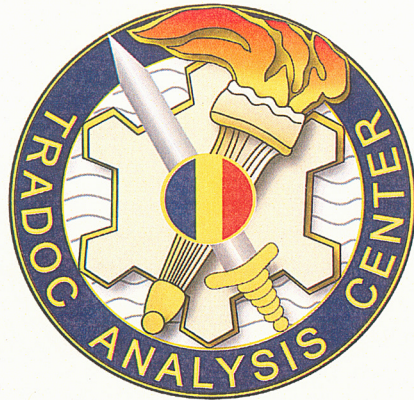


# The TRADOC Analysis Center's Definitions for Analysts



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**255 Sedgwick Avenue**  
**Fort Leavenworth, KS 66027-2345**

Distribution Statement: Distribution is limited to U.S. Department of Defense (DoD) personnel and DoD contractors. This determination was made on 20 May 2005. Other requests will be referred to U.S. Army TRADOC Analysis Center, Fort Leavenworth, KS 66027-2345.

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# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

<b>1. REPORT DATE (DD-MM-YYYY)</b> 05-20-2005		<b>2. REPORT TYPE</b> Technical Document		<b>3. DATES COVERED (From - To)</b> 112004-052005	
<b>4. TITLE AND SUBTITLE</b> Definitions for Analysts				<b>5a. CONTRACT NUMBER</b>	
				<b>5b. GRANT NUMBER</b>	
				<b>5c. PROGRAM ELEMENT NUMBER</b>	
<b>6. AUTHOR(S)</b> Dr. Christopher Morey				<b>5d. PROJECT NUMBER</b> 639	
				<b>5e. TASK NUMBER</b>	
				<b>5f. WORK UNIT NUMBER</b>	
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> U.S. Army TRADOC Analysis Center 255 Sedgwick Avenue Fort Leavenworth, KS 66027-2345				<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>  TRAC-TD-05-010	
<b>9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> U.S. Army TRADOC Analysis Center 255 Sedgwick Avenue Fort Leavenworth, KS 66027-2345				<b>10. SPONSOR/MONITOR'S ACRONYM(S)</b> TRAC	
				<b>11. SPONSOR/MONITOR'S REPORT NUMBER(S)</b>	
<b>12. DISTRIBUTION / AVAILABILITY STATEMENT</b> Distribution is limited to U.S. Department of Defense personnel and DoD contractors. This determination was made on 20 May 2005. Other requests will be referred to: U.S. Army Training and Doctrine Command Analysis Center, Fort Leavenworth, KS 66027-2345					
<b>13. SUPPLEMENTARY NOTES</b>					
<b>14. ABSTRACT</b> This document is an Army-analyst developed list of definitions for use by Army analysts. The definitions were compiled and adapted from multiple sources. The definitions fall in one of two categories:  1. Definitions that require clarification to allow analysts to converse with other analysts.  2. Terms that an Army analyst should be familiar with irrespective of the analysis to be conducted.					
<b>15. SUBJECT TERMS</b>					
<b>16. SECURITY CLASSIFICATION OF:</b> Unclassified			<b>17. LIMITATION OF ABSTRACT</b>	<b>18. NUMBER OF PAGES</b>  42	<b>19a. NAME OF RESPONSIBLE PERSON</b> Dr. Christopher Morey
<b>a. REPORT</b> UNCLASS	<b>b. ABSTRACT</b> UNCLASS	<b>c. THIS PAGE</b> UNCLASS			<b>19b. TELEPHONE NUMBER</b> (include area code) 913-684-7557



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# The TRADOC Analysis Center's Definitions for Analysts



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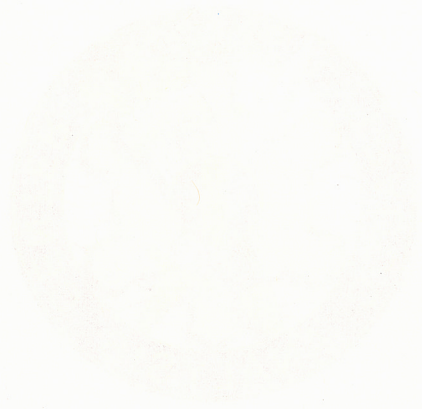
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The University of North Carolina  
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Stephen F. Kern

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## Introduction

Army analysts developed this list of definitions for use by Army analysts. The definitions in the list were included based upon a perceived “yes” answer to these questions:

1. Does the Army analyst need this definition to clarify terms for conducting analysis and to converse with other analysts?
2. Is this a term that an Army analyst should be familiar with irrespective of the analysis that the analyst will conduct?

The definitions in this list come from a variety of sources. The source for each definition is noted in parentheses following the definition. Most of the definitions included in this document come from the following sources, which the reader should refer to for definitions not contained in this document:

1. Department of Defense (DoD) Defense Acquisition University Glossary: *Defense Acquisition and Terms*, Eleventh Edition, Sep 03; <http://www.dau.mil/pubs/glossary/preface.asp>.
2. Department of Defense Directive (DoDD) 5000.1, *The Defense Acquisition System*, 12 May 03; <http://akss.dau.mil/darc/darc.html>.
3. Department of Defense Instruction (DoDI) 5000.2, *Operation of the Defense Acquisition System*, 12 May 03; <http://akss.dau.mil/darc/darc.html>.
4. Chairman of the Joint Chiefs of Staff Memorandum (CJCSM) 3170.01A, *Operation of the Joint Capabilities Integration and Development System*, 12 Mar 04; <http://akss.dau.mil/darc/darc.html>.
5. Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01D, *Joint Capabilities Integration and Development System*, 12 Mar 04; <http://akss.dau.mil/darc/darc.html>.
6. Department of Defense Directive (DoDD) 5000.59-M, *DoD Modeling and Simulation (M&S) Management*, 4 Jan 1994, certified current 1 Dec 03; <https://www.dmsomil/> (click “online M&S Glossary” from sidebar menu).
7. Department of Defense Instruction (DoDI) 5000.61, *DoD Modeling and Simulation (M&S) Verification, Validation, and Accreditation (VV&A)*, 13 May 2003; [http://www.dtic.mil/whs/directives/corres/pdf/i500061\\_051303/i500061p.pdf](http://www.dtic.mil/whs/directives/corres/pdf/i500061_051303/i500061p.pdf).
8. JP 1-02, *DoD Dictionary of Military and Associated Terms*, as amended through 30 November 2004; <http://www.dtic.mil/doctrine/jel/doddiet/>.
9. TRADOC Pamphlet 11-8, *Army Programs Studies and Analysis Handbook*, . Most of the definitions from this source came from the 1995 draft version. Where the 19 July 1985 version was used, the date is included in the parentheses. This resource is currently not available on line.
10. TRADOC and TRAC analysts.

## Acronym List

Note: With few exceptions, this list of acronyms describes terms that have definitions in the definitions section of the dictionary.

AAR	After Action Review
ABS	Agent-Based Simulation
ACAT	Acquisition Category
ACDEP	Army Concept Development and Experimentation Program
ACR	Advanced Concepts and Requirements
ACTD	Advanced Concept Technology Demonstration
ADM	Acquisition Decision Memorandum
AMA	Analysis of Materiel Approaches
AMSAA	Army Materiel Systems Analysis Activity
Ao	Operational Availability
AoA	Analysis of Alternatives
APB	Acquisition Program Baseline
ASARC	Army System Acquisition Review Council
ASB	Army Science Board
ATD	Advanced Technology Demonstration
AUTL	Army Universal Task List
AWE	Advanced Warfighting Experiment
BAA	Broad Area Announcement
BCT	Brigade Combat Team
BOIP	Basis of Issue Plan
CAA	Center for Army Analysis
CAIG	Cost Analysis Improvement Group
CAIV	Cost as An Independent Variable
CAMEX	Computer Assisted Map Exercise
CBA	Capabilities-Based Assessment
CD	Combat Developments or Concept Decision
CDD	Capabilities Development Document
CDR	Critical Design Review
CER	Cost Estimating Relationship
COA	Course of Action
COBP	Code of Best Practice
CoC	Council of Colonels
COE	Contemporary Operational Environment
COI	Critical Operational Issue
COTS	Commercial Off-The-Shelf
CPD	Capabilities Production Document
CR	Concept Refinement
CRD	Capstone Requirements Document
CY	Current Year



DA	Department of the Army
DAB	Defense Acquisition Board
DCMP	Data Collection and Management Plan
DCR	DOTMLPF Change Recommendation
DoD	Department of Defense
DOTMLPF	Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities
DSB	Defense Science Board
DT&E	Developmental Test and Evaluation
DUSA(OR)	Deputy Undersecretary of the Army for Operations Research
EEA	Essential Element of Analysis
EXSUM	Executive Summary
FAA	Functional Area Analysis
FACT	Focus Area Collaborative Team
FCB	Functional Capabilities Board
FCS	Future Combat Systems
FNA	Functional Needs Analysis
FOC	Full Operational Capability
FOE	Future Operational Environment
FOM	Federation Object Model
FoS	Family of Systems
FSA	Functional Solution Analysis
FUE	First Unit Equipped
FY	Fiscal Year
FYDP	Future Years Defense Program
GICOD	Good Idea Cutoff Date
GIG	Global Information Grid
GOSC	General Officer Steering Committee
HITL	Human-in-the-Loop
HLA	High-Level Architecture
HNS	Host-Nation Support
ICD	Initial Capabilities Document
IER	Information Exchange Requirement
ICT	Integrated Concept Team
ILS	Integrated Logistics Support
IOC	Initial Operational Capability
IPR	In-Progress Review
IPT	Integrated Product Team
IRB	Issue Review Board
JCB	Joint Capabilities Board
JCIDS	Joint Capabilities Integration and Development System
JFC	Joint Functional Concept
JIC	Joint Integrating Concept
JOC	Joint Operating Concept
JOpsC	Joint Operations Concepts
JPD	Joint Potential Designator
JROC	Joint Requirements Oversight Council

KPP	Key Performance Parameter
LCC	Life Cycle Costs
LIA	Logistics Impacts Analysis
LOE	Limited Objective Experiment
LRIP	Low Rate Initial Production
MAPEX	Map Exercise
MDA	Milestone Decision Authority
MDAP	Major Defense Acquisition Program
M-E-M	Model-Experiment-Model
METL	Mission Essential Task List
MOE	Measure of Effectiveness
MOM	Measure of Merit
MOP	Measure of Performance
MOS	Military Occupational Specialty
MPT	Manpower, Personnel, and Training
MS	Milestone
MSEL	Master Scenario Event List
NMS	National Military Strategy
NSS	National Security Strategy
OE	Operating Environment or Operational Effectiveness
OIPT	Overarching Integrated Product Team
ORD	Operational Requirements Document
OT&E	Operational Test and Evaluation
OV	Operational View
PA&E	Program Analysis and Evaluation
PB	President's Budget
P&D	Production and Deployment
PDR	Preliminary Design Review
PEO	Program Executive Officer
$P_h$	Probability of Hit
PIA	Post Independent Analysis
$P_k$	Probability of Kill
PM	Program Manager
PMJ	Professional Military Judgment
POM	Program Objective Memorandum
PPBE	Planning, Programming, Budgeting and Execution
P3I	Preplanned Product Improvement
QDR	Quadrennial Defense Review
RAM	Reliability, Availability, and Maintainability
RDT&E	Research, Development, Test and Evaluation
SBA	Simulation Based Acquisition
SAG	Study Advisory Group
SAP	Special Access Program
SDD	System Development & Demonstration
SIMEX	Simulation Exercise
SME	Subject Matter Expert



SoS	System of Systems
SOW	Statement of Work
SSP	Simulation Support Plan
STAFFEX	Staff Exercise
SV	Systems View
T&E	Test and Evaluation
TEA	Training Effectiveness Analyses
TEMP	Test and Evaluation Master Plan
TOR	Terms of Reference
TRAC	TRADOC Analysis Center
TRADOC	Training and Doctrine Command
TRP	TRAC Reimbursable Program
TV	Technical View
UA	Unit of Action
UE	Unit of Employment
UJTL	Universal Joint Task List
WBS	Work Breakdown Structure
WMSL	Weapons, Munitions, and Sensors List

