Department of the Army
Headquarters, United States Army
Training and Doctrine Command
Fort Eustis, Virginia 23604-5700

***TRADOC Regulation 71-20**

28 June 2013

Force Development

CONCEPT DEVELOPMENT, CAPABILITIES DETERMINATION, AND CAPABILITIES INTEGRATION

FOR THE COMMANDER:

OFFICIAL:

DAVID D. HALVERSON
Lieutenant General, U.S. Army
Deputy Commanding General/
Chief of Staff

CHARLES E. HARRIS, III
Colonel, GS
Deputy Chief of Staff, G-6

History. This publication is a major revision to TRADOC Regulation 71-20, published 23 February 2011. Significant changes are listed in the Summary of Change.

Summary. This regulation prescribes policy and responsibilities for the development of warfighting concepts, the determination of capability requirements, and the integration of capabilities throughout the Army. This regulation also prescribes the U.S. Army Training and Doctrine Command (TRADOC) responsibilities and policy for the implementation of the Joint Capabilities Integration and Development System (JCIDS), and how TRADOC's capability development efforts integrate with the Defense Acquisition System.

Applicability. This regulation applies to all Army organizations and force modernization proponents that conduct concept development, experimentation, and capabilities development activities. The term capabilities development includes identifying, assessing, and documenting changes in doctrine, organization, training, materiel, leadership and education, personnel, facilities (DOTMLPF) and any policy implications that collectively produce the force capabilities and attributes prescribed in approved concepts or other prescriptive guidance.

*This regulation supersedes TRADOC Regulation 71-20 dated 23 February 2011.

Proponent and exception authority. The proponent of this regulation is the TRADOC Director, Army Capabilities Integration Center (ARCIC)/Deputy Commanding General, Futures. The proponent has the authority to approve exceptions or waivers to this document consistent with controlling law and regulations. Activities may request a waiver to this regulation by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the commander or senior leader of the requesting activity and will be forwarded through higher headquarters to Director, ARCIC (ATFC-O), 950 Jefferson Avenue, Fort Eustis, VA 23604-5767.

Army management control process. This regulation does not contain management control provisions.

Supplementation. Supplementation of this regulation is prohibited unless specifically approved by the Director, ARCIC/Deputy Commanding General, Futures (ATFC-O), 950 Jefferson Avenue, Fort Eustis, VA 23604-5767.

Suggested improvements. Users are invited to send comments and suggested improvements on Department of the Army (DA) Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Director, ARCIC/Deputy Commanding General, Futures (ATFC-O), 950 Jefferson Avenue, Fort Eustis, VA 23604-5767.

Distribution. This publication is approved for public distribution and is available on the TRADOC Homepage at http://www.tradoc.army.mil/tpubs.

Summary of Change

TRADOC Regulation 71-20
Concept Development, Capabilities Determination, and Capabilities Integration

This major revision, dated 28 June 2013-

o Modifies U.S. Army Training and Doctrine Command's requirements to comply with higher headquarters revised guidance including use of Joint Capabilities Integration and Development System alternate formats specified in the Manual for the Operation of the Joint Capabilities Integration and Development System. Updated guidance includes the Joint Capabilities Integration and Development System, Chairman, Joint Chief of Staff Instruction 3170.01H, and the Manual for the Operation of the Joint Capabilities Integration and Development System.

o Updates doctrinal terminology (throughout).

o Adds references to Army Regulation 5-22, The Army Force Modernization Proponent System as a key higher headquarters regulation which the U.S. Army Training and Doctrine Command supports (para 1-1).

o Introduces the use of the Agile Capabilities Life Cycle Process as described in the Headquarters, Department of Army standard operating procedure approved by the Vice Chief of Staff of the Army (para 1-4).

o Updates the organization of the Army Capabilities Integration Center (figure 2-1).

o Adds Director, Army Capabilities Integration Center responsibilities for oversight of the Army capability integration efforts and the validation of Army needs through the Network Integration Evaluations (para 2-10.).

o Updates the document signed by the Director, Army Capabilities Integration Center that provides guidance for concepts and capabilities development, entitled "ARCIC Concepts and Capabilities Guidance (ArG)" (paras 2-10, 2-11, and 5-1).

o Clarifies the role of the force modernization proponents across the Army in the areas of Concept Development, Capabilities Determination, and Capabilities Integration from within the Centers of Excellence, Capabilities Development and Integration Directorates and non-U.S. Army Training and Doctrine Command proponent organizations (paras 2-14, 2-15, and 2-16).

o Clarifies the role of Integrated Capabilities Development Teams as temporary teaming arrangements for capabilities development and documentation efforts and delineates the permanent teaming arrangements supporting the U.S. Army Training and Doctrine Command two-year cycle (para 2-14).

o Clarifies U.S. Army Training and Doctrine Command Capability Manager command relationships (paras 2-16 and 2-20).

o Updates the lead organization for the Training domain from U.S. Army Training and Doctrine Command G-7 to U.S. Army Combined Arms Center (paras 2-16, 8-1, and 8-5; table 8-1).

o Adds responsibilities and requirements to execute early analysis in preparation for an analysis of alternatives for a proposed solution (initial capabilities document) or a materiel requirement (capability development document/capability production document) (para 2-19 and 7-6).

o Updates the Capabilities Integration governance principles and senior leader governance forums used to support U.S. Army Training and Doctrine Command core functions (Chapter 5).

o Updates the Capabilities needs analysis process (para 7-8).

o Adds guidance on required training for capability developers in the Army (para 8-1 and Appendix D).

o Adds clarification on how non-materiel requirements are handled and integrated (para 8-2).

o Adds clarification that Combatant Commanders' input for capability development efforts will be included in proposed solutions and materiel requirements (para 8-9).

o Adds mandated guidance from memorandum signed 31 August 2012 by Headquarters, Department of Army Deputy Chief of Staff, G-3/5/7 "Process to Introduce Requirement to Measure Protection Factor of Shielding Against Low Level Radiation", and the use of a draft capability development document to inform the Technology Development Strategy and Requests for Proposals following the Milestone A acquisition decision (para 8-11)

o Deletes mandated use of the Strategic Framework (para 8-13).

o Updates Chapter 10 to reflect Rapid Acquisition/Rapid Equipping actions the U.S. Army Training and Doctrine Command performs, to include the Agile Capabilities Life Cycle Process (para 10-4).

Table of Contents

Chapter 1
Introduction

1-1. Purpose
This regulation assigns responsibilities and establishes policies that U.S. Army Training and Doctrine Command (TRADOC) and non-TRADOC proponents must follow to develop concepts, conduct experiments, identify gaps in capability, and develop doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF), and policy solutions to address gaps requiring mitigation or closure. This regulation implements the Joint Capabilities Integration and Development System (JCIDS) as outlined in Chairman of the Joint Chief of Staff Instruction (CJCSI) 3170.01 and the Manual for the Operation of the JCIDS (hereafter referred to as the JCIDS Manual). It describes how TRADOC supports the Defense Acquisition System as outlined in Department of Defense Directive (DoDD) 5000.01, Department of Defense Instruction (DoDI) 5000.02, and Army Regulation (AR) 70-1. Finally, it describes how TRADOC supports AR 71-9, Warfighting Capabilities Determination and AR 5-22, The Army Force Modernization Proponent System.

1-2. References
Required and related publications and referenced forms are listed in appendix A. It is the responsibility of the user of this TRADOC regulation to ensure they are using the latest version of any publication listed in the references.

1-3. Explanation of abbreviations and terms
Abbreviations and special terms used in this publication are explained in the glossary. The terms "validate requirements," "requirements determination," and "documenting requirements" as used in this regulation are not to be confused with Headquarters (HQ) TRADOC, G-8 functions as outlined in the AR 570 series (Manpower and Equipment Control).

1-4. Guidance
TRADOC is the DOTMLPF capability developer (CAPDEV) and operational architect for the Army. TRADOC designs, develops, and integrates warfighting requirements; fosters innovation; and leads change for the Army. To accomplish these responsibilities, TRADOC established concept development, requirements (capabilities) determination, and capabilities integration as core functions and assigned the Army Capabilities Integration Center (ARCIC) as the lead. These core functions are linked together to provide a process to validate capabilities for the warfighter.

a. Core function: Concept development.

