



Close Combat Tactical Trainer (CCTT)

ACCREDITATION PLAN

version 1.8

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Close Combat Tactical Trainer
Accreditation Plan

TABLE OF CONTENTS

Section	Title	Page
1.0	PURPOSE	1
2.0	BACKGROUND	1
2.1	General CCTT System Description	1
2.2	Equipment Description	1
2.3	CCTT Developer and Proponents	2
2.4	Intended Uses	2
2.4.1	CCTT Purpose and Mission	2
2.4.2	CCTT M&S Category Identification	3
3.0	ACCREDITATION PROCESS	4
3.1	Establish Acceptability Criteria	4
3.2	Conduct CCTT Review	5
3.2.1	Establish Review Team	6
3.2.2	Conduct Review	6
3.3	Recommend Accreditation of CCTT	7
3.4	Modify CCTT	7
3.5	Abort Process	7
3.6	Prepare Accreditation Report	7
4.0	CCTT REVIEW METHODOLOGY	7
4.1	Phase I, Collect and Review Information	7
4.2	Phase II, Assess CCTT	8
4.2.1	Assess Training Uses	8
4.2.2	Assess Acceptability Criteria	9
5.0	INFORMATION SOURCES	11
5.1	CCTT Documentation	11
5.2	CCTT Developers	11
5.3	Subject Matter Experts (SMEs)	11
5.4	Verification and Validation	12
5.5	Information Sources Matrix	13

Section	Title	Page
6.0	ACCREDITATION RESPONSIBILITIES	14
6.1	Overview	14
6.2	U.S. Army Training and Doctrine Command (TRADOC) System Manager (TSM) CATT	14
6.3	HQ Department of the Army Representatives	14
6.4	IOTE Unit Representatives	14
6.5	Verification and Validation Representatives	14
6.5.1	U.S. Army Simulation, Training, and Instrumentation Command (STRICOM) Program Manager Combined Arms Tactical Trainer (PM CATT)	14
6.5.2	U.S. Army Evaluation Analysis Center (EAC)	15
6.5.3	U.S. Army Material Systems Analysis Activity (AMSAA)	15
6.5.4	Communications-Electronics Command (CECOM) Software Engineering Directorate-STRICOM Support Office (SED-SSO)	15
6.5.5	TRADOC Analysis Command-White Sands (TRAC-WSMR)	15
7.0	SCHEDULES, MILESTONES, & RESOURCES	16
7.1	Schedules	16
7.2	Milestones	18
7.3	Resources	18
7.3.1	Form CCTT Review Team	18
7.3.2	Collect and Review Information	18
7.3.3	Interview V&V Report Authors	18
7.3.4	Assess CCTT Acceptability Criteria	18
7.3.5	Write CCTT Accreditation Report	18

LIST OF ANNEXES

Section	Title	Page
Annex A	Accreditation Forms	19
Annex B	Method for Assessing Training Uses	30
Annex C	Source Documentation	36
Annex D	Subject Matter Experts (SME)	40
Annex E	Abbreviations	41
Annex F	Glossary	46

LIST OF FIGURES

Section	Title	Page
Figure 3.0-1	Close Combat Tactical Trainer Accreditation Process	4
Figure 4.0-1	Conducting the Review	9
Figure 5.0-1	Verification and Validation Information	12
Figure 5.0-2	Information Sources Matrix	13
Figure 6.0-1	VV&A Responsibilities	16
Figure 7.0-1	Accreditation Schedule	17

Close Combat Tactical Trainer
(CCTT)
Accreditation Plan

1.0 PURPOSE

This plan implements policy and establishes guidance to conduct the accreditation of the Close Combat Tactical Trainer. This plan is pursuant to guidance provided in Army Regulation 5-11 (AR 5-11) *Army Model and Simulation Management Program* and the applicable requirements of the Department of Army Pamphlet 5-11 (DA Pam 5-11) *Verification, Validation, and Accreditation of Army Models and Simulations*. The purpose of this plan is to identify necessary and sufficient information, resources, and processes that will permit the model and simulation accreditation proponent to determine if the CCTT is suitable and acceptable for its intended purpose.

2.0 BACKGROUND.

2.1 General CCTT System Description.

The CCTT is comprised of a group of interactively networked simulators and command, control, and communications workstations replicating the vehicles and weapon systems of a cavalry squadron, mechanized infantry or armor battalion task force and its supporting Combat, Combat Support, and Combat Service Support elements at the ground troop and company/team level of training. Two versions of the CCTT system will be developed, a fixed version for the Active Component and a mobile version for the Reserve Component. Army Aviation, Field Artillery, Air Defense, and Engineer modules will interface and interact with CCTT in the future under the Synthetic Environment Core Technology program. These future modules will require interface capability and software compatibility with CCTT.

2.2 Equipment Description.

The CCTT system will consist of the following modules and/or systems:

Manned Modules

M1A1	Abrams Tank
M1A2	Abrams Tank
M2/3A2	Bradley Fighting Vehicle (BFV)
M981	Fire Support Team Vehicle (FIST-V)
M113A3	Armored Personnel Carrier
M1025	High Mobility, Multipurpose Wheeled Vehicle (HMMWV)
DIM	Dismounted Infantry Module

Support Work Stations

CTCP	Combat Trains Command Post
SAF	Semi-Automated Forces
UMCP	Unit Maintenance Collection Point
FABTOC	Field Artillery Battalion Tactical Operations Center
TACP	Tactical Air Control Party
CES	Combat Engineer Support Workstation
FDC	Fire Direction Center
FSE	Fire Support Element

Control Workstations

MCC	Master Control Console
ARR	After Action Review
MC	Maintenance Control

Communication and Visual Systems

Computer Generated Forces

2.3 CCTT Developer and Proponents.

Developer: Project Manager, Combined Arms Tactical Trainer (PM CATT)

Application Sponsor: Training and Doctrine Command (TRADOC)

Verification and Validation Proponent: TRADOC System Manager, CATT (TSM CATT)

Accreditation Proponent: TRADOC Deputy Chief of Staff for Training (DCST)

2.4 Intended Uses.

2.4.1 CCTT Purpose and Mission.

The CCTT is being developed to overcome the deficiencies revealed in the Mission Area Analysis for the Close Combat Forces as detailed in the Mission Area Battle Plan and the Battlefield Development Plan. The active and reserve components of the United States Army need the capability to train the total combined arms force on a simulated, fully interactive, real time battlefield. A system is required to train and sustain individual and collective (crew through battalion task force) tasks and skills in command and control, communications, maneuver, and to integrate the functions of combat support and combat service support units. This requires the capability to simulate, in real time, the conduct of

combat operations in a realistic environment with an appropriate and challenging opposing force that will require realistic individual, crews and staff actions, placing the stresses of combat on all participants.

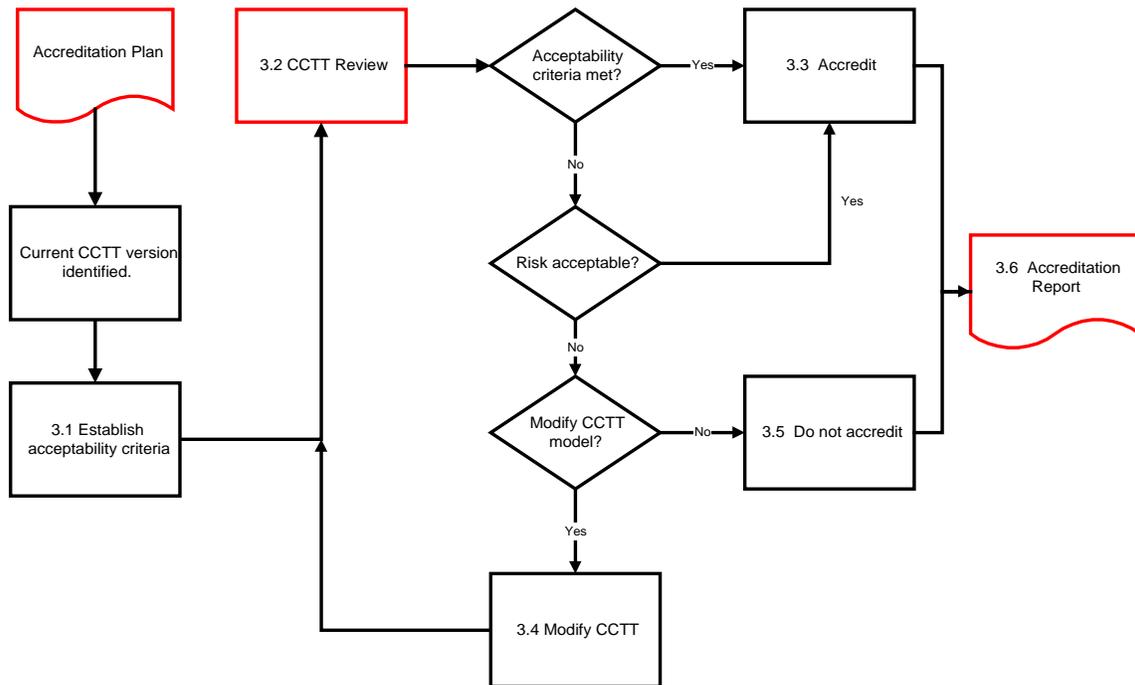
The CCTT system will allow individuals, crews, and units to operate in a simulated combat environment. This will reduce the impact of weapons effects restrictions, safety concerns, terrain limitations, time allocation, and help in overcoming the adverse effects of crew turbulence and scarce resources. This will allow units to raise or maintain their level of training and ensure more efficient use of their training assets when they train in the field.

The CCTT training goal is to practice and achieve a level of proficiency on collective tasks and subtasks prior to field training. The CCTT will also be used as a sustainment trainer in conjunction with periods of field training and as an advanced trainer that can provide conditions for task training that are more intense than available during field training conditions. The CCTT system will be fielded initially in platoon and company team sets. Some of the sets may be expanded to battalion task force size under preplanned product improvements (P3I) and additional sets of battalion task force size may be procured.

