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SECRETARY OF THE AIR FORCE

AIR FORCE INSTRUCTION 36-2251

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Personnel

MANAGEMENT OF AIR FORCE TRAINING SYSTEMS

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This instruction provides direction for managing Training Systems. It applies to all active United States Air Force organizations, Air Force Reserve Command (AFRC), and Air National Guard (ANG), except as noted. This instruction implements Air Force Policy Directive (AFPD) 36-22, *Air Force Military Training*, and must be used in conjunction with AFI 36-2201V1, *Training Development, Delivery, and Evaluation,* AFI36-2201V6, *Career Field Education and Training*, AFI 63-101, *Operations of Capabilities Based Acquisition System,* AFI 10-601, *Capabilities Based Requirements Development,* and AFI 99-103, *Capabilities Based Test and Evaluation.* Ensure that all records created as a result of the processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/gcss-af61a/afrims/afrims/**.

This is a revised instruction updating AFI 36-2251, *Operation and Management of Aircrew Training Devices*. Submit suggested improvements to this instruction on AF IMT 847, *Recommendation for Change of Publication*, from the field through the appropriate functional's chain of command to HQ/USAF/A3O-AT, 1480 Air Force Pentagon, Washington D.C. 20330-1480. Requests for waivers to this instruction should be directed to Chief, Operational Training Division, HQ/USAF/A3O-AT. MAJCOMs, Field Operating Agencies, and Direct Reporting Units may supplement this instruction after coordination with and approval by HQ/USAF/A3O-AT. Send one copy of approved supplements back to HQ/USAF/A3O-AT after publication.

SUMMARY OF CHANGES:

This document has substantially been revised and must be completely reviewed. Major changes include adding Distributed Mission Operations (DMO), adding AF Training System Program Manager, a description of the Training Systems Product Group and its function, and the simulator certification and evaluation process.

Chapter 1

GENERAL INFORMATION

1.1. Scope. This instruction provides the guidance for managing Air Force Training Systems. It outlines the requirement to develop, acquire, modify, test, validate, and support training systems, to include but not limited to Aircrew Mission Training Systems, Mission Crew (i.e. Command and Control (C2)) Training Systems, Maintenance Training Systems, Space Training Systems, other Training Systems and Training Services. This AFI must be used in conjunction with AFI 10-601, *Capabilities-Based Requirements Development*, and AFI 99-103, *Capabilities-Based Test and Evaluation*, and AFI 63-101, *Operations of Capabilities Based Acquisition System* to provide an integrated framework for the implementation of a training system.

1.2. System Development. Training systems are developed using the integrated management framework outlined in this AFI. Training systems must follow approriate guidance in regards to acquisition, programming, requirements, and test IAW the references in Attachment 1. The following concepts and terms are included to communicate DoD perspective and intentions. All training systems shall incorporate the intent of the following:

1.2.1. Requirements Development.

1.2.1.1. IAW DoD 5000-series directives and instructions, CJCSI/M 3170.01, *Joint Capabilities Integration and Development System*, and AFI 10-601, *Capabilities-Based Requirements Development*, all training systems considered acquisition programs must follow prescribed acquisition and requirements development direction and policy. See Attachment 1 for a list of all referenced guidance. Training system requirements shall consider the role of the weapon system and combat/mission crew in the operational environment to determine the extent of interoperability to be designed into the training system. Use a comparison of Mission Essential Competencies to help determine interoperability requirements. Possible effects on other parts of the system shall be considered when decisions are made that primarily concern one part of the system. For example, the effects on unit training shall be a key consideration in decisions on institutional training. Training systems/programs should be developed according to AFMAN 36-2234, *Instructional System Development (ISD).* Additionally, ensure the Air Force Career Field Managers (AFCFMs) and Air Education & Training Command (AETC) Training Pipeline Managers (TPMs) are included in developing and implementing formal training requirements through the Utilization and Training Workshop (U&TW) as detailed in AFI 36-2201, *Air Force Training*, and Volume 5, *Career Field Education and Training.*

1.2.2. Management of Training Programs.

1.2.2.1. Simulators and other training devices for prime mission systems shall be developed, procured, distributed, and used when supported by the ISD analysis. Particular emphasis shall be placed on simulators that provide training of tasks that might be limited by safety considerations or constraints on training space, time, or other resources. When deciding on simulation issues, the primary consideration shall be on improving the quality of training, safety, and the state of readiness.

1.2.2.2. Program Managers (PMs) will execute training system acquisitions IAW DoDI 5000.2, *Operation of the Defense Acquisition System*, and Air Force acquisition policies.

1.2.2.3. Program Managers will ensure training devices are supported IAW AFI 63-111, *Contract Support for Systems, Equipment and End-Items*, (Contract Logistics Support (CLS) or Contract Sustainment Support (CSS)).

1.2.3. Distributed Mission Operations (DMO) allows for routine unit level training activity by linking live, virtual, and constructive elements and training systems within and across weapon system platforms. DMO capabilities may be used to accomplish Major Weapon System (MWS) training table activity, specific mission rehearsal, and test and evaluation of tactics, techniques and procedures. Distributed Mission Operations is also a readiness initiative to train warfighters as they expect to fight, maintain combat readiness at home or deployed, conduct mission rehearsals in an environment as operationally realistic as necessary, and provide support to operations. Commanders will use DMO to prepare and assess Aerospace Expeditionary Forces (AEF) and to prepare and certify Air and Space Operations Centers (AOCs), including Joint Force Air Component Commanders (JFACCs), for real-world missions. As an integration effort, DMO will primarily leverage existing and emerging programs and technologies to fill gaps in total-team training, rehearsal, and operations support.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. Responsibilities.AFPD 36-22, *Air Force Military Training*, AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*, AFPD 63-1, *Acquisition Sustainment Life Cycle Management* and AFI 63-101, *Operations of Capabilities Based Acquisition System*, direct the following:

2.1.1. Secretary of the Air Force.

2.1.1.1. The Assistant Secretary of the Air Force for Manpower & Reserve Affairs (SAF/MR) is responsible for military training policy matters.

2.1.1.2. The Assistant Secretary of the Air Force for Acquisition (SAF/AQ) serves as the Air Force Service Acquisition Executive for non-space related programs and Air Force Senior Procurement Executive (SPE), oversees all non-space related acquisition programs through the Program Executive Officers (PEOs) and Designated Acquisition Officials (DAOs), and issues Program Management Directives (PMDs) for all non-space related acquisition programs.

2.1.1.3. The Under Secretary of the Air Force (SAF/US) serves as the designated Air Force Service Acquisition Executive for Air Force space acquisition programs, and as such develops, coordinates, and integrates plans, policy (including safety), and programs for space systems and acquisition of all Air Force space programs.

2.1.2. Headquarters Air Force.

2.1.2.1. The Deputy Chief of Staff, Manpower, Personnel and Services (HQ USAF/A1) develops, coordinates, and executes personnel policy and essential procedural guidance for the management of military training programs.

2.1.2.2. Deputy Chief of Staff, Operations, Plans and Requirements, HQ USAF/A3/5 (for Air or Space Crew Training Devices) oversees the management of and policies for functional training, training devices, and System Training Plans (STPs), as appropriate. They appoint A3/5 career field managers to ensure development, implementation, and maintenance of Career Field Education and Training plans for Air Force specialties. As Functional Manager, HQ USAF/A3/5 shall review all Life Cycle Management Plans (LCMPs)/System Training Plans, support all Air Force Review Boards, and Acquisition Strategy panel or similar reviews as appropriate for ACAT I & II programs. HQ USAF/A3/5 shall advocate for funding of flight trainers, mission crew trainers (e.g. Air Operations Center, Airborne Warning and Control System, Joint Tactical Air Controller), aircrew trainers (e.g. centrifuge, loadmaster), maintenance trainers (HQ USAF/A4LM will assist in providing oversight for maintenance trainers/simulators), MAJCOM distributed training capabilities, space trainers, and operational training systems. These include Aircrew/Spacecrew/Mission Crew training systems as a whole, Aircrew/Spacecrew/Mission Crew training devices, and Part Task Trainers in particular.