(1) Concepts illustrate how future joint and Army forces may operate, describe the capabilities required to carry out the range of military operations against adversaries in the expected operational environment (OE), and explain how a commander, using military art and science, might employ these capabilities to achieve desired effects and objectives. They describe a problem or series of problems to be solved, the components of the solution, and the interaction of those components in solving the problem. Concepts define how the force functions

(operational concept), the timeframe and conditions in which it must operate (the OE), and what the force must be able to execute (required capabilities [RCs]) in terms of performing missions or producing the desired end state. Army concepts consist of future capabilities descriptions within a proposed structure of military operations for a period of 6-18 years in the future.

(2) As an integral part of the TRADOC HQ Staff, ARCIC leads Army concept development and supports Headquarters, Department of the Army (HQDA) in joint concept development in collaboration with force modernization proponents. ARCIC develops and manages the Army Concept Framework (ACF); develops the Army Capstone Concept (ACC) and the Army Operating Concept (AOC); directs, manages, and synchronizes the development of Army Functional Concepts (AFCs) and concepts-based concept of operations (CONOPS) and white papers by force modernization proponents to establish RCs across the DOTMLPF. ARCIC serves as the TRADOC lead integrator for modeling & simulation (M&S) support to concept development. Finally, ARCIC ensures the integration of unified land force capabilities in the development of joint concepts in coordination with (ICW) HQDA, Deputy Chief of Staff (DCS), G-3/5/7, Joint Staff J-7, and the combatant commands (CCMDs).

(3) ARCIC leads the Campaign of Learning (CoL), focused on the challenges that the U.S. military will face in the near, mid, and far-term, and how it might face them through the transition from today's force, through the programmed force of 2020, and to the potential force of 2030 and beyond. The CoL will integrate the objectives and learning of Title 10 wargames, experiments, Network Integration Evaluations (NIEs), studies, Science and Technology (S&T) events, joint and multinational wargames and talks, and other venues for learning.

b. Core function: Requirements (capabilities) determination.

(1) Requirements (capabilities) determination assesses RCs to identify gaps, specify their risk level, and develop DOTMLPF solutions to resolve or mitigate the gaps identified as having unacceptable risk. Determining, prioritizing, and documenting risk is outlined in Field Manual (FM) 5-19. New requirements (capabilities) are the result of capabilities-based assessments (CBAs) and other studies; exercises/warfighting lessons learned; Joint Capability Technology Demonstrations (JCTDs), Joint Urgent Operational Needs/Joint Emergent Operational Needs (JUONs/JEON), and other experiments; Joint Improvised Explosive Device Defeat Initiative Transition; and Defense Business Systems Business Case Documents. JUONs; Army Operational Needs Statement (ONS); JEONs, Initial capabilities documents (ICDs, including Information Systems [IS] ICDs); capability development documents (CDDs); capability production documents (CPDs); joint DOTmLPF change recommendations (DCRs); and Army DOTmLPF integrated capabilities recommendations (DICRs) formally document these new requirements. (NOTE: For changes that are primarily non-materiel in nature, the Army and Joint Staff uses the acronym DOTmLPF. The letter "m" in the acronym is usually lower case since DCRs/DICRs do not advocate new materiel development, but may recommend increased quantities of existing materiel solutions or use in alternate applications.)

(2) The Army uses both deliberate and accelerated developments processes to address capability requirements as appropriate. JCIDS, AR 71-9, this regulation, and the TRADOC CBA Guide provide the deliberate process guidance to assess force concepts or CONOPS,

identify gaps in required capabilities, assess risk, and determine DOTMLPF solutions to mitigate gaps with unacceptable risk. The Army also utilizes two differing Accelerated Capabilities Development processes to speed delivery of fully funded DOTMLPF solutions to the soldier. One process is the capabilities development for rapid transition (CDRT). This accelerated process, described in this regulation, recommends rapidly fielded capabilities for fast track entry into the JCIDS and the Defense Acquisition System (DAS) as programs of record. The other accelerated process used by the Army is the Agile Capabilities Life Cycle Process (ACLCP) as described in the HQDA ACLCP standard operating procedure (SOP), TRADOC memorandum (ATFC-IBU), 27 November 2012, subject: *Agile Capabilities Life Cycle Process Execution Directive*, and this regulation. It is used to identify, rapidly develop, and test critical capabilities for immediate entry into both the JCIDS and DAS processes in order to rapidly field proven DOTMLPF capabilities to the force.

(3) On behalf of TRADOC HQ, ARCIC recommends policy and guidance to the Commanding General (CG), TRADOC to execute the JCIDS and Accelerated Capabilities Development (ACD) processes. ARCIC coordinates, synchronizes, and integrates Army capabilities developments with Department of Defense (DoD) agencies, Joint Staff, other services, other Army commands (ACOMs), Army service component commands (ASCCs), and combatant commanders.

(a) ARCIC manages the analysis conducted by proponents to identify gaps in joint and Army capabilities. Analysis results propose DOTMLPF approaches to resolving or mitigating high risk gaps, proposes gaps that can remain unmitigated due to acceptable risk or affordability concerns; and proposes divestments due to unnecessary redundancy. This analysis includes, but is not limited to functional and/or formation-centric CBAs, Capabilities Needs Analyses (CNAs), ACLCP, other studies, experimentation, lessons learned, or anything else considered acceptable analysis by the Joint Staff as delineated in the CJCSI 3170.01 and/or JCIDS Manual.

(b) ARCIC coordinates, staffs, and validates JCIDS capability documents and then forwards them on behalf of the CG, TRADOC, to HQDA DCS, G-3/5/7 for Army Requirements Oversight Council (AROC) validation and Army approval. The AROC validates that identified gaps are backed by appropriate analysis; that the proposed strategies to resolve those gaps, including associated DOTMLPF changes, are consistent with Joint and Army Concepts, modernization strategies and priorities; that the documents are fully integrated across the DOTMLPF domains; that the operational improvements sought justify the costs to deliver the capability at the appropriate time and in the appropriate quantities; and that proposed strategies, including long-term supportability requirements, are affordable (e.g., in consonance with long-range modernization, force structure, and manpower plans of HQDA).

c. Core function: Capabilities integration.

(1) Capabilities integration is the continuous process to identify, assess, prioritize, synchronize, and communicate RCs across time, functions (whether they are warfighting functions (WfFs) or not), DOTMLPF, resourcing, organizations, and range of military operations. The ARCIC designs and manages the integration construct to ensure the full range of

solutions across all DOTMLPF domains interoperate in a manner consistent with the appropriate concepts, and that adaptive solutions are fielded in an integrated manner (Chapter 5).

(2) TRADOC uses a collaborative approach to concept and capabilities development and integration. Proponents executing **recurring capabilities development analysis** as part of the TRADOC two-year cycle will establish permanent multidisciplinary teams to maximize integration efforts using limited resources. TASKORDs will be issued by TRADOC (ARCIC) at the beginning of each cycle delineating the particular analysis to be conducted, the products to be delivered, any special teaming arrangements, a Plan of Action and Milestones (POAM), and any other pertinent data. For **unique capabilities development analysis efforts that are temporary in nature**, an integrated capabilities development team (ICDT) will be chartered by Director (Dir), ARCIC or CG, TRADOC. Both proponent and ICDT teams efficiently expedite the JCIDS and acquisition processes through the early involvement of key stakeholders and subject matter experts (SMEs) from different agencies and services. An ICDT, if not designated by charter, is chaired by the CG of the force modernization proponent leading the analysis effort. The exact composition of the analysis teams may vary from time to time, depending on the requirements for the product(s) being developed and the Chair's judgment of what is required to accomplish the task(s) assigned by the TRADOC task order (TASKORD), the ARCIC Concept and Capabilities Guidance (ArG), or the ICDT charter. Analysis team membership includes SMEs in all DOTMLPF domains and appropriate representation from across the Army, CCMDs, DoD organizations, and other Federal agencies. Industry and academia participate in team activities as needed (see also para 2-14). For clarity, analysis team efforts include the development of requirements documentation as directed by the ARCIC.

