

## DLXXI CONTRACT - SECTION C

### DESCRIPTIONS / SPECIFICATIONS / WORK STATEMENT

**C.1 General.** The contractor shall furnish all necessary personnel, material, equipment, facilities, and services required by this contract except as specified as government furnished. Specific work to be performed will be ordered by issuance of delivery orders.

**C.2 Army Training XXI (ATXXI).** To ensure training is included in every phase of Force XXI development, TRADOC developed the ATXXI concept. ATXXI integrates all the many on-going initiatives and future development efforts to produce a coherent, integrated training system and strategy for Force XXI. More information on Force XXI and ATXXI is available on the HQ TRADOC, Deputy Chief of Staff for Training (DCST) Internet homepage at <http://www-dcst.monroe.army.mil>. For this contract, the Army must develop training that supports the following ATXXI programs and initiatives:

- Advance Training Strategies
- Automated Instructional Management System-Redesign (AIMS-R)
- Army Doctrine and Training Digital Library (ADTDL)
- Army Doctrine and Training Literature Program (ADTLP)
- Army Modernization Training (AMT) Program
- Army Training Requirements and Resource System (ATRRS)
- Automated System Approach to Training (ASAT)
- Classroom XXI
- Nonresident Training Programs
- Diagnostics Program Strategies
- Army Doctrine and Training Digital Library (ADTDL)
- Digital Video Disc (DVD) Products.
- Distance Learning Program
- Distributed Interactive Simulation
- Embedded Training
- Facilities Upgrade
- Federal Employee Training
- High-level Architecture
- Integration of New Equipment Training
- Interactive Electronic Technical Manuals (IETM)
- Internet/Intranet/Extranet
- Instructor Training
- New and Emerging Technologies
- Program of Instruction Management Module (POIMM)
- Schoolhouse Modernization
- Staff and Faculty Training
- Total Army School System (TASS)
- Total Army Training System (TATS) and TATS Analysis
- Total Army Training System Courseware (TATSC)
- Training Aids, Devices, Simulators, and Simulations (TADSS)
- Training Development
- Training Management
- Video Teletraining (VTT)

### **C.3 Scope**

C.3.1 The contractor shall evaluate, analyze, design, develop, implement, manage, and deliver on a delivery order basis training products and services for federal government agencies that support the programs listed in paragraph C-2. Work under this contract shall include analysis of training requirements to insure that the materials are developed and presented in accordance with the most effective and efficient training technologies.

C.3.2 The contractor shall design and carry out methodologies to assess training needs, specify training objectives, develop training content, plan training delivery that is cost effective and utilizes appropriate training media, produce courseware and/or training materials, and evaluate training. The industry standard for development of educational technology is the instructional system design/systems approach to training (ISD/SAT) process (Army uses SAT). The SAT process shall be applied to all training and developmental efforts to ensure students acquire the knowledge, skills, and abilities essential for successful job performance. Examples of products of SAT are: instructional systems based on mission and job performance requirements; courses consisting of relevant knowledge and skills instruction; and graduates having the necessary knowledge, skills, and attitudes to perform the mission and/or job. The SAT process is: evaluation, analysis, design, development, and implementation. The SAT process is explained in detail in TRADOC Regulation 350-70, Training Development Management, Processes, and Products, and MIL-HDBK 1379-2, Instructional Systems Development/Systems Approach to Training and Education (Part 2 of 4), which can be downloaded from the internet (See para C.6.4). The contractor shall ensure all contractor personnel understand the SAT process and how the process will be used in evaluating, analyzing, designing, and developing training. The SAT process includes:

C.3.2.1 Evaluation of how well training takes place; can graduates and units perform assigned mission, and do products support training objectives?

C.3.2.2 Analysis of a need for training. Who gets the training; and what tasks, individual and collective, require training? Establish performance-based, measurable training objectives.

C.3.2.3 Design of training to start when, where, and how training takes place and training resource requirements. Design includes establishing long and short range training strategies, training media, courseware, and development of performance measurement documents

C.3.2.4 Development of valid training and training products.

C.3.2.5 Implementation of standardized training at resident and unit training sites and distribution of training products. Additionally, the contractor may be required to provide train-the-trainer course delivery to enable client agencies to assume instructional responsibility.

C.3.3 The contractor may also perform such tasks as: convert existing courseware to interactive multimedia instruction (IMI); convert courseware to comply with the standards of TATSC; configure authoring systems; customize authoring systems; conduct independent verification and validation of training materials; analyze training effectiveness,

training management, and training distribution; evaluate training; plan, direct, and conduct the design process in support of collective and individual training; develop or revise courseware; create, design, develop, evaluate, and produce a variety of training materials; collect training related data; design, develop, and conduct training accreditation or certification evaluations; develop training strategies, including Combined Arms Training Strategies (CATS); manage Army training requirements using a variety of tools such as Manpower and Personnel Integration (MANPRINT), Training Requirements Analysis System (TRAS), and TRADOC Training Effectiveness Analysis System; produce student performance measurement instruments and documents; and design and conduct after action reviews.

**C.4 Program Management Support:** Army Training XXI and other comparable federal government training programs. This section gives examples of programs that products may support and may be ordered.

C.4.1 Army Modernization Training (AMT). The contractor shall provide services and products required for training development, training support, and analytical services related to AMT. The contractor shall also provide training product support to the materiel acquisition process and WarMod XXI activities in support of Army Training XXI and Force XXI initiatives. Examples of typical products or processes that may be ordered are as follows:

C.4.1.1 As part of the SAT process the contractor shall review, research, coordinate, and submit data associated with the acquisition and fielding of new materiel and training systems. Examples of these documents include: mission need statements, operational requirements documents, system training plans, new equipment training strategies, new equipment training plans, best technical approaches, concept formulation packages, cost and operational effectiveness analyses, training effectiveness analyses, trade-off analyses, trade-off determinations, basis-of-issue plans, qualitative and quantitative personnel requirements information inputs, system manpower and personnel integration management plans, combined arms training strategies, training support packages, Synthetic Theater of War (STOW) analyses, Synthetic Environment Program (SEP) analyses, and other documentation. Data submissions may be in the form of print and/or electronic media.

C.4.1.2 Research, identify, develop, and document concepts and strategies to accomplish AMT (to include new equipment training, displaced equipment training, doctrine and tactics training, and sustainment training) for new or displaced materiel systems. The concepts and strategies will include media analyses that examine and recommend the most effective and efficient distance-learning and emerging media to include video teletraining (VTT), IMI, video tape (VT), Compact Disc-Read Only Memory (CD-ROM), Digital Video Disc (DVD), print, enhanced print, virtual reality, artificial intelligence, Internet and/or Intranet based training.

C.4.1.3 Conduct analyses and develop plans and actions for the integration of the goals and objectives of WarMod XXI, Warrior XXI, and Warfighter XXI in support of Army Training XXI and Force XXI initiatives.

C.4.1.4 Provide distance learning training support in the planning and execution of AMT concepts and strategies to field new or displaced materiel systems using media that includes:

C.4.1.4.1 Benefits of distance learning to include time, money, personnel, facilities, and training quality.

C.4.1.4.2 Training support available and required to include VTT sites and training aids, devices, simulators, and simulations (TADSS)

C.4.1.4.3 Training development requirements, revised programs of instruction (POI), new multimedia courseware, and training literature.

C.4.1.5 Conduct studies and analyses to determine the practicality and requirements associated with the development and fielding of both system and non-system training devices. System training devices (STD), support training for a specific weapon equipment system (e.g., M1A1 UCOFT). Non-system training devices (NSTD) are multi-use TADSS that support general military training (e.g., Multiple Integrated Laser Engagement System (MILES)).

C.4.1.6 Perform concept exploration and analyses of possible training technology concepts for AMT. This effort will include front-end analyses, measures of effectiveness, and validations of requirements to determine feasible and cost- and training-effective approaches to satisfy needs.

C.4.1.7 Perform research, analysis, design, and development of database applications. These products result from research and analysis of training transfer studies, advanced technology demonstrations, and distributed interactive simulation initiatives. These database applications provide potential solutions to AMT; New equipment training (NET) via distance learning; and the storage, retrieval, and manipulation of large quantities of data.

C.4.2 Embedded Training. The contractor shall provide services, products, and analytical support for embedded training. The contractor shall develop documentation that guides the development and implementation of embedded training. Examples of typical products or processes that may be ordered are as follows:

C.4.2.1 Research, develop, document, and maintain the operational concept for the development and implementation of embedded training.

C.4.2.2 Research, develop, coordinate, document, and maintain how-to publications for trainers, training developers, and users. This guidance includes the development of categories of embedded training, use of embedded training, development of implementation categories, and use of embedded training implications on doctrine, training, leader development, organizations, materiel, and soldiers.

C.4.2.3 Perform front-end analysis to identify alternative, feasible embedded training solutions. Identify appropriate measures of effectiveness to evaluate the alternative. Estimate training effectiveness costs, and technical risk of each alternative.

C.4.3 Product Search.

C.4.3.1 The contractor may be tasked to search and provide a bibliography report of the Defense Instructional Technology Information System (DITIS) and Defense Audio Visual Information Service (DAVIS) (the two are in the process of combining data bases) plus other federal, state, academic, commercial, and industrial course materials related to the tasks selected for training.

C.4.3.2 Analyze existing materials: When tasked, the contractor shall research and prepare a bibliography and technical report of existing materials for tasks selected. Bibliography may contain federal, state, academic, commercial/industrial, and existing DoD course materials. Contractor shall obtain all materials and analyze them for technical accuracy, quality, visual appeal of student and instructor materials, and for instructional effectiveness. Materials obtained shall be provided to the government. As the end product of this task, the contractor shall prepare a technical report that covers each item in the bibliography and which recommends either adoption as is, adoption with minor modifications, adoption with major modifications, or rejection. On any copyrighted materials, the contractor shall be responsible for obtaining all releases and provide the Government with a copy of the release.

#### C.4.4 Instructor and Developer Training.

C.4.4.1 The contractor shall design, develop, and teach courses to train-the-trainer for all phases of the SAT process and other areas, such as conduct, facilitate, administer, and manage multimedia and new emerging media instruction.