2.1.2.3. HQ USAF/A3O-AT will establish a simulator training system manager who will oversee aircrew and mission crew simulator training systems. (HQ USAF/A3O-ST will establish a simulator system manager for missile crew, space operator, and missile warning crew simulators). A3O-AT will implement MAJCOM reporting procedures on simulator utilization, training event migration, evolving DMO capabilities, and other pertinent metrics. This manager will interface with DMO Subject Matter Experts (SMEs) from the Air Staff and MAJCOMs,

including AFRC and ANG, to develop a coherent AF roadmap to assure DMO capable Major Weapon Systems (MWS), which includes current state and upgrades to both simulators and networking capabilities, for employment in DMO. This manager will also work with Air Staff functionals and MAJCOM Program Element Monitors to track funding for each MWS simulator program and advocate through the Air Force Corporate Structure to secure required funding. This manager also will interface with appropriate SAF/AQ and SAF/US organizations to ensure training system and acquisition strategies are in coordination with each other.

2.1.3. Lead Command/Using Commands (LC/UCs).

2.1.3.1. For primary weapon systems, support and training systems, the LC/UCs responsibilities are defined in AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*.

2.1.3.1.1. Lead Commands shall establish standards, tasks, and formal training requirements for both operations and maintenance of training systems, including systems required for DMO capabilities, which will be established in coordination with AF Career Field Managers, AETC Training Pipeline Managers, and AETC Training Managers (TMs).

2.1.3.1.2. Major Commands (MAJCOMs), Air National Guard (ANG), Field Operating Agencies (FOAs), and Direct Reporting Units (DRUs) will identify military training and resource requirements, establish supplementary training programs, execute their programs to comply with these policies, and report unit cost and student production data for all training programs.

2.1.4. Air Education and Training Command (AETC). Acts as the Air Force's primary focal point for training technology, training development, and formal training programs. As such, and as a UC of most training systems, AETC will provide Instructional System Development (ISD) advice and expertise to the LC, individual training system PM, and the Training Planning Team (TPT). As the Air Force’s trainer, AETC has a vested interest in the acquisition of systems and should be consulted in the development and validation of training requirements.

2.1.5. Air Force Materiel Command (AFMC).

2.1.5.1. Provides training research and training systems acquisition and sustainment through the Training Systems Product Group (TSPG).

2.1.5.2. The TSPG works directly with the LC/UCs to assist in long-term training system planning, and to refine training requirements for the applicable weapon systems. This may include hosting an annual Training Simulator Summit to review training system status; to share lessons-learned across MAJCOMs; and to facilitate discussions on potential cross-program synergies and DMO opportunities, advocacy issues and future technology needs. LC/UC decisions regarding training systems should involve consultation with the TSPG, which can assess alternatives and make recommendations to minimize program life-cycle costs.

2.1.5.3. AFMC/Centralized Asset Management (CAM), acting as the AF Executive Agent, will assume Planning, Programming, Budgeting, and Execution (PPBE) System responsibility for active Contract Logistics Support (CLS) Operations & Maintenance (O&M). Lead MAJCOMs for specific MWS Mission Design Series (MDS)/Type Model Series (TMS) equipment will work with all using MAJCOMs to identify and consolidate operational requirements to AFMC/CAM to support the sustainment requirements determination process. Trainer sustainment requirements will be identified and assessed in conjunction with all requirements for a given MDS/TMS to maintain the connection to the MDS/TMS (N/A for ANG).

2.1.6. Air Force Space Command (AFSPC).

2.1.6.1. Air Force Space Command (AFSPC) is responsible for acquisition/sustainment programs assigned to the Space and Missile Systems Center (SMC). AFSPC works closely with users to formulate long-term objectives and integrate systems and associated requirements for all Air Force space platforms. They support users by defining concepts, developing evaluation and integration studies, developing (with users and affected Program Executive Offices (PEOs)) alternative solutions to validated needs, and integrate life-cycle cost estimates to support proposed alternatives.

2.1.6.2. The Space Training Acquistion Office (STAO), SMC SCNG/ST, is the space enterprise and center lead for space systems operations and maintenance training within the AFPEO/SP for portfolio. The STAO will provide guidance and assist PMs in the development, acquisition, and sustainment of training systems for space operations and maintenance, and will facilitate crossflow training information between space programs. The STAO will review and coordinate on all space system RFPs, STPs, and all program documents that impact training system development and sustainment. The STAO serves as principal advisor to the Space PEO and Material System Wing Commanders on DoD, Air Force, and AFSPC training policies, and will provide a quarterly update to the AFPEO/SP on all STP, TSRA, and training systems. PMs will work closely with the STAO and AFSPC/A3T to ensure user training requirements are properly defined through the TSRA process and documented in the STP prior to systems RFP release to ensure space training systems are affordable, effective, sustainable, and meet operator's expectations.

2.1.6.2.1. The STAO is responsible for program management of the Standard Space Trainer (SST) program. The SST is the AFSPC directed common training platform for all space training systems. PMs will work closely with the STAO to ensure space training systems are developed that interface with the SST architecture and that meet AFSPC/A5 training requirements. Additionally, AFSPC/CC has assigned the STAO program management responsibility for the Distributed Mission Operations – Space Domain (DMO-S) program.

2.1.6.2.2. The STAO and AFSPC/A3T will host the semi-annual Space Training Advisory Group conference to review training system status; share lessons-learned across the space portfolio; and facilitate discussions on potential cross-program synergies, advocacy issues, and future technology needs.

Chapter 3

MANAGEMENT, ACQUISITION, MODIFICATION, AND MODERNIZATION

3.1. Training System Management Responsibilities. The effective management of training systems and DMO capabilities (network and network control functions) requires close coordination between the Lead and Using Commands and the Acquisition/Sustainment communities.

3.1.1. The Lead Command. The LC will actively participate in all training system-sponsored acquisition / modification, strategy development, and reviews. Additionally, The LC will:

3.1.1.1. Support the requirements for coincident development and concurrency of the training system throughout the life of the prime mission system. The training system shall receive the same Air Force precedence rating as the prime mission system it supports and the same visibility, funding, and documentation priority.

3.1.1.2. Support simulators and training devices and DMO capabilities as integral parts of an overall training system.

3.1.1.3. Support the individual training system PM to ensure that the training systems dedicated to prime mission systems or equipment are available and DMO capable (when applicable) prior to the fielding of the parent system. This is accomplished by defining training system requirements attendant to the material fielding strategy/plan for the prime mission system.

3.1.1.4. Lead Commands must fund training system modifications and DMO capabilities when applicable if the prime mission systems are modified or updated. Lead Commands shall fund training systems to ensure they remain concurrent with systems in the field. Prime mission systems shall not be modified if there is insufficient funding to modify both the prime mission system and the training system.

3.1.1.5. Assist individual training system PMs in translating operational and training requirements into contractual terms and system/technical performance requirements.

3.1.1.6. Weapon system and DMO requirements are the responsibility of the Lead Command and validated through the Joint Capabilities Integration and Development System (JCIDS) process. Lead Commands will conduct an annual review of weapon system/DMO requirements or product group requirements, to include training system requirements. These reviews will ensure requirements are accurate, testable, reliable, timely, properly formatted, and documented (file maintained) in an appropriate database. Once validated, prioritize CLS requirements, including trainer sustainment requirements, according to their relative importance by weapon system, applicable end-items and/or by product group using Air Force-approved criteria following the AFMC/CAM Logistics Requirements Determination Process Procedures. (N/A for ANG)

3.1.1.7. Support individual training system PMs in the development of acquisition program documents (e.g. Life Cycle Management Plans (LCMPs), contracts, and material fielding plans).