Chapter 2
Responsibilities

Section I
Headquarters, TRADOC

2-1. Commanding General (CG), U.S. Army Training and Doctrine Command (TRADOC)
The CG, TRADOC will-

a. Execute responsibilities delineated in TRADOC Regulation (TR) 10-5, Organizations and Functions.

b. Approve the AOC, AFCs, and leadership directed concepts.

c. Validate Army DOTMLPF force modernization proposals submitted to HQDA DCS, G-3/5/7 Future Warfighting Capabilities Division (DAMO-CIC) for AROC and Joint Requirements Oversight Council (JROC) review and approval. This responsibility is further delegated to Dir, ARCIC/Deputy Commanding General (DCG), Futures (DCG, Futures) by TR 10-5.

d. Identify requirements that warrant special access program (SAP) protection in accordance with (IAW) AR 380-381.

e. Recommend approval of the ACC to the Chief of Staff, Army (CSA).

f. Serve as the Army lead for asymmetric warfare.

g. Serve as the DOTMLPF CAPDEV and operational architect of the Army.

h. Sign ICDT charters requiring special emphasis or being chaired by Dir,ARCIC/ DCG, Futures.

i. Sign TRADOC Capability Manager (TCM) Charters.

j. Validate TRADOC force modernization and branch proponent designation requests prior to submission to HQDA, G-3/5/7 Strategic Plans, Concepts, and Doctrine Division (DAMO-SSP) for review and approval. This responsibility is further delegated to Dir, ARCIC/DCG, Futures.

2-2. Deputy Commanding General (DCG), Futures
The DCG, Futures is dual-hatted as the Dir, ARCIC and will-

a. Execute responsibilities delineated in TR 10-5.

b. Represent the CG, TRADOC in the exercise of TRADOC responsibilities to design, develop, and integrate all aspects of Army forces into the joint force, from concept to capability development.

(1) Validate Army DOTMLPF force modernization proposals submitted to HQDA DCS, G-3/5/7 (DAMO-CIC) for AROC and JROC review and approval.

(2) Serve as the TRADOC representative on the AROC, the Army Systems Acquisition Review Committee (ASARC), the Army Marine Corps Board, and the Army Requirements and Resources Board.

(3) Serve as the senior TRADOC representative to the configuration steering boards (CSBs) and the Army-Defense Advanced Research Projects Agency (DARPA) Senior Advisory Group.

(4) Serve as the senior TRADOC representative to the Army-Air Force Integration Forum with the United States Air Force Air Combat Command.

c. Serve as a voting member of the Army Geospatial Governance Board.

d. Serve as a voting member of the Army Space Council with the CG, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command and senior leaders of the Army Staff (ARSTAF).

e. Establish TRADOC capabilities determination policy and guidance. Provide direction to execute the JCIDS and manage its implementation and execution within TRADOC.

f. Approve Army operational architectures and provide architecture standards, policy, and governance in support of concepts and capabilities development.

2-3. TRADOC Deputy Chief of Staff (DCS), G-1/4
The TRADOC DCS, G-1/4 will-

a. Execute responsibilities delineated in TR 10-5 and TR 10-5-1 related to capabilities development, requirements (capabilities) determination, and capabilities integration.

b. Coordinate with the supporting Installation Management Command garrisons to ensure DD Form 1391 (FY___ Military Construction Project Data) project documentations are completed as required to support capability development efforts.

c. Participate in ICDTs and other DOTMLPF capabilities development efforts as required.

2-4. TRADOC DCS, G-2
The TRADOC DCS, G-2 will-

a. Execute responsibilities delineated in TR 10-5-1 related to concept development, requirements (capabilities) determination, and capabilities integration.

b. Assist ARCIC in the development of Army concepts IAW the ACF.

c. Develop, coordinate, and operate the Operational Environment Enterprise (OEE) which is a TRADOC key enabler and is the principal means to develop and deliver OE products, services and support to TRADOC and TRADOC's supported users. Approve the OE portrayal IAW TR 71-4 and TR 10-5-1.

d. Assist in developing and documenting the OE and threat products that serve as the benchmarks for all systems or capability development IAW AR 381-11 and TR 381-1.

e. Provide overarching OE support for each iteration of the ACLCP.

f. In support of the CoL manage the OE functional bin for required learning objectives integrated across DOTMLPF.

g. Participate in ICDTs and other DOTMLPF capabilities development efforts as required.

h. Support TRADOC leadership, staff, and subordinate organizations as requested by applying the Devil's Advocate Red Team (DART) to:

(1) Conduct independent critical reviews to identify DOTMLPF weaknesses, vulnerabilities, gaps, and disconnects, and to challenge the assumptions, hypotheses, and premises being used in concepts, doctrine, organizational designs, experiments and future requirements.

(2) Conduct independent critical analysis to identify and frame problems, identify alternative perspectives and alternative courses of action to resolve emerging problems or issues.

(3) Provide support to strategic initiatives, independent fact finding and informal assessments to support decisionmaking.

2-5. TRADOC DCS, G-3/5/7
The TRADOC DCS, G-3/5/7 will-

a. Provide staff management and integration for military occupational classification and structure (MOCS) proposals within the context of DOTMLPF IAW AR 611-1 and Department of the Army (DA) Pamphlet (Pam) 611-21.

b. Assist ARCIC with analyzing Personnel domain implications in force design assessments and force design updates (FDUs).

2-6. TRADOC DCS, G-6
The TRADOC DCS, G-6 will execute responsibilities delineated in TR 10-5-1 and participate in ICDTs and other DOTMLPF capabilities development efforts as required. Serve as the Designated Approval Authority for the ARCIC Battle Lab Collaborative Simulation Environment Simulation Lab (SimLab) and all battle laboratories.

2-7. TRADOC DCS, G-8
The TRADOC DCS G-8 will execute responsibilities delineated in TR 10-5-1 and participate in ICDTs and other DOTMLPF capabilities development efforts as required.

2-8. TRADOC Safety Office

a. Will execute responsibilities delineated in TR 10-5-1 and participate in ICDTs and other DOTMLPF capabilities development efforts as required.

b. Serve as principal advisor on system safety matters for the ARCIC and proponents (IAW TR 385-1).

c. Manage TRADOC system safety program as it pertains to capability documents.

2-9. TRADOC Office of the Staff Judge Advocate (OSJA)

The TRADOC OSJA will provide legal advice on matters involving fiscal issues, travel, conference planning, event planning and execution, invitations to contractors and other non-DoD personnel, and other issues concerning travel, ethics, and fiscal issues. The TRADOC OSJA should be brought into the planning process early in order to avoid policy, legal, and regulatory issues.

Section II
Army Capabilities Integration Center (ARCIC)