2.4.2 CCTT M&S Category Identification.

DA Pam 5-11 identifies numerous M&S categories. The CCTT conforms to the M&S "Form" category because it is both a physical and procedural model. As a physical model it represents real world objects as they relate to the simulator. As a procedural model it expresses dynamic relationships in terms of mathematical or logical processes. The CCTT can also be classed by "Purpose" since it is an educational training simulation environment that will replicate the daily operational requirements needed in the decision making process of individuals, crew members, commanders and their staffs.

Figure 3.0-1. CLOSE COMBAT TACTICAL TRAINER ACCREDITATION PROCESS



3.0 ACCREDITATION PROCESS. (Figure 3.0-1)

- The Accreditation Process begins with the current version of the CCTT. The CCTT proceeds to a thorough review by the CCTT Review Team (3.2) If the Review Team, led by TSM CATT, recommends accreditation, the recommendation is forwarded to the approving authority, TRADOC DCST. Upon TRADOC approval of the Accreditation Report, the CCTT receives accreditation.
- If the CCTT Review Team recommends against accreditation, the CCTT can either be modified until it passes their review, or the process can be aborted.

3.1 Establish acceptability criteria.

“The first task for the accrediting authority is to officially establish the acceptability criteria to fit the use of the model. The principal focus of this effort is to establish those essential elements which the model must be capable of addressing to prove useful in solving the problem at hand.” (DA Pam 5-11) The acceptability criteria for CCTT were primarily derived from the CCTT TDR. Training considerations and Distributive

Interactive Simulation (DIS) Standards and Protocols also influenced these criteria. These criteria are provided below:

1. Data Values & Sources. That all required data values are well defined and data sources for obtaining required data have been identified and used.
2. Algorithms, Terrain, & Environment. That the algorithms, terrain, and environment representations are functionally adequate to support the required use of the system.
3. BLUFOR & OPFOR. That the levels of BLUFOR and OPFOR force structure and integration have the required fidelity and resolution.
4. Simulated Entities. That the clarity, fidelity, complexity, and level of detail of the simulated entities are sufficient for their intended use.
5. PDU Exchange. That the CCTT will exchange Protocol Data Units (PDU) with the required timing, accuracy, and fidelity (1) between mobile CCTT sites and (2) between mobile CCTT sites and fixed CCTT sites.
6. Data Items Exchange. That the data items being exchanged within CCTT are accurate and DIS interoperable across components.
7. System Support. That the system documentation and contractor logistics support are adequate.
8. Configuration Management. That configuration management is in effect and responsive to anticipated needs of the users.
9. Training Support. That CCTT provides adequate Comprehensive Training Support Packages to train core MTP tasks at the platoon and company/team/troop level.
10. Negative Training. That the use of CCTT does not internalize actions, cognitive processes, or procedures in the performance of tasks that must be untrained when executed in the live environment.
11. Training Uses. That CCTT provides an adequate training environment to train core level MTP tasks at the platoon and company/team/troop level.

3.2 Conduct CCTT Review.

The CCTT Review is the foundation upon which the accreditation decision is made. This review process is conducted by a specified Review Team to determine the degree to which the CCTT meets the previously established acceptability criteria.

3.2.1 Establish Review Team.

Although no specific team content is specified by regulation, it has been proven useful in other accreditation efforts for a team of personnel to assist the proponent in his review. For accreditation of the CCTT, the following team members will participate on the Review Team:

Core Team Members:

- TRADOC Representatives
 - Team Leader: TSM CATT
 - U. S. Army Armor Center Representative(s) (USAARMC)
 - U. S. Army Infantry School Representative(s) (USAIS)
- HQDA Representative(s) (DAMO-TR and DUSA (OR))

Support Team Members:

- IOTE Unit Representative(s) (TBD)
- U.S. Army Test and Experimentation Command Representative(s) (TEXCOM)
- Verification & Validation Representative(s)
 - PM CATT Representative(s)
 - U. S. Army Evaluation Analysis Center (EAC)
 - U. S. Army Material Systems Analysis Activity (AMSAA)
 - U. S. Army Communications-Electronics Command (CECOM)
 - U. S. Army TRADOC Analysis Center-White Sands (TRAC-WSMR)
 - U.S. Army TRADOC Threat Support Directorate (TTSD)

Specific team member responsibilities are addressed in paragraphs 4.0 and 6.0.

3.2.2 Conduct Review.

The CCTT Review is undertaken to determine the degree to which the CCTT Acceptability Criteria have been met. The following are key elements in the review:

- Audit trail for the development and use of the model
- TDR Essential Characteristics documentation
- V&V documentation
- How well CCTT has been accepted by soldiers and trainers
- System level task based assessment of training uses
- Configuration management procedures & records
- Model assumptions

The methodology for conducting this review is provided in paragraph 4.0.

3.3 Recommend Accreditation of CCTT.

If the CCTT satisfactorily passes the CCTT Review and or is above the level of risk of not met criteria, then the model should be accredited by the proponent.

3.4 Modify CCTT.

If the level of risk for any criterion or criteria has not been met or if the CCTT is determined to provide an inadequate training environment for task based training, then the model may be modified in an attempt to satisfy the criteria and/or the prerequisites for an adequate training environment.

3.5 Recommend Not Accrediting CCTT.

If the resources required to modify CCTT are not available or worth the effort, the accreditation process will recommend that CCTT not be accredited.

3.6 Prepare Accreditation Report.

“The report must be written in a manner that will allow it to be read and understood as a stand-alone document.” (DA Pam 5-11) The report of accreditation of the model should contain the following elements:

- Executive Summary
 - Overall issues and findings of the accreditation process
 - Highlights of the model strengths and limitations in terms of the intended model use
 - Identification of agencies/personnel responsible for performing the accreditation
 - Recommendations
- Acceptability criteria
 - Description of each criterion
 - Ratings of each criterion and brief reason for rating
 - Summary of importance of each criterion

4.0 CCTT REVIEW METHODOLOGY.

The CCTT Accreditation Review will be conducted in two phases (see Figure 4.0-1).

4.1 Phase I, Collect and Review Information.

First, the Accreditation Review Team will collect and review information from the Verification and Validation (V&V) of CCTT, the LUT, the Initial Operational Test and Evaluation (IOTE) of CCTT, and other development, test, and use documentation.

Structure for this review will be broken into five categories, generally following those of paragraph 5 of the TDR (Essential Characteristics).

- System Requirements
- Vehicle Simulator and Dismounted Modules
- Simulated Terrain and Environment
- C&C, CS, and CSS Simulator Support
- Operations Monitor and AAR

Information sources are depicted in paragraph 5.0 and Figure 5.0-2. Information will be collected, reviewed, and processed throughout the Review period. Core team members will meet during this phase to assimilate information and ensure a common understanding of the CCTT system. Support team members will attend these sessions on an as needed basis.

4.2 Phase II, Assess CCTT Acceptability Criteria.

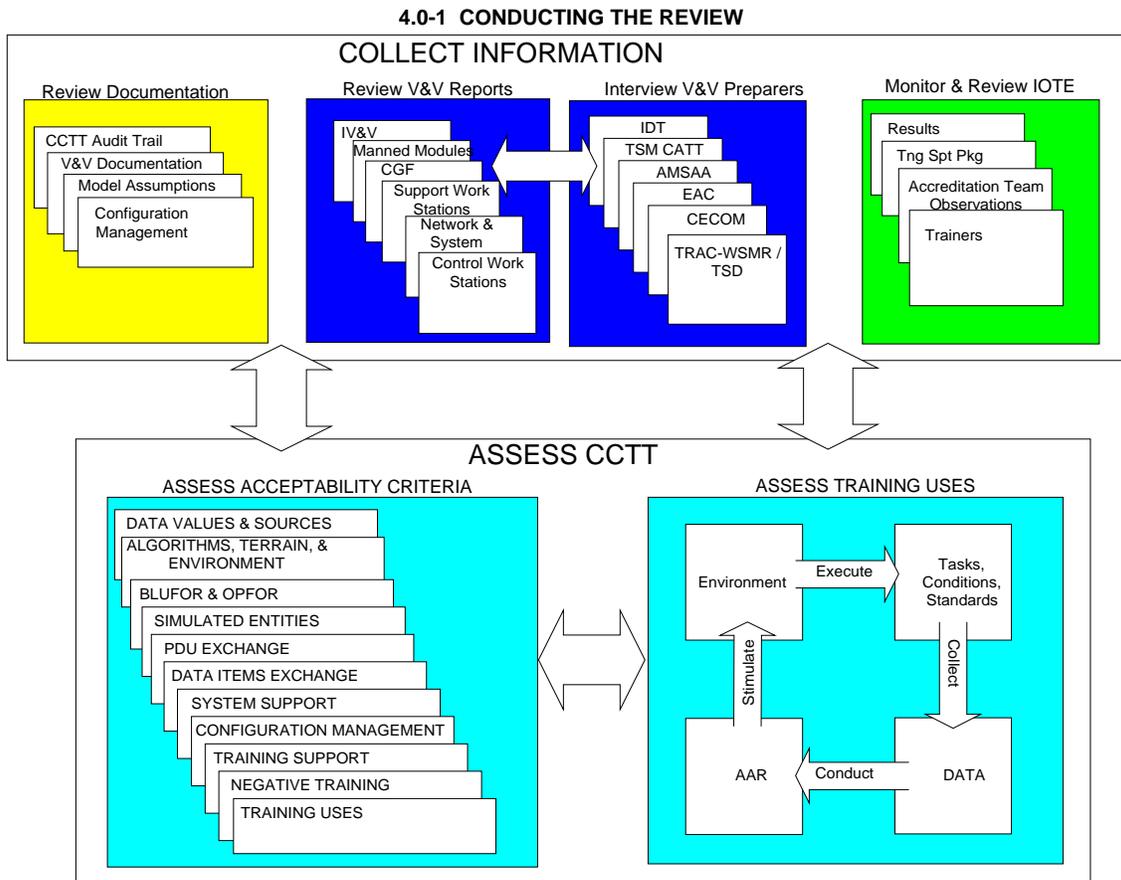
Figure 4 .0-1 below, describes the process to assess the Acceptability Criteria.