3.1.1.8. Chair the Training Planning Team (TPT).

3.1.1.9. Semi-annually report on their simulator utilization and concurrency impacts, for major weapon system platforms, and forward reports to HQ USAF/A3O-AT. Reference **Attachment 4**.

3.1.2. Using Commands.

3.1.2.1. A UC is responsible for conducting mission operations using the resources allocated by the LC and Higher Headquarters. As such, a UC is responsible for defining the system requirements necessary to conduct operations. These requirements, to include training/DMO, are submitted to the LC for advocacy, programming, and funding allocation. HQ USAF/A3/5 is responsible for ensuring the LC balances the requirements and funding of a UC against the requirements and funding of the LC. CLS funding allocation is the responsibility of the AFMC/CAM office (N/A for ANG). Modifications driven by UCs or unique mission requirements for MDS hardware/software are the UC's programming responsibility. In these cases, the UC shall assume LC responsibilities and comply with AFPD 10-9.

3.1.2.2. UCs will submit information to the LC required under paragraph 3.1.1.9. above.

3.1.3. Air Education and Training Command. AETC provides support to System Program Managers (SPMs), PMs, and PGMs with functional expertise in the development and modifications of training systems, training devices, and DMO network functions.

3.1.4. Quality Assurance Personnel (QAP), to include Quality Assurance Specialists (QASs), Functional Area Evaluators (FAEs), Advisory and Assistance Service (A&AS) personnel, and Contracting Officer Technical Representatives (COTRs), are assigned by the Program Manager, or by the Functional Commander/Director (FC/FD) at the location where the training system is installed or where training is to take place. The primary organization/agency receiving contracted training support/service is responsible for providing government manpower to assist in the management of training system contracts. The FC/FD should assign individuals to QA duty based on their technical expertise. The Quality Assurance Program Coordinator (QAPC) is the Mission Support Group or AFMC/AFSPC Center-level individual, normally from the contracting activity, selected to coordinate the Performance Management Assessment Program. The QAPC's primary responsibilities are to provide FC/FD and QA personnel with training on the requirements in accordance with the contract performance plan as well as reviewing contract requirements to ensure they are clearly stated and enforceable. Reference AFI 63-124, *Performance-Based Services Acquisition (PBSA)*, and Air Force Federal Acquisition Regulation Supplement Mandatory Procedure 5346.103, *The Quality Assurance Program*, for additional information. (Note: By law, the contract officer who owns the contract logistics support is accountable for contract oversight. A manpower billet generated when AFMC fields a training system will follow that device wherever it goes and will not be used for other purposes.)

3.1.5. Program Managers serve as the single point of accountability for accomplishing program objectives for life cycle system management. Program Managers are responsible for ensuring their programs have a process for continuously managing the program cost, schedule and performance expectations of the operator. The PM will be responsible for documenting the process and communicating the roles and responsibilities concerning training systems to everyone involved. Reference AFI 63-101, *Operations of Capabilities Based Acquisition System*, for further guidance concerning Program Manager responsibilities.

3.2. Training Planning Team (TPT). The TPT is responsible for documenting training requirements for inclusion in the product support acquisition and sustainment planning strategy document and the System Training Plan (STP). It is recommended that TPT meetings be held annually. Open/unresolved training system/DMO quality and concurrency issues will be reviewed at all TPT meetings. This meeting will review and document training system quality and concurrency. The TPT shall be established sufficiently early to support development of the system acquisition strategy, preferably as

early as Milestone A or Key Decision Point (KDP) A. The TPT Chair, usually the LC, will coordinate on training system/DMO acquisition strategies developed by the individual training system PM.

3.2.1. TPT Composition. At a minimum, the TPT should include the individual training system PM, Using Command(s), specifically, AETC TPMs and TMs, prime weapon system program office, Air Force Human Systems Integration Office, and TSPG/STAO (for space systems) representatives. The TPT Chair should include representatives from test and evaluation agencies, validation and certification agencies, AFRC, ANG, other Services, applicable laboratories, and designated contractor personnel, as needed. The TPT Chair shall clearly define the composition of the TPT and the roles and responsibilities of each member, and delegate those responsibilities if desired. The Using Commands are responsible for providing mission Subject Matter Experts (SMEs) and Instructional System Development (ISD) expertise. The LC is responsible for balancing TPT requirements with current fiscal policy and for advocating for resources within the Lead Command and Higher Headquarters. The TPT Chair shall approve the TPT minutes and the STP with the coordination of all the UCs and the individual training system PM as a minimum.

Chapter 4

SYSTEM TRAINING PLAN (STP)

4.1. General Instructions. The Lead Command, via the TPT, will develop, maintain, and review an STP for a prime mission system. The STP for each prime mission system will include any DMO training requirements. The STP shall be used to support acquisition and modification processes, requirement documents, and milestone decisions. **Attachment 2** outlines the considerations and format for developing an STP. As a minimum, key training system performance, schedule, and cost elements identified in the STP will be included in prime mission system program lifecycle management documents, e.g. the LCMP. STP development shall use data collected from the Training Systems Requirements Analysis (TSRA), which must be started as early as practicable after Milestone A or Key Decision Point (KDP) A.

4.2. STPs for Emerging Prime Mission Systems. For planning, programming, and budgeting purposes, the LC shall initiate the STP through a TPT as soon as possible after Milestone A or KDP A. The LC can delegate some STP creation duties to other organizations as necessary. The TPT Chair will coordinate the STP to obtain LC approval prior to Milestone B or KDP B. The approved STP is a comprehensive document detailing the developmental steps, responsibilities, and guidance for the emerging training system. See **Attachment 2** for topic areas.

4.3. STP Review. The TPT will review and update the STP annually throughout the life cycle of the prime mission system. The LC can delegate some STP review duties to other organizations as necessary. The TPT will review changes affecting training that have occurred in the following areas: mission tasking, threat capabilities, tactics, experience level / background of training audience, training system availability, component capabilities, funding priorities, basing, new training technologies, or deficiencies identified in mishap reports. The TPT Chair will coordinate the changes to the STP through the LC and all the UCs, TSPG or STAO (for space systems) and the individual training system PM for final approval by the LC.

Chapter 5

MOVEMENT, DISPOSITION, AND INVENTORY MANAGEMENT

5.1. Movement of Training Devices. Movement of centrally procured and managed training devices shall be in accordance with AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*. Accomplish the following steps:

5.1.1. Coordinate movement through the individual training system PM and Item Manager. Allow enough lead-time to enable proper planning, programming, and funding.

5.1.2. Send a loss and gain message, per AFI 21-103 Chapter 4, to the Item Manager.

5.1.3. Coordinate funding for the movement and temporary storage with the item manager, losing Command, and gaining Command. The MAJCOM funds intra-Command movements and the gaining Command funds inter-Command movements, unless coordinated otherwise.

5.1.4. Movement of local-purchase or MAJCOM-procured training devices and equipment is the responsibility of the MAJCOM.

5.2. Disposition of Excess Training Materials. Training equipment and materials that are local-purchase or Command-procured should also be considered for reuse rather than disposal. Courseware, hardware, and software may have utility for other U.S. or international agencies, particularly security assistance programs. Disposition of local-purchase or Command-procured equipment and materials is the responsibility of the LC/UC, and should not be referred to the Item Manager; however, the Item Manager may assist in locating potential users for such materials. Reuse or disposal of excess training materials should be in accordance with Federal Acquisiton Regulation (FAR) 45.6 and Supplements AFMAN 23-110, *USAF Supply Manual*, and AFI 23-501, *Retaining and Transferring Materiel*.