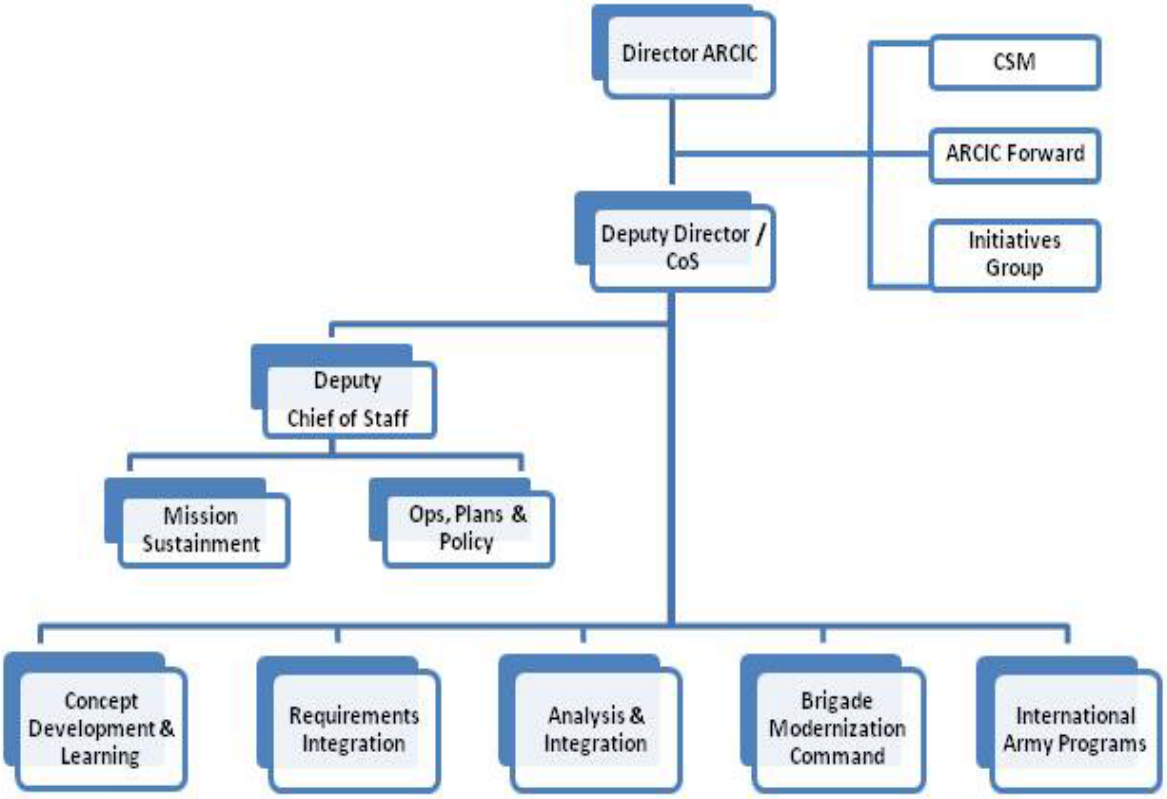


Figure 2-1. ARCIC organization

2-10. Dir, ARCIC

The Dir, ARCIC is dual-hatted as the TRADOC DCG, Futures and will-

a. Develop, evaluate, and integrate concepts, requirements, and solutions for the Army - across DOTMLPF, functions and formations - to provide Soldiers and units the capabilities they need to support Combatant Commanders.

(1) Approve capabilities development roadmaps for future concept and capabilities development efforts as required. These efforts focus on a specified capability area and/or organizations to depict necessary capabilities integration and synchronization.

(2) Lead Army capability integration efforts and validation of Army needs through the NIE efforts executed by the Brigade Modernization Command (BMC).

(3) Direct and approve the ArG outlining DOTMLPF capabilities development activities across TRADOC, as supplemented by TASKORDs for specific efforts. Direct and approve ICDT charters for one time special concept and capabilities development efforts.

(4) Approve cost-benefit analyses (C-BA) conducted by force modernization proponents. Determine at the earliest feasible point to continue, adjust, or place a force modernization proposal in abeyance for reasons of technical risk, minimal value added, or change in military priorities, strategy, or doctrine.

(5) Use concepts, experimentation, wargaming and architecture to develop and integrate capability requirements from a comprehensive DOTMLPF perspective.

b. Coordinate, staff, and validate JCIDS capability documents, then forward them on behalf of the CG, TRADOC to HQDA DCS, G-3/5/7 for AROC validation and Army approval.

c. Lead joint and Army concept development and learning (CDL) efforts through force modernization proponents.

(1) Assist HQDA in the development of Office of the Secretary of Defense (OSD) products which support strategic analysis (DoDD 8260.05, Support for Strategic Analysis [SSA]). This includes integrated security constructs (ISCs) and other SSA products that can be used to support multiservice force deployment documentation and related efforts.

(2) Direct the study of future warfare.

(3) Lead TRADOC experimentation and synchronize efforts with non-TRADOC organizations across the CDL community of practice (CoP).

(4) Synchronize and integrate Army CDL with joint CDL, lead the development of joint concepts and architectures, and lead the development of Army concepts ICW Joint Staff, or the appropriate command or agency, HQDA, other CCMDs, and functional capabilities board (FCB) working groups in support of land force capabilities.

d. Lead execution of the JCIDS process by force modernization and branch proponents to determine capability requirements for the force.

(1) Coordinate, synchronize, and integrate Army capabilities development with Joint Staff, other services, other Federal agencies, other ACOMs, ASCCs, and CCMDs, as required.

(2) Identify and prioritize cross-functional gaps and overlaps in Army capability and propose DOTMLPF solutions to resolve or mitigate gaps and recommend divestitures as appropriate.

(3) Represent CG, TRADOC for decisions regarding the Capabilities Portfolio Review Boards.

(4) Direct and approve the results of analysis as indicated in tables 7-1 and 7-2.

e. Approve corps and division scenarios for studies, analysis, and experimentation.

f. Lead asymmetric warfare efforts within TRADOC. Integrate and synchronize proponent activities within the asymmetric warfare areas of electronic warfare, force protection and improvised explosive device defeat.

g. Lead the Brigade Combat Team Modernization (BCTM) strategic communications, integrated concept teams, and board of directors. Identify requirements for HQDA approval to execute the BCTM strategy and BCTM general officer steering committee (GOSC) efforts to integrate BCTM into the Army.

h. Manage, coordinate, develop, and maintain the battle lab collaborative simulation environment federation of M&S, and distributed simulation network in support of joint and Army concept development, capabilities determination, and capabilities integration.

i. Provide guidance for the execution of TRADOC force design goals and objectives, and recommend approval to release organizational changes and adjustments for Army-wide staffing.

j. Provide security classification guidance for ARCIC-originated sensitive information IAW AR 380-5.

k. Serve as the lead for TRADOC M&S. Manage M&S requirements in support of the advanced concepts and requirements (ACR) domain agent for review and validation of ACR domain M&S capabilities and support concept development, requirements (capabilities) determination, and capabilities integration. Serve as the senior TRADOC representative to the Army M&S GOSC.

l. Serve as the senior rater for directors of the Capability Developments Integration Directorates (CDIDs).

m. Support the CG, TRADOC in his role of providing operational architectures for the Army.

(1) Develop, validate, and integrate operational architectures depicting warfighting capabilities by guiding and managing proponent architecture efforts and providing the policy for operational architecture in TRADOC.

(2) Support force modernization proponent capability development efforts by providing operational architecture expertise and data through the Architecture Integration and Management Division.

(3) Provide TRADOC approval of Army warfighting operational architectures.

n. ICW the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)), validate research and development priorities for Army S&T needs (to include SAP) and the RCs outlined in Army concepts and existing concept capability plans (CCPs). Conduct reviews of SAP and new S&T initiatives as required ensuring technology is aligned with future needs.

o. Serve as the manager of the TRADOC Capability Management program IAW TR 71-12.

2-11. Deputy Director, ARCIC
The Deputy Dir, ARCIC will-

a. Develop, review, and submit concept development, CoL (wargames and experimentation, requirements (capabilities) determination, capabilities integration, and architecture policies and guidance to DCG, Futures for validation.

b. Provide staff management of CDL, experimentation, capabilities integration, and requirements determination in the following areas:

(1) The assessment RCs to identify gaps and the development of integrated DOTMLPF solutions to resolve or mitigate those gaps with unacceptable risk.

(2) The broad studies of future warfare to isolate those issues vital to development of the Army's forces.

(3) The conduct of Army and TRADOC experiments, synchronized with joint and other service experiments, to support force developments.

(4) The development, approval, and use of scenarios to support TRADOC experiments, studies, and analysis for capabilities developments.

(5) The development of Army concepts including the ACC, AOC, AFCs, and CG, TRADOC directed concepts.

(6) The development and execution of the ArG.

(7) The M&S support to concept development, experimentation, capabilities integration, and capabilities determination.

(8) The planning, preparation, and execution of the Army Title 10 Wargame, Senior Leader Seminar, related seminars, planning meetings, political-military seminars, and staff planning exercises.

c. Provide force modernization and branch proponent CDIDs and ICDTs with subject matter expertise as required to complete integrated capability development efforts and documentation.