## Definitions

Accreditation. The official certification that a model, simulation, or federation of M&S and its associated data are acceptable for use for a specific purpose. (DoDI 5000.61, 13 May 03)

Acquisition. The conceptualization, initiation, design, development, test, contracting, production, deployment, Logistics Support (LS), modification, and disposal of weapons and other systems, supplies, or services (including construction) to satisfy DoD needs, intended for use in or in support of military missions. (DAU 11th Edition Glossary, Sep 03)

Acquisition Category (ACAT). Categories established to facilitate decentralized decision making and execution and compliance with statutorily imposed requirements. The categories determine the level of review, decision authority, and applicable procedures. (DAU 11th Edition Glossary, Sep 03)

Acquisition Decision Memorandum (ADM). A memorandum signed by the Milestone Decision Authority (MDA) that documents decisions made as the result of a Milestone Decision Review (MDR) or decision review. (DAU 11th Edition Glossary, Sep 03)

Acquisition Program. A directed, funded effort that provides a new, improved, or continuing materiel, weapon or information system or service capability in response to an approved need. Acquisition programs are divided into categories that are established to facilitate decentralized decision making, execution, and compliance with statutory requirements. (DAU 11th Edition Glossary, Sep 03)

Acquisition Program Baseline (APB). Prescribes the key cost, schedule, and cost constraints in the phase succeeding the milestone for which it was developed. (DAU 11th Edition Glossary, Sep 03)

Action Plan. A description of specific steps, including milestones, timelines, and data collection methodology to be performed during a study. (Adapted from Defense Logistics Agency A-76)

Advanced Concepts and Requirements (ACR) Domain. One of the three domains for Army M&S applications. ACR includes experiments with new concepts and advanced technologies to develop requirements in doctrine, training, leader development, organizations, materiel and soldiers that will better prepare the Army for future operations. ACR evaluates the impact of horizontal technology integration through simulation and experimentation using real soldiers in real units. (DA PAM 5-11, 30 Sep 99)

Advanced Concept Technology Demonstration (ACTD). A demonstration of the military utility of a significant new capability and an assessment to clearly establish operational utility and system integrity. (DAU 11th Edition Glossary, Sep 03)

Advanced Technology Demonstration (ATD). Used to demonstrate the maturity and potential of advanced technologies for enhanced military operational capability or cost effectiveness, and reduce technical risks and uncertainties at the relatively low costs of informal processes. ATDs are funded with Advanced Technology Development (ATD) funds. (DAU 11th Edition Glossary, Sep 03)

Advanced Warfighting Experiment (AWE). Discrete, single events or progressive iterations for testing and assessing new equipment, technologies, and information gathering technologies aimed at increased



warfighting capabilities. AWEs typically have large teams of multiple Battle Laboratories, materiel developers, combat developers, training developers, doctrine developers, industry, and academia to test, operate, and evaluate advanced ideas, concepts, and technologies. (AR 350-1, 9 Apr 03)

Affordability. A determination that the Life Cycle Cost (LCC) of an acquisition program is in consonance with the long-range investment and force structure plans of the DoD or individual DoD Components. (DAU 11th Edition Glossary, Sep 03)

After Action Review (AAR). A structured review process that follows a project or activity with the goal of allowing the participants to discover how and why certain events actually happened and how to improve future performance. (Adapted from AR 350-1, 9 Apr 03)

Agent-Based Simulation (ABS). A simulation that employs software constructs (agents) that inhabit some complex, dynamic environment and that can sense and act autonomously in this environment. In ABS, the agent's behavior is generally modeled as a set of goals or actions. Agents control their own destiny (consistent with their goals) and change their state based on their knowledge of the environment in which they are placed. Communication with other agents is the precondition of common action in pursuit of a goal. Also called Agent-Based Modeling. (Developed by TRADOC and TRAC analysts from the Agent Based Simulation 6 Workshop)

Alternatives. The potential solutions for meeting a warfighting capability that are compared in a study. "Solutions" may be materiel, organizational, training, or doctrinal, depending on the purpose of the study. For example, two different organizational designs may form two alternative organizational "solutions" compared in a study. (Adapted from TRADOC PAM 11-8)

Analysis. The examination of a complex whole, its elements, and their relationships. The purpose of analysis is to inform senior leader decisions or to gain understanding of complex problems. See also study. (TRADOC PAM 11-8)

Analysis Plan. A plan that describes the context and conduct of an analytic effort. This description should include the analysis methodology, the tools to be used for analysis, the input data requirements, the overarching Study Objectives, corresponding Study Issues, Essential Elements of Analysis (EEA), and Measures of Merit (MOM) to be used to evaluate the results, and any analysis assumptions and critical milestones. It may also include a description of specific steps, including milestones, timelines, and data collection methodology to be performed during a study. (Derived from the COBP for Experimentation and NATO COBP for C2 Assessment 2002)

Analysis of Alternatives (AoA). The evaluation of the operational effectiveness, operational suitability, and estimated costs of alternative systems to meet a mission capability. The analysis assesses the advantages and disadvantages of alternatives being considered to satisfy capabilities, including the sensitivity of each alternative to possible changes in key assumptions or variables. (CJCSM 3170.01A, 12 Mar 04) [Note: AoAs may be conducted to support acquisition milestones at any stage of a program life (MS A, MS B, MS C)]

Analysis of Materiel Approaches (AMA). The JCIDS analysis to determine the best materiel approach or combination of approaches to provide the desired capability or capabilities. Though the AMA is similar to an AoA, it occurs earlier in the analytical process. Subsequent to approval of an ICD, which

may lead to a potential ACAT I/IA program, Director, PA&E provides specific guidance to refine this initial AMA into an AoA. (CJCSM 3170.01A, 12 Mar 04)

Analytical Space. The experimental design environment created by scenario developers, model developers, war gamers, and study analysts to measure and analyze the differences in performance and effectiveness among various military capabilities and resources. Those capabilities and resources include concepts, forces, systems, or tactics. Also called measurement space. (Developed by TRADOC and TRAC analysts)

Army Concept Development and Experimentation Program (ACDEP). A TRADOC-led experimentation program that outlines key areas of conceptual and prototype investigation and exploration to develop a coherently joint Future Force. Experimentation is the principal means used for developing these concepts and prototypes. (Developed by TRADOC and TRAC analysts)

Army Materiel Systems Analysis Activity (AMSAA). An analysis organization of the United States Army. AMSAA supports the Army by conducting systems and engineering analyses to support decisions on technology, materiel acquisitions, and the designing, developing and sustaining of Army weapon systems. ([www.amsaa.army.mil/organization.htm](http://www.amsaa.army.mil/organization.htm))

Army Science Board (ASB). A Federal Advisory Committee organized under the Federal Advisory Committee Act. It is the Department of the Army senior scientific advisory body that was chartered in 1977 to replace the Army Scientific Advisory Panel. The ASB advises and makes recommendations to the Secretary of the Army, the Chief of Staff of the Army, the Assistant Secretary of the Army (Acquisition, Logistics and Technology) (ASA(ALT)), the Army Staff, and major Army commanders on scientific and technological matters of concern to the Army. The Secretary of the Army delegates oversight authority to the ASA(ALT), who functions as the ASB Director. The ASB is composed of distinguished individuals from the private sector, academia, and non-DoD government agencies. (<https://webportal.saalt.army.mil/sard-asb//Descript.htm>)

Army System Acquisition Review Council (ASARC). Top level DA review body for ACAT I and ACAT II programs. Convened at formal Milestone reviews or other program reviews to provide information and develop recommendations for decisions by the Army Acquisition Executive (AAE). (TRADOC PAM 11-8)

Army Universal Task List (AUTL). The standard, doctrinal foundation and catalog of the Army's tactical collective tasks. (FM 7-15)

Assumption. A statement related to the study that is taken as true in the absence of facts, often to accommodate a limitation. (Adapted from definition provided in FM 101-5 and FM 101-5-1.)

**-B-**

Basis of Issue Plan (BOIP). Document that establishes the distribution of new equipment and associated support items of equipment and personnel, as well as the reciprocal displacement of equipment and personnel. (DAU 11th Edition Glossary, Sep 03)

Brigade Combat Team (BCT). The Army's primary organization for fighting tactical engagements and battles. BCTs have organic close combat, combat support, and combat service support capabilities. (Army Comprehensive Guide to Modularity, Vol 1, Version 1, TRADOC, Oct 04)

Broad Agency Announcement (BAA). A general announcement of an agency's research interest including criteria for selecting proposals and soliciting the participation of all offerors capable of satisfying the Government's needs. (Federal Acquisition Regulation, Sep 01, available at <http://www.arnet.gov/far/current/pdf/FAR.book.pdf>)

**-C-**

Capabilities-Based Assessment (CBA). The JCIDS analysis process that includes four phases: the Functional Area Analysis (FAA), the Functional Needs Analysis (FNA), the Functional Solution Analysis, and the Post-Independent Analysis (PIA). (CJCSM 3170.01B, Mar 05)

Capabilities Development Document (CDD). A document that captures the information necessary to develop a proposed program(s), normally using an evolutionary acquisition strategy. The CDD outlines an affordable increment of militarily useful, logistically supportable and technically mature capability. (CJCSM 3170.01B (Draft), Mar 05)

Capabilities Production Document (CPD). A document that addresses the production elements specific to a single increment of an acquisition program. (CJCSM 3170.01B, Mar 05)

Capability. The ability to execute a specified course of action. It is defined by an operational user and expressed in broad operational terms in the format of an initial capabilities document or a DOTMLPF change recommendation. In the case of material proposals, the definition will progressively evolve to DOTMLPF performance attributes identified in the Capabilities Development Document (CDD) and the Capabilities Production Document (CPD). (CJCSM 3170.01A, 12 Mar 04)

Capability Gaps. Those synergistic resources that are unavailable but potentially attainable to the operational user for effective task execution. These resources may come from the entire range of DOTMLPF solutions. (CJCSM 3170.01A, 12 Mar 04)

Capstone Requirements Document (CRD). A document that contains capabilities-based requirements that facilitates the development of CDDs and CPDs by providing a common framework and operational concept to guide their development. (CJCSM 3170.01A, 12 Mar 04)

Center for Army Analysis (CAA). A Field Operating Agency of the Chief of Staff, Army, reporting to the Deputy Chief of Staff for Programs, the Army G-8. CAA maintains special expertise in the analysis of issues pertaining to theater-level operations and Army-wide processes, especially those involving resource allocation. ([www.caa.army.mil](http://www.caa.army.mil))

Certification. In relation to a study, the determination of its analytical soundness and sufficiency to answer the decision maker's issues. (TRADOC PAM 11-8)

Characteristics. A description of the static physical attributes (parameters) of a system or concept. (TRADOC PAM 11-8)



Closed-form Simulation: See constructive M&S.