5.3. Lease or Loan of Training Devices. If determined to be advantageous to the U.S. Government (AFRC: "For loans or leases under 90 days"), training devices may be leased or loaned to non-US Government organizations in accordance with AFMAN 23-110, *USAF Supply Manual*, and AFI 64-103, *Leasing Non-Excess USAF Aircraft, Aircraft-Related Equipment and Other Personal Property to Non-Government Organizations*. SAF/AQ authorizes such leases or loans and issues a Determination and Findings (D&F). Upon receipt of an approved D&F, the appropriate AFMC/AFSPC program office, product group, or materiel group evaluates lease/loan requests, determines device availability, and negotiates the lease or loan.

5.4. Training Device Inventory. Item manager or Lead/Using Command will maintain a training device inventory by category, description, location, number, and type of logistics support and provide it upon request to HQ USAF/A3O-AT.

5.5. Use of Grounded Aircraft and Excess Materiel for Training.PMs, LCs, and UCs should attempt to utilize excess materiel for training purposes before purchasing or fabricating a new system. Refer to the following documents to use excess materiel for training: DoD 4160.21-M, *Defense Materiel Disposition Manual*, and AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting and Termination*, Paragraph 4.3.

Chapter 6

SIMULATOR CERTIFICATION (SIMCERT) AND SIMULATOR VALIDATION (SIMVAL)

6.1. Air Force Training System and Device Simulator Certification and Validation Programs: Simulator certification (SIMCERT) ensures that Air Force prime mission system simulators/services and their components support accurate and credible training for allocated tasks, missions, and events including DMO activity, through verification and validation of training system hardware and software performance. Simulator validation (SIMVAL) verifies and validates the performance of the simulated mission environments employed in training systems. Each of these programs compare the training system with the prime mission system to establish and to document concurrency baselines. They support both stand-alone unit level training and distributed training in a DMO activity. Collectively, they provide the commander with the status of the capabilities and limitations of assigned training systems and environments. SIMCERT and SIMVAL provide an audit trail for measuring system effectiveness and quality assurance of contractor supported training or equipment. Observe the following guidance:

6.1.1. General. Lead Commands (LCs) shall determine which training systems, DMO activity, and services require a SIMCERT or SIMVAL program and the frequency of these programs.

6.1.2. Using Commands (UCs), to include ANG and AFRC. UCs should coordinate and align their SIMCERT program with the prime mission equipment SIMCERT program, where appropriate.

6.1.3. Distributed Training Systems and Services. If the training system/service connects to a distributed training network, federate, or federation, the LC/UC shall:

6.1.3.1. Evaluate each system's ability to provide training that is realistic, secure, and approximates the full capabilities of the weapons system.

6.1.3.2. Establish the requirements for the federate and federation to include training objectives, interoperability objectives, and criteria.

6.1.3.3. Ensure fidelity of the distributed environment supports realisitic and secure training and simulates the full capabilities of the integrated force.

6.1.3.4. Ensure the training device introduces no anomalous or unwanted artifacts into the training network.

6.2. SIMCERT Programs. The LC, with assistance from appropriate agencies such as the UC, TSPG or STAO (for space systems) and product or materiel group, shall establish training system certification requirements, to include training tasks, criteria, and certification interval. An overview of the certification requirements should be included in the STP. Each LC SIMCERT program shall be documented in a Master SIMCERT plan IAW MAJCOM supplements to this AFI or in accordance with AFI 16-1001, *Verification, Validation and Accreditation (VV&A)*. Units will complete initial certification of training devices within 120 days or as determined by the Lead Command following delivery of a new training system or upon fielding major modifications to existing training systems. SIMCERTS will be reaccomplished throughout the life cycle of the system, and each certification will focus on training fidelity. The early implementation of the SIMCERT program is critical to ensure the intended quality of the training is delivered and maintained during the lifespan of the training system. The V&V reports generated by the SIMCERT program support the accreditation authority's decision to accredit the associated training system for its intended use.

6.3. SIMVAL Programs. The LC, with assistance from appropriate agencies such as the UC, TSPG or STAO (for space systems) and product or materiel group, shall establish training system validation requirements. The SIMVAL program ensures the quality of the intended level of training is delivered and maintained. The V&V reports generated by the SIMVAL program support the accreditation authority's decision to accredit the associated training system for its intended use.

6.3.1. The validation shall include:

6.3.1.1. A comparison between the current intelligence threat assessments of a weapons system to the training system's simulated mission environment (i.e., threat models, weapon flyout models, etc.).

6.3.1.2. An assessment of the interaction between the weapon system and the operational environment.

6.3.1.3. A documented summary of the differences between the training system and the weapon system.

6.3.1.4. The STP/LCMP/HSI should include an overview of validation requirements.

6.3.1.5. Conduct the LC SIMVAL program IAW MAJCOM supplements to this AFI or in accordance with AFI 16-1001, *Verification, Validation, and Accreditation (VV&A)*. Accomplish SIMVAL throughout the life cycle of the training system.

6.4. Adopted Forms.

AF IMT 847, *Recommendation for Change of Publication*

AF IMT 4026, *Aircrew Training Devices Utilization*

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DoD 4120.15L, *Model Designation of Military Aerospace Vehicles*, 12 May 2004

DoD 4160.21-M, *Defense Materiel Disposition Manual*, 18 Aug 1997

DoDD 1322.18, *Military Training*, 3 Sep *2004*

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AFFARS Mandatory Procedure 5346.103, *The Quality Assurance Program*, Aug 2005

AFI 10-601, *Capabilities-Based Requirements Development*, 31 Jul 2006

AFI 10-901, *Lead Operating Command—Communications and Information Systems Management*, 22 Mar 2001

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AFI 16-1001, *Verification, Validation and Accreditation (VV&A)*, 1 Jun 1996

AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*, 14 Dec 2005

AFI 23-501, *Retaining and Transferring Materiel*, 16 May 1994

AFI 36-2201V1, *Training Development, Delivery, and Evaluation*, 1 Oct 2002

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Abbreviations and Acronyms

AETC—Air Education and Training Command

ACAT—Acquisition Category

AFMAN—Air Force Manual

AFI—Air Force Instruction

AFMC—Air Force Materiel Command

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFRL—Air Force Research Laboratory

AFSC—Air Force Specialty Code

AFSPC—Air Force Space Command

AMARC—Aerospace Maintenance and Regeneration Center

ANG—Air National Guard

AVPOL—Aviation Petroleum Oil and Lubricants

CAM—Centralized Asset Management

CCB—Configuration Control Board

CBT—Computer Based Training

CLS—Contract Logistics Support

CDD—-Capabilities Development Document

CJCS—Chairman of the Joint Chiefs of Staff

CPD—Capabilities Production Document

D&F—Determination and Finding

DCMA—Defense Contract Management Agency

DoD—Department of Defense

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

DLR—Depot Level Reparable

DMO—Distributed Mission Operations

DPEM—Depot Purchased Equipment Maintenance

DRMO—Defense Reutilization and Marketing Office

ESOH—Environment, Safety, and Occupational Health

FAR—Federal Acquisition Regulation

FOC—Full Operational Capability

HQ USAF—Headquarters US Air Force

HSI—-Human Systems Integration

ICD—Initial Capabilities Document

ICW—Interactive Courseware

ILSP—Integrated Logistics Support Plan

IOC—Initial Operational Capability

ISD—Instructional System Development

JCIDS—Joint Capabilities Integration and Development System

KDP—Key Decision Point

LC—Lead Command

LCMP—Life Cycle Management Plan

LVC—Live, Virtual, Constructive

MAJCOM—Major Command

MILCON—Military Construction

MDA—Milestone Decision Authority

MOASP—Management and Oversight of Services Process

MOU—Memorandum of Understanding

MTA(R)—Mission/Task Analysis (Report)