2-12. ARCIC Directorates

All ARCIC directorates support Dir, ARCIC by executing responsibilities delineated in TR 10-5-2, provide support to force modernization and branch proponent CDIDs and ICDTs as required, support BMC in the execution of the ACLCP, support the Army CoL, support CSBs, to include assessing de-scoping options proposed by the ASA(ALT) community to our approved capability documents, and perform integration responsibilities specified in appendix C. Recommend consideration of the DCS, G-2 DART (see paragraph 2-4.h.) in planning and review of products, such as concepts, doctrine, organizational designs, white papers, experiments, etc.

a. The International Army Programs Directorate also manages and coordinates TRADOC international activities to synchronize the exchange of DOTMLPF information with ASCC priority countries, allies, and friends to enhance current and future operational capabilities; increase interoperability; and build partnerships.

b. ARCIC, Analysis & Integration Directorate (A&ID), Studies and Analysis Division (S&AD).

(1) Upon receipt of the notification e-mail, assign analysts to support development of the materiel requirements document (usually from co-located Operations Research/Systems Analysis analysts).

(2) Conduct a review of existing analysis related to the capability gap or solution under consideration. Based upon the results of this review, the Acquisition Category (ACAT) and the nature of the decision issues, determine the type of analysis (see enclosure). For ACAT III materiel, if the review warrants, prepare a sufficiency memorandum providing the results addressing cost and benefit of the potential materiel solution and pertinent issues.

(3) In conjunction with the CDID, TRADOC Analysis Center (TRAC), Program Executive Officer (PEO), and other stakeholders, frame the analysis problem, including the objective, decision to be supported, tentative decision date, study issues, the form of analysis required or evidence of sufficiency, key constraints and limitations, potential technologies to be considered, and needed support.

(4) Within 60 days of notification, initiate coordination for draft study guidance, including those items listed above, and publish the study directive. The directive will identify the primary study issues and key analysis tasks, direct the appointment of a study director, the formation of a study team and development of a study plan, assign organizational responsibilities, and establish an initial study timeline. The directive will also, if an analyses of alternatives (AoA), formally request needed resources from HQDA DCS, G-8 and ASA(ALT) to conduct the study. Because the decision authority varies by ACAT level, Table 2-1 provides those mandated agencies with which study guidance must be coordinated.

Table 2-1. AoA Guidance Coordination

Estimated Program Acquisition Category	*Coordinate with these Agencies*
ACAT I	OSD-Cost Assessment and Program Evaluation, ASA(ALT), HQDA
ACAT II	ASA(ALT), HQDA DCS, G-3/5/7 & DCS, G-8
ACAT III	Appropriate PEO

2-13. Brigade Modernization Command (BMC)

The ARCIC BMC will-

a. Conduct physical integration, assessments, and evaluations of the Network, Capability Sets and other adaptive capabilities; provide DOTMLPF recommendations to the Army; and prepare fielding of readily available candidate solutions to help mitigate near-term capability gaps and requirements.

b. Plan and conduct the NIE semi-annually and publish the support directive.

c. Prepare the TRADOC DOTMLPF Recommendations Report.

d. Synchronize NIE efforts across TRADOC.

e. Represent TRADOC for the ACLCP at all Triad, Army and HQDA G-3/5/7 LandWarNet/ Mission Command Directorate (DAMO-LM) and Army Campaign Plan meetings.

f. Execute guidance from Dir, ARCIC and represent him in the conduct of the NIE and Agile Process (i.e., ACLCP).

2-14. Chair, Integrated Capabilities Development Team (ICDT) or Force Modernization Proponent.

a. ***ICDTs will be used for capabilities development and documentation efforts that are temporary in nature***. ICDTs will be chartered by Dir, ARCIC or CG, TRADOC as required. An ICDT chair will be identified in the charter. However, ***ICDTs will no longer be used to establish permanent capabilities development and documentation teams to conduct recurring DOTMLPF efforts*** such as CBAs, CNAs, and/or JCIDS documentation efforts. Those teaming arrangements are established in this regulation and supplemented by TRADOC TASKORDs when required. When SMEs outside TRADOC are required and ICDT chairs or Commanders need encouragement for participants, an Army TASKORD can be requested.

b. The ICDT Chair or force modernization proponent can assign a lead to manage daily activities of capability development teams. ARCIC review/approval is not required for establishing intra-Center of Excellence (CoE) or CDID capability development operations and activities. The Chair will-

(1) Conduct capabilities portfolio reviews (CPRs) as required to support Army leadership decisions and the Army Force Generation (ARFORGEN) process and products.

(2) Conduct DOTMLPF assessments, integration and synchronization for designated formations as required.

(3) Conduct analysis of identified RCs in concepts/CONOPS, as directed. If conducting a CBA, the TRADOC CBA Guide should be utilized. If another type of capabilities analysis is directed, appropriate guidance will be provided to the proponent conducting the assessment, such as a TASKORD. At a minimum, if the analysis is intended to support leadership decisions on JCIDS documents, the analysis must be entered into the Joint Staff Knowledge Management Decision Support (KM/DS) Studies Repository. The analysis should contain the essential elements of information outlined in the TRADOC CBA Guide or CNA TASKORD. Analysis requirements are further defined in Chapter 7 of this regulation.

(4) Ensure all concepts contain sufficient detail to initiate JCIDS analysis. See TRADOC Pamphlet (TP) 71-20-3, The U.S. Army Training and Doctrine Command Concept Development Guide.

(5) Ensure the TRADOC DCS, G-2 approves threats used in concept development and any modeling efforts supporting capabilities developments.

(6) Coordinate development of operational architecture products with the Chief, Architecture Integration and Management Division (AIMD). Assist AIMD by providing subject matter expertise in functional areas, giving insights into the operational content depicted by the architecture products.

(7) Prepare and forward JCIDS capability documents as directed to the ARCIC JCIDS Gatekeeper for Dir, ARCIC or Dir, Requirements Integration Directorate (RID) validation, and approval by the AROC and/or JROC.

(8) Conduct C-BA as required. Make recommendations to Dir, ARCIC for decisions at the earliest feasible point to continue, adjust, or place a force modernization proposal in abeyance for reasons of technical risk, minimal value added, or change in military priorities, strategy, or doctrine.

(9) Represent the WfF and related functions for HQ TRADOC in the CNA process, and any other capability development processes and products germane to their portfolio.

(10) Utilize current mission funding levels to execute DOTMLPF capabilities development and documentation, unless additional funds have been identified and specifically coordinated and approved in advance.

(11) Establish interdisciplinary teams that include organizations outside TRADOC, and fully coordinate force modernization proposals prior to submission to ARCIC for validation. This will mitigate delays and avoid sequential processes that prevent agile developments. This includes members of the ARSTAF and Army Secretariat, U.S. Army Materiel Command (AMC), U.S. Army Test and Evaluation Command (ATEC), U.S. Army Forces Command and other Army organizations or activities. This is not an all inclusive list, but specific organizations

to consider are: ARSTAF G-1, G-2, G-3/5/7, G-4, Chief Information Officer (CIO)/G-6, G-8; Assistant Secretary of the Army for Acquisition, Logistics, & Technology (ASA(ALT)) - Dir, System of Systems and Systems Engineering (SOSE), Deputy for Acquisition and System Management; other Army Secretariat Staff agencies; PEOs; ARSTAF Offices of the Army National Guard and U.S. Army Reserve Command; the Surgeon General; US. Army Forces Command; U.S. Army Materiel Command-Research and Development Command or other sub-organizations; CCMDs; Unified Commands (e.g. SOCOM); Army Service Component Commands; Direct Reporting Units (e.g. ATEC and MEDCOM); Joint Staff; non-TRADOC force modernization proponents and Sister Services.

(12) Forward organizational/formation issues (including prospective FDU issues) to the ARCIC, A&ID, Force Design Division (ATFC-RF) for consideration during the total Army analysis process.

(13) Schedule all DOTMLPF capabilities development and documentation-related appearances in Joint forums through HQDA, G-3/5/7 (DAMO-CIC), ICW ARCIC RID.

(14) ICDT charters or TASKORDs are terminated upon completion of the assigned deliverables as directed by the signatory.

(15) For ICDT efforts, transfer responsibility for development of JCIDS documentation to the applicable force modernization proponent organization as directed by Dir, ARCIC.

(16) Consider incorporating the DCS, G-2 DART (see paragraph 2-4.h.) in the planning and review of products, such as concepts, doctrine, organizational designs, white papers, experiments, etc.