Code of Best Practice (COBP). A compilation of techniques, guidelines, and considerations developed for a specific area (e.g., experimentation, analysis of alternatives) by subject matter experts (SMEs) expressly for assisting others in the planning, preparation, or execution of activities associated with the given area. (Developed by TRADOC and TRAC analysts)

Combat Developments (CD). The process within TRADOC which establishes requirements, leading to new or improved materiel systems or organizations. The improvements overcome deficiencies in the Army's ability to carry out its missions. (TRADOC PAM 11-8, 1995 Draft)

Commercial Off-The-Shelf (COTS). Commercial items that require no unique government modifications or maintenance over the life cycle of the product to meet the needs of the procuring agency. (DAU 11th Edition Glossary, Sep 03)

Computer Assisted Map Exercise (CAMEX). An analytic event in which tactical plans and movement are cyclically determined by individuals or staffs and input into a computer simulation for adjudication of outcomes and subsequent presentation to the individuals or staffs for the next cycle. (Developed by TRADOC and TRAC analysts)

Concept Decision (CD). First decision point of the Defense Acquisition Management Framework. It authorizes entry into the Concept Refinement (CR) phase. The principal document at this decision point is the Initial Capabilities Document (ICD) which also contains an approved plan for conducting an Analysis of Alternatives (AoA). A successful CD does not mean that a new acquisition program has been initiated since funding is normally limited to the CR phase which follows. (DAU 11th Edition Glossary, Sep 03)

Concept Development Experiment. An experiment designed to further investigate and refine the combat operations that have been described in a future force concept. (Developed by TRADOC and TRAC analysts)

Concept Refinement (CR). The first phase of the Defense Acquisition Management Framework as defined and established by DoDI 5000.2. The purpose of this phase is to refine the concept documented in the ICD and to prepare a Technology Development Strategy (TDS). The Milestone Decision Authority (MDA) decision to begin CR does not constitute program initiation of a new acquisition program. (DAU 11th Edition Glossary, Sep 03)

Constant Dollars. A method of relating dollars from several different Fiscal Years (FYs) by removing the effects of inflation and showing all dollars at the value they would have in a selected Base Year . Constant dollar series are derived by dividing current dollar estimates by appropriate price indices, a process generally known as deflating. The result is a time series as it would presumably exist if prices were the same throughout as in the Base Year – in other words, as if the dollar had constant purchasing power. Any changes in such a series would reflect only changes in the real (physical) volume of output. Constant dollar figures are commonly used for Gross Domestic Product (GDP) and its components. (DAU 11th Edition Glossary, Sep 03)

Constraint. A restriction imposed by the study sponsor that limits the study team's options in conducting the study. Study sponsor includes the sponsor's designated reviewing body, e.g., the Study Advisory Group (SAG). (Adapted from definitions provided in FM 101-5 and FM 101-5-1)

Constructive M&S. Models and simulations that involve simulated people operating simulated systems. Real people stimulate (make inputs) to such simulations, but are not involved in determining the outcomes. (DoDD 5000.59-M) [TRADOC Pam 25-73 definition: *Constructive*: mathematically oriented tools used across a range of analytical and training purposes. Constructive simulations may be performed either with, or without, human interaction. With human interaction, they are often referred to as "wargaming" simulations and are used for battle staff training or tactics development. Constructive simulations are in widespread use in the Army and in TRADOC, e.g., Brigade/Battalion Battle Simulation (BBS), Corps Battle Simulation (CBS), and Janus.]

Contemporary Operational (or Operating) Environment (COE). See Operational Environment.

Cooperative Research and Development Agreement (CRADA). A legal agreement that implements the authority specified in 15 USC 3701 et seq., as amended. CRADAs include agreements between one or more Federal laboratories and one or more non-Federal parties under which the laboratory provides personnel, services, facilities, equipment, or other resources (but not funds), with or without reimbursement, and the non-Federal parties provide funds, personnel, services, facilities, equipment, or other resources toward the conduct of specified research or development efforts that are consistent with the missions of the Army R&D activity. The term does not include procurements, grants, or other types of cooperative agreements made under the authority of any other legislation. (AR 70-57, Feb 04, available at [http://www.apd.army.mil/pdf/files/r70\\_57.pdf](http://www.apd.army.mil/pdf/files/r70_57.pdf))

Core Funds. Those operation and maintenance Army funds provided by HQ TRADOC through the Command Operating Budget that pay for direct mission expenses which include authorized civilian labor, recurring contract, travel and supplies. (Developed by TRADOC and TRAC analysts)

Cost Analysis Improvement Group (CAIG). Organization that advises the Defense Acquisition Board (DAB) on matters concerning the estimation, review, and presentation of cost analysis of future weapon systems. The CAIG also develops common cost estimating procedures for DoD. The Director, Program Analysis and Evaluation (PA&E) provides the chair for the CAIG. (DAU 11th Edition Glossary, Sep 03)

Cost as An Independent Variable (CAIV). Methodology used to acquire and operate affordable DoD systems by setting aggressive, achievable Life Cycle Cost (LCC) objectives and managing achievement of these objectives by trading off performance and schedule, as necessary. Cost objectives balance mission needs with projected out-year resources, taking into account anticipated process improvements in both DoD and industry. CAIV has brought attention to the government's responsibilities for setting/adjusting LCC objectives and for evaluating requirements in terms of overall cost consequences. (DAU 11th Edition Glossary, Sep 03)

Cost Estimating Relationship (CER). A mathematical relationship that defines cost as a function of one or more parameters such as performance, operating characteristics, physical characteristics, etc. (DAU 11th Edition Glossary, Sep 03)

Council of Colonels (CoC). A body of colonels or their civilian equivalents who monitor and guide the progress of a project on the behalf of general officers and who provide recommendations to those general officers. (Developed by TRADOC and TRAC analysts)

Course of Action (COA). 1. Any sequence of activities that an individual or unit may follow. 2. A possible plan open to an individual or commander that would accomplish, or is related to the accomplishment of the mission. 3. The scheme adopted to accomplish a job or mission. 4. A line of conduct in an engagement. 5. A product of the Joint Operation Planning and Execution System concept development phase. Also called COA. (Joint Pub 1-02)

Cradle-To-Grave. Total life cycle of a given system, from concept through development, acquisition, operations phases, and final disposition. Also called “womb-to-tomb.” (DAU 11th Edition Glossary, Sep 03)

Criterion of Choice. Any measure that displays data in a form for a decision maker to rank alternatives. Often, it is the relationship between cost and operational effectiveness in a study, stated as fixed cost/variable effectiveness, fixed effectiveness/variable cost, or variable cost/variable effectiveness. (TRADOC PAM 11-8)

Critical Design Review (CDR). A technical review that may be conducted to determine that the detailed design satisfies the performance and engineering requirements of the development specification; to establish the detailed design compatibility among the item and other items of equipment, facilities, computer programs and algorithms, and personnel; to assess producibility and risk areas; and to review the preliminary product baseline specifications. Normally conducted during the System Development and Demonstration (SDD) phase. (DAU 11th Edition Glossary, Sep 03)

Critical Operational Issue (COI). A key Operational Effectiveness (OE) and/or Operational Suitability (OS) issue (not a parameter, objective, or threshold) that must be examined in Operational Test and Evaluation (OT&E) to determine the system’s capability to perform its mission. A COI is normally phrased as a question that must be answered in order to properly evaluate OE (e.g., “Will the system detect the threat in a combat environment at adequate range to allow successful engagement?”) or OS (e.g., “Will the system be safe to operate in a combat environment?”). (DAU 11th Edition Glossary, Sep 03)

**-D-**

Data Collection and Management Plan (DCMP). The plan that addresses what data will be obtained from an analytic event, how it will be obtained, and what controls will be placed on the data in terms of its release to parties not associated with the study sponsor. (Developed by TRADOC and TRAC analysts)

Data Element. 1. A basic unit of information built on standard structures having a unique meaning and distinct units or values. 2. In electronic recordkeeping, a combination of characters or bytes referring to one separate item of information, such as name, address, or age. (JP 1-02)

Decision Table. In constructive or closed-form M&S, the list of actions the units or entities in the simulation take based on conditions arising on the simulated battlefield. Serves as the means by which



constructive or closed-form M&S represent commanders' decisions. The list of actions is often referred to as the "tactical decision rules." (Developed by TRADOC and TRAC analysts)

Defense Acquisition Board (DAB). The DAB is the Department's senior-level forum for advising the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD(AT&L)) on critical decisions concerning Acquisition Category (ACAT) ID programs. The DAB is composed of the Department's senior acquisition officials. The Board is chaired by the USD(AT&L). The Vice Chairman of the Joint Chiefs of Staff (VCJCS) serves as the vice chairman of the Board. Other principal members of the Board include the Principal Deputy USD(AT&L); the Under Secretary of Defense (Comptroller) (USD(C)); the Under Secretary of Defense (Policy) (USD(P)); the Under Secretary of Defense (Personnel and Readiness (USD(P&R))); the Assistant Secretary of Defense for Networks and Information Integration (ASD(NII))/DoD Chief Information Officer (CIO); the Director of Operational Test and Evaluation (DOT&E); the Secretaries of the Army, Navy, and the Air Force. The DAB Chairman is also routinely supported by senior advisors such as the Director of Defense Procurement/Acquisition Policy (DP/AP) and the Chairman of the Cost Analysis Improvement Group (CAIG). Other senior Department officials may be invited by the USD(AT&L) to participate in DAB meetings on an as-needed basis. (DAU 11th Edition Glossary, Sep 03)

Defense Science Board (DSB). A board, composed of members designated from civilian life by the Under Secretary of Defense (Acquisition, Technology and Logistics), that advises the Secretary of Defense, the Deputy Secretary of Defense, the Under Secretary of Defense for Acquisition, Technology and Logistics, and the Chairman of the Joint Chiefs of Staff on scientific, technical, manufacturing, acquisition process, and other matters of special interest to the Department of Defense. (<http://www.acq.osd.mil/dsb/charter.htm>)

Dendritic. A hierarchical relationship linking a study objective, study issues, essential elements of analysis (EEA) and measures of merit (MOM). Study issue decomposition establishes this relationship. (Developed by TRADOC and TRAC analysts)

Department of the Army (DA). The executive part of the Department of the Army at the seat of government and all field headquarters, forces, Reserve Components, installations, activities, and functions under the control or supervision of the Secretary of the Army. (JP 1-02)

Department of Defense (DoD). The US Government Executive Branch agency is responsible for providing the military forces needed to deter war and protect the security of the United States. The major elements of these forces are the Army, Navy, Air Force, and Marine Corps. Under the President, who is also Commander-in-Chief, the Secretary of Defense exercises authority, direction, and control over the Department which includes the Office of the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, three Military Departments, nine Unified Combatant Commands, the DoD Inspector General, fifteen Defense Agencies, and seven DoD Field Activities. ([www.defenselink.mil/odam/omp/pubs/GuideBook/](http://www.defenselink.mil/odam/omp/pubs/GuideBook/))

Department of Defense Acquisition System. A single uniform system whereby all equipment, facilities, and services are planned, designed, developed, acquired, maintained, and disposed of within the DoD. The system encompasses establishing and enforcing policies and practices that govern acquisitions, to include documenting mission needs and establishing performance goals and baselines; determining and prioritizing resource requirements for acquisition programs; planning and executing acquisition

programs; directing and controlling the acquisition review process; developing and assessing logistics implications; contracting; monitoring the execution status of approved programs; and reporting to the Congress. (DAU 11th Edition Glossary, Sep 03)

Deputy Undersecretary of the Army for Operations Research (DUSA (OR)). The senior operations research/systems analysis (ORSA) representative on the DA staff. The DUSA(OR) establishes policy for ORSA activities for all Army analytical support services, and provides policy & program direction for Army OR education programs. The DUSA(OR) supports the Army System Acquisition Review Council (ASARC), Defense Acquisition Board (DAB), and similar systems acquisition review committees. He also serves as the Army interface with the Director, Defense Research & Engineering, and the Director, Defense Operational Test & Evaluation. (www.odusa-or.army.mil)

Deterministic. An averaging of all possible probabilities of a quantified event to produce a single number, sometimes called an expected value. In effect, a deterministic value converts a probability into a constant. A deterministic model always gives the same results for the same input values; it is not stochastic. There is no "roll of the dice". (TRADOC PAM 11-8)

Developmental Test and Evaluation (DT&E). 1. Any testing used to assist in the development and maturation of products, product elements, or manufacturing or support processes. 2. Any engineering-type test used to verify status of technical progress, verify that design risks are minimized, substantiate achievement of contract technical performance, and certify readiness for initial Operational Testing (OT). Development tests generally require instrumentation and measurements and are accomplished by engineers, technicians, or soldier operator-maintainer test personnel in a controlled environment to facilitate failure analysis. (DAU 11th Edition Glossary, Sep 03)

DoD Components. The Office of the Secretary of Defense (OSD); the Military Departments; the Chairman, Joint Chiefs of Staff (CJCS) and Joint Staff; the Unified Combatant Commands (UCCs); the Defense Agencies; and DoD field activities. (DAU 11th Edition Glossary, Sep 03)

DoD Directive (DoDD) 5000.1. "The Defense Acquisition System." The principal DoD directive on acquisition, it states policies applicable to all DoD acquisition programs. These policies fall into five major categories: 1) Flexibility, 2) Responsiveness, 3) Innovation, 4) Discipline, and 5) Streamlined and Effective Management. (DAU 11th Edition Glossary, Sep 03)

DoD Instruction (DoDI) 5000.2. "Operation of the Defense Acquisition System." Establishes a simplified and flexible management framework for translating mission needs and technology opportunities, based on approved mission needs and requirements, into stable, affordable, and well managed acquisition programs. Specifically authorizes the Program Manager (PM) and the Milestone Decision Authority (MDA) to use discretion and business judgment to structure a tailored, responsive and innovative program. (DAU 11th Edition Glossary, Sep 03)

DOTMLPF (Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities) Change Recommendation (DCR). Mechanism by which the sponsor coordinates with the appropriate DoD Component to take action through the process outlined in the CJCSI 3180.01 Series, "Joint Requirements Oversight Council (JROC) Programmatic Processes for Joint Experimentation and Joint Resource Change Recommendations," when a capability can be partially or completely addressed

by an integrated DOTMLPF approach (that is, a nonmateriel approach). (DAU 11th Edition Glossary, Sep 03)

Dynamic Scenario. A version of an operational or study scenario that is modeled (instantiated) in a simulation. Final gaming may not match the planned operations of the operational or study scenario, based on circumstances occurring during gaming and associated contingency plans. (Adapted from TRADOC Reg 71-4, 24 Mar 05)

**-E-**

Essential Elements of Analysis (EEA). Specific questions that the analysis must answer to fully address the study issues. By fully answering the study issues, the analysis should achieve the objectives of the overall effort (TRADOC PAM 11-8)

Evaluation. See study.