MTD—Maintenance Training Device

MTTL—Master Training Task List

MWS—Major Weapon System

OMA(R)—Objectives/Media Analysis (Report)

OPR—Office of Primary Responsibility

OSS&E—Operational Safety, Suitability, and Effectiveness

PEM—Program Element Monitor

PEO—Program Executive Officer

PGM—Product Group Manager

PM—Program Manager

PMD—Program Management Directive

POM—Program Objective Memorandum

PPBE—Program, Planning, Budgeting, and Execution System

SIMCERT—Simulator Certification

SIMVAL—Simulator Validation

SKA—Skills, Knowledge levels, and Attitudes

SLA—Service Level Agreement

SME—Subject Matter Expert

SPM—System Program Manager

STAO—Space Training Acquisition Office

STP—System Training Plan

T&E—Test and Evaluation

TOs—Technical Orders

TPT—Training Planning Team

TRA(R)—Training Requirements Analysis (Report)

TSBA(R)—Training Systems Basis Analysis (Report)

TSPG—Training Systems Product Group

TSRA—Training System Requirements Analysis

UC—Using Command

VV&A—Verification, Validation and Accreditation

WST—Weapon System Trainer

Terms

Centralized Asset Management (CAM)—-The effort to centralize management and execution of logistics sustainment funding under one Air Force process owner. The Deputy Chief of Staff for Logistics, Installations and Mission Support, as the process owner, tasked the Air Force Materiel Command (AFMC) CAM Program Office to develop and manage this program using the following four main pillars: Centralized sustainment funding, logistics requirements determination, performance based logistics, and integrated wholesale supply and depot maintenance operations.

Computer Based Training (CBT)—--Training in which computers are used for training development, delivery, evaluation, and training management. The management functions often include scheduling, lesson selection, score keeping, and quality of student responses.

Concurrency—--The condition where the configuration and operation of the training systems matches configuration and function of the reference prime mission system(s).

Contract Logistics Support (CLS)—-A support concept where a contractor is used to provide all or part of the logistics support for a system, subsystem, modification, or equipment. CLS covers depot maintenance and, as negotiated with the Using Command, necessary organizational and intermediate level maintenance, software support, and other operation and maintenance tasks.

Course—Logically grouped instruction on a subject, designed to achieve defined learning objectives. A complete series of instructional units identified by a common title or number. An ordered arrangement of subject matter designed to instruct personnel in the knowledge, skills, or techniques required in the performance of tasks in a designated area of specialization.

Courseware—--All instructional material including technical data, textual materials, and audio tapes, slides, movies, video tapes, video discs, and other audiovisual materials.

Distributed Mission Operations (DMO)—--Warfighter training that utilizes the integration (networking) of live-fly, virtual (man in the loop), and constructive (computer generated) entities, systems, and environments to complete mission essential competencies required for a combat ready force. DMO focuses on individual and small team unit-level training, utilizing a unit's organic resources to train assigned warfighters to perform their wartime tasks. It also expands a unit's training capabilities and resources to facilitate Inter-team training among geographically separated and composite force teams to execute missions (or significant portions of missions) and mission rehearsal scenarios.

Human Systems Integration (HSI)—-The process of effective integration of manpower, personnel, training, human factors, safety and occupational health, personnal survivability, and habitability considerations into the acquisition of prime mission systems to improve total system performance and reduce costs by focusing attention on the capabilities and limitations of humans.

Interactive Courseware (ICW)—-A computer program controlled instruction that relies on trainee input to determine the order and pace of instruction delivery.

Instructional System Development (ISD)—-A deliberate and orderly process for planning and developing instructional programs that make sure personnel are taught the knowledge, skills, and attitudes essential for successful job performance. Depends on a description and analysis of the tasks necessary for performing the job, objectives, and tests clearly stated before instruction begins, evaluation procedures to determine whether or not the objectives have been reached, and methods for revising the process based on empirical data. (See AFMAN 36-2234)

Lead Command (LC)—-The MAJCOM, which is the primary operator of a system, subsystem, or item of equipment. This generally applies to those operational Commands or organizations designated by Headquarters US Air Force to conduct or participate in operations or operational testing (See AFPD 10-9). The Air Force assigns responsibility for overall management of each prime mission system to a LC. The LC contributes to the process of developing and maintaining a force structure with a balance of complementary capabilities, and it establishes a basis for rational allocation of scarce resources among competing requirements. In other words, the LC is responsible for advocating, programming and allocating funding for those systems assigned to it.

Master Training Task List (MTTL)—-Documentation of total training tasks developed for a prime mission system and its respective mission. It includes the entire spectrum of tasks in each functional area (operations, maintenance, and support) requiring training. The MTTL provides the training task baseline for all acquisition, modification, support, management, and funding actions through comparison with predecessor or future prime mission systems.

Media—--The delivery vehicle for presenting instructional material or the basic communication stimuli presented to a student to induce learning.

Mission Design Series (MDS)—-Sytem by which military aerospace vehicles are identified. See DoD 4120.15-L, Model Designation of Military Aerospace Vehicles, for a complete description of this identification system.

Mission Essential Competencies (MECs)—--Higher-order individual, team, and inter-team competencies that a fully prepared pilot, crew, or flight requires for successful mission completion under adverse conditions and in a non-permissive environment. MECs are derived from descriptions of how aircrews accomplish the kill chain (Find, Fix, Track, target, Engage, Assess) within their MDS and mission. They have distinct starting and end points, and if not successfully completed before going into the next phase, can jeopardize successful mission completion. MECS are not abstract knowledge or general skills. They are demonstrated in the context of an actual mission or high-fidelity simulated mission, under wartime conditions.

Mission/Task Analysis (MTA)—--A process of reviewing mission requirements, developing collective task statements, and arranging the collective tasks in a hierarchical relationship.

Mission Trainer—--A device that provides the trainees with a simulated warfare environment that is specifically mission oriented to the type of prime mission system involved. The device can provide specific prime mission system operator modes or a mission mode that requires tactical decision-making.

Prime Mission System (Equipment)—-Any weapon system, support system, work station, or end-item that supports a specific military mission, therefore requiring operations, maintenance, or support personnel training. Also called a Defense System and/or Parent System.

Program Manager (PM)—-The DoDD 5000.1 designated individual with responsibility for and authority to accomplish program objectives for development, production and sustainment to meet the user's operational needs. The PM has life-cycle responsibility for the prime mission system. PM duties include providing assessments of program status and risk to higher authorities and to the operator or operator's representative; actively managing within approved resources, program cost, performance, and schedule; and providing assessments of contractor performance. As used in this instruction applies collectively to System Program Manager and/or Product Group Manager.

Simulation—--A method for implementing a model over time. Also a technique for testing, analysis, or training in which real-world systems are used, or where real-world and conceptual systems are prepared by a model.

Simulator—--A training device that permits development and practice of the necessary skills for accomplishing operational tasks, to a prescribed standard of competency, in a specific prime mission system and duty position.

Simulator Certification (SIMCERT)—--The process of ensuring through validation of hardware and software baselines that a Training System and its components provide accurate and credible training. The process also makes sure the device continues to perform to the delivered specifications,

performance criteria, and configuration levels. It will also set up an audit trail regarding specification and baseline data for compliance and subsequent contract solicitation or device modification.

Simulator Validation (SIMVAL)—-The process for (1) comparing a training device's operating parameters and performance to the current intelligence assessment of a weapon system, threat and interaction between the weapon system and threat and (2) documenting the differences and impacts. This process includes generation and deployment of an intelligence data baseline of the system, comparison of simulator characteristics and performance, support for the modification and upgrade of the simulator, a comparison of simulator and threat operating procedures, and correction of any significant deficiencies. Uncorrected deficiencies are identified and published in validation reports. The process continues throughout the life cycle of the simulator.