C.4.4.2 Some examples of instructor and developer courses that may be ordered include:

- Distance Learning Training Developers Course
- Media Selection
- Multimedia Course Design
- Multimedia Courseware Development
- Multimedia Courseware Evaluation and Validation
- Multimedia Presentation Systems
- Multimedia Learning Facilitator
- Multimedia Classroom Instruction
- Multimedia Courseware Implementation
- Instructional Systems Design/Systems Approach to Training
- Instructor Training-Classroom Presentation Skills
- Observer/Controller Training
- Training Design Software such as Designer's Edge
- Authoring System Software such as Asymetrix ToolBook II Instructor<sup>®</sup>
- Training Strategy Decision Support Tools Software such as Advisor<sup>®</sup>
- Test Development Course

#### C.4.5 Test Package.

C.4.5.1 The contractor shall develop test packages that consist of a minimum of one pretest (diagnostic) and two posttests. The contractor shall develop performance/performance-based, criterion referenced tests in accordance with Chapter VI of TRADOC Regulation 350-70. The contractor shall develop a test package for each

lesson, module (group of lessons), and course (when indicated) that provides a GO/NO GO score by lesson within that module and an overall GO/NO GO score for the module and course. The contractor shall develop sufficient test questions for every test package to provide equivalent forms of a pretest and two posttests. This can be accomplished through randomized test forms controlled by content, or through equivalent forms. This will ensure that the student has a separate evaluation for the pretest while allowing for two separate re-tests on the final test. For each test in the test package, the contractor shall provide a minimum of eight multiple-choice or short response items for each terminal learning objective that can be used with a test generation database to produce multiple forms of the evaluation.

C.4.5.2 The pretest, administered before training, is an assessment that measures soldier or civilian competency on the tasks or supporting skills being trained. The pretest will be used to evaluate student ability and to use the results to improve and manage training. Providing a diagnostic pretest will allow training to be focused only on what the student needs to learn, allowing for “testing out” of lessons, modules, phases, or even the entire course. Criterion referenced performance based (multiple choice and short response) pretests will generally be designed to be administered and scored on the computer. For IMI, the contractor will design the navigation so that students will have the option to take a pretest or proceed directly to the instruction. For IMI, test results will provide immediate feedback within the context of the learning objective. Results of the pretest will also include the capability to hyperlink directly to the source material within the instruction that provides the correct answer for each question.

C.4.5.3 The contractor shall develop multimedia instructional packages that include for each lesson, each module, and, when indicated, each course, a comprehensive diagnostic pretest (alternate form of posttest). A student will have the option to take a pretest or proceed directly to training. The contractor shall develop test questions to provide different versions of comprehensive posttests and a comprehensive diagnostic pretest. At least two versions of the posttest will be used to evaluate a soldier who has to retake the lesson, phase, or course so that the soldier does not take the same assessment on the retry. There shall be feedback of results and deficiencies by major learning objective (usually a lesson) and by total test, upon completion. Feedback should identify probable causes of student errors.

C.4.6 Video Teletraining (VTT) Packages. The contractor shall develop or configure instruction material for use by VTT. The material includes new visuals, student materials, instructor materials, and tests.

C.4.6.1 Army VTT consists of two networks: the Teletraining Network (TNET) and the Satellite Education network (SEN). TNET’s compressed digital technology delivers interactive training by broadcasting two-way audio and video via satellite and telephone lines from an instructor’s site to multiple student sites in geographically dispersed locations. SEN delivers a high quality compressed, digital signal to downlinks over a satellite for one-way video with return audio over telephone lines. TNET is located at Fort Eustis, Virginia; SEN at the Army Logistics Management College, Fort Lee, Virginia.

C.4.6.2 VTT uses television networks to deliver instruction from an originating site to remote locations. Selected training sites are able to interact with the instructor, either audibly, visually or both. VTT provides the live, one-on-one, audiovisual communication

that is so often necessary for effective training. VTT training can use virtually any AV media alone or in combination.

C.4.6.3 Video teletraining involves the transmission of training via a government operated transceiver system and a contractor-operated state-of-the-art network using full motion digital signal broadcast from studio facilities. For this program, VTT also includes computer-based VTT.

C.4.6.4 Two-way synchronous and interactive video via wide area network is the emerging transmission media for the Army Distance Learning Plan (ADLP), sending broadcast signals to distance learning classrooms via lines through digitized training access centers (DTAC) at origin and destination training sites.

C.4.7 Total Army Training System (TATS). TRADOC's mission is to train the total Army. In the past, separate training systems for the Active Component and Reserve Component (AC/RC) accomplished that mission. Recent experience proved that one standard for training the total Army is necessary for combat readiness: that is the vision for the future of Army training. This will ensure that all soldiers train to one standard, with one training system training the same requirements. The current policy and procedures are described in Interim Policy for Total Army Training System (TATS) Course Design, Development, and Management, 65 Mar 98, until incorporated in TRADOC Regulation 350-70.

C.4.7.1 TATS Course (TATSC) Analysis and Redesign (TATSC A&R). TATSC A&R refers to the systematic review, verification, and synchronization of the AC/RC continuum of training for Military Occupational Specialties (MOS), Areas of Concentration (AOC), and officer, warrant officer, and enlisted specialties. The methodology is a prerequisite to the instructional design and subsequent development and delivery of TATSC that train AC/RC soldiers to a single, Total Army standard.

C.4.7.2 The contractor shall perform TATS analysis tailored to a specific occupational area as stated in each individual delivery order to include the following five phases:

C.4.7.2.1 Phase 1, Initial Coordination - consists of a meeting between the contractor and the staff and faculty of the proponent school which addresses government furnished information (GFI) requirements and analysis, the specific MOS for which a TATS course will be developed, the milestone schedules, and associated product outputs.

C.4.7.2.2 Phase II, Critical Task/Supporting Skill and Knowledge Definition - involves reviewing GFI for accuracy and completeness, preparing critical task base-line matrices for aligning AC/RC requirements, conducting workshops to address findings from matrices, and preparing approved critical task base-lines.

C.4.7.2.3 Phase III, Terminal Learning Objective/Enabling Learning Objective (TLO/ELO) Definition - involves preparing TATS course learning objective/instructional method matrices, which aligns approved critical task baselines with applicable TLOs and ELOs from current AC/RC lesson plans, conducting workshop to address findings, and revising matrices as appropriate.

C.4.7.2.4 Phase IV, Instructional Design – involves conducting a workshop to identify relevant multimedia training products through media analysis, and determining the logical sequence of instruction and evaluation. Consideration will also be given to

designing prerequisites or pre-resident phases and the placement of course modules that allow for maximum use of diagnostic pretesting to reduce student course time.

C.4.7.2.5 Phase V, TATS Course Design Documentation - involves preparing the TATS course design final report, which will include a synopsis of implementation activities completed to date, documentation of significant issues, and a description of the course laydown in detail.

C.4.7.3 TATSC. The contractor shall develop courseware which may be trained at different sites and may use various media and methods to train the phases/modules/lessons. Courseware will leverage technology and develop courses that can be delivered using the latest distance learning techniques and training strategies according to the optimum effectiveness for the subject matter taught. TATS courses will replace the existing separate Active Component and Reserve Component Course Configuration Courses. All new course development will be according to the TATS policy and standards. The current policy and procedures are described in Interim Policy for Total Army Training System (TATS) Course Design, Development, and Management, as described above.

C.4.7.3.1 Delivery platform will be specified in delivery orders.

C.4.7.3.2 Traditional-based products are normally to be delivered in both paper and on 3.5" diskettes. Print or other products may be ordered to be delivered on various other forms such as CD-ROM (various sizes), removable hard drive formats: Syquest disc; ZIP disc; Jazz disc; or other forms or methods as new technologies become accepted and available. Preferred delivery method will be specified in each delivery order. TATS courseware will normally require the use of automated analysis, design, and development (see paragraph C-6.2 and C-6.3).

C.4.8 Training support to Army Warfighting Experiments (AWE). The Army is currently developing a five-year plan for AWE. These experiments will test new concepts, processes, equipment, and organizational designs. Training developments will be required for each major AWE as identified on individual delivery orders.

**C.5 Technologies.** The contractor shall keep up-to-date with technological development applicable to the Army's needs and advise the Government of advances in training development and delivery technology that could potentially be applied to evolutionary improvements and/or enhancements to training products. There are several groups or committees studying standards efforts currently underway for the training industry. It is likely that several new standards will be available or set during the period of this contract. It is likely that additional low-cost commercial off-the-shelf solutions will be available to the Army in the future. Proposals for advances shall be provided at no cost to the Government. The contractor, upon submission of the proposal, may indicate changes that cause no degradation in product method/performance. Changes that would result in any degradation of any part of the training product (even if the contractor feels the overall benefit outweighs the degradation) or that will require an equitable adjustment to the contract pricing will not be initiated until the Government agrees to such a change by contract modification. Additional CLINs may be added to the contract if the Government agrees to the emerging technology. If the Government initiates a request for proposal for emerging technology that will better the training product, the contractor shall provide the

proposal at no cost to the Government. If the proposal is accepted, additional CLINs may be added to the contract. The contractor shall not provide any alternative or substitute methods to replace a method already required by the contract unless a contract modification has been issued.

## C.6 General Requirements.

C.6.1 Safety and environmental requirements. The contractor shall comply with TRADOC and other agencies' safety and environmental regulations and directions, as applicable, during all phases of the SAT process. TRADOC Regulation 350-70; Training Development Management, Processes, and Products, Chapter I-2, provides guidance for including safety, risk assessment, and environmental protection into training and training development for TRADOC.

C.6.2 TRADOC schools currently use the following suite of software for courseware development: Automated Systems Approach to Training (ASAT) version 4.2/4.xx software in support of course design and development; Designer's Edge<sup>®</sup> (DE), Version 2.0/2.xx (DE) as tailored by TRADOC; and Asymetrix ToolBook II Instructor<sup>®</sup>, Version 6.0 (32 bit)/6.xx (referred to as "ToolBook" in this document). The Government will furnish as GFM copies of ASAT and TRADOC's changes to Designer's Edge (to enable one per developer as needed or access by LAN). No commercial off-the-shelf software nor training on its use will be provided by the Government. ATSC will provide contractor training on the use of ASAT. This suite of software will allow for interactive course design, development, pre-authoring, and authoring that is required by TRADOC. Specifically, the ASAT software supports task development, standardized critical task information, and lesson plan/Training Support package (TSP) production capabilities. Delivery orders will state software requirements.