4.2.1 Training Use Analysis. As part of the Acceptability Criteria Assessment, analysts will extend the development of Task Performance Support Codes (TPSC) with the objective of determining how well CCTT provides the cues and responses necessary to support the training of core MTP tasks and the contribution (relative value) of CCTT in training those specific Tasks.

This Training Use Analysis will provide the basis for assessing the Training Use element of the Acceptability Criteria. Core tasks are those few (6-8) MTP tasks which are critical to maintain readiness. The Infantry and Armor Schools will identify core tasks from the MTPs listed below.

- ARTEP 17-237-10 MTP, Tank Platoon
- ARTEP 7-7J MTP, Mechanized Infantry Platoon/Squad
- ARTEP 71-1 MTP, Tank/Mechanized Infantry Team
- ARTEP 17-57-10 MTP, Scout Platoon
- ARTEP 17-487-30 MTP, Regimental Armored Cavalry Troop

The method for assessing training uses is presented in Annex B.



4.2.2 Assess Acceptability Criteria.

Core members of the CCTT Review Team will meet for 2-3 days every other week to make the acceptability assessment.

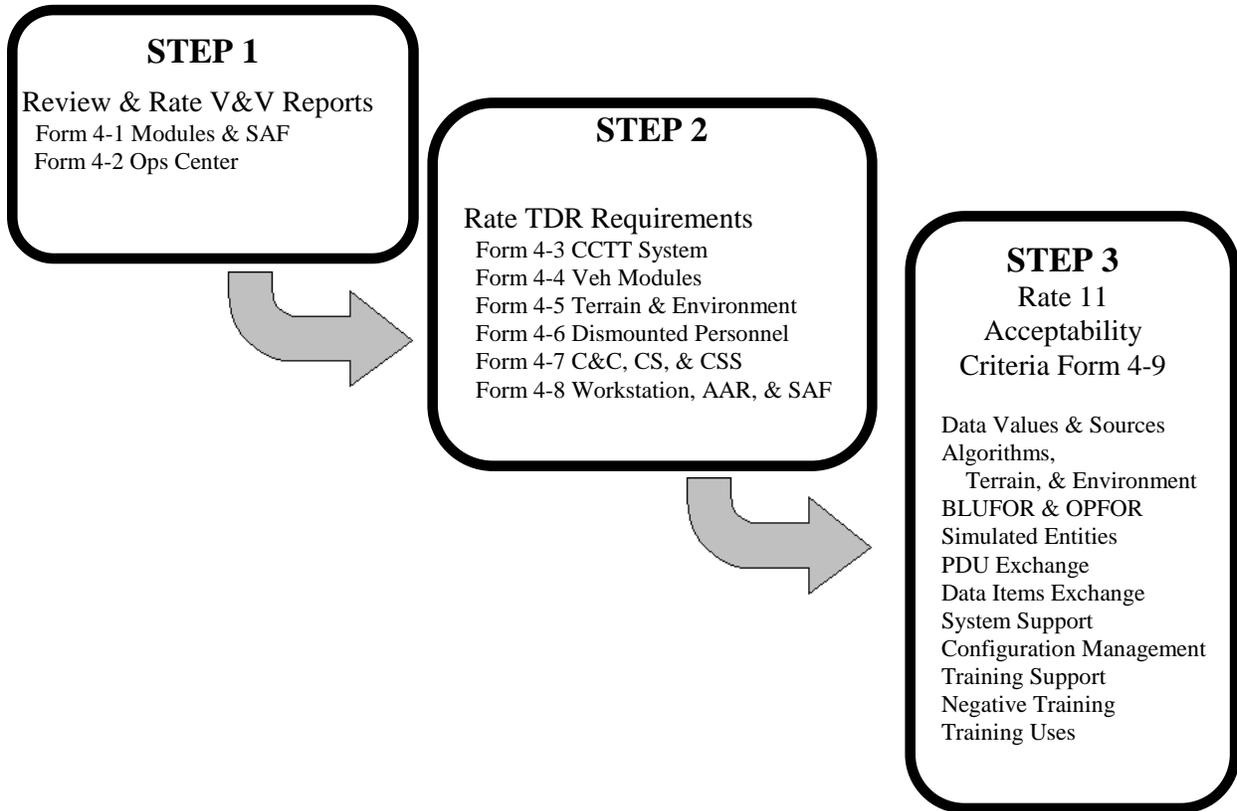
The acceptability criteria are necessary and sufficient conditions for establishing the viability of CCTT as a training model and simulation.

Prior to rating the Acceptability Criteria, the CCTT Review Team will first review and rate elements from the V & V Reports. Next, the Team will ensure all requirements from the TDR are addressed by rating each of the major requirements. With the V & V ratings, the TDR ratings, and the Training Use Assessment as background sources, the Team will make its final subjective assessment and ratings for each of the eleven Acceptability Criteria.

If the model meets or exceeds the acceptability criteria, then CCTT will be deemed suitable as a training simulation. If the criteria are not met, the Review Team will assess the risk involved and determine if there is an acceptable level of risk for each failed criterion. If the criteria are not met and risk is unacceptable, the Review Team will recommend that CCTT not be accredited in its current configuration. In either case, the

Review Team will report any CCTT shortcomings noted during the criteria assessment process.

Actions of Core Team Members



Step One. (V & V Review)

- Review the V & V documentation and rate the Manned Modules, Dismounted Infantry, and SAF using **FORM 4-1** in Annex A.
- Review the V & V documentation and rate each Operations Center Workstation using **FORM 4-2** in Annex A.
- Ratings will be subjectively assessed as:
 - A--Acceptable
 - AR--Acceptable with risk
 - NA--Not Acceptable

Step Two. (LUT, IOTE, Documentation, and personal observations)

- Rate the CCTT as a system using **FORM 4-3** in Annex A.
- Rate the Vehicle Simulators using **FORM 4-4** in Annex A.
- Rate the Terrain and Environment using **FORM 4-5** in Annex A.
- Rate the Dismounted Personnel using **FORM 4-6** in Annex A.
- Rate the C&C, CS, and CSS functions and modules using **FORM 4-7** in Annex A.
- Rate the Exercise Workstations, AAR, and SAFOR using **FORM 4-8** in Annex A
- Ratings will be subjectively assessed as:

A--Acceptable
AR--Acceptable with risk
NA--Not Acceptable

Step 3 (Acceptability Criteria)

- Rate each of the eleven Acceptability Criteria using **FORM 4-9** in Annex A
- Ratings will be subjectively assessed as:
 - A--Acceptable
 - AR--Acceptable with risk
 - NA--Not Acceptable

5.0 INFORMATION SOURCES.

One of the key factors to a successful accreditation program is the information sources that are provided through documentation, Subject Matter Experts (SME), Limited User Test, Initial Operational Test and Evaluation, the CCTT Training Support Package, CCTT verification and validation efforts, and Army leaders/trainers. These sources will provide necessary and sufficient information for assessing acceptability.

5.1 CCTT Documentation.

The government and contractor documents and sources available to support the accreditation effort are listed in Annex C.

5.2 CCTT Developers.

The developers of this simulation are Program Manager CATT and the contractor Integrated Development Team (IDT). The IDT consists of: Lockheed-Martin Corporation, Evans and Southerland, Pulau, Science Applications International Corporation (SAIC), ECC and Dynamics Research Corporation.

5.3 Subject Matter Experts (SME)

The Subject Matter Experts (SME) are listed in Annex D.

5.4 Verification and Validation.

The complexities of CCTT mandated that the V&V efforts be accomplished by module and subsystem (see paragraph 2.2). Figure 5.0-1 relates the organizations that are conducting the verification and validation of the modules and subsystems. These organizations will be providing V&V reports as reflected below. Details of each V&V effort are reflected in the VV&A Master Plan and the individual plans developed by each organization. Both the V&V Reports and individuals from the organizations conducting the V&V will be used as information sources in the accreditation process.

Figure 5.0-1 Verification & Validation Information

V & V FUNCTIONS & REPORTS						
AGENCY	IV&V (Software)	Manned Module & DI	CGF/SAF	OC Workstations	Network & System	Control Workstations & AAR
ITD Integrated Dev Tm	X	X	X	X	X	X
TSM CATT		X	X			
AMSAA		X	X	X		
EAC				X	X	X
TRAC- WSMR/TSD	X		X			
CECOM Nations	X					

5.4 Information Sources Matrix.

Figure 5.0-2 relates the sources of information that are expected to be used in assessing the areas in the accreditation.

CCTT ACCREDITATION PLAN

Figure 5.0-2 INFORMATION SOURCES MATRIX

INFORMATION SOURCES		ACCEPTABILITY CRITERIA										
		Data Values	Algorithms Terrain, & Environment	BLUEFOR & OPFOR	Simulated Entities	PDU Exchange	Data Items Exchange	System Support	Configuration Management	Training Support	Negative Training	Training Uses
VERIFICATION & VALIDATION REPORTS	Software IVV	X	X	X	X	X	X		X			
	Form, Fit, & Function			X	X						X	
	Target Acquisition	X	X	X	X						X	
	Delivery Accuracy	X	X	X	X						X	
	Rate of Aimed Fire	X	X	X	X						X	
	Weapons Characteristics	X	X	X	X						X	
	Vulnerability	X	X	X	X						X	
	Mobility	X	X	X	X						X	
	Combat Damage & Repair	X	X	X	X						X	
	Stochastic Reliability	X	X	X	X						X	
	Deterministic Reliability	X	X	X	X						X	
	Terrain & Environment		X								X	
	Ops Center Workstations	X	X	X	X		X				X	
	SAF/CGF Workstations	X	X	X	X		X				X	
Network & System					X	X		X				
LUT & IOTE	Test Results		X	X	X					X	X	X
	Training Support Packages							X		X	X	
	Trainer Observations		X	X	X						X	
	Trainee Observations		X	X	X						X	
TASK ANALYSIS	Task Uses Assessment											X
OTHER SOURCES	Accreditation Trn Observations		X	X	X			X		X	X	
	Government Documentation	X	X	X	X	X	X	X	X			
	Contractor Documentation	X	X	X	X	X	X	X	X			

6.0 ACCREDITATION RESPONSIBILITIES.

6.1 Overview.

The roles and responsibilities for the TRADOC Deputy Chief of Staff for Training (Application Sponsor), TSM CATT (V&V Proponent), and PM CATT (M&S Sponsor) for the full VV&A process are shown in Figure 6.0-1. TSM CATT will lead the accreditation team. The remaining members will participate in the M&S Review on a part time basis as determined by the TSM. TSM CATT, acting as agent for TRADOC DCST, will make the final accreditation recommendation.

