Center (NTC)
- Joint Readiness Training Center (JRTC)
- Combat Maneuver Training Center (CMTC)
- Mission Command Training Program (MCTP)

Homestation Instrumentation Training System (HITS) supports collective maneuver training for platoon-through-battalion units. HITS allows commanders to train at homestation in preparation for CTC rotations. It builds on the proven CTC train-assess- train model, to enhance Warfighting capabilities and mission readiness.

The TAIS Increment 2 will provide interfaces that allow the system to interoperate with TADSS (Training Aids, Devices, Simulators and Simulations) and with the current forces in a synthetic training environment that includes live, virtual, and constructive simulators/simulations. The TAIS Increment 2 must interoperate with current systems such as the Multiple Integrated Laser Engagement System (MILES), HITS, and the Aviation Combined Arms Tactical Trainer (AVCATT)

#### **7.1.1.4.5 Logistics Support Areas**

Logistics support areas are facilities used for logistics processing, support, storage and staging. The home station unit is responsible for storing training devices and systems, both classified and unclassified. There are no additional facilities required to support the new TAIS Increment 2 systems. No facilities modifications to include joint operations are required to support TAIS Increment 2 Systems.

**7.1.1.4.6 Battle Command Training Centers (BCTC)**

Not Applicable

#### **7.1.1.5 Training Services**

Product Manager (PM) TAIS is responsible for the New Equipment Training Plan (NETP). Training products developed for NET will be used as the basis for unit sustainment training. PM TAIS must provide resources for the most cost-effective training program and strategies for leaders, staff, crews, and maintainers.

#### **7.1.1.5.1 Management Support Services**

Training Management and support services will be provided by Air Traffic Services Command (ATSCOM) Inspection and QA Teams. Courseware Management Services will be provided and sustained by USAACE and TRADOC agencies. PM ATC is responsible to ensure the any and all software and hardware updates and changes are updated and provided to the Proponent for incorporation into the Course Management System.

#### **7.1.1.5.2 Acquisition Support Services**

No requirements for acquisition support services at the operational level.

#### **7.1.1.5.3 General Support Services**

The PM is responsible for coordinating Army or contractor support and funding for the required general support services throughout the life cycle of the Tactical Air Integration System Increment 2.

### 7.1.2 Architectures and Standards Component

TAIS is a mobile communications and digitized battlefield automated system (BAS). The TAIS can be deployed in any theater of operations to perform both Army Airspace Command and Control (AC2) and Air Traffic Services (ATS) requirements. TAIS provides the Force XXI battlefield with automated AC2 planning, enhanced AC2 execution, and improved theater and intra- and inter-Corps/Division ATS support in war. It also provides a versatile airspace management system for military operations other than war (MOOTW), as well as effective air Operational Environment synchronization in the third and fourth dimensions. Altitude and time define the third and fourth dimensions, respectively. In addition, TAIS adds civil and government inter-agency capability, and provides a direct link to the Theater Air Ground System (TAGS) through an interface with the Joint Force Air Component Commander's (JFACC) automated airspace planning and communication systems.

In the Command and Control mission area, the TAIS provides automated AC2 and the coordinated use of battlefield airspace for the purpose of supporting force operations in a projection role while minimizing fratricide through more exacting Operational Environment synchronization. The TAIS also supports non-automated airspace users and aircraft. The TAIS Airspace Work Station (AWS) Increment 2 primarily performs the second of the two major TAIS missions for the Army: AC2 for Army organizational echelons, although higher echelon ATS organizations utilize the TAIS AWS to support ATS functions. The TAIS AWS Increment 2 capability will upgrade increment 1 TAIS AWS systems in ATS units and Army unit headquarters from BCT thru Theater echelons. There are no new functional mission requirements for Increment 2 TAIS systems over increment 1 systems. The Increment 2 TAIS AWS supports the same Joint Operating Concepts of the Increment 2 TAIS system. The TAIS AWS (remoteable workstation) is a subcomponent of the mobile TAIS system. Specific tactical applications were previously identified in the Increment 1 TAIS AC2 warfighting function that did not require the full independent mobility or communications capabilities of a shelter-mounted vehicular system. To accommodate these applications and fielding's, a specific TAIS AWS line item number (LIN # W63636) was assigned. The component workstations in the TAIS and the stand-alone TAIS AWS are functionally identical (software). TAIS AWS allocation requirements were authorized in a TRADOC-recommended Proponent Modification to the TAIS ORD, dated 9 Sep 2002.