C.6.2.1 Designer's Edge<sup>®</sup> is an integrated software that provides training developers with tools they need to build technology-based training. Designer's Edge<sup>®</sup> leads users through the entire instructional design process--from analysis to evaluation. Synergy<sup>®</sup>, an addition to the popular Designer's Edge<sup>®</sup> instructional design tool, allows storyboard contents, such as graphics, audio, video, text, buttons, animations, photographs, etc., in Designer's Edge<sup>®</sup> to be seamlessly imported into authoring tools that have been synergistically linked, retaining all of their attributes and frame placements. ToolBook Instructor<sup>®</sup> is an easy to use, flexible, powerful development environment that lets training developers create highly customized IMI. ToolBook<sup>®</sup> has a wide array of tools and predefined content including wizards, templates and catalogs of prescribed objects that allows training developers to create compelling IMI for presentation on either hard drive, CD-ROM, and/or Internet. This suite of software will allow the concentration of development efforts channeled through using a single design development authoring suite for the Total Army School System (TASS), will standardize training data, design, and development practices, and provide audit trail documentation.

C.6.2.2 The Government will issue a delivery order to provide training to a cadre of contractor personnel on the use of ASAT. Training will be conducted at Fort Eustis, using the ATSC Distance Learning Classroom XXI or via the Teletraining Network. Scheduling will be mutually agreed to by both the Government and the contractor.

C.6.2.3 ASAT shall be used for the start of all training products. DE<sup>®</sup> can be used for designing and developing training materials, not field manuals, soldiers' manuals, task analysis data, etc. ToolBook<sup>®</sup> should be used only for the development of IMI. Program of Instruction (POI) Management module (POIMM), provided as GFM, shall be used for all POI development products.

C.6.3 The contractor shall deliver TRADOC course materials for installation on the Army Doctrine and Training Digital Library (ADTDL). Publishing standards for ADTDL are on the ATSC home page at <http://www.atsc.army.mil/>.

C.6.4 Applicable Documents. In the event of a conflict between the documents referred to herein and other applicable documents, resolution shall be made by the government.

C.6.4.1 DoD Military Performance Specifications and Handbooks as listed below.

C.6.4.1.1 MIL-PRF-29612, Performance Specification, Training Data Products, including Data Item Descriptions (DIDs), 26 Sep 96.  
<http://dtswg.msosa.dmsa.mil/revisona/29612a.pdf>

C.6.4.1.2 MIL-HDBK-1379-1 (Changing to MIL-HDBK 29612-1), Guidance for Acquisition of Training Data Products and Services (Part 1 of 4 Parts), 26 Sep 96.

C.6.4.1.3 MIL-HDBK-1379-2 (Changing to MIL-HDBK 29612-2), Instructional Systems Development Process (Part 2 of 4 Parts), 9 Jun 97.

C.6.4.1.4 MIL-HDBK-1379-3 (Changing to MIL-HDBK 29612-1), Development of Interactive Multimedia instruction (IMI) (Part 3 of 4 Parts), 9 Jun 97.

C.6.4.1.5 MIL-HDBK-1379-4 (Changing to MIL-HDBK 29612-1), Glossary for Training (Part 4 of 4 Parts), 9 Jun 97.

C.6.4.1.6 DoDI 1322.20, Development and Management of Interactive Courseware, 14 Mar 91 with Change 1, 16 Nov 94. The DoDI is available at web site <http://www.dmdc.osd.mil/ditis/>.

C.6.4.2 Army documents.

C.6.4.2.2 TRADOC Regulation 350-70, Training Development Management, Processes, and Products, 24 Sep 95.

C.6.4.2.3 TRADOC Pamphlet 350-70-1, Guide for Producing Collective Training Products, 15 Mar 96.

C.6.4.2.4 TRADOC Pamphlet 350-70-2, Multimedia Courseware Development Guide, 22 Apr 96. Updates are available on at <http://155.217.20.177/Pam350.htm>.

C.6.4.2.5 TRADOC HDBK 350-70-TATS, 25 Apr 96.

C.6.4.2.6 Total Army Training System (TATS) Checklist.

C.6.4.2.7 TATS Courseware Digitization Data file Naming Conventions and Packaging Guidelines.

C.6.4.2.8 Digitization Standards for use on CD-ROM and Internet.

C.6.4.2.9 Graphics for CD-ROM Delivery.

C.6.4.2.10 Naming Conventions for ADTDL Inputs.

C.6.4.2.11 Interim Policy for Total Army Training System (TATS) Course Redesign, Development, and Management, (To be incorporated in next revision of TRADOC HDBK 350-70-TATS).

C.6.4.3 Applicable Delivery Order Documents. In addition to and in place of the documents referenced above, specific documents may be applicable as specified and listed in each delivery order issued under this contract.

C.6.4.4 Availability of Documents.

C.6.4.4.1 Any DoD specification or standard listed in this document may be received via mail/fax or telephone request. To receive a specification or standard by mail/fax, send requests to:

DODSSP  
Standardization Document Order Desk  
700 Robbins Avenue, Bldg. 4D  
Philadelphia, PA 19111-5094  
(215) 697-2667/2179  
FAX (215) 697-2978/1462

Allow 1 to 2 weeks for shipping. Non-DoD organizations are charged a fee. Use of DoD Specification and Standards order form (DD Form 1425) or company letterhead is preferred. Please provide your Commercial and Government Entity (CAGE) number and mailing address. A customer account number may be established by calling the phone number listed above.

C.6.4.4.2 Order TRADOC publications from:  
National Technical Information Service (NTIS)  
5285 Port Royal Road  
Springfield, VA 22161  
1-800-553-6847  
Homepage: <http://www.ntis.gov/>

Note: NTIS routinely removes availability of publications when they are undergoing revision. TRADOC publications not available from NTIS must be retrieved from the TRADOC DCST homepage. See paragraph C.7.5.4.3.2.

C.6.4.4.3 Publications are available on various World Wide Web (WWW) sites:

C.6.4.4.3.1 DoD Training Specifications. Defense Training Specifications Working Group (DTSWG) homepage: <http://dtswg.msosa.mil.inter.net/dtswg/index.htm> or on the Navy's Office of Training Technology homepage: <http://www.ott.navy.mil/policy.htm>.

C.6.4.4.3.2 TRADOC training and specification publications are available on or linked to the TRADOC DCST homepage: <http://www-dcst.monroe.army.mil> , (ftp site). ADTDL standards are on or linked to the ATSC homepage, <http://atscweb.atsc-army.org/atsc/home.html-ssi>.

C.6.4.5 Links to all references are available on the Training Product Support Team homepage: <http://www.atsc.army.mil/dld/tpst/multmedi.htm> . ATSC will review changes as they occur to check applicability to the contract and level of effort required to accommodate the change. A contract modification will be initiated as required.

C.6.5 Government furnished materials and information (GFM/GFI). Unless specified otherwise in the delivery order work statement, all required Government Furnished Material (GFM) and information (GFI) will be supplied within 15 working days after order award. However, the contractor is required to provide its own access to the Internet for downloading of specific items available from the government by that delivery method, specifically the ADTDL. GFM and GFI will be returned to the government within 15 working days after completion of the work.

C.6.6 Government subject matter experts (SMEs). Government SMEs are government resources who will review the contractor's deliverables for technical and doctrinal accuracy

C.6.7 Contractor SMEs. The contractor shall provide at least one technically and doctrinally knowledgeable SME for each of the subject areas specified on each delivery order. A resume for each SME shall be submitted to the COR within 10 days after the order is issued.

C.6.8 Contractor program manager. The Program Manager will function as the point of contact between the contractor and the COR. The Program Manager manages multiple projects at diverse locations. He/she organizes, directs and coordinates planning and production of all the contract support activities and performs oral and written communications with all levels of management. He/she ensures deliverable products receive a quality review and ensures conformance with standards.

C.6.9 Quality assurance. Unless otherwise specifically provided in this contract, the quality of all products and services rendered shall conform to the highest standards of commercial practice in the industry.

C.6.9.1 Quality assurance and internal reviews on the contractor's part is of utmost importance to ensure technical accuracy as well as consistency, completeness, and editorial correctness of draft and final deliverables. The government should be able to concentrate its review time on whether the deliverables meet the overall requirements of the Army and whether instructional soundness has been met.

C.6.9.2 If courseware does not teach to the performance specification required, or if students fail to navigate through computer based training, whether validations are

conducted by the contractor or the government, the contractor shall correct the courseware at no cost to the government if failure is the result of contractor error.

**C.6.10 Meetings. Delivery Order (DO) Post-award and In-process Review (IPR)** Meetings will be conducted as specified in the DO. The contractor shall provide the agenda for DO post-award and IPRs (CDRL A002). The contractor shall write minutes of all meetings with input from all concerned and coordinate the minutes with the attendees before departing from the meeting (CDRL A003). A copy of all IPR minutes shall be provided to the COR. IPRs may be held at the contractor's facility or the applicable school or agency or another location as stated in the delivery order. Use of video teleconference centers (VTC) and Video teletraining (VTT) will be considered for all meetings. All costs (except travel as mentioned below) associated with the IPRs shall be included within the burdened prices listed in Section B.

**C.6.10.1 Delivery Order Post-award Meeting.** A Delivery Order Post-award Meeting shall be conducted within 15 working days after the effective date of each DO. The COR, contractor personnel, and other government representatives will be in attendance. The purpose of the meeting is to issue and discuss GFI and GFM, milestone schedule, and review cycles. For delivery orders for follow-on products or similar type products with the same school, government personnel, and contractor personnel; the COR may waive the meeting.

**C.6.10.2 In Process Review (IPR) Meetings.** In-process review meetings shall be conducted to review and discuss technical issues or products and/or to discuss contractual issues with a bearing on delivery of a product (contract deliverables, government review comments, contractor correction requirements, scheduling problems, milestone schedule, etc.). IPRs shall normally be conducted amongst technical personnel only. The COR and/or the contracting officer will attend when necessary.

**C.6.11 Monthly status report.** IAW CDRL A004, the contractor shall submit, by the 15th of each month, a comprehensive monthly status or progress report for each delivery order issued. The reports shall include the DO current status, the projected completion date for each stage of development, and projected contractor travel. The report shall also describe any difficulties or problems encountered, anticipated, or which previously existed which could alter the progression of work. The report shall include recommendations for resolution for problem areas.

**C.6.12 Milestone Schedule.** The contractor shall submit a suggested milestone schedule with each DO price proposal. The milestone schedule shall allow time for and depict all events of contractor performance, government review, contractor correction of errors found, resubmission, and acceptance of deliverables. The milestone schedule will be changed as needed by mutual agreement between the contractor and the KO. Government review times will be specified in each DO.