6.2 U.S. Army Training and Doctrine Command (TRADOC) System Manager (TSM).

The TSM CATT is the user's representative. They are also the Accreditation Agent and will be the CCTT VV&A single point of contact to TRADOC. The U.S. Army Armor Center (USAARMC) and the U.S. Army Infantry School (USAIS) are the Proponent/User Representatives. In coordination with the Major Commands (MACOMs), they prepare the Training Device Requirements Document, monitor development, provide Subject Matter Experts (SMEs), develop requirements for testing of manpower, personnel, logistics, and maintenance implications, establish the user position on acceptability of safety and health hazards, develop requirements for user testing, and provide guidance to STRICOM.

6.3 HQ Department of the Army Representatives. DAMO-TR and DUSA-OR.

6.4 IOTE Unit Representatives (TBP).

6.5 Verification and Validation Representatives.

6.5.1 U.S. Army Simulation, Training, and Instrumentation Command (STRICOM) Program Manager Combined Arms Tactical Trainer (PM CATT).

The PM CATT is responsible for the program management, system engineering and integration, and overall program element coordination for the CCTT. PM CATT will support the test program by reviewing and approving all contractor-prepared test related documents and by assisting the contractor in the planning, conducting, and reporting of test results. Test related documents will be coordinated with U.S. Army Evaluation Analysis Center (EAC) and other agencies as appropriate. Reports from each agency will be consolidated at PM CATT for submission to the TSM CATT.

6.5.2 U.S. Army Evaluation Analysis Center (EAC).

US Army EAC will assist in preparation for, conduct of, and monitoring of those tests necessary to accomplish the mission of providing an independent assessment of the system and providing a safety release for the system. EAC will review contractor test plans and reports to determine the adequacy of data requirements and witness contractor conducted tests as required to support evaluation of critical technical issues. All available sources of valid data will be used to prepare an independent evaluation report. US Army EAC will be the independent assessor and technical tester, with the U.S. Army Aberdeen Test Center (USAATC) as the designated test center.

6.5.3 U.S. Army Materiel Systems Analysis Activity (AMSAA).

AMSAA is the designated independent Deputy Chief of Staff for Logistics (DCSLOG) for CCTT. AMSAA will conduct verification of algorithms and data outlined in their V&V plans. This will include form, fit and function, data checks, target acquisitions, target tracking, delivery accuracy, etc.

6.5.4 Communications-Electronics Command (CECOM) Software Engineering Directorate-STRICOM Support Office (SED-SSO) .

Para 6.5.4 must be rewritten. MAD does not have the background to rewrite. Jeff or Bob White?

The CECOM SED-SSO is the principal technical advisor to STRICOM and will fully support the CCTT acquisition. Additionally, CECOM SED-SSO is the STRICOM Life Cycle Software Engineering Center (LCSEC) agent for CCTT. The LCSEC will provide management and technical support to STRICOM during the development/testing and Post Deployment Software Support (PDSS) of the CCTT prototype. The CECOM SED-SSO is also the designated agency to conduct the CCTT Independent Validation and Verification (IV&V) program during the development/test phase. The CECOM SED-SSO will conduct the IV&V program in accordance with the CCTT IV&V Plan.

6.5.5 TRADOC Analysis Command-White Sands (TRAC-WSMR).

TRAC-WSMR will provide the implementation plans for conducting V&V of Semi-automated Forces/Computer Generated Forces (SAF/CGF) behaviors and coordinate reporting of overall behavior shortfalls and V&V efforts as outlined in this plan. The TRADOC Threat Support Directorate (TTSD) is responsible for providing subject matter experts to verify threat vehicle and unit behaviors to TRAC-WSMR.

Figure 6.0-1 VV&A Responsibilities.

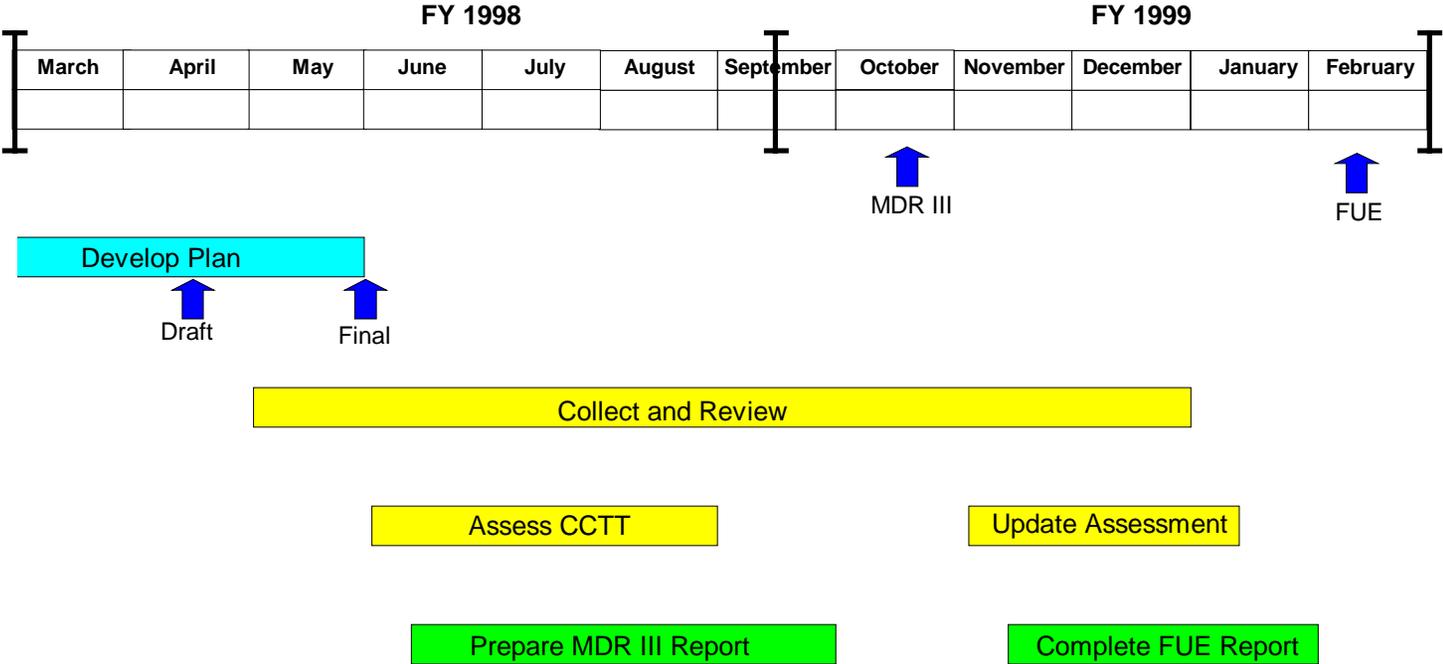
Activity	Organization		
	M&S Developer (PM CATT)	V&V Proponent (TSM CATT)	Application Sponsor (DCST)
Verification	Performs	Assists	Responsible
Validation	Assists	Performs	Responsible
Accreditation	Assists	Performs	Responsible
V&V Plan	Assists	Responsible	Uses
V&V Report	Assists	Responsible	Uses
Accreditation Plan	Assists	Performs	Responsible
Accreditation Report	Assists	Performs	Responsible

7.0 SCHEDULES, MILESTONES, AND RESOURCES.

7.1 Schedules. The schedule of activities is provided in Figure 7.0-1.

CCTT ACCREDITATION PLAN

Figure 7.0-1 ACCREDITATION



7.2 Milestones.

<u>PRODUCT</u>	<u>DATE</u>
CCTT Accreditation Plan Complete	1 June 1998
CCTT Accreditation Report for MDR III	15 September 1998
CCTT Accreditation Report for FUE	12 February 1999

7.3 Resources.

7.3.1 Form CCTT Review Team. Fund the Core members for 2-3 days per month during Phase I and 2 days every other week during the Phase II assessment period.

7.3.2 Collect and Review Information. Location to be determined by TSM CATT. Conference room, overhead view projector, chalk boards or dry erase boards.

7.3.3 Interview V&V Report Authors. As Needed. Conference room, overhead view projector, chalk boards or dry erase boards.

7.3.4 Assess CCTT Acceptability Criteria. Location to be determined by TSM CATT. Conference room, overhead view projector, chalk boards or dry erase boards.