Section III
Force Modernization Proponents

2-15. Common responsibilities

a. Force modernization and branch proponents are designated IAW AR 5-22. Commanders of U.S. Army Combined Arms Center (CAC) and most TRADOC Centers of Excellence are identified as force modernization proponents. Within the CoEs, the CDIDs usually execute most force modernization responsibilities. A few of these responsibilities may be worked elsewhere in the CoEs (e.g., training). The common responsibilities outlined below apply to all TRADOC force modernization proponents and those force modernization proponents that have, or should have a memorandum of understanding (MOU) with TRADOC for DOTMLPF capability development processes and document validation. When common responsibilities overlap, use AR 5-22 for additional guidance to determine the proponent with primary responsibility. These proponents include, but are not limited to specialty branches and functions such as U.S. Army Cyber Command, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, Special Operations CoE; U.S. Army Medical Department Center and School; U.S. Army Chaplain Center and School; The Judge Advocate General's Legal Center and School; the Army Public Affairs Center; and any proponents executing DOTMLPF processes IAW AR 5-22.

To establish a MOU with TRADOC, contact the ARCIC, Mission Sustainment Division (MSD). All force modernization and branch proponents must develop DOTMLPF integration strategies such that a capability is provided or enhanced by the combination of these domain solutions. These integration strategies may be aligned to a specific solution (e.g., materiel or collective training) or to a specific organizational structure. These integration strategies must identify the associated DOTMLPF solutions and provide a packaged fielding schedule to ensure these products are delivered to units in a synchronized manner.

b. TRADOC proponents and non-TRADOC proponents with MOUs will-

(1) When initiating an ICD, CDD, or CPD, notify by e-mail the ARCIC JCIDS Gatekeeper; Dir, A&ID; and the Chief and Deputy Chief, S&AD.

(2) Support the BMC-led NIEs by executing responsibilities delineated in the ACLCP SOP approved by the Vice Chief of Staff of the Army (VCSA) and TRADOC memorandum (ATFC-IBU), 27 November 2012, subject: *Agile Capabilities Life Cycle Process Execution Directive*, and performing actions assigned by Directives signed by Dir, ARCIC.

(2) Approve new equipment training plans for their areas of subject matter expertise and responsibility after validation by CAC-Training (CAC-T). New equipment training plans that cover more than one proponent functional area will be coordinated by the lead proponent.

(3) Develop, coordinate, and provide blue force concept input and development support to ARCIC, to include the Joint and Army Concepts Division (JACD) for integration into scenario developments IAW TR 71-4.

(4) Support the analysis of joint and Army concepts by analyzing requirements within proponent's area of functional expertise as specified in AR 5-22 or as assigned by CG, TRADOC.

(5) Conduct C-BAs, AoAs, and Business Case Analyses (BCAs) for ACAT III programs as required, for ACAT II programs when directed by Dir, ARCIC, and support conduct of AoAs for ACAT I programs. Perform analyses to determine key performance parameters (KPPs), key system attributes (KSA), and other requirements analyses in collaboration with pertinent centers, schools, and battle laboratories.

(6) Ensure their supporting TRADOC related manpower and personnel integration (MANPRINT) analyses are conducted for each of the MANPRINT domains for each materiel alternative.

(7) Ensure that supporting proponents are fully integrated into the analysis process.

(8) Coordinate with CCMDs during the JCIDS process to ensure their requirements are addressed during analysis activities and the development of JCIDS documents. The Combatant Commanders are now required to input their requirements directly to the JROC, so proponents

must consider their input before sending the documents forward for TRADOC and AROC validation and approval.

(9) Develop a CDD, CPD, and/or DCR/DICR, as appropriate, to support the acquisition or fielding of a capability demonstrated through a JCTD, qualified prototype project, or quick reaction technology project, when directed by Dir, ARCIC.

(10) Develop C-BA as required throughout development. Based on these analyses, make recommendations to Dir, ARCIC for decision at the earliest feasible point to continue, adjust, or place a force modernization proposal in abeyance for reasons of technical risk, minimal value added, or change in military priorities, strategy, or doctrine.

(11) Develop individual and collective training systems and programs to execute approved concepts.

(12) Develop non-system training aids, devices, simulators, and simulations (TADSS) requirement documents for validation by CAC-T and forward to Dir, ARCIC for validation, integration, and submission to HQDA DCS, G-3/5/7 via the Capabilities and AROC Management System (CAMS).

(13) Coordinate and approve scenario inputs within area of expertise IAW TR 71-4.

(14) Ensure newly approved joint and Army concepts and existing CCPs are integrated into proponent doctrinal and training products.

(15) Ensure that any new, updated or revised JCIDS documents prepared and submitted to the ARCIC JCIDS Gatekeeper account for the capability gaps identified in the currently approved CNA.

(16) Establish teams to conduct required supporting analysis (e.g. CPRs, CBAs, CNAs, or other analyses) and prepare capability documents in support of high risk gaps as directed by Dir, ARCIC.

(17) Lead assigned accelerated/agile solution developments, operational assessments, and integration to resolve critical warfighter needs, when directed by Dir, ARCIC.

(18) Prepare and forward capability documents to the ARCIC JCIDS Gatekeeper for TRADOC and AROC validation when directed by Dir, ARCIC.

(19) Support TRADOC and HQDA G-3/5/7 at the applicable CSBs, to include assessing proposed performance de-scoping options to approved capability documents.

(20) Review and update FM 7-15, The Army Universal Task List (AUTL) and participate in the review and development of Chairman of the Joint Chief of Staff Manual (CJCSM) 3500.04, Universal Joint Task List.

(21) Review TRADOC Pam 525-series concepts to ensure accuracy and currency of content and to determine the extent to which doctrinal and training publications, force design, materiel solutions, leadership and education, personnel, and facilities issues require changing to execute the concept, as needed.

(22) As virtual and constructive M&S training and leader development tools are developed for your functional area, ensure that they are consistent with the overall training and leader development M&S environment as managed by Commander, CAC.

(23) Serve as the user representative in the development, acquisition, testing, and fielding of capabilities within designated area specified in AR 5-22 or as assigned by CG, TRADOC.

(24) As tasked, provide observer/controllers, system DOTMLPF data collectors, and data analysts ICW ATEC and U.S. Army Forces Command for the NIE efforts.

(25) Support CDL efforts, when directed by Dir, ARCIC.

(a) Develop and execute experiment plans IAW the ArG priorities.

(b) Develop detailed cost estimates for planned experiments and forward them to Dir, Concept Development and Learning Directorate (CDLD) for approval.

(c) Participate in the development of joint concepts, when directed by Dir, ARCIC.

(d) Provide assistance to the ARSTAF and the Dir, ARCIC, as requested.

(e) Provide Dir, CDLD a written report of experiment results within 90 days of experiment completion, and follow the process outlined in Chapter 6, identifying whether the experiment director is someone other than the proponent.

(f) Provide Dir, CDLD a detailed accounting of manpower resources, funds expended and obligated, and for what purposes, to execute each experiment.

(g) Provide ARCIC Joint and Army Experimentation Division (JAED), Joint and Army Modeling and Simulation Division (JAMSD), and S&AD with experiment objectives, M&S capability needs, and their attendant study issues.

(h) Support development of the running estimates and Interim Solution Strategies (ISS). Ensure concept and CAPDEVs identify learning demands to drive learning activities.

(26) Develop operational architecture products for concepts and capability documents, to include CONOPS, functional concepts, ICDs (including IS ICDs), CDDs, and CPDs. Provide functional area subject matter expertise and validate the operational content depicted within the architecture products.

(27) Support development and execution of the ArG.

(28) Participate in the CNA process, specifically the RCs identification, solution input, organizational assessment, Council of Colonels (CoC) and GOSC elements. All proponents will participate in the weapons systems reviews during the Program Objective Memorandum (POM)/program budget review development as requested.

(29) Give consideration to incorporating the DCS, G-2 DART (see paragraph 2-4.h.) in the planning and review of products, such as concepts, doctrine, organizational designs, white papers, experiments, etc.