## **C.7 Specific Requirements:**

**C.7.1** The training data products required by this contract are defined in the appropriate Data Item Description (DID) as annotated below. Further description is provided in the MIL-PRF-29612 <http://dtswg.msosa.dmsa.mil/handbk.htm> and the MIL-HDBK-1379-1

through MIL-HDBK-1379-4. The following descriptions are provided to define the requirements of this contract IAW those DoD performance specifications.

#### C.7.1.1 Traditional-based instructional material.

C.7.1.1.1 Traditional instructor-led training products consist of the development functions normally associated with the SAT process for courses and/or lessons as identified in TR 350-70 including the Program of Instruction (POI) and Course Management Plan (CMP). These products will be based on previously conducted government approved front-end analysis results or developed by the contractor. The materials produced must meet the objectives within the allotted time.

C.7.1.1.2 Training Program Structure Document, DI-ILSS-81521, for traditional instructor-led courseware (CDRL A006). This is the part of the design function of the SAT process for traditional-based courseware. It shall include the POI and CMP and contain the information specified in the DID and TR 350-70. For TATS it shall include training data for the total force. The POI instructional hours approved by the Government will be the number of instructional hours required for development of training conduct support documents. The latest version of the Program of Instruction Management Module (POIMM) shall be used. POIMM will be furnished as GFM.

C.7.1.1.3 Training conduct Support Document, DI-ILSS-81523, and Test Packages, DI-ILSS-81525, for traditional-based courses. The contractor shall provide lesson plans (CDRL A011), trainee guides (CDRL A0012), on-the-job training (OJT) handbooks (CDRL A013), instructional visual aids (CDRL A014), training material change data (CDRL A015), and appropriate testing materials such as test items, tests [( pretests, posttests, comprehension checks, end-of-lesson tests, end-of-unit tests, etc.)( see paragraph C.4.5)], and test administration materials (CDRL A007) as ordered by the delivery order. These training data products, when combined, shall constitute stand-alone courses of instruction for instructor-led or self-paced use. These products are based on the number of instructional hours which will comprise the final course materials with one hour equating to a unit of instruction.

#### C.7.1.2 Interactive Multimedia Instruction (IMI) Courseware.

C.7.1.2.1 Instructional Media Design Package (IMDP) (CDRL A005), <http://dtswg.msosa.dmsso.mil/revisiona/81520a.pdf> DI-ILSS-81520. The contractor shall provide the IMDP for either print or IMI or a combination of both per delivery orders. The IMDP and its accompanying prototype lesson(s) are the most important document in the design and development of IMI. All prerequisite information (front-end analyses) required will be provided by the government or will be completed by the contractor. The IMDP shall break out the number of instructional hours for the course being designed. The hours approved by the Government will serve as the basis for development of the instructional media package. The content areas will be divided into units, topics, and lessons of reasonable length as approved by the government. Questions and/or exercises will be embedded in all units, topics, and lessons. The IMDP will also contain design strategies for electronically administered criterion referenced performance and/or performance based IMI tests to include a diagnostic pretest, progress checks (check on learning), and two versions of a final comprehensive test for each lesson, module, and course (see paragraph C.4.5). The sample/prototype lesson(s) shall not normally

exceed one instructional hour and must demonstrate all the design strategies identified in the IMDP (i.e., conventions, performance standards, lesson content, interface design and controls, instructional strategies, testing strategies, computer managed instruction training control features, etc.). All screen design and programming templates (with accompanying instructions) used in the development of IMI will be provided to the government at the end of the delivery order

C.7.1.2.2 Instructional Media Package (CDRL A008), <http://dtswg.msosa.dmsomil/revisiona/81526a.pdf> DI-ILSS-81526, and Test Package (CDRL A007) <http://dtswg.msosa.dmsomil/revisiona/81525a.pdf> , DI-ILSS-81525. Instructional Media Package <http://dtswg.msosa.dmsomil/revisiona/81526a.pdf> (CDRL A008), DI-ILSS-81526, and Test Package (CDRL A007), <http://dtswg.msosa.dmsomil/revisiona/81525a.pdf> DI-ILSS-81525. The contractor shall provide IMI with appropriate testing requirements (see paragraph C.4.5) as specified on the delivery order and IAW MIL-PRF 29612 <http://dtswg.msosa.dmsomil/revisiona/29612a.pdf> . The IMI materials will be developed IAW the government approved IMDP and sample prototype lesson and will be based on references and curricula provided by the government. The total package shall include instructional media data files, all portability commands, and all instructor and student materials required for course conduct . The contractor will design the test package to collect historical data on item responses to allow test item analysis to be performed.

C.7.2 Firm-fixed price Labor category CLINs. For all requirements not specifically covered by the specific product CLINs. The contractor shall develop the training data products, provide the necessary personnel, or perform the work as identified in the order. Due to emerging technologies, this work may include any number of products and challenges, covering a wide range of training planning, analysis, design, development, implementation, evaluation, revision, and maintenance efforts. Examples of efforts that require using labor category CLINs are:

- Training Technology Applications
- Training Situation Analyses
- Training Program development and Management Planning
- Training Equipment Requirements
- Tasks analysis
- Training analysis
- Media analyses
- Individual Training Standards Data
- Lesson Specification
- Internet and World Wide Web based training products development, delivery, and management (when programming is beyond normal courseware development)
- Internet Home Page Design
- Interactive Electronic Training Manuals
- Graphics and animation development not associated with products from firm fixed price CLINs.
- Programming and replication of diskettes and CD-ROM as stand-alone products or to load on ADTDL.

- Test package for special diagnostic evaluations

C.7.3 Government Furnished Information Report, CDRL A001. Within 30 calendar days after DO is issued the contractor shall submit a GFI report with contents as follows:

C.7.3.1 List of objectives. This list shall include all soldier tasks, skills, knowledges, numbers, titles, and training objectives to be covered.

C.7.3.2 GFI Evaluation. This report shall address all materials identified and provided by the government necessary to design and develop the courseware. This report shall cover each learning objective and state if the GFI is available, unavailable, not required, not current, or inadequate. The contractor also shall explain why GFI is inadequate, if applicable.

**C.8 Products:** The contractor shall develop the following training data products in accordance with stated contract data requirements list as tailored by each delivery order. The products shall be developed using the stated current or emerging technology.

C.8.1 Training Situation Document.

C.8.1.1 Training situation analysis data: Data Item Description DI-ILSS-81517, paragraph 10.2.2, CDRL A016.

C.8.1.2 Training technology assessment data: Data Item Description DI-ILSS-81517, paragraph 10.2.3, CDRL A017.

C.8.2 Instructional Performance Requirements Document

C.8.2.1 Mission and collective and individual tasks data. Data Item Description DI-ILSS-81518, paragraph 10.2.3, CDRL A018.

C.8.2.2 Training Task Data: Data Item Description DI-ILSS-81518, paragraph 10.2.4, CDRL A019.

C.8.2.3 Learning objectives Data: Data Item Description DI-ILSS-81518, paragraph 10.2.5, CDRL A020.

C.8.2.4 Knowledge, skills and attitudes analysis data: Data Item Description DI-ILSS-81518, paragraph 10.2.6, CDRL A021.

C.8.2.5 Mission performance standards data: Data Item Description DI-ILSS-81518, paragraph 10.2.7, CDRL A022.

C.8.2.6 Individual training standards data: Data Item Description DI-ILSS-81518, paragraph 10.2.8, CDRL A023.

C.8.3 Instructional media Requirements Document.

C.8.3.1 Media selection model specifications data: Data Item Description DI-ILSS-81519, paragraph 10.2.2, CDRL A024.

C.8.3.2 Media selection analysis data: Data Item Description DI-ILSS-81519, paragraph 10.2.3, CDRL A025.

C.8.3.3 Instructional delivery system functional characteristics data: Data Item Description DI-ILSS-81519, paragraph 10.2.4, CDRL A026.

C.8.3.4 Training system modification data: Data Item Description DI-ILSS-81519, paragraph 10.2.5, CDRL A027.

C.8.4 Instructional Media Design Package, CDRL A005. (See paragraph C.7.1.2.1) <http://dtswg.msosa.dmsa.mil/revisiona/81520a.pdf>

C.8.4.1 Summary description of training program data: Data Item Description DI-ILSS-81520, paragraph 10.2.2.

C.8.4.2 Courseware design strategy data: Data Item Description DI-ILSS-81520, paragraph 10.2.3.

C.8.4.3 Lesson strategy data (including prototype lesson): Data Item Description DI-ILSS-81520, paragraph 10.2.4.

C.8.4.4 Courseware logic flow diagrams data: Data Item Description DI-ILSS-81520, paragraph 10.2.5.

C.8.5 Training Program Structure Document, CDRL A006. (See paragraph C.7.1.1.2)

C.8.5.1 Training Planning data: Data Item Description DI-ILSS-81521, paragraph 10.2.2.

C.8.5.2 Training course data: Data Item Description DI-ILSS-81521, paragraph 10.2.3.

C.8.6 Course Conduct Information Package.

C.8.6.1 Trainee orientation guidance data: Data Item Description DI-ILSS-81522, paragraph 10.3.2, CDRL A028.

C.8.6.2 Training course standards data: Data Item Description DI-ILSS-81522, paragraph 10.3.3, CDRL A029.

C.8.6.3 Training materials data: Data Item Description DI-ILSS-81522, paragraph 10.3.4, CDRL A030.

C.8.6.4 Trainee and training course completion data: Data Item Description DI-ILSS-81522, paragraph 10.3.5, CDRL A031.

C.8.7 Training Conduct Support Document. (See paragraph C.7.1.1.3)

C.8.7.1 Front matter: Data Item Description DI-ILSS-81523, paragraph 10.2.1.

C.8.7.2 Lesson Plan data requirements: Data Item Description DI-ILSS-81523, paragraph 10.2.2, CDRL A011.

C.8.7.3 Trainee guide data requirements: Data Item Description DI-ILSS-81523, paragraph 10.2.3 CDRL A012.

C.8.7.4 On-the-job training handbook data: Data Item Description DI-ILSS-81523, paragraph 10.2.4, CDRL A013.

C.8.7.5 Instructional visual aids: Data Item Description DI-ILSS-81523, paragraph 10.2.5, CDRL A014.

C.8.7.6 Training material change data: Data Item Description DI-ILSS-81523, paragraph 10.2.6, CDRL A015.

C.8.8 Training Evaluation Document.  
<http://dtswg.msosa.dmsso.mil/revisiona/81524a.pdf>

C.8.8.1 Training evaluation planning data: Data Item Description DI-ILSS-81524, paragraph 10.2.3, CDRL A032.