#### 7.1.2.1 Operational View (OV)

Same as 6.1.2.1

#### **7.1.2.2 Systems View (SV)**

Same as 6.1.2.2

### 7.1.2.3 Technical View (TV)

Same as 6.1.2.3

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

Where possible, TAIS Increment 2 will use existing facilities and support infrastructure. The staff training estimate in support of TAIS Increment 2 will focus on the most efficient use of existing resources and precisely identify and quantify any expected shortfalls. Training development will focus on producing products that are capable of being used both in the institution and for operational use. Students and evaluators will be routinely asked to evaluate training events and products to determine how best to improve the quality and efficiency of instruction while maximizing available resources.

#### **7.1.3.1 Management**

Where possible, TAIS Increment 2 will use existing facilities and support infrastructure. The staff training estimate in support of TAIS Increment 2 will focus on the most efficient use of existing resources and precisely identify and quantify any expected shortfalls. Training development will focus on producing products that are capable of being used both in the institution and for operational use. Students and evaluators will be routinely asked to evaluate training events and products to determine how best to improve the quality and efficiency of instruction while maximizing available resources.

#### **7.1.3.1.1 Strategic Planning**

Planning will be conducted in accordance with:

- National Defense strategies
- Joint Vision 2020
- Army Transformation Campaign Plan (ATCP)
- TRADOC plan
- USAACE Campaign Plan

#### 7.1.3.1.2 Concept Development and Experimentation (CD&E)

TBD

#### **7.1.3.1.3 Research and Studies**

No requirements for research and studies at the operational level.

#### **7.1.3.1.4 Policy and Guidance**

Not applicable at the operational level.

#### **7.1.3.1.5 Requirements Generation**

The following documents support requirements for TAIS Increment 2.

- Capabilities Development Document (CDD)
- Capabilities Production Document (CPD)
- System Training Plan (STRAP)

#### **7.1.3.1.6 Synchronization**

The fielding of TAIS Increment 2 will be synchronized with the following, as applicable, to ensure that New Equipment Training (NET) occurs as units are fielded and with the following considerations:

- Training Aids, Devices, Simulation and Simulators (TADSS) Distribution Plans
- Army Force Generation (ARFORGEN)
- Power projection platforms
- Training institutions

The Army Force Generation (ARFORGEN) process is the Army's method for effectively and efficiently generating trained forces by synchronizing training resources. Fielding priorities should be to Special Operations and deploying forces.

Full Operational Capability (FOC) for the TAIS Increment 2 will be achieved when all Modified Table of Organization and Equipment (MTOE) and Table of Distribution and Allowances (TDA) aviation units in the Active Army, Reserve, and National Guard are equipped with the fully integrated TAIS Increment 2.

#### 7.1.3.1.7 Joint Training Support

N/A

#### **7.1.3.2 Evaluation**

The Air Traffic Services Command (ATSCOM) will conduct periodic internal and external course and training evaluations.

#### **7.1.3.2.1 Quality Assurance (QA)**

Unit Commanders, Instructors, Training Officers and Standardization Evaluators will provide quality assurance in TAIS Increment 2 training at the Unit Level. USAACE DOTD and CASCOM SID agencies will conduct periodic assessment surveys on the effectiveness of unit training.

#### **7.1.3.2.2 Assessments**

The New Equipment Training Team (NETT) and selected TAIS subject matter experts will conduct an assessment during fielding, using a written survey. The analysis will include evaluations of Programs of Instruction, lesson plans, personnel selection criteria, and Situational Training Exercises (STXs). The NETT analysis of demonstrated skills by unit personnel will provide data for the evaluation. Data collected by the NETT and the results of the analysis will be staffed throughout the proponent agencies and institutions conducting TAIS Increment 2 training and will be used to improve or make changes to the TAIS Training Support Package as required.