2-16. Centers of Excellence (CoEs)
CoEs will-

a. Ensure CDID organizations support the CoE in the execution of its responsibilities for concept development, experimentation, requirements (capabilities) determination and capabilities integration. The CDID develops and validates DOTMLPF integrated combined arms capabilities that complement unified action partners capabilities. Although chartered by CG, TRADOC, the TCMs work for the CDID Director.

(1) Coordinate with other CDIDs and CoEs to execute the CoE functions of delivering current warfighting requirements, identifying future capabilities, integrating DOTMLPF domains, and presenting recommendations to the Dir, ARCIC and TRADOC CG.

(2) Coordinate, integrate, and synchronize developments with ARCIC, CAC, proponent CDIDs, Army and Joint communities as appropriate when concepts and DOTMLPF solutions are proposed to solve or mitigate gaps.

(3) Coordinate and synchronize DOTMLPF integration with other CDIDs and the Army/Joint communities when appropriate for any assigned functions, capabilities, systems, or system of systems (SoS).

(4) Participate in Army CoL wargames, seminars, and experimentation, as directed by ARCIC, with other CDIDs and experimentation activities, and the joint community.

(5) Use their TCMs and/or work with other CDIDs to ensure the review of requests for proposals (RFPs) prior to release for competition to assist the program manager (PM) in correctly identifying achievable required operational capabilities.

b. Execute responsibilities approved by the VCSA and manage the CDID on behalf of the force modernization proponent.

c. Review combined arms solutions for unified land operations ICW other CoEs.

d. Use their respective CDID organization to conduct DOTMLPF prioritization, integration and synchronization within their functional areas of responsibility.

e. Support the BMC-led NIEs by executing the CoE/CDID responsibilities delineated in the VCSA approved ACLCP SOP, TRADOC memorandum (ATFC-IBU), 27 November 2012, subject: *Agile Capabilities Life Cycle Process Execution Directive*, and any subsequent ARCIC NIE Directives.

f. Ensure the concurrent development of the System Training Plan (STRAP) with the materiel requirements documents (particularly CDD). Approve STRAPs that define training strategies, training support, and resource requirements in support of new, improved, and displaced equipment and training systems/subsystems.

g. Approve and forward system training requirements to Dir, ARCIC for entry into the CAMS as part of the JCIDS base document and/or supporting information as appropriate.

h. When identified as the responsible CoE for a candidate, per TRADOC memorandum (ATFC-IBU), 27 November 2012, subject: *Agile Capabilities Life Cycle Process Execution Directive*, CoEs will develop plans to determine: minimum essential Basis of Issue; necessary associated DOTMLPF products; necessary resourcing adjustments for the entire suite of DOTMPLF products; recommended delivery timing of these products; and recommended requirements documentation generation or update. See Table 10-1, ACLCP Roles and Responsibilities, for more details.

2-17. Commander, U.S. Army Combined Arms Center
In addition to the responsibilities identified in TR 10-5, the Commander, CAC will-

a. Serves as Domain Lead for Army Training/Training Support and Leadership and Education, to include S&T efforts.

b. Develop and manage Training Support System (TSS) requirements for the Army Learning Environment (ALE). The Army learning environment consists of three domains: institutional, operational, and self-development (see Appendix D, TP 525-8-2, The U.S. Army Learning Concept). Develop and manage requirements for Leader Development, Training, and Doctrine.

c. Provide policy for the submission of ALE capability needs and validate capability documents prior to submission for approval.

d. Assist ARCIC by supporting capabilities development analysis of the BMC-led NIE, the ACLCP, and capability document preparation as required.

e. To ensure that all materiel requirements are aligned with training and leader development needs, Commander CAC will:

(1) Use the STRAP to manage the development of associated training & leader development products.

(2) Ensure that the performance parameters (e.g., training KPP as applicable), training, and resourcing paragraphs of JCIDS documents (CDD or CPD) reflect the needed metrics, products,

and resources and are consistent with the STRAP and JCIDS Manual, even though the STRAP does not have to be completed before the JCIDS documents completes staffing.

f. Manage the identification of training and training system requirements in support of JCIDS and the acquisition processes. Commander, CAC and Dir, ARCIC validate training and training system requirements in the execution of their assigned responsibilities in support of JCIDS and the acquisition processes.

g. Provide Training Device Requirements Review Committee (TDRRC) validation for non-system TADSS requirements documents to ensure technical sufficiency prior to submission to Dir, ARCIC for integration, final validation, and submission to HQDA.

2-18. Commander, U.S. Army Combined Arms Support Command (CASCOM) and the Sustainment CoE (SCoE)
In addition to the responsibilities identified in TR 10-5, the Commander, CASCOM will-

a. Develop, coordinate, and approve sustainment scenario inputs within area of expertise and incorporate input from the U.S. Army Soldier Support Institute's Financial Management and Adjutant General Schools, U.S. Army Medical Department Center and School, U.S. Army Chaplain Center and School, and The Judge Advocate General's Legal Center and School IAW TR 71-4.

b. Serve as the TRADOC DOTMLPF integration portal for Human Resources, Financial Management, Medical, Chaplain, and Judge Advocate General proponents.

c. ICW ARCIC Sustainment Division, ensure execution of their responsibility to review all JCIDS documents for compliance with supportability requirements (for example, prepare an integrated logistics plan to support the capability, as required).

d. Support the BMC-led NIEs by executing the CoE/CDID responsibilities delineated in the VCSA approved ACLCP SOP, TRADOC memorandum (ATFC-IBU), 27 November 2012, subject: *Agile Capabilities Life Cycle Process Execution Directive*, and any subsequent ARCIC NIE Directives.

Section IV
Separate TRADOC Activities

2-19. Dir, TRADOC Analysis Center (TRAC)
The Dir, TRAC will-

a. Assist Dir, ARCIC by leading and conducting analyses of Army concepts, existing CCPs, major TRADOC experiments, and operational architectures.

b. Develop scenarios that depict future force operations IAW emerging concepts, results of previous appropriate wargames and experiments, and existing CCPs.

c. Develop and maintain databases, scenarios, and M&S in order to support TRAC analytical/ experimentation efforts.

d. Assist Dir, ARCIC by supporting BMC-led NIEs to develop and execute the evaluation plans and draft the final TRADOC DOTMLPF Recommendations Report.

e. Assist Dir, ARCIC by leading analyses of major TRADOC experiments IAW Army Experimentation Guidance and support experimentation with database management, scenario development, simulations, and analysis.

f. Assist Dir, ARCIC by leading studies and analyses to inform key decisions by Joint Staff, ARSTAF, TRADOC and senior leaders pertaining to capabilities integration and development. Perform M&S for AoAs (primarily ACAT I, information assurance (IA), and select applicable ACAT II), KPP, and other requirements analyses in collaboration with TRADOC centers, schools, and battle laboratories.

(1) Lead or assist (depending on projected program ACAT level and designated AoA study lead) in planning and initiation of pre-Materiel Development Decision (MDD) “knowledge development” activities – developing data, analysis tools, analysis methods, and early understanding of relevant technologies to support the AoA.

(2) Lead AoA study efforts for ACAT I and selected ACAT II systems.

(3) Assist the owning CDID/TCM in developing the AoA study plan and shaping their analysis for ACAT II and ACAT III CDID-tasked AoAs.

g. Develop TRADOC standard scenarios, derived from or based upon SSA products, depicting echelons above corps, corps, division, and brigade combat team forces in a joint operational context for studies, analysis, and experimentation IAW TR 71-4 and as directed by Dir, ARCIC. ICW TRADOC DCS, G-2, ensure accurate representation of the OE.

h. Develop non-standard TRADOC scenarios, such as the Multi-Level Scenario, for unclassified studies, analysis, and experimentation IAW TR 71-4 and as directed by Dir, ARCIC.

i. Develop, maintain, and provide configuration management of TRADOC's verified and validated force on force and functional operations models and simulations for which TRAC is the proponent, to support capability developments and operations analysis.

j. Serve as CG, TRADOC’s authority on matters of study design, data management, scenario development and application, and selection of models and simulations for use in analyses.

k. Support or lead complex CBAs of joint concepts, large complex Army CBAs, and other force development analyses, when directed by Dir, ARCIC.