System Training Plan (STP)—The STP is an iterative planning document that defines the justification, design, development, funding, resources, support, modification, operation, and management of a Training System. The STP is designed to provide for planning and implementation of training and to make sure all resources and supporting actions required for establishment and support are considered. The STP may be a stand-alone document, or it may be referenced and summarized in the Life Cycle Management Plan (LCMP) or Human Systems Integration (HSI) documents. All references to the STP in this document incorporate the possibility that the intended documentation may be part of an LCMP or HSI documents.

Technical Planning Integrated Product Team (TPIPT)—-TPIPTs are multi-constituent teams of Operators and AFMC laboratories, System Program Offices, development planners, and industry to generate, consolidate, and analyze an array of concept options and technology needs that address the Operator's needs.

Training—--Instruction and applied exercises for the acquisition and retention of skills, knowledge, and attitudes required to accomplish military tasks.

Training Device—--A hardware device that permits learning, development, and the practice of skills and procedures necessary for understanding and operating the integrated systems of a specific prime mission system.

Training Planning Team (TPT)—-An action group composed of representatives from all pertinent functional areas, disciplines, and interests involved in the life cycle design, development, acquisition, support, modification, funding, and management of a specific prime mission training system. The TPT uses the STP to ensure training considerations are adequately addressed in the prime mission system acquisition and modification processes.

Training Requirement—--The skills and knowledge that are required for satisfying the job performance requirements and are not already in the incoming students' repertoire.

Training Services—--Work performed in support of meeting objectives to train personnel in their assigned duties. Examples of training services include, but are not necessarily limited to, contract aircrew training, courseware development, document review and writing, academic (classroom) instruction, scheduling, training device operation and instruction, and conduct / facilitation of briefings and debriefings.

Training System—--A systematically developed curriculum including, but not necessarily limited to, courseware, classroom aids, training simulators and devices, operational equipment, embedded training capability, and personnel to operate, maintain, or employ a system. The Training System includes all necessary elements of logistic support.

Training System Product Group (TSPG)—-The Training Systems Product Group (TSPG) assists LC/UC in exploring existing and developmental training systems to satisfy training needs. The TSPG conducts research and provides the needed training system acquisition (or modification and sustainment contracting) expertise. The TSPG consists of the following organizations: Warfighter Readiness Division of the 711th HPW/RHA at the AFRL in Mesa, AZ; the 677th Aeronautical Systems Group at Wright-Patterson AFB, OH; and the 507th Aircraft Sustainment Squadron at Ogden ALC, Hill AFB, UT.

Training Systems Requirements Analysis (TSRA)—-The initial step in user requirements identification. It consists of mission/task analysis, training requirements identification, objectives/media analysis, and training systems basis analysis. A TSRA integrates the products of the Instructional System Development (ISD) process and the Systems Engineering (SE) process to describe the Training System to be procured. It serves as a required input to the System Training Plan. It is accomplished by the PM in coordination with the LC and UC.

Using Command (UC)—--Any Command or organization that possess a prime weapon system and uses the products of the Training System. The Using Command is responsible for managing and conducting mission operations using the resources allocated by the Lead Command and Higher Headquarters. As such, the UC is responsible for defining the system requirements necessary to conduct and sustain operations. These requirements are submitted to the Lead Command for advocacy, programming and funding allocation. If only one MAJCOM or agency possesses the weapon system, that MAJCOM or agency is the designated lead command. Reference AFPD 10-9 for further guidance on the delineation of responsibilities for Lead and Using Commands.

Attachment 2

SYSTEM TRAINING PLAN (STP)

A2.1. The STP shall:

A2.1.1. Establish training system definition through acquisition and modification documentation that will support the review and decision process.

A2.1.2. Identify training needs, concepts, strategies, constraints, risks, data, alternatives, resources, responsibilities, and other areas, through an iterative process.

A2.1.3. Document the results of early, front-end, and follow-on training task analyses.

A2.1.4. Provide information and identify resources for management decisions within the planning, programming, budgeting, and execution process which support defense/training system acquisition, modification and sustainment processes.

A2.1.5. Provide the basic concepts and strategy to attain and maintain training system concurrency to support desired training capability at the appropriate time.

A2.1.6. Identify alternate training strategies, to include methodology and media, if funding, concurrency, or other unknowns negatively impact required training system capabilities.

A2.1.7. Establish milestones and schedules to ensure timely development, testing, and fielding of training capability and training support.

A2.2. STP Format. The TPT may choose to utilize one of two formats for the STP depending upon the life-cycle phase of the prime mission systems: STP for emerging prime mission systems and STP for existing prime mission systems.

A2.2.1. STP Format For Emerging Prime Mission Systems. The exact composition of the STP is at the discretion of the TPT. The STP (if required) should be referenced and summarized in the Life Cycle Management Plan or Human System Integration (HSI) documents. The STP is a top level document that provides input to the requirements generation, acquisition program planning, and budget development processes. The details needed to support this analysis may be maintained in other documents and referenced in the STP.

A2.2.1.1. Suggested STP Sections. Following are suggested STP sections. Include only those sections necessary to guide the development, fielding, and management of the Training System:

A2.2.1.1.1. Executive Summary. Provide an overview of the STP. Highlight sufficient and significant elements to support your program, shortfalls, and future objectives. Briefly describe the overall mission of the prime mission system, the Training System, and requirements. Show the relationship of the resource to meeting the overall mission, shortfalls, and alternatives.

A2.2.1.1.2. Mission and Prime Mission System Description. Describe the prime mission system and mission based on the operational requirement, threat environment, and the designed operational capability, when determined. Include a thorough analysis of the prime system mission. A classified attachment may be required. Include title, nomenclature, and program elements for budget, security classification, prime mission system priority rating, and principal agencies. Reference other plans and documents that support the prime mission or Training System acquisition and modification process. Include a brief summary of

baseline system to be replaced, modified, or augmented; shortcomings, displacement, or disposition, if being replaced.

A2.2.1.1.3. Training Planning Team Membership (TPT). The STP should document TPT membership, which shall comprise LC, UCs, prime weapons system program office and TSPG/STAO representatives.

A2.2.1.2. Training System Description. Describe the total Training System by functional area, including instructional strategy, duration, content, media, training devices and utilization rates, and facilities. Provide strategy and alternative methodologies throughout the training continuum for initial training, on-the-job training, in unit training (i.e. continuation and career progression training), required qualification levels, reentry qualifications, evaluation points, training concept during hostilities, etc. Identify proposed approach to acquire training equipment and facilities. Estimate training qualification time required to achieve full proficiency. Include description of database, systems integration, networking protocols, compatibility, transportability, and deployability requirements. Address ability to efficiently and cost effectively modify Training System software concurrently with the prime mission system. Identify requirement for CBT and ICW. Provide a course summary document.

A2.2.1.2.1. Diagram a timeline, the training progression of each operational and maintenance functional area from entry-into to exit-from the prime mission system. Identify on the continuum all qualification levels, evaluation checkpoints, and reentry qualification points. State the policy upon which decisions will be based for critical points, such as course sequence, media allocation, on prime mission equipment training, and qualification evaluation. Indicate basic training principles to be taken into account, such as a building-block approach.

A2.2.1.2.1.1. Describe:

A2.2.1.2.1.1.1. Operator Training System(s).

A2.2.1.2.1.1.2. Maintenance Training System(s).

A2.2.1.2.1.1.3. Support (Depot) Training System(s).

A2.2.1.2.1.2. List and describe Training System components role, use, and capabilities:

A2.2.1.2.1.2.1. Actual prime mission and non-prime mission system equipment.

A2.2.1.2.1.2.2. Courseware and associated equipment.

A2.2.1.2.1.2.3. Training aids and devices.

A2.2.1.2.1.2.4. Embedded training capability in the prime mission system.

A2.2.1.2.1.3. Describe AFRC and ANG participation.