#### **7.1.3.2.3 Customer Feedback**

The following tools will be used to seek and receive feedback: written surveys, interviews, focus groups, and questionnaires.

#### **7.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)**

AARs will be used as described in paragraph 6.1.3.2.3 above to provide feedback on course material, as well as functional use evaluations. The Center for Army Lessons Learned (CALL) documentation will be analyzed for lessons learned from the field and incorporated into TAIS training as needed.

#### **7.1.3.3 Resource Processes**

Not applicable at the operational level.

## **8.0 Self-Development Training Domain**

Paragraphs 8.1 thru 8.1.3 discuss the TAIS in the Self Development Domain.

## **8.1 Self-Development Training Concept and Strategy**

This strategy applies to all TAIS Increment 2 operators and maintainers. Learning is a lifelong process. Institutional, organizational, and operational training alone cannot provide the insight, intuition, imagination, and judgment needed in combat. This requires commanders at all levels to create an environment that encourages subordinates to establish personal and professional development goals. Further refinement of those interests should occur through personal mentoring by commanders and first line leaders. Conduct of battle-focused officer and NCO professional development programs are essential to leader development. Exploiting reach-back, distributed learning, and continuing education technologies support these programs.

Product Manager (PM) TAIS will provide exportable Interactive Multimedia Instruction (IMI), distributed learning (DL) and train-the-trainer material. These items will be packaged so that individual Soldiers can conduct self-taught, self-paced learning. The package will monitor the Soldier's progress and level of understanding. The training will include IMI and computer based training (CBT) to provide the student with virtual hands on experience. The training will encompass both operator and maintainer training. The courseware will comply with Army Training Information System Architecture and be distributed over the Army Learning Management System (ALMS). Personnel remain MOS qualified and will utilize the Individual Training Plan (ITP) for their respective Military Occupational Specialty (MOS). Self-development is a function of the MOS ITP.

### **8.1.1 Product Lines**

Product lines will consist of hardware, software, publications, courses, lessons, training aids, training facilities and management services that will provide the capabilities that trainers and Soldiers need to train in the self-development domain.

#### **8.1.1.1 Training Information Infrastructure**

The TAIS will be equipped with state-of-the-art secure and jam-resistant voice and data communications systems to coordinate and disseminate air information. The communication system must comply with the JTA, JTA-A, and DISR with DII COE (Level 6 - Threshold and Level 8 - Objective) and NCES.

#### **8.1.1.1.1 Hardware, Software, and Communications Systems**

The TAIS Increment 2 consists of the AN/TSQ-221(V)1-4 and the sub component of the AN/FSQ-211A. Individual operators and maintainers must know how to use the components and integrate them into Aviation Coordination operations. TAIS Increment 2 development requires continuous integration of improved capabilities to increase functionality. Units will require personal computers and required software for accessing Interactive Multimedia Instruction (IMI) for soldier self-development programs.

#### **8.1.1.1.2 Storage, Retrieval, and Delivery**

Digital access and storage of TAIS Increment 2 operational training and information will be made available through one or more of the following locations:

- Training Development Capability Database (TDC)
- The Army Learning Management System (ALMS)
- Army Training Network (ATN)
- The Central Army Registry (CAR)

#### **8.1.1.1.3 Management Capabilities**

The TAIS Increment 2 training products and information will be managed through the Digital Training Management System (DTMS), Distributed Learning (DL), and the Resident Institutional Training Management system (RITM)

#### **8.1.1.1.4 Other Enabling Capabilities**

None at this time.

#### **8.1.1.2 Training Products**

Trainers and Soldiers will have the same access to training products as explained in paragraph 6.1.1.2 and 7.1.1.2 for self-development.

#### **8.1.1.2.1 Courseware**

Trainers and Soldiers will have the same access to training products as explained in paragraph 6.1.1.2.1 and 7.1.1.2.1 for self-development.