Event Report. A scripted, stand-alone briefing that is reviewed and published 30 days after an Army Concept Development and Experimentation Program (ACDEP) event or experiment. (Developed by TRADOC and TRAC analysts)

Evolutionary Acquisition. DOD's preferred strategy for rapid acquisition of mature technology for the user. An evolutionary approach delivers capability in increments, recognizing up front, the need for future capability improvements. (CJCSM 3170.01A, 12 Mar 04)

Executive Summary (EXSUM). A condensed version of a study containing not more than 30 pages (preferably 10-20 pages), prepared to help decision makers in understanding and using study results. (TRADOC PAM 11-8)

Expected Value Model. A model or simulation that uses the average performance characteristics of a system under given conditions rather representing the variability of the system's performance under those conditions. Sometimes called a deterministic model. (Developed by TRADOC and TRAC analysts)

Experiment. An event or series of events designed to investigate concepts or prototypes. (Adapted from TRADOC PAM 71-20 (Coordinating Draft), 29 Oct 04)

Experiment Design. Process of creating a detailed experiment plan. Typically it requires several cycles of refinement using simulation. (Derived from the COBP for Experimentation)

**-F-**

Family of Systems (FoS). A set or arrangement of independent systems that can be arranged or interconnected in various ways to provide different capabilities. The mix of systems can be tailored to provide desired capabilities, dependent on the situation. An example of a FoS would be an anti-submarine warfare FoS consisting of submarines, surface ships, aircraft, static and mobile sensor systems, and additional systems. Although these systems can independently provide militarily useful capabilities, in collaboration they can more fully satisfy a more complex and challenging capability: to detect, localize, track and engage submarines. (CJCSM 3170.01A, 12 Mar 04)



Federation. A system of interacting M&S with supporting infrastructure, based on a common understanding of the objects portrayed in the system. (DA PAM 5-11, 30 Sep 99)

Federation Object Model (FOM) list. An identification of the essential classes of objects, object attributes, and object interactions that are supported by a High Level Architecture federation. In addition, optional classes of additional information may also be specified to achieve a more complete description of the federation structure and/or behavior. (DoD 5000.59-M)

Final Experiment Report. An authoritative analysis report on experiments conducted as part of the Army Concept Development Program (ACDEP). (Developed by TRADOC and TRAC analysts)

Finding. 1) The result reached after examination or investigation. 2) The corroboration of an insight from multiple venues. 3) A combination of quantitative and statistical comparisons of various cases or treatments examined, supplemented, and amplified by qualitative observations and assessments. (Developed by TRADOC and TRAC analysts)

First Unit Equipped (FUE) Date. The scheduled date system or end item and its agreed upon support elements are issued to the designated Initial Operational Capability (IOC) unit and training specified in the new equipment training plan has been accomplished. (DAU 11th Edition Glossary, Sep 03)

Fiscal Year (FY). For the United States Government (USG), the period covering 1 October to 30 September (12 months). (DAU 11th Edition Glossary, Sep 03)

Focus Area Collaborative Team. A community of experts that identifies and coordinates simulation technology projects in specific high-payoff areas, e.g., representation of urban operations. (Developed by TRADOC and TRAC analysts)

Force Costs. The peacetime costs to acquire, operate, and maintain a given force for a specified period. (TRADOC PAM 11-8)

Force-on-force. An evaluation that compares alternatives at the force-level, even though only one of the systems in the force is at issue. A means for examining synergism among systems in a force. (TRADOC PAM 11-8)

Full Operational Capability (FOC). The full attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics, which is manned and operated by a trained, equipped, and supported military unit or force. (DAU 11th Edition Glossary, Sep 03)

Functional Area. A broad scope of related joint warfighting skills and attributes that may span the range of military operations. Specific skill groupings that make up the functional areas are approved by the Joint Requirements Oversight Council (JROC). (CJCSM 3170.01A, 12 Mar 04)

Functional Area Analysis (FAA). Identifies the operational tasks, conditions and standards needed to achieve military objectives. (see also Functional Needs Analysis and Functional Solution Analysis) (DAU 11th Edition Glossary, Sep 03)

Functional Area Model. A tool, typically developed by TRADOC schools and centers, that analysts use for more detailed investigation of a specific battlefield function. One example is FIRESIM, a tool specifically designed for in-depth investigation of indirect fires. (Developed by TRADOC and TRAC analysts).

Functional Capabilities Board (FCB). A permanently established body that is responsible for the organization, analysis and prioritization of joint warfighting capabilities within an assigned functional area. (CJCSM 3170.01A, 12 Mar 04)

Functional Needs Analysis (FNA). Assesses the ability of the current and programmed joint capabilities to accomplish the tasks that the Functional Area Analysis (FAA) identified under the full range of operating conditions and to the designated standards. Produces as output a list of capability gaps or shortcomings that require solutions and indicates the time frame in which those solutions are needed. It may also identify redundancies in capabilities that reflect inefficiencies. The FNA includes supportability as an inherent part of defining capability needs. (see also Functional Area Analysis and Functional Solution Analysis) (DAU 11th Edition Glossary, Sep 03)

Functional Solution Analysis (FSA). Operationally based assessment of all potential Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) approaches to solving (or mitigating) one or more of the capability gaps (needs) previously identified. The order of priority for potential solutions is: 1) integrated DOTMLPF changes that leverage existing materiel capabilities; 2) product improvement to existing materiel or facilities; 3) interagency or foreign materiel solutions; and 4) initiation of new materiel programs. (see also Functional Area Analysis and Functional Needs Analysis) (DAU 11th Edition Glossary, Sep 03)

Future Combat Systems (FCS). A family of advanced, networked air- and ground-based maneuver, maneuver support, and sustainment systems that will include Manned and Unmanned (MUM) platforms. FCS will operate as a System of Systems (SoS) that will network existing systems, systems already under development, and new systems to be developed to meet the needs of the UA. (JROC approved ORD for FCS dated 14 April 2003).

Future Operational (or Operating) Environment (FOE). See Operational Environment.

Future Years Defense Program (FYDP). A massive DoD database and internal accounting system that summarizes forces and resources associated with programs approved by the Secretary of Defense (SECDEF). Its three parts are the organizations affected, appropriations accounts (Research, Development, Test and Evaluation (RDT&E), Operation and Maintenance (O&M), etc.), and the 11 major programs (strategic forces, mobility forces, R&D, etc.). The FYDP allows a “crosswalk” between DoD’s internal system of accounting via 11 major programs and congressional appropriations. The primary data element in the FYDP is the Program Element (PE). The FYDP is updated twice during an On-Year Planning, Programming, Budgeting and Execution (PPBE) Process cycle: submission of the combined Program Objectives Memorandum (POM)/Budget Estimate Submission (BES) (usually August/September), and submission of the President’s Budget (PB) (early February the year following). It is also updated by Program Change Proposals (PCPs) during the Off-Year PPBE cycle. (DAU 11th Edition Glossary, Sep 03)

**-G-**

Gantt Chart. A graphic portrayal of a project which shows the activities to be completed and the time to complete represented by horizontal lines drawn in proportion to the duration of the activity. (DAU 11th Edition Glossary, Sep 03)

Gap Analysis. Analysis that consists of the first two analyses (functional area and functional needs) of the Joint Capabilities Integration and Development System (JCIDS) and that is intended to identify inabilities to perform a given task to standard under a set of conditions. [Note: use of the term, “gap analysis” does not appear in JCIDS documentation, but is commonly used to mean the conduct of the functional area analysis and functional needs analysis described in JCIDS. (Developed by TRADOC and TRAC analysts)]

Gatekeeper. The Deputy Director for Joint Warfighting Capability Assessment (JWCA), Joint Staff, J-8 is the Gatekeeper of the Joint Capabilities Integration and Development System (JCIDS) process. This individual makes the initial joint potential designation of JCIDS proposals and determines the lead and supporting Functional Capabilities Boards (FCBs) and JWCA teams for capability proposals. The Gatekeeper is supported by Joint Forces Command (JFCOM), JWCA team leads, and Deputy J-6 and J-7 in carrying out these responsibilities. (DAU 11th Edition Glossary, Sep 03)

General Officer Steering Committee (GOSC). A body of general officers or senior executive service (SES) civilians designated to provide guidance and direction for a project or study. (Developed by TRADOC and TRAC analysts).

Global Information Grid (GIG). The globally interconnected, end-to-end set of information capabilities, associated processes and personnel for collecting, processing, storing, disseminating, and managing information on demand to warfighters, policy makers and support personnel. The GIG includes all owned and leased communications and computing systems and services, software (including applications), data, security services, and other associated services necessary to achieve information superiority. It also includes National Security Systems (NSS) as defined in Section 5142 of the Clinger-Cohen Act (CCA) of 1996. (DAU 11th Edition Glossary, Sep 03)

Good Idea Cutoff Date (GICOD). The date beyond which a change in the issues, conduct, tools or resources used in an analytic effort will create significant risk in achieving the objectives of the effort. (Developed by TRADOC and TRAC analysts)

## **-H-**

High-Level Architecture (HLA). Major functional elements, interfaces, and design rules, pertaining, as feasible, to all DoD simulation applications, and providing a common framework within which specific system architectures can be defined. (DA PAM 5-11, 30 Sep 99)

Host-Nation Support (HNS). Civil and military assistance provided by host nations to allied forces and organizations in peace, transition to war, and wartime. (DAU 11th Edition Glossary, Sep 03)

Hotwash. A flexible-format review of planning, preparation, and execution activities that follows a project or activity and that allows the participants to discuss the conduct of the project and to propose ideas for future improvement. See After Action Review. (Developed by TRADOC and TRAC analysts)

Human-in-the-Loop (HITL). See Live Simulation and Virtual Simulation.