C.8.8.2 Training evaluation results data: Data Item Description DI-ILSS-81524, paragraph 10.2.4, CDRL A033.

C.8.8.3 Instructional delivery system test and evaluation data: Data Item Description DI-ILSS-81524, paragraph 10.2.5, CDRL A034.

C.8.9 Test Package, CDRL A007. (See paragraph C.7.1.1.3 & C.7.1.2.2)  
<http://dtswg.msosa.dmsso.mil/revisiona/81525a.pdf>

C.8.9.1 Test items data: Data Item Description DI-ILSS-81525, paragraph 10.2.2.

C.8.9.2 Tests data: Data Item Description DI-ILSS-81525, paragraph 10.2.3.

C.8.9.3 Test administration materials data: Data Item Description DI-ILSS-81525, paragraph 10.2.4.

C.8.9.4 Test item cross reference chart: Data Item Description DI-ILSS-81525, paragraph 10.2.5.

C.8.10 Instructional media package. (See paragraph C.7.1.2.2)  
<http://dtswg.msosa.dmsso.mil/revisiona/81526a.pdf>

C.8.10.1 Scripts: Data Item Description DI-ILSS-81526, paragraph 10.2.2, CDRL A008.

C.8.10.2 Storyboards: Data Item Description DI-ILSS-81526, paragraph 10.2.3, CDRL A008.

C.8.10.3 Adjunctive materials: Data Item Description DI-ILSS-81526, paragraph 10.2.7, CDRL A008.

C.8.10.4 Program media: Data Item Description DI-ILSS-81526, paragraph 10.2.8, CDRL A008.

C.8.10.5 Instructional media data files: Data Item Description DI-ILSS-81526, paragraph 10.2.9, CDRL A008.

#### C.8.11 Video Data

C.8.11.1 Video shot list: Data Item Description DI-ILSS-81526, paragraph 10.2.4, CDRL A009.

C.8.11.2 Video production plan: : Data Item Description DI-ILSS-81526, paragraph 10.2.5, CDRL A009.

C.8.11.3 Edit decision list: Data Item Description DI-ILSS-81526, paragraph 10.2.6, CDRL A009.

#### C.8.12 Training system support document, CDRL A035.

C.8.12.1 Training software application data: Data Item Description DI-ILSS-81527, paragraph 10.2.2.

C.8.12.2 Training system operating data: Data Item Description DI-ILSS-81527, paragraph 10.2.3.

C.8.13 Video production will be ordered as required.

C.8.14 Compact Disk-Read only Memory (CD-ROM). The contractor shall develop CD-ROM. CD-ROM shall be in accordance with TRADOC guidance and MIL-HDBK-9660B, DoD Produced CD-ROM Products. TRADOC policy for developing and producing Interactive Multimedia Instruction (IMI) Training Products for delivery on CD-ROM is on the Internet at <http://155.217.33.168/help.htm>. All CD-ROM disks shall be delivered in a "jewel box" with label inserts. This contract is for a number of CD-ROMs for courseware development, review, validation, and installation on the ADTDL.

C.8.15 Total Army Training System Course Analysis and Redesign (TATS –CA&R). See paragraph C.4.7. TATS-CA&R shall be completed IAW TRADOC Handbook 350-70-TATS; TATS-CA&R Reference Guide, April 1997; and Interim Policy for Total Army Training System (TATS) Course Redesign, Development, and Management, 6 Mar 98 (Reference Guide and interim policy will be incorporated in next revision of TRADOC Handbook 350-70-TATS). CDRL A010.

C.8.16 Digital Video Disk (DVD). DVD is a widely used relatively new technology. The contractor shall develop DVD as ordered. The DVD shall be in accordance with TRADOC policy.

### C-9 GLOSSARY OF ABBREVIATIONS

AAR	After Action Review
ACCP	Army Correspondence Course Program
AC/RC	Active Component and Reserve Component
ADD	Army Data Dictionary
ADLP	Army Distance Learning Plan
ADPE	Automatic Data Processing Equipment

ADTDL	Army Doctrine and Training Digital Library
ADTLP	Army Doctrine and Training Literature Program
AIMS-R	Automated Instructional Management System-Redesign
AMT	Army Modernization Training
AOC	Areas of Concentration
ASAT	Automated System Approach to Training
ATIMP	Army Training Information Management Program
ATM	Asynchronous Transfer Mode
ATRRS	Army Training Requirements and Resource System
ATSC	Army Training Support Center
ATXXI	Army Training XXI
AV	Audio-visual
AWE	Army Warfighting Experiments
BOIP	Basis of Issue Plans
CAGE	Commercial and Government Entity
CAI	Computer-aided Instruction
CALLCOMS	Center for Army Lessons Learned Collection Observation Management System
CAS3	Combined Arms Services Staff School
CATA	Combined Arms Training Activity
CATS	Combined Arms Training Strategies
CBI	Computer Based Instruction
CBT	Computer Based Training
CDRL	Contract Data Requirements List
CD-ROM	Compact Disc-Read Only Memory
CGSC	Command and General Staff College
CRXXI	Classroom XXI
CLIN	Contract Line Item Number
CMI	Computer Managed Instruction
CMP	Course Management Plan
CoC	Council of Colonels
COR	Contracting Officer's Representative
COTS	Commercial Off-the-shelf
CSS	Combat Service Support
CTC	Combat Training Center
CTCIS	Combat Training Center Instrumentation System
CTC OPFOR Sys	Combat Training Center Opposing Forces System
DAVIS	Defense Audio Visual Information Service
DCST	Deputy Chief of Staff for Training
DE	Designer's Edge
DID	Data Item Description
DITIS	Defense Instructional Technology Information System
DLD	Distance Learning Directorate
DO	Delivery Order
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoDSSP	Department of Defense Single Stock Point
DSS	Decision Support System
DTAC	Digitized Training Access Center
DTP	Deployable Training Package

DVD	Digital Video Disc
ELO	Enabling Learning Objective
EPSS	Electronic Performance Support Systems
ETP	Electronic Training Platform
FM	Field Manual
FTP	File Transfer Protocol
G&A	General and Administrative
GFI	Government Furnished Information
GFM	Government Furnished Material
GTA	Graphic Training Aids
HQ TRADOC	Headquarters, U.S. Army Training and Doctrine Command
HS-IS	Home Station-Instrumentation System
HTML	Hypertext Mark-up Language
IAW	In Accordance With
ICT	Integrated Concept Team
ICW	Interactive Courseware
IETM	Interactive Electronic Technical Manuals
IMDP	Instructional Media Design Package
IMI	Interactive Multimedia Instruction
IMP	Instructional Media package
IPR	In Process Review
IPT	Integrated Process team
IRB	Information Resource Board
ISD	Instructional Systems Development
ISDN	Integrated Services Digital Network
ITAM	Integrated Training Area Management
ITP	Individual Training Plan
JCBIS	Joint Computer Based Instructional System
JWG	Joint Working Group
KO	Contracting Officer
LAN	Local Area Network
LSAP	Live Simulation Action Plan
M1A1	Model Number of an Abrahms Tank
MANPRINT	Manpower and Personnel Integration
MCA	Military Construction, Army
MDEP	Management Decision Package.
MILES	Multiple Integrated Laser Engagement System
MIL-HDBK	Military Handbook
MIL-PRF	Military Performance (Specification)
MOA	Memorandum of Agreement
MOPP	Mission Oriented Protective Posture
MOS	Military Occupational Specialty
MPEG	Moving Pictures Experts Group
MTP	Mission Training Plan
NBC	Nuclear, Biological, and Chemical
NET	New equipment training
NETP	New Equipment Training Plan
NSP	Not Separately Priced
NSTD	Non-system training devices
NTIS	National Technical Information Service

O/C	Observers/Controllers
ODCST	Office of the Deputy Chief of Staff Training
OJT	On-the-job Training
OPFOR	Opposing Forces
ORSA	Operations Research System Analyst
POC	Point of Contact
POI	Program of Instruction
POIMM	Program of Instruction Management Module
RAM	Reliability, Availability, and Maintainability
RC	Reserve Component
RCAS	Reserve Component Automation System
RTLPL	Range and Training Land Program
S&F Tng	Staff and Faculty Training
SAT	System Approach to Training
SE Core ICT	Synthetic Environment Core Integrated Concept Team
SEN	Satellite Education network
SEP	Synthetic Environment Program
SGI	Small Group Instruction
SOL	Soldier on Line
SOW	Statement of Work
STP	Soldier Training Publication
STRAC	Standards in Training Commission
STRAP	System Training Plan
System MRD	System Material Requirements Documentation
SGI	Small Group Instruction
SGITC	Small Group Instructor Training Course
SGL	Small Group Leader
SGML	Standard Government Mark-up Language
SME	Subject Matter Expert
SOW	Statement of Work
STD	System Training Devices
STOW	Synthetic Theater of War
T&EOS	Training and Evaluation Outline
TADSS	Training Aids, Devices, Simulators, and Simulations
TASC	Training and Audiovisual Support Center
TASS	Total Army School System
TATS	Total Army Training System
TATSC	Total Army Training System Courseware
TATSC A&R	TATS Course Analysis and Redesign
TATS-CCA	TATS Course Conversion Analysis
TATS-DL	Total Army Training System-Distance Learning
TD	Training Development
TDAA	Training Development and Analysis Activity
TDRRC	Training Device Requirements Review Committee
TEA	Training Effectiveness Analysis
TES	Tactical Engagement Simulation
TEXMIS	TRAMOD Executive Management Information System
TLO	Terminal Learning Objective
TMA	Training Mission Area
TNET	Teletraining Network
Tng GOSC	Training General Officer Steering Committee

TRAMOD	Training Module
TRAS	Training Requirements Analysis System
TSC	Training Support Center
TSP	Training Support Package
UCOFT	Unit Conduct of Fire Trainer
VI	Visual Information
VR	Virtual Reality
VT	Video Tape
VTT	Video Teletraining
VTT-ITC	Video Teletraining Instructor Training Course
WAN	Wide Area Network
WFLA	Warfighting Lens Analysis
WWW	World Wide Web

C.10 Definitions. The following are definitions as they apply to this contract. Other definitions are listed in MIL-STD 1379-4, Glossary for Training, and TRADOC Regulation 350-70. In case of conflict, TRADOC definitions take precedence.