#### **8.1.1.2.2 Courses**

Trainers and Soldiers will have access to DL courses that will further their self-development of the TAIS. Courses include:

- Army Correspondence Courses
- Civilian Education Courses
- Functional Courses
- Specialty Courses

### 8.1.1.2.3 Training Publications

All doctrinal and training publications may be in printed and/or electronic format, used for training individuals or units. The term "training publications" includes training literature, both official and unofficial. The training literature is a body of writing published to provide information and training on the training, doctrine, operational doctrine, and tactics, techniques, and procedures (TTP) adopted for use in training individuals assigned to ATC units. The following are examples of Field Manuals and Soldier Training Publications that are required to support the TAIS training program and should be updated and included (If appropriate) in the Multimedia TSP:

Publications	Publication Date
<b>Field Manuals</b>	
ADP and ADRP 1-02 Operational Terms and Military Symbols w/change 1	26 Sep 12
FM 1-100 Army Aviation Operations	21 Feb 97
FM 3-04.111 Aviation Brigades	07 Dec 07
FM 3-04.120 Air Traffic Services Operations	16 Feb 07

FM 3-04.126 Attack, Reconnaissance Helicopter Operations	16 Feb 07
FM 3-04.300 Airfield and Flight Operations Procedures w/C1 and C2	08 Dec 08
FM 3-52 Airspace Control	08 Feb 2013
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TM 11-5895-1887-10	05 Oct 2009
TM 11-5895-1887-10-HR	01 Mar 2011
TM 11-5895-1887-23	05 Oct 2009

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<b>Soldier Training Publications</b>	
STP 1-93C1-SM-TG Soldiers Manual and Trainers Guide, MOS 93C, Air Traffic Control, Skill Level 1	01 Apr 02
STP 1-93C24-SM-TG Soldiers Manual and Trainers Guide, MOS 93C, Air Traffic Control, Skill Levels 2/3/4	04 Jun 02
STP 9-94D12-SM-TG SOLDIER'S MANUAL AND TRAINER'S GUIDE, MOS 94D, AIR TRAFFIC CONTROL EQUIPMENT REPAIRER, SKILL LEVELS 1 AND 2	08 Jun 06
STP 9-94D34-SM-TG SOLDIER'S MANUAL AND TRAINER'S GUIDE, MOS 94D, AIR TRAFFIC CONTROL	06 Apr 06



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#### **8.1.1.2.4 Training Support Package (TSP)**

The TAIS Increment 2 Training Support Plan (TSP) will provide training products, materials, and information that supports individual and collective task that will be integrated into a training and management exercise. The multimedia TSP will be a tutorial "how to" module that permits audiences to be self-taught, wherever feasible, and will include a diagnostic test module that permits identification of Soldier training proficiency by module. Certification and sustainment training will be facilitated by the multimedia TSP left with the unit following NET. A validated TAIS Increment 2 TSP will be loaded into the Training Development Capability (TDC) system database or the current approved Army automated data base for delivery through the Digital Training Management System (DTMS) to the operating forces and a complete TAIS Increment 2 TSP will be placed on the Army Doctrine and Training Digital Library (ADTDL) for unit use in certification and sustainment training as well as Individual Self Development Reachback Training after approval by the USAACE DOTD.

#### **8.1.1.3 Training Aids, Devices, Simulators and Simulations (TADSS)**

Operational TADDS at the unit and TASC will be the primary source for trainers and Soldiers to further self-development.

#### **8.1.1.3.1 Training Aids**

Operational Training Aids, Devices, Simulators and Simulations (TADSS) at the unit and Training Support Centers (TSC) will be the primary source for trainers and Soldiers to achieve self-development.

#### **8.1.1.3.2 Training Devices**

Operational Training Aids, Devices, Simulators and Simulations (TADSS) at the unit and Training Audiovisual Support Centers (TASC) will be the primary source for trainers and Soldiers to achieve self-development.

#### **8.1.1.3.3 Simulators**

Not accessible at the self-development level.

#### **8.1.1.3.4 Simulations**

Not applicable at the self-development level .

#### **8.1.1.3.5 Instrumentation**

Not applicable at the self-development level.

#### **8.1.1.4 Training Facilities and Land**

Not applicable at the self-development level.

#### **8.1.1.4.1 Ranges**

Not applicable at the self-development level.

#### **8.1.1.4.2 Maneuver Training Areas (MTA)**

Not applicable at the self-development level.

#### **8.1.1.4.3 Classrooms**

Not applicable at the self-development level.