Hypothesis. A tentative explanation of observed behavior or performance used to structure treatment and control groups in a formal behavioral science experimental design. (Developed by TRADOC and TRAC analysts)

**-I-**

Increment. A militarily useful and supportable operational capability that can be effectively developed, produced or acquired, deployed and sustained. Each increment of capability will have its own set of threshold and objective values set by the user. (CJCSM 3170.01A, 12 Mar 04)

Information Exchange Requirements (IERS). Requirements that define the interoperability Key Performance Parameter (KPP) threshold and objective values documented in Capability Development Documents (CDDs), Capability Production Documents (CPDs) and Capability Requirement Documents (CRDs). IERS should reflect both the information needs required by the system under consideration and the needs of other supported systems, and cover all communications and computing requirements for the Command, Control and Intelligence (C2I) of the proposed system. (DAU 11th Edition Glossary, Sep 03)

Initial Capabilities Document (ICD). Documents the need for a materiel approach to a specific capability gap derived from an initial analysis of materiel approaches executed by the operational user and, as required, an independent analysis of materiel alternatives. It defines the capability gap in terms of the functional area, the relevant range of military operations, desired effects and time. The ICD summarizes the results of the DOTMLPF analysis and describes why nonmateriel changes alone have been judged inadequate in fully providing the capability. (CJCSM 3170.01A, 12 Mar 04)

Initial Operational Capability (IOC). The first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics with the appropriate number, type, and mix of trained and equipped personnel necessary to operate, maintain, and support the system. It is normally defined in the Capability Development Document (CDD) and the Capability Production Document (CPD). (DAU 11th Edition Glossary, Sep 03)

In-Progress Review (IPR). Review of a project or program at critical points to evaluate status and make recommendations to the decision authority. (DAU 11th Edition Glossary, Sep 03)

Insight. 1) The synthesis of a set of observations that reveal a capability, an enabler of a capability, or a warfighting impact. 2) New thoughts or patterns that emerge as an analysis team looks at observations and reviews them in light of a larger body of knowledge. (Developed by TRADOC and TRAC analysts)

Integrated Architecture. An architecture consisting of multiple views (operational, systems and technical) that facilitates integration and promotes interoperability across family of systems and systems of systems and compatibility among related architectures. See Operational View (OV), Systems View (SV), and Technical View (TV). (DAU 11th Edition Glossary, Sep 03)

Integrated Concept Team (ICT). Multidisciplinary team representing appropriate Army commands and staff, and appropriate DoD organizations, other Federal agencies, industry and academia that looks at requirements solutions that have resulted from review of the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) structure. (DAU 11th Edition Glossary, Sep 03)



Integrated Logistics Support (ILS). A concept to insure that Army planning considers and implements the entire logistics requirements package necessary to field an emerging system. (TRADOC PAM 11-8)

Integrated Product Team (IPT). Team composed of representatives from appropriate functional disciplines working together to build successful programs, identify and resolve issues, and make sound and timely recommendations to facilitate decision making. There are three types of IPTs: Overarching IPTs (OIPs) that focus on strategic guidance, program assessment, and issue resolution; Working-level IPTs (WIPTs) that identify and resolve program issues, determine program status, and seek opportunities for acquisition reform; and Program-level IPTs (PIPTs) that focus on program execution and may include representatives from both government and after contract award industry. (DAU 11th Edition Glossary, Sep 03)

Integrating Experiment. An experiment that combines multiple limited objective experiments (LOE) and simulation exercises (SIMEX) and is designed to extend LOE and/or SIMEX insights across concept or proponent areas. An integrating experiment is used to gain insights into the effectiveness of force designs and to identify appropriate modifications to the O&O concepts and organizational designs. (Developed by TRADOC and TRAC analysts)

Issue. See study issue.

Issue Decomposition. The process of developing essential elements of analysis (EEA) and measures of merit (MOM) using the study issues. (Developed by TRADOC and TRAC analysts)

Issue Review Board (IRB). A body designated to review the feasibility, acceptability, and suitability of issues for investigation in a specific study or analytic event. Review of the issues against these criteria yields the set of issues to be studied. (Developed by TRADOC and TRAC analysts)

## **-J-**

Joint Capabilities Board (JCB). The JCB functions to assist the JROC in carrying out its duties and responsibilities. The JCB reviews and, if appropriate, endorses all JCIDS and DOTMLPF proposals prior to their submission to the JROC. The JCB is chaired by the Joint Staff, J-8, Director of Force Structure, Resources, and Assessment. It is comprised of Flag/General officer representatives of the Services. (CJCSM 3170.01A, 12 Mar 04).

Joint Capabilities Integration and Development System (JCIDS). A joint concepts-centric capabilities identification process that will allow joint forces to meet the full range of military challenges of the future. The procedures established in the JCIDS support the Chairman of the Joint Chiefs of Staff (CJCS) and the Joint Requirements Oversight Council (JROC) in identifying, assessing and prioritizing joint military capability needs. (Adapted from the "purpose" and "policy" paragraphs in CJCSI 3170.01E, Mar 05)

Joint Functional Concept (JFC). An articulation of how a future joint force commander will integrate a set of related military tasks to attain capabilities required across the range of military operations. Although broadly described within the Joint Operations Concepts, they derive specific context from the joint operating concepts and promote common attributes in sufficient detail to conduct experimentation and measure effectiveness. (CJCSM 3170.01A, 12 Mar 04).

Joint Integrating Concept (JIC). A JIC describes how a joint force commander integrates functional means to achieve operational ends. It includes a list of essential battlespace effect and a concept of operations (CONOPS) for integrating these effects together to achieve the desired endstate. (CJCSM 3170.01A, 12 Mar 04).

Joint Operating Concept (JOC). An articulation of how a future joint force commander will plan, prepare, deploy, employ and sustain a joint force against potential adversaries' capabilities or crisis situations specified within the range of military operations. JOCs guide the development and integration of JFCs to provide joint capabilities. They articulate the measurable detail needed to conduct experimentation and allow decision makers to compare alternatives. (CJCSM 3170.01A, 12 Mar 04).

Joint Operations Concepts (JOpsC). A concept that describes how the Joint Force intends to operate 15 to 20 years from now. It provides the operational context for the transformation of the Armed Forces of the United States by linking strategic guidance with the integrated application of joint force capabilities. (CJCSM 3170.01A, 12 Mar 04) [For Joint concepts, see JFCs, JICs, JOCs, and JOpsC at <http://www.dtic.mil/jointvision/index.html>]

Joint Potential Designator (JPD). A designation assigned by the Gatekeeper to specify JCIDS validation, approval and interoperability expectations.

Joint Requirements Oversight Council (JROC). Assists the Chairman, Joint Chiefs of Staff (CJCS) in identifying and assessing the priority of joint military requirements (including existing systems and equipment) to meet the National Military Strategy (NMS). The Vice Chairman of the Joint Chiefs of Staff (VCJCS) chairs the Council and decides all matters before the Council. The permanent members include the Vice Chiefs of the U.S. Army (VCSA) and U.S. Air Force (VCSAF), the Vice Chief of Naval Operations (VCNO), and the Assistant Commandant of the Marine Corps (ACMC). The Council directly supports the Defense Acquisition Board (DAB) through the review, validation, and approval of key cost, schedule, and performance parameters at the start of the acquisition process, prior to each milestone review, or as requested by the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD(AT&L)). (DAU 11th Edition Glossary, Sep 03)

**-K-**

Key Performance Parameters (KPP). Those minimum attributes or characteristics considered most essential for an effective military capability and that must be achieved in order to justify a new system acquisition. KPPs are validated by the JROC for JROC Interest documents, and by the DOD Component for Joint Integration or Independent documents. CDD and CPD KPPs are included verbatim in the Acquisition Program Baseline (APB). (CJCSM 3170.01A, 12 Mar 04)

**-L-**

Life Cycle Costs (LCC). The total cost to the government of acquisition and ownership of that system over its useful life. It includes the cost of development, acquisition, operations, and support (to include manpower), and where applicable, disposal. For defense systems, LCC is also called Total Ownership Cost (TOC). (DAU 11th Edition Glossary, Sep 03)

Limitation. An inability of the study team to fully meet the study objectives or fully investigate the study issues. (Adapted for study purposes from definitions provided in FM 101-5 and FM 101-5-1.)

Limited Objective Experiment (LOE). A narrowly scoped, analytically focused event to refine and assess components of organizational designs and O&O concepts, e.g. deployment analysis modeling. (Developed by TRADOC and TRAC analysts)

Literature Review. An issue-focused review of relevant research that has been completed and reported in published sources, including sources such as DTIC, open source information, lessons learned documents, technical assessments, and other related material pertaining to the area of study. (Adapted from Experimentation COBP, Jul 2002)

Live Simulation. A simulation involving real people operating real systems. (DoD 5000.59-M)

Logistics Impacts Analysis (LIA). The LIA is an examination of one or more of the 12 elements of Integrated Logistics Support (ILS) (AR 700-127). The LIA can stand alone; be a part of a study on arming, fixing, fueling, deploying, or sustaining the force; support an analysis of alternatives or other materiel study. (TRADOC PAM 11-8) The LIA generally evaluates certain logistics-related items and relates the findings to an effect or impact on other items. For example, classes of supply (especially fuel, water, and ammunition consumption) affect transportation, deployment, and force structure (hence, manpower and personnel). The study is typically focused at specific issues. (Developed by TRAC analysts)

Low Rate Initial Production (LRIP). 1. The first effort of the Production and Deployment (P&D) phase. The purpose of this effort is to establish an initial production base for the system, permit an orderly ramp-up sufficient to lead to a smooth transition to Full Rate Production (FRP), and to provide production representative articles for Initial Operational Test and Evaluation (IOT&E) and full-up live fire testing. This effort concludes with a Full Rate Production Decision Review (FRPDR) to authorize Full Rate Production and Deployment (FRP&D). 2. The minimum number of systems (other than ships and satellites) to provide production representative articles for Operational Test and Evaluation (OT&E), to establish an initial production base, and to permit an orderly increase in the production rate sufficient to lead to Full Rate Production (FRP) upon successful completion of Operational Testing (OT). For Major Defense Acquisition Programs (MDAPs), LRIP quantities in excess of 10 percent of the acquisition objective must be reported in the Selected Acquisition Report (SAR). For ships and satellites LRIP is the minimum quantity and rate that preserves mobilization. (DAU 11th Edition Glossary, Sep 03)

**-M-**

Maintainability. The ability of an item to be retained in, or restored to, a specified condition when maintenance is performed by personnel having specified skill levels, using prescribed procedures and resources, at each prescribed level of maintenance and repair. (DAU 11th Edition Glossary, Sep 03)

Major Defense Acquisition Program (MDAP). An acquisition program that is designated by the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD(AT&L)) as an MDAP, or estimated by the USD(AT&L) to require an eventual total expenditure for Research, Development, Test and Evaluation (RDT&E) of more than 365 million in Fiscal Year (FY) 2000 constant dollars or, for

procurement, of more than 2.19 billion in FY 2000 constant dollars. (DAU 11th Edition Glossary, Sep 03)

Major Program. 1. A term synonymous with Major Defense Acquisition Program (MDAP). 2. In the context of the Future Years Defense Program (FYDP), a Major Program is an aggregation of Program Elements (PEs) which reflects a force or support mission of DoD and contains the resources necessary to achieve an objective or plan. It reflects fiscal time-phasing of mission objectives to be accomplished and the means proposed for their accomplishment. The FYDP is comprised of 11 major programs as shown below. Those considered combat forces programs are marked by an asterisk below. (DoD 7045.7-H) See Future Years Defense Program. (DAU 11th Edition Glossary, Sep 03)

Program 1 – Strategic Forces\*

Program 2 – General Purpose Forces\*

Program 3 – Command, Control, Communications, Intelligence and Space\*

Program 4 – Mobility Forces\*

Program 5 – Guard and Reserve Forces\*

Program 6 – Research and Development

Program 7 – Central Supply and Maintenance

Program 8 – Training, Medical, and Other General Personnel Activities

Program 9 – Administration and Associated Activities

Program 10 – Support of Other Nations

Program 11 – Special Operations Forces

Manpower, Personnel, and Training (MPT) Analyses. Related but separate evaluations which determine the total soldier requirements for a new system. They address soldier quality and quantity requirements, developments in a system's MOS support structure, and training resources required. (TRADOC PAM 11-8)

Map Exercise (MAPEX). An exercise in which a series of military situations is stated and solved on a map. (JP 1-02) Originally defined as a training event, “MAPEX” has become an analytic term. A MAPEX serves as a useful venue for identification of mission threads and for investigation of concepts. For analysis purposes, a MAPEX produces results that are consistent with the rigor imposed at the outset of the MAPEX.

Master Scenario Event List (MSEL). A listing of time-sequenced or event-driven activities that serve to stimulate participants in human-in-the-loop events. (Developed by TRADOC and TRAC analysts)

Materiel. Equipment, apparatus, and supplies used by an organization or institution. (DAU 11th Edition Glossary, Sep 03)

Materiel Developer. A command or agency responsible for Research and Development (R&D) and production validation of an item. (Army) (DAU 11th Edition Glossary, Sep 03)



Matériel Solution. A defense acquisition program (non-developmental, modification of existing systems, or new program) that satisfies, or is a primary basis for satisfying, identified warfighter capabilities. In the case of Family of System (FoS) or System of System (SoS) approaches, an individual matériel solution may not fully satisfy a necessary capability gap on its own. (DAU 11th Edition Glossary, Sep 03)

Measure. A quantitative, qualitative, or categorical value that describes an attribute and that is drawn from a defined set (e.g., the real numbers, true/false). (Developed by TRADOC and TRAC analysts)

Measurement Space. See analytical space.