C-10.1 ARMY TRAINING XXI: Army training XXI (AT XXI) supports the Army's Force XXI Modernization efforts. Army Training XXI will employ state of the art information technologies in a fully integrated, networked, and internet training support system to provide realistic, timely, user-responsive, and cost-effective training for units and individuals. The objective Army training system will provide integrated and distributed training information and training management support; comprehensive, configurable, content rich training products and media; integrated synthetic training tools and devices; and reengineered training processes-all in an open system capable of continuous improvement through the infusion of emerging technologies and functional requirements. AT XXI will be applied across the training system from tools for training development to training methods-while maintaining the quality of our battle-focused training paradigm. The resulting training system will provide the full range of responsive training support capabilities for trainers, training managers, and soldiers when and where needed either at home station, at a deployed site, or en route to operational missions.

C.10.2 Asynchronous transfer mode (ATM). A high-speed, high-volume packet switching and transfer method where information does not occur with reference to fixed time periods. Also known as Acell relay. By providing whatever bandwidth capacity is needed at any time (i.e., bandwidth on demand), ATM has the flexibility to provide users rapid access to a variety of services with different transport needs. These include voice, data, video, and message transmissions. An ATM network incorporates both public services and private networks and can support multiple simultaneous connections over a single interface.

C.10.3 CLASSROOM XXI: Classroom XXI is one of the major efforts that will lead TRADOC to the 21<sup>st</sup> century. Classroom XXI focuses on the use of technology to leverage information in a variety of ways to increase the Army's warfighting capability.

C.10.3.1 Multiple instructors will be able to simultaneously dial-up data that is digitized and deliver it to all students in a matter of minutes.

C.10.3.2 Communication links will be made within and between schools and the Computer Managed Instruction (CMI) and fiber optic networks will be established for

both fixed and mobile sites to support the electronically and retrieve digitized archival information from numerous sources, including the "Army Training Digital Library."

C.10.3.3 Technology will enable instructors to conduct small group instruction (SGI) using expert Observers/Controllers (O/C) at CTCs, assess student comprehension and performance, and deliver materials and world-class source materials on demand. "Smart podiums," netted students stations, and VTT, including simulation transfer, will enhance the instructor's capability.

C.10.3.4 Simulation and simulator training will be brought to a unit which is simultaneously linked to a school, the CTC, and the parent command. Training for operator/crew through battalion/brigade will be more readily available, relevant, and cost effective. The Classroom XXI student can eaves-drop on on-going efforts without interrupting the effort, apply his/her own solutions, and see the actual results.

C.10.4 Computer Managed Instruction (CMI). CMI involves the use of computers and software to manage the instructional process. Functions of CMI can include a management administration system designed to track student performance over time, provide information concerning performance trends, record individual and group performance data, schedule training, and provide support for other training management functions. CMI functions may be used with CBT, CBI, CAI, or IMI based on need.

C.10.5 Defense Instructional Technology Information System (DITIS) / Defense Automated Visual Information System (DAVIS). An on-line, unrestricted, full-text searchable, standard DoD-wide database containing content-descriptive production acquisition, inventory, distribution, currency status, archival control, and other data on visual information (VI) and interactive multimedia instruction (IMI) products in the Department of Defense inventory.

C.10.6 Desktop video. Another two-way video process. All locations in a two-way video network are equipped with cameras, personal computers platforms, monitors, and microphones. Point-to-point and multipoint connections enable instructors and learners to see and hear each other.

C.10.7 Digital Video Disc (DVD). DVD includes products and software that will be built in conformance with a specification being developed by a consortium of the largest computer, consumer electronics, and entertainment companies. The intention is to create a range of compatible products based on a new generation of the Compact Disc format that provides increased storage capacity and performance. Especially for video and multimedia applications.

C.10.8 Distance Learning. The delivery of standardized individual training and portions of collective and self-development training to individuals and units at the right place and right time through the application of multiple means and technology. Distance Learning is the concept for the delivery of training to the soldier when and where needed; it makes Classroom XXI achievable. Distance learning allows student/leader/unit-centered access to essential information and training. It represents a powerful capability, which provides the proper balance of course content and delivery technologies when and where they will have the greatest impact on total force readiness. Additionally, distance learning provides cost-effective approaches for achieving long term training strategies and the implementation of real-time, short term training requirements. Extensive

worldwide corporate and government electronic networks provide a range of capabilities for distributing learning in either a synchronous/real time or asynchronous mode, from simple text transmissions to video teleconferencing. The following points clarify the concept:

C.10.8.1 "Dial-up" training will eventually be available to troops wherever they are stationed or for home training.

C.10.8.2 Task training will be available on demand.

C.10.8.3 Resident courses can be shortened with the soldier receiving training at home or duty station.

C.10.8.4 Resident course offerings can be reduced; only those courses which require a high degree of personal interactivity, benefit from group dynamics, or are equipment or range dependent will be taught in residency.

C.10.8.5 Redesign of a resident course into distance learning modules can reduce classroom time from 20% to 60%. Service schools will gradually evolve into distribution networks which send training to the troops rather than vice-versa.

C.10.8.6 All distance learning will be task-based, not exercise-based.

C.10.9 Enabling Learning Objective (ELO). A learning objective that supports the TLO. It must be learned or accomplished to learn or accomplish the TLO. It consists of an action, condition, and standard. ELOs are identified when designing a lesson. A TLO does not have to have ELOs, but it may have more than one.

C.10.10 Embedded training. Training that is provided by capabilities designed to be built into or added onto operational systems to enhance and maintain the skill proficiency necessary to operate and maintain the equipment end item.

C.10.11 Interactive Electronic Technical Manuals (IETM). An IETM is a technical manual delivered electronically. The IETM possesses the following three characteristics: 1) it can be presented either on a desktop workstation or a portable devices, 2) the elements of data constituting the IETM are so interrelated that users access to the information is achievable by a variety of paths, and 3) it can function to provide procedural guidance, navigational directions and other technical information required by the user.

C.10.12 Interactive Courseware (ICW). ICW is computer-controlled courseware that relies on trainee input to determine the pace, sequence, and content of training delivery using more than one type of medium to convey content of instruction. ICW can link a combination of media to include but not limited to; programmed instruction, video tapes, slides, film, television, text, graphics, digital audio, animation, and up to full motion video, to enhance the learning process.

C.10.13 Interactive Multimedia Instruction (IMI). As a general term IMI refers to course materials which use multiple requirements for student responses as a primary means of facilitating learning. The official interservice use of the term limits its definition to computer controlled courseware that relies on trainee input to determine the pace,

sequence, and content of training delivery using more than one type medium to convey the content of instruction. IMI can link a combination of media, to include programmed instruction, video tapes, slides, film, television, text, graphics, digital audio, animation, and up to full motion video, to enhance the learning process. Interactive multimedia instruction may be delivered on a stand-alone computer workstation, networked computers, or via the Internet. The interservice term "IMI" is synonymous with "computer based instruction (CBI)" and "computer based training (CBT)." For TRADOC, IMI is a group of computer-based training and training support products. IMI includes source materials that are commonly used in IMI products, electronic products used in the delivery of or supporting the delivery of instruction, and software management tools used to support instructional programs. Types of IMI include:

C.10.13.1 Computer assisted instruction (CAI). CAI involves use of computers to aid in the delivery of instruction. CAI exploits computer technology to provide the storage and retrieval of information for both the instructor and student. CAI usually refers to the use of computers to support instructor-led classroom instruction. Using computers as a presentation tool media for slides, audio, or motion pictures which support large or small group instruction is an example of CAI.

C.10.13.2 Computer-based instruction (CBI). CBI usually refer to course materials presented or controlled by a computer and which use multiple requirements for student responses as a primary means of facilitating learning.

C.10.13.3 Computer-based Training (CBT). CBT usually refers to course materials presented or controlled by a computer and which use multiple requirements for student responses as a primary means of facilitating mastering a skill or task.

C.10.13.4 Interactive Video Disk (IVD). IVD is an information storage and retrieval technology used with computers to support programs requiring a very large quantity of memory (e.g. long full motion video sequences or a very large library of complex graphics). IVD uses text, graphics, full motion video, and audio. It is always used on a videodisk-based system.

C.10.14 Interactive Multimedia Instruction (IMI) Program. An assembly or series of closely related IMI lessons and concomitant instructional materials and documentation that are grouped together under a single identification number. An IMI program comprises one or more lessons (i.e., segments of instruction designed to teach one or more instructional objectives) that may be grouped into separate modules that can be taught, measured, and evaluated as a single unit.

C.10.15 Internet/intranet/extranet. A worldwide communications network originally developed by the U.S. Department of Defense as a distributed system with no single point of failure. The Internet/intranet/extranet has seen an explosion in commercial use since the development of easy-to-use software for accessing the Internet/intranet/extranet.

C.10.16 Interoperability. The capability to run courseware and associated programs without modification on a delivery system other than the one for which it was originally designed.

C.10.17 Instruction. The process of systematically providing knowledge. For purposes of this document, instruction includes both training (i.e., the process of systematically

making students proficient in a specific skill or set of skills through imparting knowledge and specialized practice) and education (i.e., the process of systematically providing knowledge and developing powers of reasoning and judgment in preparation for general situations).

C.10.18 Instructional hour. Traditional courseware: POI instructional hours minus exercise time. IMI: Student learning time calculated from IMDR or after validations, if conducted.

C.10.19 Learning Objective (LO). A precise three-part statement describing what the student is to be capable of accomplishing in terms of the expected student performance under the specific conditions to accepted standards. LOs clearly and concisely describe student performance required to demonstrate competency in the material being taught. LOs focus the training development on what needs to be trained and focuses student learning on what needs to be learned. Both terminal and enabling objectives are learning objectives.

C.10.19 Lesson. The basic building block of all training. The level at which training is designed in detail. The lesson is constructed to facilitate learning. A lesson normally includes telling or showing the soldiers what to do and how to do it, an opportunity for the soldiers to practice, and providing the soldiers feedback concerning their performance. A lesson may take the form of an instructor presented lesson, an SGI-presented lesson, or a self-paced lesson, such as a correspondence course or an IMI CBI lesson.

C.10.19.1 An instructor presented lesson or SGI presented lesson is documented as a lesson plan.

C.10.19.2 A self-paced lesson must be of sufficient detail that the student can learn the material to the established learning objective standard his own.

C.10.19.3 An extension training lesson is a self-paced instructional program developed, reproduced, and packaged for distribution to soldiers in the field. These lessons consist of a terminal learning objective, instructional text, practice, and immediate feedback to the soldier.