#### **8.1.1.4.4 CTCs**

Not applicable at the self-development level.

#### **8.1.1.4.5 Logistics Support Areas**

Not applicable at the self-development level.

#### **8.1.1.4.6 Battle Command Training Centers (BCTC)**

Not applicable at the self-development level.

#### **8.1.1.5 Training Services**

Not applicable at the self-development level.

#### **8.1.1.5.1 Management Support Services**

Not applicable at the self-development level.

#### **8.1.1.5.2 Acquisition Support Services**

Not applicable at the self-development level.

#### **8.1.1.5.3 General Support Services**

Not applicable at the self-development level.

### **8.1.2 Architectures and Standards Component**

Not applicable at the self-development level.

#### **8.1.2.1 Operational View (OV)**

Not applicable at the self-development level.

#### **8.1.2.2 Systems View (SV)**

Not applicable at the self-development level.

#### **8.1.2.3 Technical View (TV)**

Not applicable at the self-development level.

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

Not applicable at the self-development level.

#### **8.1.3.1 Management**

Not applicable at the self-development level.

#### **8.1.3.1.1 Strategic Planning**

Not applicable at the self-development level.

#### **8.1.3.1.2 Concept Development and Experimentation (CD&E)**

Not applicable at the self-development level.

#### **8.1.3.1.3 Research and Studies**

Not applicable at the self-development level.

#### **8.1.3.1.4 Policy and Guidance**

Not applicable at the self-development level.

#### **8.1.3.1.5 Requirements Generation**

Not applicable at the self-development level.

#### **8.1.3.1.6 Synchronization**

Not applicable at the self-development level.

**8.1.3.1.7 Joint Training Support**

Not applicable at the self-development level.

#### **8.1.3.2 Evaluation**

Not applicable at the self-development level.

#### **8.1.3.2.1 Quality Assurance (QA)**

Not applicable at the self-development level.

#### **8.1.3.2.2 Assessments**

Not applicable at the self-development level.

#### **8.1.3.2.3 Customer Feedback**

The following tools will be used to seek and receive feedback; written surveys, interviews, focus groups, and questionnaires.

- Electronic media for surveys, help desks, collaboration
- Interviews
- Focus Groups

#### **8.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)**

AARs will be used as described above to provide course material, as well as functional use evaluations.

#### **8.1.3.3 Resource Processes**

Not applicable at the self-development level.

**A Milestone Annex**

**ANNEX A**

**Training Development Milestone Schedules**

This annex contains one TRADOC Form 569-R-E, Sheet A, and five TRADOC Forms, 569-1-R-E, Sheet B, on:

- Individual Training 15Q10
- Individual Training 94D10
- Operator and Maintainer Training Simulator
- TADSS-Operator/ Maintainer
- Desktop Flight Trainer/IMI

**ANNEX A**

<b>TRAINING DEVELOPMENT MILESTONE SCHEDULE</b> - SHEET A		PAGE 1 OF 1 PAGES	REQUIREMENTS CONTROL SYM
SYSTEM  TAIS	ACAT  3	OFFICE SYMBOL  ATZQ-TDT-N	AS OF DATE  25 SEP 2014
POINTS OF CONTACT	NAME	OFFICE SYMBOL	TELEPHONE
MATERIEL COMMAND	PEO Aviation  PM ATC	SFAE-AV-AS-ATC	256-955-9008 DSN: 645
TRADOC PROPONENT	USAACE		

		CD: Mr. Jack Leib	ATZQ-CDM-T	334-255-0168 DSN: 558
		TD: SFC Carlos J. Negron	ATZQ-TDT-N	334 255-9656 DSN: 558
SUPPORTING PROPONENTS:				
CASCOM				
		CD: Mr. Ronnie Custis	ATCL-TS	804-765-1616 DSN: 687
		TD: SSG Rodney Hudson	ATCS-TSS	804-765-2550 DSN: 539
ITEM	DATE	RESPONSIBLE AGENCY/POC		TELEPHONE
SMMP:	27 June 1995	PM ATC	Mr. Gerald Barnes	256-313-2530 DSN: 897
ORD:	14 June 1995	USAACE CRD	Mr. Jack Leib	334-255-0168 DSN: 558
IILSMP:	09 September 2002	PM ATC	Mr. Terry Wingo	256-876-4104 DSN: 746
Threat TSP:	09 September 2002	USAACE CRD	Mr. Bob Overton	334-255-1392 DSN: 558
QQPRI:		PM ATC	Mr. Will Knapp	256-313-2530 DSN: 897
BOIP:	23 MAY 1994	PM ATC	Mr. Terry Wingo	256-876-4104 DSN: 746
NETP:		PM ATC	Mr. Will Knapp	256-313-2530 DSN: 897
COMMENTS:				