Measure of Effectiveness (MOE). A special-use metric used to obtain a measure of an aspect, e.g., lethality, of military operations. MOE are metrics that lead to measures of force attributes. See also measure of merit and measure of performance. (Developed by TRADOC and TRAC analysts)

Measure of Merit (MOM). A term used to indicate either a measure of effectiveness (MOE) or a measure of performance (MOP) without specifying MOE or MOP specifically. (Developed by TRADOC and TRAC analysts)

Measure of Performance (MOP). A measure of a system's technical performance expressed as speed, payload, range, time on station, frequency, or other distinctly quantifiable performance features. Several MOPs may be related to the achievement of a particular Measure of Effectiveness (MOE). See also measure of merit and measure of effectiveness. (DAU 11th Edition Glossary, Sep 03)

Metric. A defined (most often by an analyst) relationship that translates one or more sets of qualitative or quantitative observations into a set that can be measured. An analyst uses metrics to obtain measures on operational characteristics that inform answering essential elements of analysis (EEA) and issues. [Note: the metric defines the relationship. The value that results from applying the metric is the measure. For example; one aspect of military operations to measure is how Blue does against the Threat. A metric for describing this aspect is obtained by dividing the number of blue kills by the number of red kills, which leads to a measure that is drawn from the set of positive real numbers]. (Developed by TRADOC and TRAC analysts)

Milestone (MS). The point at which a recommendation is made and approval sought regarding starting or continuing an acquisition program, i.e., proceeding to the next phase. Milestones established by DoDI 5000.2 are: MS A that approves entry into the Technology Development (TD) phase; MS B that approves entry into the System Development and Demonstration (SDD) phase; and MS C that approves entry into the Production and Deployment (P&D) phase. Also of note are the Concept Decision (CD) that approves entry into the Concept Refinement (CR) phase; the Design Readiness Review (DRR) that ends the System Integration (SI) effort and continues the SDD phase into the System Demonstration (SD) effort; and the Full Rate Production Decision Review (FRPDR) at the end of the Low Rate Initial Production (LRIP) effort of the P&D phase that authorizes Full Rate Production (FRP) and approves deployment of the system to the field or fleet. (DAU 11th Edition Glossary, Sep 03)

Milestone Decision Authority (MDA). The designated individual with overall responsibility for a program. The MDA shall have the authority to approve entry of an acquisition program into the next phase of the acquisition process and shall be accountable for cost, schedule, and performance reporting to higher authority, including Congressional reporting. (DoDD 5000.1)

Military Occupational Specialty (MOS). For enlisted soldiers, the grouping of duty positions requiring similar qualifications, and the performance of closely related duties. *The Military occupational specialty code (MOSC)* is a 5-character code used to identify MOS, skill level, and special qualifications. (DA Pam 211-21)

Mission Essential Task List (METL). An unconstrained statement of tasks required to accomplish wartime missions. (FM 25-101)

Mission Funding. Funds that consist of core funds and supplemental funds designated to support the organization's assigned core responsibilities (i.e., its mission). (Developed by TRADOC and TRAC analysts).

Mission Profile. An assessment of the typical and doctrinal types of missions, environment and frequency of use of a system. (TRADOC PAM 11-8)

Mission Success. Attainment of a unit's desired end state during an operation. For study purposes, this is described as either yes or no and is supplemented with a description of those areas where the commander had risk in attaining the desired end state. (Developed by TRADOC and TRAC analysts)

Mission Thread. A description that represents a single sequence of instructions required for the completion of a unique mission. Several threads may be executed in parallel. (Developed by TRADOC and TRAC analysts)

Model. A physical, mathematical, or otherwise logical representation of a system, entity, phenomenon, or process. (DoDI 5000.61, 13 May 03)

Model-Experiment-Model (M-E-M). An integrated approach to using models and simulations in support of experimentation; conducting the actual experiment and collecting data; and post-experiment analysis of results along with further validation of the models using the experiment data. (Adapted from Defense Systems Management College (DSMC), "Systems Acquisition Manager's Guide for the Use of Models and Simulation," September 1994)

Model-Test-Model. An integrated approach to using models and simulations in support of pre-test analysis and planning; conducting the actual test and collecting data; and post-test analysis of test results along with further validation of the models using the test data. (Defense Systems Management College (DSMC), "Systems Acquisition Manager's Guide for the Use of Models and Simulation," September 1994)

**-N-**

National Military Strategy (NMS). Joint Strategic Planning System (JSPS) document developed by the Joint Staff. Provides the advice of the Chairman, Joint Chiefs of Staff (CJCS), in consultation with the other members of the JCS and the Combatant Commanders (COCOMs), to the President, the National Security Council (NSC), and the Secretary of Defense (SECDEF) on the NMS. It is designed to assist the SECDEF in preparation of the Defense Planning Guidance (DPG). (DAU 11th Edition Glossary, Sep 03)

National Security Strategy (NSS). This document is produced yearly by the National Security Council (NSC) and signed by the President. It provides grand strategy and overarching national security goals and objectives for the United States. (DAU 11th Edition Glossary, Sep 03)

Networks and Information Integration Overarching Integrated Product Team (NII OIPT). An IPT led by the appropriate Office of the Assistant Secretary of Defense (OASD(NII)), and composed of the Program Manager (PM), Program Executive Officer (PEO), Component staff, user/user representative, and Office of the Secretary of Defense (OSD) staff involved in the oversight and review of a particular Acquisition Category (ACAT) IA program. (DAU 11th Edition Glossary, Sep 03)

Non-Major Defense Acquisition Program. A program other than a Major Defense Acquisition Program (MDAP), i.e., ACAT II, III and IV programs. See Acquisition Category. (DAU 11th Edition Glossary, Sep 03)

**-O-**

Object Code. Computer instructions and data definitions in a form that is output by an assembler or compiler. Typically machine language. (DAU 11th Edition Glossary, Sep 03)

Objective. For a study, the desired outcome of the study. An objective is most often tied to achieving results on the study issues, but may also be tied to achieving some new analytic standard, e.g., model development. (Developed by TRADOC and TRAC analysts)

Objective Value. The desired operational goal associated with a performance attribute, beyond which any gain in utility does not warrant additional expenditure. The objective value is an operationally significant increment above the threshold. An objective value may be the same as the threshold when an operationally significant increment above the threshold is not significant or useful. (CJCSM 3170.01A, 12 Mar 04)

Observation. 1) A record or description obtained by the act of recognizing and noting a fact or occurrence. 2) Data generated during an analytic event (includes experiments). (Developed by TRADOC and TRAC analysts)

Operational Availability ( $A_o$ ). The degree (expressed as a decimal between 0 and 1, or the percentage equivalent) to which one can expect a piece of equipment or weapon system to work properly when it is required.  $A_o$  is calculated by dividing uptime by the sum of uptime and downtime. It is the quantitative link between readiness objectives and supportability. (DAU 11th Edition Glossary, Sep 03)

Operational Architecture. Descriptions of the tasks, operational elements, and information flows required to accomplish or support a warfighting function. (JP 1-02)

Operational Data. Input to models and simulations that accounts for the behaviors of the personnel and units represented within the simulation. Examples of operational data include movement routes, movement techniques, chain of command, and task organization. Compare with performance data. (Developed by TRADOC and TRAC analysts)

Operational and Organizational Concept. The structured set of initial ideas regarding the ways in which a future military force will conduct operations to accomplish its mission and the defining relationships among its constituents. (Developed by TRADOC and TRAC analysts)

Operational and Organizational Plan. The full set of notions regarding the ways in which people and things will be arranged and employed. The concept includes doctrine and tactics. It is concerned with the matter of how the system is to be used to accomplish its objectives. It includes organizational issues. It forms an envisaged framework within which the systems at issue are to operate. (TRADOC Pam 11-8)

Operational Effectiveness (Force). The ability of a force to perform its mission. The introduction of particular systems (doctrine, training, organizational or materiel alternatives) may improve or degrade this ability. Operational effectiveness is a force attribute. (TRADOC PAM 11-8)

Operational Effectiveness (System). Measure of the overall ability of a system to accomplish a mission when used by representative personnel in the environment planned or expected for operational employment of the system considering organization, doctrine, tactics, supportability, survivability, vulnerability, and threat. (DAU 11th Edition Glossary, Sep 03)

Operational Environment (OE). A composite of the conditions, circumstances, and influences that affect the employment of military forces and bear on the decisions of the unit commander. (JP 1-02) [Note: "OE" includes "operational environment" and "operating environment." Within the Army, "OE" principally implies Threat composition and tactics in an asymmetric environment.]

Operational Requirements. User- or user representative-generated validated needs developed to address mission area deficiencies, evolving threats, emerging technologies or weapon system cost improvements. Operational requirements form the foundation for weapon system unique specifications and contract requirements. (DAU 11th Edition Glossary, Sep 03)

Operational Requirements Document (ORD). Legacy document. A formatted statement containing performance and related operational performance parameters for the proposed concept or system. ORDs will be accepted for Joint Staff review until late December 2003. After this date, only ORD updates/annexes, Capability Development Documents (CDDs) and Capability Production Documents (CPDs) developed in accordance with CJCSI 3170.01C will be accepted. A validated and approved ORD, developed under CJCSI 3170.01A or CJCSI 3170.01B, may be used to support a Milestone B or Milestone C decision in lieu of a CDD or CPD until late June 2005. See Capability Development Document and Capability Production Document. (DAU 11th Edition Glossary, Sep 03)

Operations Research. The analytical study of military problems undertaken to provide responsible commanders and staff agencies with a scientific basis for decision on action to improve military operations. Also called operational research; operations analysis. (JP 1-02)

Operational Scenario. A graphic and narrative description of area, environment, means (political, economic, social, and military), and events of a future conflict. An operational scenario describes the global conditions before and during armed conflict; friendly and threat forces, to include weapons, munitions, and sensors lists (WMSL); friendly and threat strategic and theater plans, including air, naval, and special purpose forces; friendly, unaligned, or independent and threat behavioral and cultural operational aspects and considerations; and operational and tactical orders and plans for friendly and



threat forces involved in the conflict. It also includes considerations of geographic setting (weather, climate, topography, and vegetation), health hazards, transportation facilities, and other regional and operational elements. When appropriate, the operational scenarios will also address those unaligned or independent forces that may oppose threat, friendly, or both forces. (TRADOC Reg 71-4, 24 Mar 05)

Operational Test and Evaluation (OT&E). The field test, under realistic conditions, of any item (or key component) of weapons, equipment, or munitions for the purpose of determining the effectiveness and suitability of the weapons, equipment, or munitions for use in combat by typical military users; and the evaluation of the results of such tests. (DAU 11th Edition Glossary, Sep 03)

Operational View (OV). View of an integrated architecture that identifies the joint capabilities that the user seeks and how to employ them. OVs also identify operational nodes, the critical information needed to support the piece of the process associated with the nodes, and the organizational relationships. (DAU 11th Edition Glossary, Sep 03)

## **-P-**

Parameter. A determining factor or characteristic. Can be related to performance in developing a system, or used to describe the boundaries of a population or process. Statistically, the description of the true state of the population represented by various samples. (DAU 11th Edition Glossary, Sep 03, and TRAC analysts)

Performance. The degree to which a system accomplishes its assigned task. Performance is a system attribute. (TRADOC PAM 11-8)

Performance Data. Quantitative values that define the physical characteristics of a system. Compare with operational data. Qualitative or quantitative descriptions of human actions or behavior, typically applied to job, task, or other activities. (Developed by TRADOC and TRAC analysts)

Pilot Test. The first complete test for a given acquisition program. A trial run of data collection instruments and procedures used to identify unclear wording or other factors that could adversely affect the data accuracy and integrity. (Developed by TRADOC and TRAC analysts)