7.3.5 Write CCTT Accreditation Report. Fort Leavenworth, KS.

ANNEX A
RATING FORMS

FORM 4-1 Rating of Manned Modules, DI and SAF							
A= Acceptable		AR= Acceptable with risk		NA= Not Acceptable			
Primary Source: V & V Documentation							
	M1A1/2	M2/3A2	FISTV	M113A3	HMMW V	DIM	SAF
Form, Fit, & Function							
* Mod Compartment Tolerances							
* Dimensional Characteristics							
* Component Placement							
* Sounds							
* Communications							
* Hardware Functionality							
Target Acquisition							
* Probability of Detection							
* Probability of Recognition							
* Probability of Identification							
* Acquire Parameters Comparison							
* DISSTAF Comparison							
* Average Detection Time							
Delivery Accuracy							
* Probability of Hit vs Range							
* Flight Trajectory & Time of Flight							
* Total Dispersion vs Aimpoint							
Rate of Aimed Fire							
* First Round Firing Times							
* Subsequent Round Firing Times							
* Load Time							
Weapons Characteristics							
* Max/Min Range							
* Max Effective Range							
* Ammo Storage & Expenditure							
* MG Sustained Rate of Fire							
* MF Cyclic Rate of Fire							

Form 4-1 (Con't)							
	M1A1/2	M2A2/3	FISTV	M113A3	HMMWV	DI	SAF
Vulnerability							
* P(Kill/Hit) - Direct Fire							
* P(Kill/Hit) - Indirect Fire							
* P(Kill/Hit) Mines							
* P(KIA, P(WIA) for Personnel							
Mobility							
* Acceleration							
* Max Cross Country Speed							
* Vehicle Braking							
* Fuel Consumption							
Combat Damage & Repair							
* Average Repair Time							
* Level of Repair							
* Components Damaged							
* Damage Symptoms							
Stochastic Reliability							
* Mean Usage between Failures							
* Average Repair Time							
* Performance Degradation							
Deterministic Reliability							
* Obstacle Negotiation							
* Steering/Turning							
* Firepower-related Reliability							
* Performance Degradation							

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-1.

FORM 4-2 Rating of Operations Center (OC) Workstations							
A= Acceptable AR= Acceptable with risk NA= Not Acceptable							
Primary Source: V & V Documentation							
	CTCP	UMCP	CES	FABTOC	FSE	FDC	TACP
Mandatory Procedure Transparency							
* Reporting							
Vehicle Movement Parameters							
* Max Speed							
* Max Grade (Slope)							
* Fuel Capacity							
* Cruising Range							
* Non-idle Fuel Consumption							
* Gross Vehicle Weight							
* Maximum Cargo Weight							
Vulnerability							
* Mines							
* Direct Fire							
* Indirect Fire							
Simulated Reliability and Maintainability							
* Reliability							
* Maintainability							
* Simulated resupply Transfer							
* Ammunition							
* Fuel							
Simulated C3							
* Simulated SINCGARS							
* Digital Communications							
* Command & Control							
Simulated Battle Damage Assessment (BDA), Repairs, and Recovery							
* BDA							
* Repair							
* Recovery							
Simulated Combat Engineering							
* Mobility							
* Countermobility							
* Survivability							
Form 4.2 (Con't)							

CCTT ACCREDITATION PLAN

	CTCP	UMCP	CES	FABTOC	FSE	FDC	TACP
Ballistics							
* SP Howitzers (155)							
* Mortars (120)							
Fire Support							
* Close Air Support (CAS)							
* AFATDS							
* Artillery							
* Mortars							

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-2.

FORM 4-3 Rating of CCTT as a System	
A= Acceptable AR= Acceptable with risk NA= Not Acceptable	
From TDR (para 5,a)	Rating
a. System Requirements	
(1) Provide interactive networking of vehicle simulators, C3, and workstations that represent vehicles and support functions of: <ul style="list-style-type: none"> • Bn • Co • Plt • CS and CSS elements 	<ul style="list-style-type: none"> • • • •
(2) Operable by military personnel normally found in unit being trained.	
(3) Allow initialization, reinitialization, reconstitution, and activation of vehicles into the simulation—individually and in units.	
(4) Designed so that military personnel (training audience) can initialize and operate the system within three attempts after training.	
(5) Allow for up to five separate unit operations simultaneously.	
(6) Contain Built in Test Equipment (BITE).	
(7) Modular in design and allow for product improvements.	
i. Mobile and fixed platoon sites	
Each workstation group below can be operated by one individual:	
(1) CSS, Logistics, and Maintenance terminals	
(2) Indirect Fire Support, CAS, and mortar	
(3) AAR and next higher HQ	
(4) Engineer	
(5) SAFOR	
j. Logistics and Readiness	
Meet RAM requirements for peacetime and wartime.	

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-3.

FORM 4-4 Rating of CCTT Vehicle Simulators	
A= Acceptable AR= Acceptable with risk NA= Not Acceptable	
From TDR (para 5,b)	Rating
b. Vehicle Simulator Modules	
(1) Soldiers must be able to identify the following simulated vehicles by bumper number or vehicle marking system: M1A1, M1A2, M2A2, M3A2, M113A3, and M981 (FIST-V)	
(2) Must represent appearance and functional aspects of crew compartments they simulate.	
(3) Must represent cues associated with actual vehicles. <ul style="list-style-type: none"> • aural • visual • tactile sensations • Speeds and maneuverability must be consistent with profile of simulated terrain. 	<ul style="list-style-type: none"> • • • •
(4) Weapon systems must exhibit characteristics of actual weapons. Primary and secondary fire control systems must be replicated.	
(5) Must represent correct vehicle and weapon operation, movement, and orientation.	
(6) Must have vision blocks, sighting systems, and sensors that replicate those on actual vehicles. All objects and terrain must appear in proper size and resolution.	
(7) Must replicate SINGARS (to include terrain and distance impacts) and allow use of CVC helmet.	
(8) Must provide deterministic and stochastic failures as well as battle damage. Must replicate realistic consumption rates <ul style="list-style-type: none"> • Fuel • Ammunition Must respond to simulated resupply functions <ul style="list-style-type: none"> • Rearm • Refuel 	<ul style="list-style-type: none"> • • • •
(9) Provide inside dimension to allow all crew members to operate at any level MOPP.	
(10) Provide a compass capability depicting long axis of vehicle.	
(11) Provide a vehicle with operational characteristics of the HMMWV.	
(12) Provide a panoramic FOV representing open or popped hatch.	

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-4.

FORM 4-5 Rating of Terrain and Environment	
A= Acceptable AR= Acceptable with risk NA= Not Acceptable	
From TDR (para 5,c)	Rating
c. Provide simulated terrain and environment for conduct of military operations.	
(1) Provide terrain area of 50 by 75 km with active radius of 3500 m around each simulated vehicle.	
(2) Simulate temperate and desert terrain. Display topographic features to allow 95% of users to recognize them.	
(3) Support use of terrain for cover and concealment.	
(4) Provide UTM map representations of simulated terrain at 1:50,000.	
(5) Provide means to modify and add to existing terrain data bases.	
(6) Provide day and night visibility and effects of obscurants.	

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-5.

FORM 4-6 Rating of Dismounted Personnel	
A= Acceptable AR= Acceptable with risk NA= Not Acceptable	
From TDR (para 5,d)	Rating
d. Dismounted Personnel (Infantry and Scouts)	
(1) Simulate dismounted soldiers to perform the following: <ul style="list-style-type: none"> • reconnaissance • scan 360 degrees • engage targets with weapons • move in formations • interact and communicate with other soldiers • dismount and remount their vehicles. 	<ul style="list-style-type: none"> • • • • • •
(2) Provide capability to control the following: <ul style="list-style-type: none"> • position • rate of movement • rates of fire • targets they engage View as seen by dismounted soldiers must be same as if in the position of the dismounted soldier. Must include following FOV: <ul style="list-style-type: none"> • normal • binocular • night vision goggle 	<ul style="list-style-type: none"> • • • • • • •
(3) Mounted crews must be able to identify dismounted soldiers and dismounted soldiers must be able to identify their vehicles.	
(4) Must portray dismounted soldiers as teams armed with following weapons: <ul style="list-style-type: none"> • M16A2 • M60 MG • M249 SAW or AAWS-M • AT4 MPIM • M203 Grenade Launcher 	<ul style="list-style-type: none"> • • • • •
(5) Provide capability to replenish ammunition from a vehicle.	

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-6.

FORM 4-7 Rating of C&C, CS, and CSS	
A= Acceptable AR= Acceptable with risk NA= Not Acceptable	
From TDR (para 5,e)	Rating
e. C&C, Combat Support, and Combat Service Support	
(1) Must simulate TOC by mock-up of two M577A2 vehicles.	
(2) Must simulate CTCP by mock-up of one M577A2 vehicle.	
(3) Provide capability to emplace following support vehicles so they are visible, vulnerable, and function normally: <ul style="list-style-type: none"> • HEMTT • M577A • M113A3 • M1064 mortar • M109A3 • M728 CEV • M9, HAB • HMMWV • M88A2 • LMTV • MTV • C2V • M270 MLRS 	<ul style="list-style-type: none"> •
(4) Provide capability to control vehicles and functions.	
(5) Allow prepositioning and dispensing at designated locations.	
(6) Simulate and control a UMCP represented as a HMMWV.	
(7) Provide for personnel support functions with S1/4 in CTCP.	
(8) Provide for interaction of C&C, and support functions of higher HQ.	
(9) Provide indirect fire support as follows: <ul style="list-style-type: none"> • FSE in M577A2 collocated with TOC. • FABTOC to control 155 Bn and MLRS Battery • FDC for mortar platoon in M577A2 • Weapons effects must be visible and audible to soldiers 	
(10) Simulate the TACP with HMMWV. Must be able to control A10, and F16 aircraft.	
(11) Provide engineer work station collocated with TOC. System must simulate normal engineer functions and be governed by appropriate time constraints.	

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-7.