C.10.20 Lesson Outline. An organized outline of the training material to be presented. It identifies the terminal learning objective, enabling learning objectives (optional), learning steps/activities, methods of instruction, media, references, instructor-to-student ratios, resources required, facilities required, safety factors, environmental considerations, and risk factor. The lesson outline is completed during the design phase of the training development process from the training analysis data.

C.10.21 Lesson Plan. The detailed blueprint for presenting training by an instructor or small group leader (SGL). It prevents training from becoming haphazard and provides for training standardization. It is built on the lesson outline and includes all the details required for presentation. It must be of sufficient detail that a new instructor can teach the lesson with no decrement of training.

C.10.19 Levels of IMI interactivity. See MIL-HDBK-1379-3, paragraph 6, table 26, for interactivity levels and associated levels of learning .

C.10.19.1 Level 1 - Passive. The student acts solely as receiver of information.

C.10.9.2 Level2 - Limited participation. The student makes simple responses to instructional cues.

C.10.19.3 Level 3 - Complex participation. The student makes a variety of responses using varied techniques in response to instructional cues.

C.10.19.4 Level 4 - Real-time participation. The student is directly involved in a life-like set of complex cues and responses.

C.10.20 Master Materials. The materials necessary to reproduce or modify all components of the IMI product, including all video and audio source materials as originally supplied to the mastering facility. Reproduction master materials also include the appropriate associated development documentation necessary to reproduce or modify the IMI product (e.g., flow charts, scripts, and storyboards cross-referenced to the video shot list, edit decision list, programming/source code, runtime program, CMI functionality, etc.).

C.10.21 Moving Motions Pictures Experts Group (MPEG). Encoding standards that convert analog video and audio input signals into compressed digital files. It permits a number of encoding applications ranging from video and multimedia compact discs on a desktop computer, interactive television, to digital satellite networks.

C.10.22 Multimedia. As a general term multimedia is the use of more than one media to achieve a specific purpose or objective. The term is used primarily to refer to a technology combining text, still, and animated images, video, audio, and other forms of computer data that can be manipulated and used to convey information in a useful, educational, entertaining, realistic or more easily understood manner. Multimedia is delivered on a multimedia work-station/personal computer via network, hard disc, floppy disc, or CD-ROM.

C.10.23 Multiple Integrated Laser Engagement System (MILES). The MILES is an integrated family of laser-based transmitters and receivers that simulate direct fire weapons (e.g., small arms, tank main guns, and guided missiles) and permit realistic tactical engagements with these weapons. The devices are eye-safe and portable. The MILES devices can interoperate with other TADSS and external instrumentation systems to collect training performance data.

C.10.23.1 MILES 2000 is a program designed to replace the current MILES inventory, which is reaching the end of its projected life cycle. Based on the current maintenance effort and other factors, an annual replacement of 5 percent of the current inventory is considered sufficient to maintain an acceptable inventory level.

C.10.23.2 MILES is the objective discriminator on the force-on-force battlefield. MILES I do not exhibit all the characteristics desired by the training community. MILES 2000 provides such capabilities as player ID for each player on the battlefield, software programmable probability of kill (PK), aspect angle calculation for vehicle systems, reduction in components size and weight, event recording (500 events per player), data collection and after action review capability, MILES keys no longer required. Reduced life-cycle costs due to longer life batteries and improved manufacturing and power

management techniques. These additional capabilities will provide greater fidelity on the force-on-force battlefield.

C.10.24 Observers/Controllers (O/C). Provides the framework for integrating various technological and media combinations into effective and efficient training support packages for distribution over an ATM network.

C.10.25 Olfactory. Sense of smell

C.10.24 Part-task training device. A device that permits selected aspects of a task to be practiced independently of other elements of the task. Its purpose is to provide economical training on certain elements requiring special practice but that are not dependent upon the total equipment. A system or equipment emulator that appears like the real equipment and may include parts of real equipment for the teaching of skills that could damage the real equipment in a training environment.

C.10.25 Task. A clearly defined and measurable activity accomplished by individuals and organizations. It is the lowest behavioral level in a job or unit that is performed for its own sake. It must be specific; usually has a definite beginning and ending; may support or be supported by other tasks; has only one action, and therefore, is described using only one verb; generally is performed in a relatively short time (however, there may be no time limit or there may be a specific time limit); and it must be observable and measurable. The task title must contain an action verb and object and may contain a qualifier.

C.10.25 Teletraining. Training delivered via communication links such as satellite or communication links.

C.10.26 Terminal Learning Objective (TLO). The main objective of a lesson. It is the performance required of the student to demonstrate competency in the material being taught. A TLO describes exactly what the student must be capable of performing under the stated conditions to the prescribed standard on lesson completion. There is only one TLO per lesson regardless of presentation method or media and it has only one verb. The TLO may cover one critical task, less than one critical task (i.e., a skill or knowledge), or more than one critical task. The TLO may be identical to the critical task being taught or there may be a disparity between them. Where there is a disparity, it is the TLO standard that the student must achieve to demonstrate competency for course completion.

C.10.27 Traditional-based courseware. Print/paper based to include computer-generated lecture materials. This is used to describe those training packages developed in a computer-based presentations program such as Coral, WordPerfect presentations, or Microsoft PowerPoint.

C.10.28 UNIX. A multi-user computer operating system

C.10.29. Video teletraining (VTT). Teletraining network (TNET) and Satellite Education Network (SEN).

C.10.29.1 TNET provides near full motion two-way video and audio, graphics, and computer-based teletraining and data transfer for courses, exercises, after-action reports, new equipment training, and simulations. TNET has round-the-clock communications

capability primarily over satellite links. Each TNET site can send and receive training from over 110 other TNET locations and over 300 sites in other military and state networks, including all SEN sites. TNET also has OCONUS connectivity to Europe, Hawaii and the Sinai.

C.10.29.2 SEN is a studio-based, one-way video network with return audio to the instructor over phone lines. SEN broadcasts a high-quality full motion digital signal over three channels and has retained its ability to deliver analog broadcasts. SEN's primary mission is to support logistics and acquisition courses taught by the Army Logistics Management College at the Defense Acquisition University (DAU). SEN broadcasts to 61 of its own downlinks, 40 additional downlinks in the DAU network, and all the TNET sites as well. SEN can also broadcast to all Government Education Training Network and Governmental Alliance for Training and Education sites.

C.10.28 Virtual Training. The use of virtual reality software which has been designed to achieve specific training objectives for a subject or group of subjects in accordance with content or material determined in concert with the user. The software usually contains one or more 3-D models that can be manipulated in exactly the same manner as the real equipment for which the model is a substitute. Virtual training provides the ability to repetitively train any time of the day, in any weather as frequently as necessary to attain the designated level of competence.

C.10.29 WarMod XXI. WarMod XXI is the Army Modernization training (AMT) effort of Army Training XXI, a TRADOC initiative to re-energize and update AMT to keep pace with recent and emerging changes in the Army acquisition process. As the training piece of the Army's "Equipping the Force" axis, WarMod XXI supports both Warfighter XXI and Warrior XXI, and encompasses the process of documentation and standardization of training requirements, training products, and training outputs associated with the acquisition of material/weapon systems and training aids, devices, simulators, and simulations (TADSS). The five components of WarMod XXI are: Needs Analysis, Requirements Documentation, Training Products, Test and Evaluation, and the Army Doctrine and Training Digital Library (ADTDL). A main point to remember is what WarMod is and is not: WarMod is "not" just new equipment training (NET) or NET Teams (NETT), but a comprehensive program to improve and modernize AMT within the Army to keep pace with changes in force requirements. AMT must be re-focused and re-energized to become more training-effective and resource-efficient. WarMod XXI is the initiative to correct the de-synchronized pieces of AMT, caused by re-engineering the major command (MACOM), and to bring AMT on line in support of Force XXI training objectives.

C.10.30 Wired and Wireless Networking. The basic infrastructure needed to move, manage store, retrieve, and maintain information in, from, or to remote locations from either a central location or other remote locations. Traditional wired networks may include but not limited to dialup modem connectivity, ISDN, Ethernet, T1, T3, ATM, Fiber Channel or optical cable based information delivery systems. Wireless networking would allow Very Short Range (VSR) delivery via technologies like infrared (IR) Microcellular, and Radio Frequency (RF) as well as long range technologies like analog, Cellular, Satellite, Cellular Digital Packet Data (CDPD) or Wireless ATM. This area would also likely address the additional technologies like encryption and security protocols required to keep the data being moved secure from all manner of intrusion.

C.10.31 World Wide Web. Often referred to as WWW or the Web, this usually refers to information available on the Internet/intranet/extranet that can be easily accessed with

access software usually called a browser. Organizations publish their information on the Web in a format known as HTML (Hypertext Markup Language); this information is usually referred to as their home page.

C.11 Labor Categories. Also see Section H. The contractor shall provide personnel qualified to perform specific labor categories in accordance with this contract. The contractor also may be required to employ on a temporary basis, an individual or individuals with explicit technical expertise required under special products by delivery order. Minimum qualifications for each position are described below.

#### C.11.1 Key Personnel:

##### C.11.1.1 Program Manager

Qualifications: BA/BS degree in business, management, instructional technology, contracting, or education with two (2) courses completed in instructional technology with minimum of two years managing an educational design and development project. In addition, two years professional experience working on a contract effort either for the Army or another Department of Defense agency is required. Must have experience in systems design, and/or management, systems project development from inception to deployment. Must demonstrate expertise in the management and control of funds and resources for the Army or another DoD agency and demonstrated experience in managing multitask contracts and/or subcontracts of various types of complexity.

C.11.1.2 There will be three Project Manager categories. All Project Managers must have experience in researching, acquiring, implementing, and blending new technologies in existing infrastructures, both physical and organizational.

##### C.11.1.2.1 Project Manager for Interactive Multimedia Courseware.

C.11.1.2.1.1 Qualifications: BA/BS degree in business, management, instructional technology, contracting, or education with two (2) courses completed in instructional technology with a minimum of two years managing an educational design and development project. Six months professional experience working on a contract effort either for the Army or another DoD agency is required.

C.11.1.2.1.2 Team Experience: In graphics design; authoring; animation; audio/video integration; test packages and instructional materials.

##### C.11.1.2.2 Project Manager for Distance Learning

C.11.1.2.2.1 Qualifications: BA/BS degree in business, management, instructional technology, contracting, or education with two (2) courses completed in instructional technology with a minimum of two years managing an educational design and development project. Six months professional experience working on a contract effort either for the Army or another DoD agency is required.

C.11.1.2.2.2 Team Experience: Courseware design and conversion from paper/classroom to TV, VTT, and/or network presentation (Desktop VT or server based); Internet/intranet/extranet/Intranet connection; remote access.