Planning, Programming, Budgeting and Execution (PPBE) Process. The primary Resource Allocation Process (RAP) of DoD. It is one of three major decision support systems for defense acquisition along with Joint Capabilities Integration and Development System (JCIDS) and the Defense Acquisition System. It is a formal, systematic structure for making decisions on policy, strategy, and the development of forces and capabilities to accomplish anticipated missions. PPBE is a biennial process which in the On-Year produces a Defense Planning Guidance (DPG), approved Program Objectives Memorandums (POMs) for the Military Departments and Defense Agencies covering six years, and the DoD portion of the President's Budget (PB) covering two years. In the Off-Year, Budget Change Proposals (BCPs) and Program Change Proposals (PCPs) are used to adjust the Future Years Defense Program (FYDP) to take into account "fact of life changes," inflation, new programmatic initiatives, and the result of congressional enactment of the previously submitted PB. (DAU 11th Edition Glossary, Sep 03)

Post Independent Analysis (PIA). In the Joint Capabilities Integration and Development System (JCIDS) context, the final step in the analysis process. In this step the sponsor considers the compiled

information and analysis results to determine which integrated Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) approach best addresses the joint capability gap in the functional area. This information will be compiled into either a DOTMLPF change recommendation or an Initial Capabilities Document (ICD). (DAU 11th Edition Glossary, Sep 03)

Preliminary Design Review (PDR). A review conducted on each Configuration Item (CI) to evaluate the progress, technical adequacy, proposed software architectures and risk resolution of the selected design approach; to determine its compatibility with performance and engineering requirements of the development specification; and to establish the existence and compatibility of the physical and functional interfaces among the item and other items of equipment, facilities, computer programs, and personnel. Normally conducted during the early part of the System Development and Demonstration (SDD) phase. (DAU 11th Edition Glossary, Sep 03)

Preplanned Product Improvement (P3I). Planned future improvement of developmental systems for which design considerations are effected during development to enhance future application of projected technology. Includes improvements planned for ongoing systems that go beyond the current performance envelope to achieve a needed operational capability. (DAU 11th Edition Glossary, Sep 03)

President's Budget (PB). The Federal Government's budget for a particular Fiscal Year (FY) transmitted no later than the first Monday in February to the Congress by the President in accordance with the Budget Enforcement Act of 1992. Includes all agencies and activities of the executive, legislative, and judicial branches. (DAU 11th Edition Glossary, Sep 03)

Probabilistic. An event which an observer cannot predict exactly but which will occur over a known range of values. (TRADOC PAM 11-8)

Probability of Hit ( $P_h$ ). An item of performance data that denotes the probability that a single shot from a lethal weapon system will hit its intended target. Probabilities of hit can vary depending on the conditions (e.g., moving target) of the engagement. (Developed by TRADOC and TRAC analysts)

Probability of Kill ( $P_k$ ). An item of performance data that denotes the probability that given a hit, a single shot will kill its intended target. Probabilities of kill can vary depending on the conditions of the engagement. (Developed by TRADOC and TRAC analysts)

Process. A particular method of doing something, generally involving a number of steps, activities, or operations. (Webster's New World Dictionary of the American Language) [Note: There is no clear distinction between "process," "method," "methodology," and "technique."]

Production and Deployment (P&D) phase. The fourth phase of the life cycle as defined and established by DoDI 5000.2. This phase consists of two efforts, Low Rate Initial Production (LRIP) and Full Rate Production and Deployment (FRP&D), and begins after a successful Milestone C review. The purpose of this phase is to achieve an operational capability that satisfies the mission need. (DAU 11th Edition Glossary, Sep 03)

Program (Acquisition). A defined effort funded by Research, Development, Test and Evaluation (RDT&E) and/or procurement appropriations with the express objective of providing a new or improved capability in response to a stated mission need or deficiency. (DAU 11th Edition Glossary, Sep 03)

Professional Military Judgment (PMJ). Assessments made through application of warfighting or operational knowledge and experience. (Developed by TRADOC and TRAC analysts)

Program Analysis and Evaluation (PA&E). An office within OSD which evaluates programs of all services for priority of funding. An office within the Office of the Chief of Staff of the Army which evaluates Army programs for affordability and priority within Army funding limits. TRADOC PAM 11-8)

Program Executive Officer (PEO). A military or civilian official who has responsibility for directing several Major Defense Acquisition Programs (MDAPs) and for assigned major system and non-major system acquisition programs. A PEO has no other command or staff responsibilities within the Component, and only reports to and receives guidance and direction from the DoD Component Acquisition Executive (CAE). (DAU 11th Edition Glossary, Sep 03)

Program Manager (PM). The designated individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs. The PM shall be accountable for credible cost, schedule, and performance reporting to the MDA. (DoDD 5000.1)

Project Manager. The officer charged with management of the development, acquisition, and fielding of a materiel system. (TRADOC PAM 11-8)

Program Objective Memorandum (POM). An annual memorandum in prescribed format submitted to the Secretary of Defense (SECDEF) by the DoD Component (e.g., the Army) heads which recommends the total resource requirements and programs within the parameters of SECDEF's fiscal guidance. The POM is a major document in the Planning, Programming, Budgeting and Execution (PPBE) Process system, and the basis for the component budget estimates. The POM is the principal programming document which details how a component proposes to respond to assignments in the Defense Planning Guidance (DPG) and satisfy its assigned functions over the Future Years Defense Program (FYDP). The POM shows programmed needs six years hence (i.e., in FY 2004, POM 2006-2011 will be submitted). (DAU 11th Edition Glossary, Sep 03)

Proponent. The TRADOC school/center/battle lab or the TRADOC System Manager (TSM), which represents the interests of the users of the system. (Developed by TRADOC and TRAC analysts)

Prototype. A preliminary type, form, or instance of a system that serves as a model for later stages or for the final, complete version of the system. (DoD 5000.9-M)

Prototype Development Experiment. An experiment designed to define required capabilities for a preliminary type, form, or instance of a system that serves as a model for later stages or the final, complete version of the system. (Derived from DoD 5000.9-M)

**-Q-**

Quadrennial Defense Review (QDR). A comprehensive examination of America's defense needs to include potential threats, strategy, force structure, readiness posture, military modernization programs, defense infrastructure, and information operations and intelligence that is conducted by law every four years at the beginning of a new administration. (DAU 11th Edition Glossary, Sep 03)

Qualitative Data. A data value that is a non-numeric description of a person, place, thing, event, activity, or concept. (DoD 8320.1-M-1, "Data Element Standardization Procedures," January 15, 1993)

Quantitative Data. Numerical expressions that use numbers, upon which mathematical operations can be performed. (DoD 8320.1-M-1, "Data Element Standardization Procedures," January 15, 1993)

**-R-**

Reliability. 1)The ability of a system and its parts to perform its mission without failure, degradation, or demand on the support system. (DAU 11th Edition Glossary, Sep 03) 2) The consistency, or repeatability, of measurement results, under the same conditions. (Derived by TRAC analysts)

Reliability, Availability, and Maintainability (RAM). Requirement imposed on acquisition systems to insure they are operationally ready for use when needed, will successfully perform assigned functions, and can be economically operated and maintained within the scope of logistics concepts and policies. RAM programs are applicable to materiel systems; test measurement and diagnostic equipment; training devices; and facilities developed, produced, maintained, procured, or modified for use. See individual definitions for Reliability, Availability, and Maintainability. (DAU 11th Edition Glossary, Sep 03)

Research. Budget category 01 under Major Program 6 of the Future Years Defense Program (FYDP). Includes all scientific study and experimentation directed toward increasing knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long term national security needs. Program Elements (PEs) in this category involve pre-Milestone A efforts. (DAU 11th Edition Glossary, Sep 03)

Research, Development, Test and Evaluation (RDT&E). 1) Activities for the development of a new system or to expand the performance of fielded systems. 2) An appropriation. (DAU 11th Edition Glossary, Sep 03)

Resolution. The degree of detail and precision used in the representation of real world aspects in a model or simulation. (DoD 5000.59-M)

Risk. Probability and severity of loss linked to hazards. (JP 5-00.2)

Rockdrill. An exercise or event that verifies unique missions threads, one at a time to identify shortfalls within a proposed function or functional area. A rock drill is designed to: 1) Extract and capture professional military judgment (PMJ) from interactions of staff elements as they react to a pre-planned set of mission threads within a scenario during the Military Decision-Making Process (MDMP) process, or 2) Develop a set of procedures to accomplish selected missions or mission threads. (Developed by TRADOC and TRAC analysts)

Run Matrix. The set of all runs of a model that the study agency will use to support a study. It is related to the alternatives the analysis will use, and the quantities or conditions which will vary. (TRADOC PAM 11-8)

**-S-**

Schedule. Series of things to be done in sequence of events within given period; a timetable. (DAU 11th Edition Glossary, Sep 03)

Scenario. A graphic and narrative description of area, environment, means (political, social, economic, and military), and events of a future hypothetical conflict. It includes the opposing forces operational plans. (Adapted from TRADOC Reg 71-4, 24 Mar 05)

Scope. The bounds placed on the context, analytic space, or operational environment for a study. The bounds are typically derived from study guidance, constraints, and limitations. (Developed by TRADOC and TRAC analysts)

Seminar. A conference or meeting whose focus is on learning or developing ideas. (Developed by TRADOC and TRAC analysts)

Seminar Wargame. A wargame focusing on one or more (usually one) functional or integrating concepts. The seminar wargame is useful to identify issues for further exploration (such as science and technology impacts on proposed concepts). Often used to explore and refine organizational designs and O&O concepts. [Note: Although a seminar wargame often incorporates the use of a map in describing situations, it differs from a MAPEX in that the focus is not on specific mission threads, but on a more general understanding of concepts] (Developed by TRADOC and TRAC analysts)

Sensitivity Analysis. An analysis that determines the extent to which changes in the considered system parameters, environment, or assumptions cause changes in cost or operational effectiveness. (Adapted from TRADOC PAM 11-8)

Simulation. A method for implementing a model over time. (DoDI 5000.61, 13 May 03)

Simulation Based Acquisition (SBA). A concept which envisions greater and more integrated use of Modeling and Simulation (M&S) in the acquisition process. DoD and industry would be enabled by robust, collaborative use of simulation technology that is integrated across acquisition programs and phases. (DAU 11th Edition Glossary, Sep 03)

Simulation Exercise (SIMEX). An event similar to a computer assisted map exercise (CAMEX), but which will usually involve continuous interaction (vice cyclic) of multiple players with the simulation used in the event. (Developed by TRADOC and TRAC analysts)

Simulation Support Plan (SSP). The document that identifies how modeling and simulation tools support the overall development of a system. (Taken from a TRADOC, ATCD-EM memo, dated 26 Sep 02, subject: Simulation Support Plan)

Source Code. Human-readable computer instructions and data definitions expressed in a form suitable for input to an assembler, compiler or other translator. See Object Code. (DAU 11th Edition Glossary, Sep 03)

Special Access Program (SAP). Any program imposing need-to-know or access controls beyond those normally provided for access to Confidential, Secret, or Top Secret information. Examples of such controls include, but are not limited to, special clearance, adjudication, or investigative requirements;



special designation of officials authorized to determine need to know; or special lists of persons determined to have a need-to-know. (DAU 11th Edition Glossary, Sep 03)

Staff Exercise (STAFFEX). An exercise focused on the staff (i.e., the headquarters or command element) execution of the Military Decision-Making Process (MDMP), from which insights may be gained through the examination of multiple mission threads simultaneously. Emphasis is on the procedures used by the staff in planning their assigned missions and tasks. It may involve the use of either MAPEX or SIMEX processes. (Developed by TRADOC and TRAC analysts)

Statement of Work (SOW). That portion of a contract which establishes and defines all nonspecification requirements for contractor's efforts either directly or with the use of specific cited documents. (DAU 11th Edition Glossary, Sep 03)

Stochastic. Random occurrence for a given probability distribution. A "roll of the dice" determines whether an event occurs.

Study. Services that provide organized analytic assessments and evaluations in support of policy development, decision – making, management, or administration. [Note: Typically, a study is a longer-term effort that may consist of many component steps, each of which requires in-depth analysis. An experiment is often a part of a study and is designed primarily to assist in refining concepts.] (AR 5-5, 30 Jun 96) (With the exception of the note, this is the definition for study, analysis, and evaluation in AR 5-5.)