A2.2.1.2.1.4. Identify all Joint training and training with potential sister Service applications.

A2.2.1.2.1.5. Address potential or unresolved training issues.

A2.2.1.3. Training System Requirements. Describe how manpower, personnel, training, human factors engineering, safety, and occupational health considerations are applied to the design and development of the prime mission or Training System to reduce costs and enhance capabilities. Establish initial objectives that support readiness, force structure, affordability, and operational objectives.

A2.2.1.4. Training System Requirements Analysis (TSRA). The TPT will use the results of the TSRA to identify the Training System training requirements. The TPT will validate the TSRA products for use in the design of the Training System. The Mission/Task Analysis Report (MTAR) and Training Requirements Analysis Report (TRAR) will be used by the TPT to develop the Master Training Task List (MTTL) with performance criteria for inclusion in the Training System requirement documents. The Objectives/Media Analysis Report (OMAR) and Training Systems Basis Analysis Report (TSBAR) will be used to identify other Training System requirements, such as the number and type of training devices, courseware, etc., to be included in the Training System requirement documents. (See Attachment 3 for TSRA process description.)

A2.2.1.5. Implementation. Describe data sources, implementation procedures, special authorization or approvals, and assign responsibilities. Identify those training areas not supported by a complete task analysis process.

A2.2.1.6. Training System Concurrency Strategy. Identify and group critical training tasks consistent with mission training development and implementation that are impacted by concurrency. When incremental (phased) delivery of training capability is advantageous or necessary, training capabilities should support the following priorities as agreed to by the TPT:

A2.2.1.6.1. Safety training requirements and tasks.

A2.2.1.6.2. Warfighting training requirements and tasks.

A2.2.1.6.3. Full mission training and rehearsal requirements and tasks.

A2.2.1.7. Organizational Interfaces. Identify Government organizations necessary to ensure timely approvals and transfer of data, equipment, and property, which should be concurrent with the first contract award and renewed throughout the life cycle of the prime mission and training system. Include established agreements such as Sevice Level Agreements, Satements of Work, and Memorandums Of Understanding (MOUs). Briefly list responsibilities for each Command or organization.

A2.2.1.8. Training System Management and Support Concept. Concurrency must be given a primary consideration in contracting. Identify the concept and strategy for achieving life cycle management and support of the Training System. Describe requirements and options for logistics support. Contract Logistics Support (CLS) contracts that include modifications (hardware/software) should be developed and used. Consider:

A2.2.1.8.1. CLS and management.

A2.2.1.8.2. Technical data.

A2.2.1.8.3. Spares.

A2.2.1.8.4. Consumables.

A2.2.1.8.5. Organizational, intermediate, and depot level maintenance.

A2.2.1.8.6. Special or system operational equipment.

A2.2.1.8.7. Common or special tools and equipment.

A2.2.1.8.8. Facilities

A2.2.1.9. **Manpower Support Concept, Military Personnel Utilization Concept, and Personnel Training Requirements.** Consider student demographics, entry requirements, and student throughput estimates; estimate portion of military, civilian, or contract personnel.

Describe Air Force Specialty Codes (AFSC) employed. Identify these and any other unique requirements for this system in each of the following functional areas:

A2.2.1.9.1. Combined test force.

A2.2.1.9.2. Initial cadre.

A2.2.1.9.3. Operations.

A2.2.1.9.4. Maintenance.

A2.2.1.9.5. Depot.

A2.2.1.9.6. Security forces.

A2.2.1.9.7. Munitions and explosive ordnance.

A2.2.1.9.8. Contract support/CLS/Contract Training.

A2.2.1.10. Training Constraints and Risks**.** Include all potential limitations that will or may affect timely implementation of training objectives to meet mission initial operational capability (IOC) and maintain full operational capability (FOC). Describe all peacetime training constraints. Consider manpower or personnel and resource availability, security, cost, and environment, safety, and occupational health (ESOH) considerations, which may influence training media and methodology design, development, and selection. Include peacetime restrictions on the use of the prime mission system. Identify risks and assign risk levels that may affect deployment schedules or other milestones. Identify the expected impact of late to need or unusable training devices in terms of work-a-rounds, dollar costs for alternative training, increased use of the prime mission system, or impact of failure to perform on combat capability. Initiatives such as advanced prime mission system design change data deliveries and long-lead contractor provided equipment or Government-furnished equipment, information, or property should be considered. The risk Government-furnished property adds to a concurrent delivery schedule must be discussed and tradeoffs identified.

A2.2.1.11. Prime mission and Training System Milestones. Identify the prime mission system and Training System schedules and priority ratings necessary for concurrency required to deliver the Training System. Show "need dates" in terms of milestones. Include key engineering change proposals, management responsibility and operational milestones. Consider all schedules pertinent to satisfying training objectives through definitive milestones. These could include:

A2.2.1.11.1. Prime Mission System major milestones to include IOC through full operational capability.

A2.2.1.11.2. Task requirements and analyses completion dates.

A2.2.1.11.3. Training equipment requirements and delivery.

A2.2.1.11.4. Facility beneficial occupancy dates.

A2.2.1.11.5. Prime mission and training system deployment dates.

A2.2.1.11.6. Training system support center activation.

A2.2.1.11.7. Factory or contractor training dates.

A2.2.1.11.8. Instructional course start dates.

A2.2.1.11.9. Logistics support requirements dates.

A2.2.1.11.10. Ready for training, and Required Assets Available dates.

A2.2.1.11.11. Technical data availability.

A2.2.1.11.12. Courseware development completion dates.

A2.2.1.11.13. Training management system completion dates.

A2.2.1.11.14. Training system evaluation plan and review dates.

A2.2.1.12. Resource Summary. Identify total resource requirements to develop and operate the Training System throughout the prime mission system life cycle. Include recommended tradeoffs to support training and impact of not funding or procuring desired training capability.

A2.2.1.12.1. Indicate funding by allocation and Fiscal Year.

A2.2.1.12.2. Training or test equipment, courseware, training aids, technical manuals, and documentation:

A2.2.1.12.2.1. Types.

A2.2.1.12.2.2. Numbers.

A2.2.1.12.2.3. Life-cycle support.

A2.2.1.12.3. Manpower:

A2.2.1.12.3.1. Officer.

A2.2.1.12.3.2. Enlisted.

A2.2.1.12.3.3. Civilian.

A2.2.1.12.4. Personnel:

A2.2.1.12.4.1. Instructor cadre.

A2.2.1.12.4.2. Support personnel.

A2.2.1.12.5. Military construction or facility modification. Describe project and costing by fiscal year. Establish physical, power, security, etc., requirements.

A2.2.1.12.5.1. Facility requirements.

A2.2.1.12.5.2. Furniture, audiovisual, etc., requirements.

A2.2.1.12.5.3. Security.

A2.2.1.12.6. Contractor support. Time, effort, and cost. Initial training support.

A2.2.1.12.7. Travel and per diem.

A2.2.1.12.8. Other: Airspace, ranges, flying hours, munitions, etc.

A2.2.1.13. Training Evaluation and Validation. Develop and document evaluation and validation criteria, methodology, and responsibilities. Provide cost benefit analysis of proposed alternatives. Include plan for evaluation of training effectiveness.

A2.2.1.14. R&D Efforts. Describe current and future R&D studies and cost benefit analysis that may support upgrades to the systems or alternative methodologies to close any training gaps or accomplish the training with fewer resources.

A2.2.1.15. Lessons Learned. Identify problem areas common with other programs and potential solutions. Document assumptions made, fixes, work-a-rounds, or changes to requirements based on lessons learned. Include impact on system costs, effectiveness, and combat capability.

A2.2.1.16. Distribution. Include appropriate distribution to members of the training planning team and other designated agencies.