FORM 4-8 Rating of Exercise Workstations, AAR System, and SAFOR	
A= Acceptable AR= Acceptable with risk NA= Not Acceptable	
From TDR (para 5,f&g)	Rating
f. Provide Operations Monitor and AAR capabilities	
(1) Provide means to display, monitor, record, and play back simulation exercise.	
(2) Provide time stamps to identify significant points of an exercise.	
(3) Provide display and playback of UTM projection view of the entire operation.	
(4) Provide for conduct of up to five independent/simultaneous AARs.	
(5) Provide display and playback of horizontal view up to 300 m above the terrain data base elevation.	
(6) Provide capability to freeze or stop an exercise for a “during action” review and restart exercise at that point.	
g. Provide semi-automated forces (SAFOR) to perform tasks and functions with minimum human involvement.	
(1) Replicate enemy and friendly battalion and subordinate size units. Forces down to platoon level will be controlled by trained personnel and will be indistinguishable from live forces.	
(2) Must be capable of offensive or defensive roles consistent with allied or threat doctrine and tactics.	
(3) Must interact under control of manned command simulators and move as simulated adjacent elements.	
(4) Provide SAFOR workstation to control movements, formations, fire support, and weapons employment.	
(5) Provide for conduct of fixed and rotary wing aviation operations.	
(6) Provide capability to emplace vehicles (OPFOR and BLUFOR) in selected positions and execute movement sequences.	

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-8.

FORM 4-9 Rating of Acceptability Criteria		
A= Acceptable AR= Acceptable with risk NA= Not Acceptable		
Acceptability Criteria	Sources	Rating
1. All required data values are well defined and data sources for obtaining required data have been identified and used. (Data Values & Sources)	Form 4-1 Form 4-2 Form 4-4 Form 4-6 V & V	
2. Algorithms, terrain, and environment representations are functionally adequate to support the required use of the system. (Algorithms, Terrain, & Environment)	Form 4-5 LUT & IOTE V & V	
3. Levels of BLUFOR and OPFOR force structure and integration have the required fidelity and resolution. (BLUFOR & OPFOR)	Form 4-1 Form 4-2 Form 4-4 Form 4-6 LUT & IOTE V & V	
4. Clarity, fidelity, complexity, and level of detail of the simulated entities are sufficient for their intended use. (Simulated Entities)	Form 4-1 Form 4-4 Form 4-6 Form 4-7 LUT & IOTE V & V	
5. CCTT will exchange PDUs with the required timing, accuracy, and fidelity (1) between mobile CCTT sites and (2) between mobile CCTT sites and fixed CCTT sites. (PDU Exchange)	Form 4-4 Form 4-6 Form 4-7 LUT & IOTE V & V	
6. Data items being exchanged are accurate and DIS interoperable across components. (Data Items Exchange)	Form 4-4 Form 4-6 LUT & IOTE V & V	
7. System documentation and contractor logistics support. are adequate. (System Support)	Form 4-8 LUT & IOTE Contractor Doc Govt Doc	
8. Configuration management is in effect and responsive to anticipated needs of the users. (Configuration Management)	Govt Doc	
9. CCTT provides adequate Comprehensive Training Support Packages to train core MTP tasks at the platoon and company/team/troop level. (Training Support)	LUT & IOTE	
10. CCTT does not internalize actions, cognitive processes, or procedures in the performance of tasks that must be untrained when executed in the live environment. (Negative Training)	Form 4-1 thru Form 4-8 LUT & IOTE	
11. CCTT provides adequate training environment to train core level MTP tasks at the platoon and company/team/troop level. (Tng Uses)	Training Use Assessment	

Ratings of **AR** (Acceptable with risk) and **NA** (Not Acceptable) must be explained in detail by an attachment to Form 4-9.

ANNEX B

METHOD FOR ASSESSING TRAINING USES

1.1 Premise.

In order to train MTP tasks, tasks must be executed in an environment which provides appropriate stimuli causing responses by the unit personnel undergoing training. These responses must be assessed by the trainer. In turn, the trainer must provide feedback to the unit personnel undergoing training so that they discover for themselves what happened, why it happened, and how it can be done better.

To objectively assess a training environment, such as CCTT, two factors need to be considered: (1) the environment in which tasks are *executed* and (2) the mechanisms provided in the environment for *feedback*.

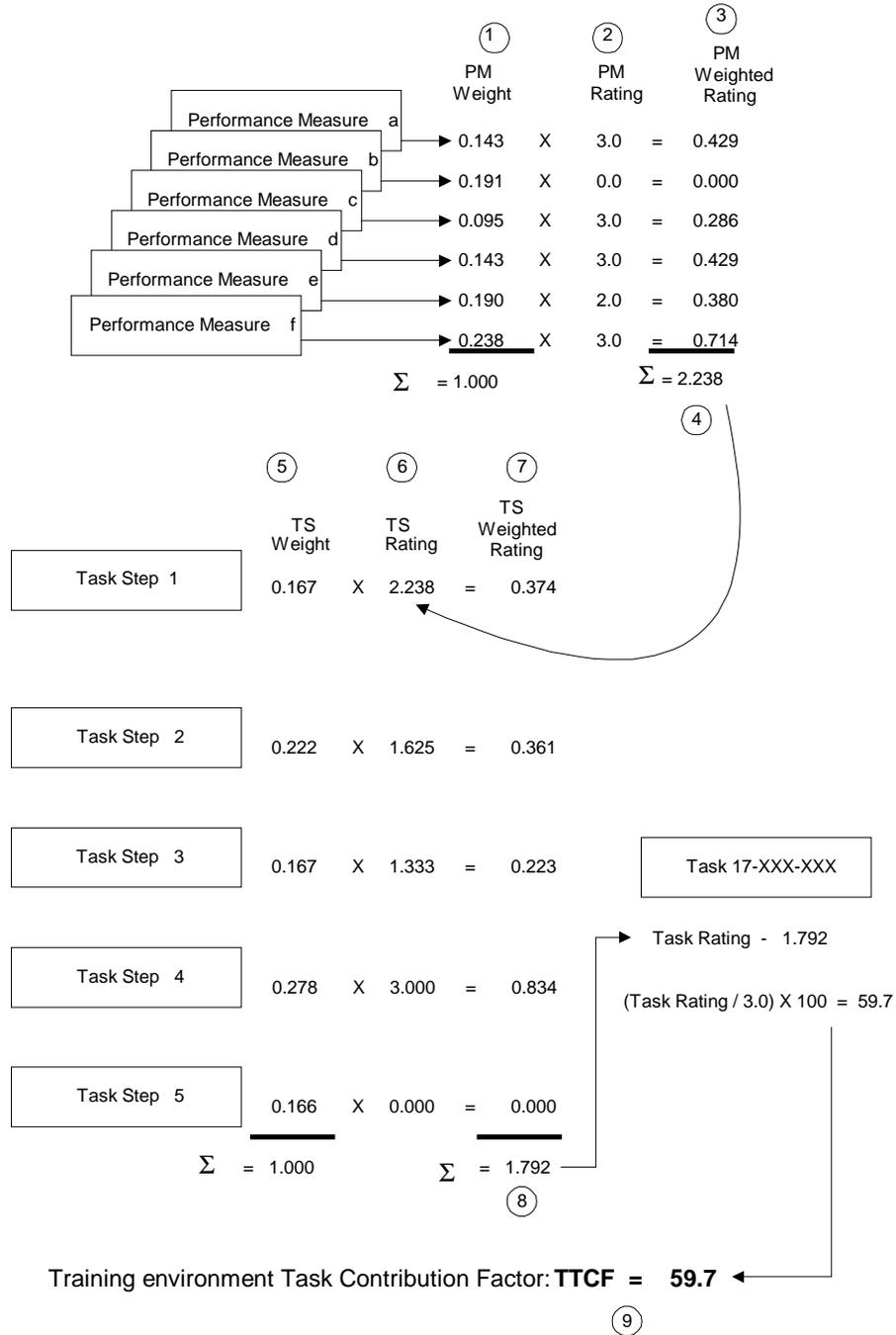
- Evaluation of the adequacy of the environment for *execution* will consider 1) whether sufficient cues are present, and 2) whether these cues respond appropriately to the students inputs and scenario events.
- Evaluation of the adequacy of the environment for *feedback* will consider whether there are sufficient data, information, and facilities for assessing and diagnosing performance independent of the trainer and trainee.

Thus, the assessment of training uses of CCTT will focus on 1) the environment for *execution* of MTP tasks, and 2) the environment for *feedback* on the unit personnel responses. These two assessments will be combined to provide factors indicating the contribution CCTT makes toward training.

1.2 Training environment Task Contribution Factors (TTCF).

The Training environment Task Contribution Factor (TTCF) determination process will be used in the methodology for assessing training uses (see para 1.3 below). This process is a modification of and extension to the methodology for the development of the Task Performance Support (TPS) Codes for MTP tasks (reference Annex C, Section C1, Government Documentation). This process is based on the paradigm that training requires the application of cues, the awareness of responses to those cues, and a feedback mechanism that supports an adequate understanding of the results and the causes of those results. A training model accreditation process using this approach will provide both immediate feedback on the adequacy and uses of the model as well as point to areas for improvement, in both the model execution and the feedback mechanisms available. The process is reflected in Figure B-1 and the following steps:

Figure B-1. TRAINING ENVIRONMENT TASK CONTRIBUTION FACTOR DEVELOPMENT PROCESS



① Determine Performance Measure Weight for all Performance Measures within a Task Step. A Performance Measure Weight is the relative importance or contribution of that performance measure in training the task step on a scale from 0 to 1.0. Performance measure weights for each task step sum to 1.0. Performance measure weights for each performance measure within each

task step are developed by TRADOC (Data coordinated for and provided by the model proponent.) independent of the training environment (CCTT, field training exercise, etc.).

② Rate all Performance Measures within a Task Step. A Performance Measure Rating is an assessment by subject matter experts on how well a performance measure can be trained (execution and/or feedback) in a specific training environment. The rating is on a bench marked scale from 0 to 3 designed for that aspect of the environment being rated.

a. *Execution.* The following rating scale (adapted from the TPS Codes) is used in determining the execution portion of the training experience:

Rating of 3: The performance measure can be performed completely. Sufficient cues are present within the training environment and appropriate responses are supported.

Examples: The platoon occupies overwatch position and scans for threat force (in CCTT).

The platoon uses main gun fire to suppress and destroy visible targets (in CCTT).