#### C.11.1.2.3 Project Manager for managing Data Files and Documentation

C.11.1.2.3.1 Qualifications: BA/BS degree in business, management, instructional technology, contracting, or education with two (2) courses completed in instructional technology with a minimum of two years managing an educational design and development project. Six months professional experience working on a contract effort either for the Army or another DoD agency is required.

C.11.1.2.3.2 Team Experience: File conversion; scanning; CD-ROM burning; page layout and design; electronic publishing.

C.11.1.3 Subject Matter Expert Qualifications: Formal education or the successful completion of military training in specific military occupational specialties related to the subject matter of the project with three (3) years specific experience in the instruction or supervision of instruction of adult level training programs; knowledge of equipment, techniques, principles, or practices of the specific occupation or subject.

#### C.11.2 Non-key Personnel:

C.11.2.1 Audiovisual/Media Productions Specialist. Qualifications: BA/BS degree in communications, media, motion pictures or television. Three (3) years general experience two years specific experience directly related to production to include planning, supervising, directing, and editing of motion pictures, video, film strips, or television production.

C.11.2.2 Behavioral Scientist/Psychologist. Qualifications: A Doctorate degree in the field of study related to the DO Statement of Work (SOW) functional area or subarea. In addition, a minimum of twelve (12) years of employment with progressively increasing responsibility in directing related disciplines and/or projects is required. At least five (5) years (of the twelve years) must reflect extensive and in-depth experience in a specific field directly related to the SOW.

C.11.2.3 Computer Graphics Specialist. Qualifications: At least three (3) years experience in developing computer graphics art for electronic publications and training. The person shall have demonstrated capability for accomplishing semi-detailed electronic art. Must have substantial experience in common graphics programs for the MS Windows/Windows for Work Groups (WFWG) /WIN95/WIN NT platform. If Macintosh, must have experience in file conversion to MS Windows platform.

C.11.2.4 Computer Programmer. Qualifications: BA/BS degree in a computer field such as computer science, data processing, or information processing and two (2) years specific experience in computer programming (in at least two computer program analyst languages) to include the analysis, planning, and program oversight responsibilities in creating and/or modifying all or parts of computer systems on the basis of detailed programming specifications provided. Experience must be in the Windows operating system.

C.11.2.5 Computer Scientist/Software Engineer. Qualifications: BS degree in computer science or any computer field and a minimum of five (5) years specific experience in the design and development of computer software, using both assembler and high order languages. Experience should include work with: computer programming languages,

computer based authoring for Interactive multimedia instruction (IMI), database management systems, operating systems, hardware/software interfaces, and systems engineering. Experience must be in the MS Windows operating system.

C.11.2.6 Computer Systems Analyst. Qualifications: BA/BS degree in management information systems or any computer field and a minimum of three (3) years experience in training development and computer systems and applications. Experience in the design, development, and analysis of programs or systems relating to training systems. Experience in the identification of need, problems and implementing corrective actions. Experience must be in the Windows NT platform.

C.11.2.7 Data Entry Clerk. Qualifications: High school diploma with two (2) years experience in word processing, filing, data entry, compiling information, and writing short reports. Familiarity with basic correspondence styles, tables, and word processing software applications and administration.

C.11.2.8 Digital Communications Specialist. Qualifications: Two (2) years experience in digital communications and thorough knowledge of automated communications. Individual shall plan and assist in the installation of peripheral capabilities for specialized training applications such as computer-assisted simulations and computer-to-computer interface over the network.

C.11.2.9 Digital Video Editor. Qualifications: Three (3) years experience editing digital video using computer video editing programs and interpreting the script and story board design in a visually appealing manner. Must have analogue video editing skills and be familiar with different video digitizing and editing computer programs and various video compression techniques and video formats.

C.11.2.10 Educational Measurement Specialist. Qualifications: MS/MA in educational psychology with a minimum total of 18 semester hours psychometrics/measurement/test statistics/personnel testing research. Must have a minimum of two years of experience in the design, development and validation of criterion referenced, personnel ability assessments, such as, classroom and other educational tests. Experience must include specific familiarity with the integration of student evaluation into computer-assisted instruction, including internet/intranet/extranet emerging technologies. Must include extensive experience in designing and crafting problem solving and other application items using accepted item types such as multiple choice and matching formats, as well as, interactive interpretive and situation exercises that realistically assess more complex analysis and application skills.

C.11.2.11 Illustrator. Qualifications: Three (3) years experience creating complex black and white line drawings of schematics, charts, forms, isometric and orthographic drawings. Experience in computer-based vector drawing programs. Experience in creating renderings of scenes and figures using both traditional illustration techniques and computer-based illustration programs.

C.11.2.12 Instructional Media Technical Specialist (Emerging Technologies and Internet/intranet/extranet, Warrior XXI). Qualifications: BA/BS degree in management information systems or any computer field and a minimum of three (3) years experience in training development and computer systems and applications. Experience in the design, development, and analysis of programs or systems relating to training systems. Must

show evidence of experience in emerging technologies during the past three years, for example, CD-ROM, Internet/intranet/extranet, digital video, video teleconferencing, etc., for educational and/or training applications.

C.11.2.13 Instructional Systems Specialist/Instructional Technologist/Training Developer. Qualifications: BA/BS degree in education, instructional technology, or related field. Four (4) years teaching or other instructional experience in developing courseware including two of the following: job/task analysis, course design, written/performance test development, development of interactive/criterion-referenced materials, or validation of instructional materials.

C.11.2.14 Instructor. Qualifications: BS/BA degree in education or related area. One year specific experience in teaching, developing or reviewing course materials, training aids, manuals for vocational or military training programs.

C.11.2.15 Market Analyst (Commercial off-the-shelf products). Qualifications: Five (5) years experience in organizational/institutional automation planning, requirements determination, and acquisition of hardware, software, and network/desktop computers for offices, schools, and multimedia production facilities.

C.11.2.16 Media Director. Qualifications: BA/BS in education, communications, media, motion pictures, or television. Four (4) years general experience in the audiovisual field; two years must have included a combination of the following: supervising audiovisual development staff, directing instructional audiovisual development, developing shooting scripts, directing and editing of motion pictures, and reviewing and analyzing audiovisual instructional programs for ICW.

C.11.2.17 Media Production Specialist. Qualifications: BA/BS degree in communication, media, motion pictures, television, or education. Four (4) years experience in media production including: video, studio, post-production; video equipment; reading and interpreting test signals; computerized editing equipment; digital special effects equipment, and digital still frame storage equipment. Experience with authoring and production automation systems to produce interactive videodisk and interactive CD-ROM.

C.11.2.18 Military Analyst. Qualifications: BA/BS degree in any field with a minimum of eight (8) years of related military work experience in research regarding National Military Strategy, Army, Joint and combined doctrine, operations concepts, liaison, and coordination with allies, industry and academia. Must demonstrate the ability to apply emerging doctrine and tactics from formal doctrinal changes, Force XXI initiatives, or system design and development.

C.11.2.19 Operations Research Analyst. Qualifications: BA/BS degree in operations research, analysis, or related field and two (2) years specific experience in training systems, force designs, or educational programs management. Experience conducting analytical studies using mathematical, statistical and other scientific methods for the design, development and adaptation of education/training programs.

C.11.2.20 Script Writer. Qualifications: BA/BS degree in journalism, creative writing, English, or other related field; at least two (2) years general experience; and three years specific experience writing adult training programs. Ability to use specialized methods of

presentation, characteristics of various media, and apply audiovisual techniques effectively.

C.11.2.21 Software Engineer. Qualifications: BA/BS degree in computer science, information systems, engineering, business, or other related scientific or technical discipline. This position requires a minimum of three (3) years experience as a software engineer and two of the three years experience must be working with current programming languages (UNIX/Windows).

C.11.2.22 Training Specialist. Qualifications. BA/BS degree in any field. This position requires a minimum of five (5) years experience, of which at least two (2) years must be specialized. Specialized experience includes: experience in developing and providing ADP and end-user training on computer hardware and application software. General experience includes information systems development, training, or related fields.

C.11.2.23 Visual Information Specialist. Qualifications: BA/BS degree in art, design, visual communication, or related field and two (2) years specialized experience in the planning, designing, producing, and editing of visual material used in printed material, exhibits, speeches, briefings, television, motion pictures, etc., to include photographs and illustrations.

C.11.2.24 Writer-Editor. Qualifications: BA/BS degree in English, journalism, communications, or media; three years general experience in writing and editing; and two years specialized experience in writing or editing articles, news releases, pamphlets, brochures, speeches, manuscripts, technical training manuals, correspondence courses, interactive video, training films, and/or military or government publications.

### C.11.3 EQUIVALENCE:

C.11.3.1 A BA/BS degree plus nine years of progressively increasing responsibility in a directly related discipline may be substituted for a Masters Degree.

C.11.3.2 A Masters Degree plus fourteen years of progressively increasing responsibility in a directly related field may be substituted for a Doctorate degree except for a Behavioral Scientist/Psychologist.

C.11.3.3 In lieu of the BA/BS degree requirements or a degree in an indirectly related field, the contractor may submit candidates with special qualifications for consideration on a case-by-case basis by demonstrating how their special qualifications overcome and substitute for the normal qualifications.

C.12 Emerging Technology. The contractor shall keep up-to-date with technological development applicable to the multimedia courseware (MMC) and advise the Government of advances in MMC technology that could potentially be applied to evolutionary improvements and/or enhancements to MMC product. Proposals for advances shall be provided at no cost to the Government. The contractor, upon submission of the proposal, may indicate changes that cause no degradation in product method/performance and no increase in the cost to the Government. Changes that would result in any degradation of any part of the MMC product (even if the contractor feels the overall benefit outweighs the degradation) or that will require an equitable adjustment to the contract pricing will not be

initiated until the Government agrees to such a change by contract modification. Additional CLINs may be added to the contract if the Government agrees to the emerging technology. If the Government initiates a request for proposal for emerging technology that will better the MMC product the contractor shall provide the proposal at no cost to the Government. If the proposal is accepted, additional CLINs will be added to the contract. The contractor shall not provide any alternative or substitute methods to replace a method already required by the contract unless a contract modification has been issued.

### C.13 TECHNICAL DATA ITEMS

All Technical Data Items shall be in accordance with Data Item Descriptions (DD Form 1664) referenced in Block 4 of the applicable Contract Data Requirements List (DD Form 1423) Exhibit A.

END OF SECTION C