Study Advisory Group (SAG). An advisory group formed by a study sponsor. It consists of representatives from Army and often DoD elements having a clear functional interest in the study topic or use of the study results. The SAG is to advise and assist the study sponsor on conduct of the study, and to provide assistance, coordination, and support to the study performing organization. (DA PAM 5-5, 1 Nov 96)

Study Directive. A document that initiates a study, gives guidance on the conduct of the study and provides management information and direction. (TRADOC Pam 11-8)

Study Director. The individual who has the overall lead for planning, performing, and reporting a study. (Derived from TRADOC Pam 11-8, 1995 draft)

Study Issues. The set of questions that a study sponsor tasks a study director to investigate. Seeking answers to these questions, combined with the study's established scope, focuses analysis efforts. (Developed by TRADOC and TRAC analysts)

Study Objectives. See Objective.

Study Plan. The outline of the technical and administrative procedures the study will follow to achieve the objectives of the study directive. (TRADOC PAM 11-8)

Study scenario. The application of the operational scenario in a simulation or other gaming tool to serve as a base case for a particular study. The study scenario usually reflects modifications of the operational scenario in order to meet the needs of a study. The study scenario is not significantly different from the

operational scenario so as to affect the outcome or concept of operation. Alternatives are measured using the study scenario as the base case. (TRADOC Reg 71-4, 24 Mar 05)

Subject Matter Expert (SME). A person who has extensive training, knowledge, or experience in a particular area. A professional, a specialist in a specific area. (Adapted from TRADOC Pam 11-8)

Survivability. The capability of a system and its crew to avoid or withstand a man-made hostile environment without suffering an abortive impairment of its ability to accomplish its designated mission. (DAU 11th Edition Glossary, Sep 03)

Sustainability. The ability to maintain the necessary level and duration of operational activity to achieve military objectives. Sustainability is a function of providing for and maintaining those levels of ready forces, materiel and consumables necessary to support military effort. (DAU 11th Edition Glossary, Sep 03)

System. 1. The organization of hardware, software, material, facilities, personnel, data, and services needed to perform a designated function with specified results, such as the gathering of specified data, its processing, and delivery to users. 2. A combination of two or more interrelated pieces of equipment (or sets) arranged in a functional package to perform an operational function or to satisfy a requirement. (DAU 11th Edition Glossary, Sep 03)

System Analysis. A management planning technique which applies scientific methods of many disciplines to major problems or decisions. The list of disciplines includes, but is not limited to, traditional military planning, economics, political science and social sciences, applied mathematics, and the physical sciences. (DAU 11th Edition Glossary, Sep 03)

Systems Architecture. Descriptions, including graphics, of systems and interconnections providing for or supporting warfighting functions. (JP 1-02)

System Development & Demonstration (SDD). 1. The third phase of the life cycle as defined and established by DoDI 5000.2. This phase consists of two efforts, System Integration (SI) and System Demonstration (SD), and begins after Milestone B. It also contains a Design Readiness Review (DRR) at the conclusion of the SI effort. A successful Milestone B can place the program in either SI or SD. A program planning to proceed into SD at the conclusion of SI will first undergo a DRR to confirm that the program is progressing satisfactorily during the phase. 2. Budget Activity (BA) 5 within a Research, Development, Test and Evaluation (RDT&E) appropriation account. Involves mature system development, integration and demonstration to support Milestone C decisions and the conduct of Live Fire Test and Evaluation (LFT&E) and Initial Operational Test and Evaluation (IOT&E) of production representative articles. A logical progression of program phases and development and production funding must be evident in the Future Years Defense Program (FYDP) consistent with DoD's full funding policy. (DoD 7000.14-R) See Research, Development, Test and Evaluation Budget Activities. (DAU 11th Edition Glossary, Sep 03)

System of Systems (SoS). A set or arrangement of interdependent systems that are related or connected to provide a given capability. The loss of any part of the system will degrade the performance or capabilities of the whole. (DAU 11th Edition Glossary, Sep 03)

Systems View (SV). View of an integrated architecture that identifies the kinds of systems, how to organize them, and the integration needed to achieve the desired operational capability. It will also characterize available technology and systems functionality. (DAU 11th Edition Glossary, Sep 03)

**-T-**

Technical Architecture. A minimal set of rules governing the arrangement, interaction, and interdependence of the parts or elements whose purpose is to ensure that a conformant system satisfies a specified set of requirements. (JP 1-02)

Technical Document (TD). A TD is the documentation of interim work done in support of a study. Subjects that might be reported in a TD include front-end analyses, methodologies and their development, interim/emerging results of research that support long-term study efforts, system (model) documentation, user's manuals, or other areas of research for which the results are documented. Information recorded in a TD may be incorporated in a final TR. (Policy Memorandum 70-1 Policies and Procedures Publication of TRAC-FLVN Products, Jul 89)

Technical Memorandum (TM). A TM contains background material, material prepared in the performance of consultative services, data support of models, literature reviews, etc., for in-house use. Information recorded in a TM may be incorporated in a higher level product. (Policy Memorandum 70-1 Policies and Procedures Publication of TRAC-FLVN Products, Jul 89)

Technical Report (TR). A TR encompasses the evaluated relevant facts of a study or phase of a study. It is the official publication that documents results and recommendations of scientific and technical work to proponents or to the scientific community. Results of research previously recorded in a technical document and the methods used should be incorporated in the final technical report of a study. A TR stands as the permanent official record of the study. (Policy Memorandum 70-1 Policies and Procedures Publication of TRAC-FLVN Products, Jul 89)

Technical Test. (see Developmental Test and Evaluation)

Technical View (TV). View of an integrated architecture that describes how to tie systems together in engineering terms. It consists of standards that define and clarify the individual systems technology and integration requirements. (DAU 11th Edition Glossary, Sep 03)

Technique. See "process."

Terms of Reference (TOR). A mutually agreed-to set of informational statements that frame an effort undertaken by two or more organizations. For study purposes, the terms of reference usually include unique definitions, issues, constraints, limitations, assumptions, scope, and resources. (Developed by TRADOC and TRAC analysts)

Test and Evaluation (T&E). Process by which a system or components are exercised and results analyzed to provide performance-related information. The information has many uses including risk identification and risk mitigation and empirical data to validate models and simulations. T&E enables an assessment of the attainment of technical performance, specifications and system maturity to determine whether systems are operationally effective, suitable and survivable for intended use, and/or lethal. There are three distinct types of T&E defined in statute or regulation: Developmental Test and

Evaluation (DT&E), Operational Test and Evaluation (OT&E), and Live Fire Test and Evaluation (LFT&E). See Operational Test and Evaluation, Initial Operational Test and Evaluation (IOT&E), Developmental Test and Evaluation, and Live Fire Test and Evaluation. (DAU 11th Edition Glossary, Sep 03)

Test and Evaluation Master Plan (TEMP). Documents the overall structure and objectives of the Test and Evaluation (T&E) program. It provides a framework within which to generate detailed T&E plans and it documents schedule and resource implications associated with the T&E program. The TEMP identifies the necessary Developmental Test and Evaluation (DT&E), Operational Test and Evaluation (OT&E), and Live Fire Test and Evaluation (LFT&E) activities. It relates program schedule, test management strategy and structure, and required resources to: Critical Operational Issues (COIs), Critical Technical Parameters (CTPs), objectives and thresholds documented in the Capability Development Document (CDD), evaluation criteria, and milestone decision points. For multi-Service or joint programs, a single integrated TEMP is required. Component-unique content requirements, particularly evaluation criteria associated with COIs, can be addressed in a component-prepared annex to the basic TEMP. (DAU 11th Edition Glossary, Sep 03)

Threat. The sum of the potential strengths, capabilities, and strategic objectives of any adversary that can limit or negate U.S. mission accomplishment or reduce force, system, or equipment effectiveness. (DAU 11th Edition Glossary, Sep 03)

Threshold Value. A minimum acceptable operational value below which the utility of the system becomes questionable. (CJCSM 3170.01A)

Trade-off. Examination of possible changes in the performance and cost of a system to determine the relationship between cost and performance. Also, the impact of the changes in performance upon operational effectiveness. (TRADOC PAM 11-8)

TRADOC standard scenario (or “standard operational scenario”. A TRADOC-approved, DPS-derived operational scenario which portrays doctrinally approved and emerging operational concepts. “TRADOC approved” implies senior TRADOC leaders, e.g., the Director of the TRADOC Futures Center. (Derived from TRADOC Reg 71-4, 24 Mar 05)

TRADOC System Manager (TSM). The officer designated to oversee the materiel acquisition process from the user perspective. Usually co-located with the proponent school or center. (Developed by TRADOC and TRAC analysts)

Training Effectiveness Analyses (TEA). A general category of studies for assessing the cost and/or effectiveness of TRADOC's training strategies, programs, and products. TEA are a primary means by which TRADOC establishes and maintains quality control over the outputs of TRADOC's training development and training delivery systems. TEA are tailored to the requirements of the training decision being made and no two TEA will be exactly alike. (TRADOC PAM 11-8)

**-U-**

Unit of Action (UA). Tactical level organizations that accomplish discrete sets of functions in accordance with prescribed mission-essential tasks. UAs are further designed as modular organizations that can be combined and integrated as the basic building blocks of combined arms combat power to

form larger formations. Represented today by the echelons of section through brigade, units of action will vary in size and number of organic sub-units, dependent on the battlefield functions performed by the unit and its organic capabilities (TRADOC Pam 525-3-92 dated 2 June 2003)

Unit of Employment (UE). Highly tailorable, higher-level echelons that integrate and synchronize Army forces for full spectrum operations at the higher tactical and operational levels of war/conflict. Focused on major operations and decisive land campaigns in support of joint operational and strategic objectives, units of employment participate in all phases of joint operations from initial entry to conflict termination in any form of conflict and operating environment. The UE will be capable of command and control (C2) of all Army, joint, and multinational forces. It will be organized, designed, and equipped to fulfill C2 functions as the Army Forces (ARFOR) Component, Joint Force Land Component Command (JFLCC), or the Joint Task Force (JTF). The UE will also have the inherent capacity to interact effectively with multinational forces as well as with interagency, non-governmental organizations, and private volunteer organizations. In historical terms, UE represents the field army, corps and division (TRADOC Pam 525-3-92 dated 2 June 2003).

Universal Joint Task List (UJTL). A menu of capabilities (mission-derived tasks with associated conditions and standards, i.e., the tools) that may be selected by a joint force commander to accomplish the assigned mission. Once identified as essential to mission accomplishment, the tasks are reflected within the command joint mission essential task list. (JP 1-02)

**-V-**

Validation. The process of determining the degree to which a model and its associated data are an accurate representation of the real-world from the perspective of the intended uses of the model. (DMSO VV&A Recommended Practices Guide, 2004)

Verification. The process of determining that model implementation and its associated data accurately represent the developer's conceptual description and specifications. ( DMSO VV&A Recommended Practices Guide, 2004)

Virtual Simulation. A simulation involving real people operating simulated systems. Virtual simulations inject human-in-the-loop in a central role by exercising motor control skills (e.g., flying an airplane), decision skills (e.g., committing fire control resources to action), or communication skills (e.g., as members of a C4I team). (DoD 5000.59-M)

**-W-**

Wargame. A simulation, by whatever means, of a military operation involving two or more opposing forces using rules, data, and procedures designed to depict an actual or assumed real life situation. (JP 1-02) NOTE: Wargames generally have key Human-in-the-Loop (HITL) participants making decisions at key junctures of the simulation.

Weapons, Munitions, and Sensors List (WMSL). An all-inclusive list of systems to be used in a particular model for a particular study. It includes weapons, munitions, sensors, and any other physical system or supplies that need to be represented, typically in a force-on-force simulation. Basic loads and consumption rates are normally provided in the WMSL. (Developed by TRADOC and TRAC analysts)



Weighting. A judgmental or numerical process which gives a relative value to attributes of a decision problem or tasks under examination. (Derived from TRADOC PAM 11-8)

Work Breakdown Structure (WBS). An organized method to break down a project into logical subdivisions or subprojects at lower and lower levels of details. It is very useful in organizing a project. (DAU 11th Edition Glossary, Sep 03)

Workshop. A usually brief, intensive effort for a relatively small group of people that focuses especially on creating a product for use in a study or analytic effort. (Developed by TRADOC and TRAC analysts)