Rating of 2: Most of the performance measure can be executed. Sufficient cues are present within the training environment and appropriate responses are supported to permit practice of tactics and techniques; however, missing cues/responses do not cause negative training.

Examples: Platoon conducts resupply operations during a scheduled halt (in CCTT).

Recon and mark route for passing unit (in CCTT).

Subordinate tank commanders acknowledge platoon leader's signal/radio message (in CCTT).

Rating of 1: The performance measure can be fully met only if resources outside the training environment are provided by the training unit.

Examples: Leaders establish hot loop including every vehicle, OP, and company CP (in CCTT).

Platoon leaders construct terrain model to show terrain features and obstacles (in CCTT).

Rating of 0: The performance measure cannot be executed in the training environment. A significant number of essential cues and responses are not provided.

Examples: The platoon camouflages vehicles and equipment (in CCTT).

Employ early warning devices for security (in CCTT).

Comments: Written comments should be made to describe any necessary functionality that is missing or insufficiently implemented.

b. *Feedback.* The following rating scale is used in determining the feedback portion of the training experience:

Rating of 3: Feedback on the performance measure can be provided completely. Feedback on the execution of the performance measure is highly supported. Necessary and sufficient data, information, facilities, and equipment are present.
 Examples: The platoon occupies overwatch position and scans for threat force (in CCTT).
 The platoon uses main gun fire to suppress and destroy visible targets (in CCTT).

Rating of 2: Feedback on the performance measure is adequate. Feedback on the execution of the performance measure is moderately supported. Most data, information, facilities, and equipment are present.
 Examples: Platoon conducts resupply operations during a scheduled halt (in CCTT).
 Recon and mark route for passing unit (in CCTT).
 Subordinate tank commanders acknowledge platoon leader's signal/radio message (in CCTT).

Rating of 1: Feedback on the performance measure is marginal. Feedback on the execution of the performance measure is minimally supported
 Examples: Leaders establish hot loop including every vehicle, OP, and company CP (in CCTT).
 Platoon leaders construct terrain model to show terrain features and obstacles (in CCTT).

Rating of 0: Feedback on the performance measure is inadequate. Feedback of the execution of the performance measure is not supported. Insufficient data, information, facilities, and/or equipment are present.
 Examples: The platoon camouflages vehicles and equipment (in CCTT).
 Employ early warning devices for security (in CCTT).

③ Calculate Weighted Ratings for each Performance Measure. The Performance Measure Weighted Rating is the product of Performance Measure Weight and Performance Measure Rating.

④ Sum Performance Measure Weighted Ratings. This sum represents the total weighted contribution to training of all the performance measures within a specific task step to that task step. The maximum value of this sum is 3.0.

⑤ Determine Task Step Weights for all Tasks Steps within a Task. Task step weight is the relative importance or contribution in training the task on a scale from 0 to 1.0. Task step

weights for each task step sum to 1.0. Task step weights for each for each task step within each task are developed by TRADOC independent of the training environment (CCTT, field training exercise, etc.).

- ⑥ Rate all Tasks Steps within a Task. The Task Step Rating is the sum of Performance Measure Weighted Ratings for all the performance measures of that task step.
- ⑦ Calculate Task Step Weighted Ratings for each Task Step. The Task Step Weighted Rating is the product of the Task Step Weight and the Task Step Rating.
- ⑧ Sum Task Step Weighted Ratings. This sum represents the total weighted contribution to training of all the task steps within a specific task to that task. The maximum value of this sum is 3.0. The sum of Task Step Weighted Ratings for each task is the Task Rating.
- ⑨ Calculate TTCF. Divide the Task Rating by 3.0 and multiply by 100. Training environment Task Contribution Factor is a number on the scale from 0 to 100 which represents the overall assessment of the *opportunity or potential for training a specific task (execution and/or feedback) in a specific training environment*. Opportunity / potential incorporates both how well a task can be trained and the contribution (relative value) of performance measures in performing a specific step task and of the step tasks in training a specific task.

Thus, TTCF represents the objective potential (in terms of percent) for training to occur on a specific MTP task in a particular training environment. For example:

- $TTCF-E_{CCTT} = 85.0$ is interpreted that CCTT provides 85% of the cues and responses necessary for training the performance measures and step tasks of the specified MTP task.
- $TTCF-F_{CCTT} = 67.5$ is interpreted that CCTT provides 67.5% of the data, information, and facilities for determining and representing what happened and why it happened (assessing and diagnosing performance) during training of the performance measures and step tasks of the specified MTP task.

Note: For critical (essential) performance measures, a Performance Measure Rating of zero mandates that the associated Task Step Rating be zero. For critical (essential) tasks steps, a Task Step Rating of zero mandates that the associated TTCF be zero.

1.3 Assessment Methodology.

The assessment of training uses for CCTT will be done in three parts:

1. First, the Training environment Task Contribution Factors for Execution (TTCF-E) and for Feedback (TTCF-F) will be developed by implementing the TTCF development process for the CCTT environment for those MTP tasks listed above in paragraph 4.2.

2. Secondly, the TTCF-E and TTCF-F will be developed by implementing the TTCF development process for a baseline, the comparable MTP tasks in Fort Hood field training exercises.
3. Finally, the CCTT TTCF for Execution and Feedback will be compared and contrasted with acceptance criteria for each.

ANNEX C
SOURCE DOCUMENTATION

GENERAL MANAGEMENT DOCUMENTATION

The following documents are either referenced in this Plan or are applicable to its content:

- a. Army Regulation 5-11: U.S. Army Model and Simulation Management Program, 1 Aug 97.
- b. DA Pamphlet 5-11: Verification, Validation, and Accreditation of Army Models and Simulations, 15 Oct 93.
- c. Test and Evaluation Master Plan (TEMP) for CCTT
- d. Training Device Requirement (TDR) for CCTT, 14 Jan 98.
- e. Computer Resources Management Plan (CRMP) for CCTT
- f. Naval Air Warfare Command - Training Systems Division (NAWC-TSD) System Specifications for CCTT
- g. Various Operator Technical Manuals (TM -10) (Operator tasks and controls data)
- h. Various Maintenance Manuals (TM -24P & -34P) (Parts fidelity, design data)
- i.
- j. DA PM, CATT, Close Combat Tactical Trainer (CCTT) Verification, Validation, and Accreditation (VV&A) Master Plan, version 1.0, 6 October 1995.

C.1 . GOVERNMENT DOCUMENTATION

The following documents are applicable to the CCTT accreditation process:

Document Number	IV&V	Document Description
MIL-STD-1815A	Yes	Ada Programming Language, January 22, 1983
(none)	Yes	AMSAA VV&A Plans, January 1995
DAAB07-92-D-Q514, <i>TAM No. 94-41a,b</i>	Yes	CCTT Primary/Secondary I, & A, June 11, 1993
DOD-STD-2167A	Yes	Defense System Software Development, February 29, 1988
PM91-W024 SOWCN-2	Yes	Project Manager for Training Devices Statement of Work for Close Combat Tactical Trainer, April 20, 1992
(None)	Yes	CECOM Software Independent Verification & Validation Plan, September 1995
Draft	Yes	EAC Independent Evaluation Plan for the Close Combat Tactical Trainer, April 15, 1994
MIL-STD-498	No	Defense System Software Development,
MIL-STD-973	No	Configuration Management
MIL-STD-59B	No	CALS
Training Performance Support Codes	Yes	Training Performance Support Codes Document June 6, 1995

C.2. CONTRACTOR'S DOCUMENTATION

The following documents are referenced in the Contractor's Software IV&V Plan and are applicable to the CCTT accreditation process:

Document Number	Document Description
95-CCTT-LFS-00111 <i>Revision A</i>	CCTT Software Test Program Plan (STPP), February 28, 1995
95-CCTT-LFS-00116 <i>Revision B, Change 1</i>	CCTT Prime Item Development Specification, March 1, 1995
94-CCTT-LFS-00211 <i>Revision A, Change 1</i>	CCTT Software Development Plan (SDP), September 2, 1994
[TBD]	CCTT Configuration Management Plan, [TBD]
Document Number	Document Description
93-IBM-DR-0034	Critical Task Analysis Report, May 28, 1993
(None)	DRC Fidelity Analysis Reports for CCTT Manned Modules, June, 1993
(None)	IBM Proposal for CCTT System Design, February 5, 1992
(None)	System Test Program Plan
94-CCTT-LFS-00281 <i>Revision</i>	

C.3. INDEPENDENT V&V (IV&V) CONTRACTOR'S DOCUMENTATION

The following documents are applicable to the CCTT accreditation process:

Document Number	Document Description
(None)	IV&V Requirements Traceability Report for Close Combat Tactical Trainer - Fidelity Analysis-to-PIDS Traceability Assessment for the M113A3, M1A2, HMMWV and DI Manned Modules, <i>January 30, 1995.</i>
(None)	IV&V Requirements Traceability Report for Close Combat Tactical Trainer - IBM Proposal for CCTT-to-PIDS Traceability Assessment, <i>March 29, 1995.</i>
(None)	IV&V Requirements Traceability Report for Close Combat Tactical Trainer - Training Device Requirement-to-PIDS Traceability Assessment, <i>April 17, 1995</i>
(None)	IV&V Requirements Traceability Report for Close Combat Tactical Trainer - Critical Task Analysis-to-PIDS Traceability Assessment for the AAR, MC and MCC Workstations, <i>November 9, 1994</i>
(None)	IV&V Requirements Traceability Report for Close Combat Tactical Trainer - M2A2/M3A2 Fidelity Analysis-to-PIDS Traceability Assessment, <i>November 9, 1994.</i>
(None)	IV&V Requirements Difference Assessment - Prime Item Development Specification and System Specification for the Close Combat Tactical Trainer, <i>July 11, 1994</i>
(None)	IV&V Requirements Traceability Report for Close Combat Tactical Trainer - Critical Task Analysis-to-PIDS Traceability Assessment, <i>May 6, 1994</i>
(None)	IV&V Requirements Traceability Report for Close Combat Tactical Trainer - M1A1 Fidelity Analysis-to-PIDS Traceability Assessment, <i>August 12, 1994.</i>
(None)	IV&V Requirements Traceability Report for Close Combat Tactical Trainer - Critical Task Analysis-to-PIDS Traceability Assessment for the UOSP and SAF Workstations, <i>September 20, 1994</i>