**ANNEX A**

SYSTEM MILESTONE SCHEDULE SHEET B					PAGE
					PAGES
SYSTEM					TRADOC SYM
TAIS					
TRAINING PACKAGE					
ELEMENT/PRODUCT: Institutional Training 15Q Operator					
LEGEND	MILE				
	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Course Starts				x	
Lesson Plans Completed		x			
POI					

Submitted			x		
CAD Submitted	x				
DTT Completed		x			
ITP Submitted	x				
Distance Learning			x		
TAIS Simulator					
Simulator V & V			x		
NOTES: N/A					

TRADOC FORM 569-1-R-E, Aug 89

**ANNEX A**

SYSTEM MILESTONE SCHEDULE SHEET B	PAGE
	PAGES

SYSTEM

TRADOC SYM

TAIS

TRAINING PACKAGE

ELEMENT/PRODUCT: Institutional Training 94D Maintainer Training

LEGEND	MILES				
	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Course Starts				x	
Lesson Plans Completed			x		
POI Submitted			x		
CAD Submitted	x				
Distance					

Learning			x		
NOTES: N/A					

TRADOC FORM 569-1-R-E, Aug 89

**ANNEX A**

SYSTEM MILESTONE SCHEDULE SHEET B					PAGE
					PAGES
SYSTEM					TRADOC SYM
TAIS					
TRAINING PACKAGE					
ELEMENT/PRODUCT: Operator and Maintainer Training Simulator					
LEGEND	MILE				
	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
TAIS Simulator					

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NOTES: N/A

TRADOC FORM 569-1-R-E, Aug 89

**ANNEX A**

SYSTEM MILESTONE SCHEDULE SHEET B					
SYSTEM					
TAIS					
TRAINING PACKAGE					
ELEMENT/PRODUCT: TADSS Operator Maintainer					
LEGEND					
	FY 2008	FY 2009	FY 2010	FY 2011	
TADSS Operator/Maintainer		x			

VAL/VER		x			
TADSS Upgrades					
NOTES: N/A					

TRADOC FORM 569-1-R-E, Aug 89

**ANNEX A**

SYSTEM MILESTONE SCHEDULE SHEET B					PAGE
					PAGES
SYSTEM					TRADOC SYMB
TAIS					
TRAINING PACKAGE					
ELEMENT/PRODUCT: Desktop Flight Trainer/IMI					
LEGEND	MILES				
	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012

Simulator Final Version					x
VAL/VER				x	
IMI				x	
VAL/VER				x	
Upgrades					x

NOTES: N/A

## B References

The following references pertain to the operational testing and subsequent fielding of TAIS:

1. TAIS  
ORD 14 JUN  
95
2. TAIS  
CPD Draft
3. System MANPRINT Management Plan 27 JUN 97
4. Basis of Issue Plan (BOIP) 09  
SEP 02
5. New Equipment Training Plan (NETP) Number In Review