A2.2.2. STP Format For Existing Prime Mission Systems. After fielding of the Training System, the STP for an emerging prime mission system becomes a historical document providing direction, perspective, and guidance for managers of the training system. The STP for an existing prime mission system is a forward-looking road map of the Training System. The exact composition of the STP is at the discretion of the TPT. It should include the following:

A2.2.2.1. An assessment of future training needs caused by changes in the prime mission system and/or its mission tasking.

A2.2.2.2. A timeline to show the plan for sustaining, modifying, disposing, and replacing the Training System components.

A2.2.2.3. Any analysis, assessment, or background documentation that provides justification for acquisition, modification, and funding support for Training System components.

A2.2.2.4. An assessment of Training System deficiencies and their impact on the training system costs, effectiveness, and combat capability. Document recommended fixes, work-a-rounds, or changes to requirements.

A2.2.2.5. An assessment of future R&D efforts or technological advances that could improve training effectiveness/efficiency, including cost-benefit analysis data.

Attachment 3

TRAINING SYSTEMS REQUIREMENTS ANALYSIS (TSRA)

A3.1. Training System Requirements Analysis (TSRA) Process. For new and emerging weapon systems, a Training System Requirements Analysis shall be conducted to fully define the training system requirements and to identify any risks to develop and implement the training system. For existing weapon systems, TSRAs will be conducted when major modifications to existing training capability are anticipated or when the training system PM, or TPT determines the need for a TSRA. This analysis enables the UC experts to prioritize critical tasks and ensure all training requirements are addressed in the Instructional Systems Development (ISD) process. The LC, in conjunction with Air Force Materiel Command (AFMC)/Air Force Space Command (AFSPC) program office, product or materiel group, or AETC in coordination with LC/UC, should perform the TSRA. The TSRA contains four major components: mission/task analysis (MTA), training requirements analysis (TRA), objectives/media analysis (OMA), and the Training System Basis Analysis (TSBA).

A3.1.1. **Mission/Task Analysis (MTA).** The MTA identifies and analyzes all tasks to be performed for the operation and maintenance of the prime mission system. The MTA will result in the training task list for each mission area. The TSM, together with appropriate agencies, will develop and the TPT will maintain a Master Training Task List (MTTL) by mission area for each prime mission system. The MTA is the parent document for the MTTL. Thus, the MTTL should be derived from analysis of mission tasks, associated system tasks, legacy mission equipment or Training System task lists, and additional requirements resulting from personnel and resource availability, security, cost, and environment, safety, and occupational health (ESOH) constraints imposed by the peacetime environment. The TPT will determine the configuration of the MTTL. The MTTL should:

A3.1.1.1. Provide a total listing of tasks to be trained from initial entry into the prime mission equipment through upgrade, qualification, and continuation training.

A3.1.1.2. Break each mission into tasks to be trained, situational context, and coordination requirements. Each prime equipment mission shall be described in terms of mission objectives, scenarios, and mission profiles.

A3.1.1.3. Provide a full range of threat and environmental conditions.

A3.1.1.4. Provide a detailed task analysis record that characterizes each task and the criteria for successful performance in a mission context.

A3.1.2. **Training Requirements Analysis (TRA).** The TRA converts the MTTL into the training requirements for the prime mission system. The TRA defines the entry level and exit level Skills, Knowledge, and Attitudes (SKA) for each unique target student population. The target population can include 3, 5, and 7-level personnel, whether in upgrade, qualification or continuation training.

A3.1.2.1. Training requirements equal SKA_{Exit} minus SKA_{Entry}

A3.1.2.2. Entry SKAs are baselined to the target student population (e.g. basic training graduate, cross-trainee).

A3.1.2.3. Exit SKAs are derived from the Job Performance Requirements (JPRs) provided in the MTA.

A3.1.2.4. SKAs are classified as perceptual, motor, cognitive, and information processing skills, knowledge requirements, and desired attitudes.

A3.1.3. Objectives/Media Analysis (OMA). The OMA identifies all training objectives. It also allocates and justifies instructional strategies, methods, and media for each training objective. The OMA:

A3.1.3.1. Defines training objectives in terms of conditions, required behavior, and standards of acceptable performance.

A3.1.3.2. Defines a media analysis and selection process.

A3.1.3.3. Documents the method/media trade process.

A3.1.3.4. Selects the method/media to be used and, with rationale, allocates the training objectives.

A3.1.3.5. Develops the syllabus and course map.

A3.1.4. Training Systems Basis Analysis (TSBA). The final step in the TSRA is the TSBA. The TSBA:

A3.1.4.1. Analyzes the existing Training System, identifies training deficiencies, and recommends solutions.

A3.1.4.2. Assesses technology for potential application of new training technology to Training System concepts.

A3.1.4.3. Evaluates alternative Training System concepts and system configurations.

A3.1.4.4. Recommends numbers, functions, and types of training media, courseware requirements, and training management system functions.

A3.1.4.5. Provides rationale and justification concerning how a proposed system will remedy deficiencies.

A3.1.4.6. (Optional) Develops a preliminary system requirements document that consolidates training and system requirements.

A3.2. TSRA Support of the STP. For emerging systems and updates to fielded systems, the TSRA provides inputs and supporting rationale for the STP. The TSRA shall be completed in the Technology Development phase with sufficient lead time to complete the STP, which is required at Milestone B/KDP B. The STP shall:

A3.2.1. Identify tasks for which personnel cannot be currently adequately trained. These tasks should be documented in the STP as unmet requirements. If necessary, they will be identified as potential limiting factors in the ability to accomplish the prime equipment mission.

A3.2.2. Include an ISD analysis of the ground-based media. Analyze how it complements hands-on training or supplements training when resource availability, security, cost, and ESOH constraints limit use of the prime mission equipment as a training media.

A3.2.3. Identify alternatives based on validated opportunities to train, qualify, and certify personnel.

A3.2.4. Identify how subsystems and components should be integrated into the total Training System.

A3.2.5. Recommend areas for new technology applications to improve future Training System effectiveness and efficiency.

Attachment 4

TRAINING SYSTEM METRICS

A4.1. The following table and example remarks are provided as tools to help track aircrew training system utilization and to communicate the status and health of training systems through the MAJCOMs to HQ USAF/A3O-AT. The intent is to gain and maintain visibility on issues affecting aircrew training systems and measure and improve on how simulator training is conducted. MAJCOMs can modify this table as necessary or use other existing forms, such as the AF IMT 4026, *Aircrew Training Devices Utilization*, to track training system metrics. As stated in paragraph 3.1.1.9 and 3.1.2.2, simulator utilization and concurrency impacts will be reported to HQ USAF/A3O-AT semi-annually.

Table A4.1. Aircrew Training System Metrics.

MAJCOM: **BASE:** **UNIT:**				**Report Month and Year:** **Type of Contract:**					
A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Prime Mission System	Type Of Training Device	Hours Contracted For Use	Training Hours Lost	Hours Available For Use: Column C Minus Column D	Availability Rate: Column E Divided by Column C	Hours Scheduled For Use	Hours Actually Used	Utilization Rate: Column H Divided by Column E	Hours Used For (On and Off Stn) DMO Missions
TOTALS:									

REMARKS: Some examples of possible remarks:

1. Alibis for Training Hours Lost: MX, Supply, Ops, DV Tours, Other
2. Maintenance Issues: Sim downtime due to MX, Reconfiguration time, Chargeable Downtime
3. Environmental Issues: Power outages, T-Storms, Air Conditioning and Humidity Control Problems, or other Non-Chargeable Downtime
4. Scheduling Issues (Deployments): Visibility on TDYs and reconstitution time; Can other units use the sim

while the host unit is deployed?

5. Concurrency Issues: Impact on training and UTE when training device is lagging an airframe upgrade

6. If Column C is not applicable because the training system is not under contract, then track total usage and list assumptions on Availability (Column E) calculations

7. Other pertinent remarks