ANNEX D
SUBJECT MATTER EXPERTS (SME)

The CCTT Subject Matter Experts are identified below:

Agency	POC/Office Symbol	Phone/DSN
Air Defense School Fort Bliss, TX 79916-0002	Jaime Macias Attn: ATSA-DTS-I	915-568-1678 978
Engineer School Fort Leonardwood, MO 65473	Billy J. Montgomery Attn: ATSE-PD-NES	314-563-7649 676
Infantry School Fort Benning GA 31905	Dave Reoss Attn: ATSH-OTY-S	706-545-3843 835
AMSAA Aberdeen Proving Grounds,MD	Phil Topper Attn: AMSXY-CD	410-278-3368 298
BRL	Tony Baran Attn: SLCBR-SE(ACO)	410-278-8688 298
TECOM	Koon Kit-Yu Attn: AMSTA-TA-M	410-278-5278 298
Threat Support Directorate Fort Leavenworth, KS	James Hicks Attn:ATZL-CST-T	913-684-7961 552
CAC-TR	Attn:ATZL-CTS-B	913-684-3189 552
TRAC-SAD	Rudy Pabon Attn:ATRC-SAD	913-684-3030 552
TSM CATT		
Armor School Fort Knox, KY 40121	Larry Herzog	502-624-5656 464
Aviation Center Fort Rucker, AL 32362	Bob Wofington Attn: ATZQ-TD	205-255-9159 558
TRAC-WSMR White Sands, NM 88002	Lee Kirby Attn: ATRC-WE	505-678-1012 258
Artillery School Fort Sill, OK 73053	CW3 Coulter Attn: ATSF-CBL	405-351-3919 639
USAF	MAJ Buck Waldrop	804-764-2985

Langley AFB, VA 2366502778	Attn: HQ ACC/XPJO	574
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ANNEX E ABBREVIATIONS

AAR	After Action Review
ACC	Air Combat Command
AIS	Automated Information Systems
AMC	Army Materiel Command
AMC REG	Army Materiel Command Regulation
AMCCOM	Armament, Munitions and Chemical Command
AMSAA	Army Materiel Systems Analysis Activity
APSE	Ada Program Support Environment
AR	Army Regulation
ARI	Army Research Institute
ARL	Army Research Laboratory
ASARC	Army Systems Acquisition Review Council
ATACMS	Army Tactical Missile System
ATC	Aberdeen Test Center
ATCOM	Aviation and Troop Support Command
BFVS	Bradley Fighting Vehicle System
BLD	Software Build
BLUFOR	Blue Forces
C2V	Command and Control Vehicle
C/A	Contract Awarded
CAC-T	Combined Arms Command - Training
CAS	Close Air Support
CASE	Computer Aided Software Engineering
CATT	Combined Arms Tactical Trainer
CCB	Configuration Change Board
CCTT	Close Combat Tactical Trainer
CDR	Critical Design Review
CE	Concurrent Engineering
CECOM	Communications-Electronics Command
CES	Combat Engineer Station
CFV	Calvary Fighting Vehicle
CGF	Computer Generated Forces
CIS	Combat Instruction Sets
CM	Configuration Management
CMP	Configuration Management Plan
COEA	Cost and Operational Effectiveness Analysis
COTS	Commercial Off-the-Shelf
CRMP	Computer Resources Management Plan
CRWG	Computer Resources Working Group
CSC	Computer Software Component
CSCI	Computer Software Configuration Item

CSE	Computer Software Engineer
CSTA	Combat Systems Test Activity
CSU	Computer Software Unit
CT	Contractor in Plant Test
CTCP	Combat Trains Command Post
DA	Department of the Army
DA PAM	Department of the Army Pamphlet
DCSLOG	Deputy Chief of Staff for Logistics
DCS-T	Deputy Chief of Staff for Training
DIM	Dismounted Infantry Module
DIS	Distributed Interactive Simulation
DMA	Defense Mapping Agency
DMSO	Defense Modeling and Simulation Office
DOCATS	Document Catalog System
DOD	Department Of Defense
DT&E	Developmental Test & Evaluation
DTP	Detailed Test Plan
DTR	Detailed Test Report
ECAC	Electromagnetic Compatibility Analysis Center
ECDB	Equipment Characteristics Data Base
FAAD	Forward Area Air Defense
FABTOC	Field Artillery Battalion Tactical Operations Center
FDC	Fire Direction Center
FIST-V	Fire Support Team Vehicle
FQT	Functional Qualification Test
FSE	Fire Support Element
FUE	First Unit Equipped
FY	Fiscal Year
HMMWV	High Mobility, Multipurpose Wheeled Vehicle
HRED	U.S. Army Human Resource Engineering Directorate
IAW	In Accordance With
IDD	Interface Design Document
IDT	Integrated Development Team
IEP	Independent Evaluation Plan
IER	Independent Evaluation Report
IOT&E	Initial Operational Test and Evaluation
IRS	Interface Requirements Specification
IV&V	Independent Verification and Validation
LAN	Local Area Network
LCSEC	Life Cycle Software Engineering Center

LUT	Limited User Test
MACOM	Major Commands
MANPRINT	Manpower and Personnel Integration
MC	Maintenance Console
MCC	Master Control Console
MCSO	Maneuver Control Systems Directorate
MICOM	Missile Command
MLRS	Multiple Launch Rocket System
MM	Manned Module
MOS	Military Operational Specialty
M&S	Modeling and Simulation
MS	Milestone
MTP	Mission Training Plan
NAWC-TSD	Naval Air Warfare Center-Training Support Directorate
NGIC	National Ground Intelligence Center
NTC	National Training Center
NVEOL	Night Vision Electro-Optics Laboratory
O/C	Observer/Controller
OPFOR	Opposing Forces
OPTEC	Operational Test and Evaluation Command
OT&E	Operational Test and Evaluation
OTP	Outline Test Plan
OTRR	Operational Test Readiness Review
P3I	Preplanned Product Improvement
PCA	Physical Configuration Audit
PDL	Programming Design Language
PDR	Preliminary Design Review
PDSS	Post Deployment Software Support
PDU	Protocol Data Unit
PG	Procedures Guide
PIDS	Prime Item Description Specification
PM	Program Manager/Project Manager/Product Manager
PM CATT	Program Manager Combined Arms Tactical Trainer
PPQT	Preproduction Qualification Test
PTR	Program Trouble Report
QS	Quick Start
RAM	Reliability, Availability and Maintainability
RCI	Resource Consultants, Inc.
RFP	Request For Proposal
RQT	Reliability Qualification Test

RTM	Requirements Traceability Management
SAFOR/SAF	Semi Automated Forces
SAIC	Science Applications International Corporation
SCM	Software Configuration Management
SDDs	Software Design Document
SDF	Software Development Files
SDP	Software Development Plan
SED-SSO	Software Engineering Directorate-STRICOM Support Office
SI	System Integration
SIMNET	SIMulation NETwork
SMEs	Subject Matter Experts
SINGCARS	Single Channel Ground and Airborne Radio Systems
SOP	Standing Operating Procedures
SPR	Software Program Review
SPSs	Software Product Specifications
SQA	Software Quality Assurance
SRSs	Software Requirements Specification
STD	Software Test Description
STP	Software Test Plan
STPP	Software Test Program Plan
STRICOM	U.S. Army Simulation, Training, and Instrumentation Command
SW	Software
TACOM	Tank Automotive Command
TACP	Tactical Air Control Party
TBD	To Be Determined
TPSC	Task Performance Support Codes
T&E	Test and Evaluation
TDR	Training Device Requirement
TEC	Topographic Engineering Center
EAC	Evaluation Analysis Center
TEMP	Test and Evaluation Master Plan
TEP	Test and Evaluation Plan
TER	Test and Evaluation Report
TEXCOM	U.S. Army Test and Experimentation Command
TIR	Test Incident Report
TIWG	Test Integration Working Group
TOC	Tactical Operations Center
TRAC-WSMR	TRADOC Analysis Command-White Sands Missile Range
TRADOC	Training and Doctrine Command
TREDS	Training Exercise Development System
TRR	Test Readiness Review
TSD	Threat Support Directorate
TSM	TRADOC System Manager

TSM CATT	TRADOC System Manager for Combined Arms Tactical Training
TSP	Training Support Package
TTCF	Training environment Task Contribution Factor
TTCF-E	Training environment Task Contribution Factor - Execution
TTCF-F	Training environment Task Contribution Factor - Feedback
TTSD	TRADOC Threat Support Directorate
UMCP	Unit Maintenance Collection Point
USAARMC	U.S. Army Armor Center
USAATC	U.S. Army Aberdeen Test Center
USAAVNS	U.S. Army Aviation School
USACMLS	U.S. Army Chemical School
USADS	U.S. Army Air Defense School
USAEC	U.S. Army Engineer Center
USAFAS	U.S. Army Field Artillery School
USAIS	U.S. Army Infantry School
USASCAS	U.S. Army Signal Center and School
USAEAC	U.S. Army Evaluation Analysis Center
V & V	Verification and Validation
VV&A	Verification, Validation and Accreditation
WS	Work Statement
WS	Work Station

ANNEX F
GLOSSARY

Acceptability criteria	A set of standards that a particular M&S must meet to be accredited for a given use.
Accreditation	An official determination by management that an M&S is acceptable for a specific purpose.
Core Team Members	Those members of the Accreditation Review Team that participate in all aspects of the review process.
Support Team Members	Those members of the Accreditation Review Team that participate in the review process on a part time basis as needed to assist in the review.