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	
v2.2.2 James E Baker 2014/11/18 - 2014/11/28	Document Accepted As Written			0	0	0	0	0	0	-
v2.2.1 Approvals - Michael P Donohue 2014/11/18 - 2014/11/28	Document Accepted As Written			0	0	0	0	0	0	-
v2.2.1 Approvals - Robert A Story 2014/11/18 - 2014/11/28	Document Accepted As Written			0	0	0	0	0	0	-
v2.2 Army - USAACE - Aviation School 2014/10/16 - 2014/11/15	No Comments Submitted			0	0	0	0	0	0	-
v2.2 Army - TCM-SBCT 2014/10/16 - 2014/11/15	Document Accepted As Written			0	0	0	0	0	0	-
v2.2 Army - TCM ATIS 2014/10/16 - 2014/11/15	No Comments Submitted			0	0	0	0	0	0	-
v2.2 Army - SCoE 2014/10/16 - 2014/11/15	No Comments Submitted			0	0	0	0	0	0	-

v2.2 Army - PM-UAS 2014/10/16 - 2014/11/15	No Comments Submitted	0	0	0	0	0	0	-
v2.2 Army - PM Air Warrior 2014/10/16 - 2014/11/15	No Comments Submitted	0	0	0	0	0	0	-
v2.2 Army - PEO Aviation 2014/10/16 - 2014/11/15	No Comments Submitted	0	0	0	0	0	0	-
v2.2 Army - MSCoE - MANSCEN 2014/10/16 - 2014/11/15	Document Accepted As Written	0	0	0	0	0	0	-
v2.2 Army - ICoE - Mil Intelligence School 2014/10/16 - 2014/11/15	No Comments Submitted	0	0	0	0	0	0	-
v2.2 Army - FCoE - Field Artillery 2014/10/16 - 2014/11/15	Document Accepted As Written	0	0	0	0	0	0	-
v2.2 Army - Brigade Modernization Cmd (BMC) 2014/10/16 - 2014/11/15	No Comments Submitted	0	0	0	0	0	0	-
v2.2 Army - ATSC TSAID 2014/10/16 - 2014/11/15	No Comments Submitted	0	0	0	0	0	0	-
v2.2 Army - ATSC								



2014/09/26 - 2014/10/15	No Comments Submitted			0	0	0	0	0	0	-
v2.1 Peer - ICoE - Mil Intelligence School 2014/09/26 - 2014/10/15	11	0	0	7	0	0	4	0	0	
v2.1 Peer - FCoE- ADA School 2014/09/26 - 2014/10/15	Document Accepted As Written			0	0	0	0	0	0	-
v2.1 Peer - FCoE - Field Artillery 2014/09/26 - 2014/10/15	No Comments Submitted			0	0	0	0	0	0	-
v2.1 Peer - CYBER CoE - Signal School 2014/09/26 - 2014/10/15	No Comments Submitted			0	0	0	0	0	0	-
v2.1 Peer - Brigade Modernization Cmd (BMC) 2014/09/26 - 2014/10/15	No Comments Submitted			0	0	0	0	0	0	-
v2.1 Peer - AVNCoE Aviation Logistics School 2014/09/26 - 2014/10/15	No Comments Submitted			0	0	0	0	0	0	-
v2.1 Peer - ATSC Fielded Devices 2014/09/26 - 2014/10/15	No Comments Submitted			0	0	0	0	0	0	-
v2.1 Peer - Aerial										

ISR Systems	No Comments	0	0	0	0	0	0	-
2014/09/26 -	Submitted							
2014/10/15								

<b>Key</b>
Completed Review with Comments
Completed Review, No Comments
Active Review Occurring

ATZQ-TD

NOV 21 2014

MEMORANDUM FOR RECORD

SUBJECT: Approval of the System Training Plan (STRAP) for the Tactical Airspace Integration System (TAIS) Increment 2, Version 3.0

1. Reference: System Training Plan Version 3.0, Tactical Airspace Integration System (TAIS) Increment 2.
2. The STRAP for the Tactical Airspace Integration System (TAIS) Increment 2 is approved. Approved STRAP will be posted to the Central Army Registry (CAR) website. This STRAP can be found at the following web address:  
<http://www.adtdl.army.mil/>.
3. The DOTD POC for this action is: Mr. Andrew Lecuyer, 334-255-2584 DSN (558) email: [andrew.b.lecuyer.civ@mail.mil](mailto:andrew.b.lecuyer.civ@mail.mil), U.S. Army Aviation Center of Excellence, ATTN: ATZQ-TDT-N, Fort Rucker, AL 36362-5202.

  
JAMES E. BAKER, JR.  
Colonel, Aviation  
Director of Training and Doctrine

Memorandum of Approval for the TAIS Increment II