(1) Advise the ICDT or force modernization proponent chair in developing analytic requirements and analysis plans.

(2) Conduct selected analytic tasks exceeding the ability of the ICDT or proponent CDID.

l. Ensure consistency of analytic standards and the integrity of databases, models, and scenarios for which TRAC is the proponent.

m. Participate in and support the analysis processes (CNA C-BA, CBA, and other JCIDS supporting analyses).

2-20. TRADOC Capability Managers (TCMs)/TRADOC Project Office (TPO)
TCMs are chartered by the CG, TRADOC, but report to their respective CDID Directors or other capabilities development leadership as assigned (e.g. training TCMs work for CAC-T). TPOs are chartered by local commanders. TCMs/TPOs will support CG TRADOC initiatives ICW their CDID Director, to include:

a. Execute responsibilities as outlined in TR 71-12.

b. Coordinate with CoEs, other proponents, other TCMs, TRADOC project offices, and materiel developers relative to supporting TRADOC DOTMLPF products key to their capabilities' implementation, fielding and operations.

c. Represent CG, TRADOC at joint (functional area working group, JROC, FCB), other Service, Army (for example, ASARCs and CSBs), multinational, and/or coalition requirements forums, as required and report to the CDID Director.

d. Serve as the CG, TRADOC representative to the PEO and/or PM for those capabilities for which the TCMs have responsibility and report to the CDID Director.

e. Participate in the materiel developers' system concept, cost performance trade-off, and cost as an independent variable analyses by providing detailed warfighting capability impact of specific system characteristics. Present TRADOC's recommendation(s) at all design reviews.

f. Review all applicable TRADOC DOTMLPF products (to include capability documents) for clarity, consistency, and adequacy and assist in their staffing for validation with Dir, ARCIC.

g. Provide membership to ICDTs and force modernization proponent analysis and documentation teams when directed by Dir, ARCIC or requested by other force modernization or branch proponents.

h. Work with other CAPDEVs to review RFPs and statements of work prior to being released for competition to ensure the PM is correctly describing the required performance and other DOTMLPF attributes.

i. TCMs will review materiel solutions associated with their CoEs and all materiel assigned/employed by their functional area CAPDEVs. TCMs will also work issues across all aspects of DOTMLPF to ensure organizations remain capable of executing their role in all concepts of operation.

j. TCMs assigned organizational integration capability areas must conduct unit visits or coordinate as needed in order to ensure they have situational awareness of capability gaps from units and CTC rotations to assist in the determination and development of those capability gaps. These TCMs normally integrate DOTMLPF imperatives for their assigned organizational integration capability areas and corresponding organization(s).

2-21. Commandant, U.S. Army War College (USAWC)
The Commandant, USAWC will-

a. Assist Dir, CDLD in blue force concept input and development support for integration into scenario developments IAW TR 71-4.

b. Ensure newly approved joint and Army concepts and existing CCPs are appropriately integrated into resident and nonresident curriculum of the USAWC.

c. Provide assistance in the development and synchronization of DOTMLPF solutions for peace and stability operations.

d. Provide membership to ICDTs and force modernization proponent analysis and documentation teams when directed by Dir, ARCIC or requested by other force modernization or branch proponents.

e. Review TRADOC Pam 525-series of concepts as needed to assist in ensuring accuracy and currency of content and assist in determining the extent to which DOTMLPF issues require change to execute the concept.

f. Support CDL efforts and responsibilities identified in paragraph 2-14.b.(23), when directed by Dir, ARCIC.

g. Support the CBA or other analysis of Joint and Army concepts as directed by analyzing those portions within their functional expertise.

Chapter 3
Concept Development and Learning

3-1. General

a. Concepts are the foundation for the Army's execution of the JCIDS deliberate process. The Army participates in the development of joint concepts and leverages them in the development of Army concepts. Concepts describe a problem or series of problems to be solved,

the components of the solution, and the interaction of those components in solving the problem. Concepts define how the force functions (operational concept), the timeframe and conditions it must be able to operate in (the OE), its physical and organizational characteristics (design parameters and architecture), and what it must be able to execute (required capabilities) in terms of performing missions or producing effects.

b. Concepts illustrate how future joint and Army Forces will operate, describe the capabilities required to carry out unified land operations they are likely to conduct against adversaries in the expected OE, and how a commander, using military art and science, might employ these capabilities to achieve desired effects and objectives. Joint Concepts consist of future capability descriptions within a proposed structure of future military operations for a period of 8-20 years, while Army concepts cover a period of 6-18 years in the future.

3-2. Strategic guidance

Strategic guidance and national policies are developed in response to security needs in an ever changing geo-political environment. These changes prompt the need to continually reexamine joint and service capabilities to determine whether they can meet future needs. Further information on strategic guidance can be found in TP 71-20-3, TRADOC Concept Development Guide.

3-3. Operational environment

TRADOC DCS, G-2 supports the development of the OE information (as established by Defense Intelligence Agency [DIA]) used in all concepts and advisory documents developed to inform the ACF, CBAs, analyses/assessments and the development of DOTMLPF solutions. Further information on the OE can be found in TP 71-20-3.

3-4. Army Concept Framework (ACF)

ARCIC leads Army concept development and supports joint concept development in collaboration with proponents throughout the Army and with unified action partners. TP 71-20-3 presents the details in the development of Army concepts and concepts-based CONOPS and white papers that serve as advisory input to Army concepts. JACD develops and manages the ACF; develops the overarching Army concepts, the ACC and AOC; and directs, manages, and synchronizes the development of AFCs, CG-directed concepts, and existing CCPs. JACD also ensures the integration of unified land force capabilities in the development of joint capstone, and joint concepts ICW HQDA DCS, G-3/5/7, the Joint Staff J-7, and CCMDs. The CJCSI 3010 series presents guidance for joint concept development.

3-5. Development of Army concepts

a. The development of Army concepts is initiated by:

(1) CG, TRADOC direction to develop or revise concepts to change the way the Army conducts operations in the future.

(2) A new military assessment that identifies a need to document a conceptual view of new capabilities or requirements or a change in current conceptual view. These can include updates to the OE; national defense, and Army strategic guidance; a Quadrennial Defense Review; new joint concepts; or Total Army Analysis (TAA).

(3) The two-year concepts review-and-revision cycle provides the means to apply these assessments and the CoL as part of the regular review of Army concepts to determine the need to revise a concept, create a new concept, or delete a current concept. The ArG may direct additional requirements for the review of Army concepts.

b. CONOPS and white papers may be initiated by any TRADOC organization. Their revision is at the discretion of the approval authority.

c. Army concept review and approval:

(1) The CSA approves the ACC.

(2) CG, TRADOC approves the AOC and any CG directed concepts.

(3) Dir, ARCIC approves all AFCs and may – on behalf of the CG, TRADOC – approve leadership directed concepts.

(4) CONOPS and white papers are usually approved by a general officer in the organization that initiated the document's development. CONOPS and white papers carry the authority of the approving organization. If one purpose of a concepts-based CONOPS or white paper is to formally present one or more RCs to support capabilities development, then Dir ARCIC must approve it. Further information on the development of concepts-based CONOPS and white papers is in TP 71-20-3.

3-6. Concept of operations (CONOPS) and white papers

A concepts-based CONOPS is a statement, in broad outline, of a commander's assumptions or intent about an operation or series of operations. It is designed to give an overall picture and a useful visualization of how a future operation would be conducted. It is developed at the discretion of a CoE commander or directed by Dir, ARCIC to inform revisions to the ACF, or as a tool to help describe how a particular operation is conducted in the future. Concepts-based white papers are a second method available to ARCIC and CoEs to develop ideas to facilitate revisions to the ACF or to inform a CBA.

3-7. Campaign of Learning (CoL)

a. The CoL is the ARCIC's multi-tiered effort to integrate the objectives and learning of Title 10 wargames, experiments, NIEs, studies, S&T events, joint and multinational wargames and talks, and other venues for learning. The CoL is a return to a multi-year, long term approach to learning after 10 years of war during which the Army's learning has quite rightly been focused on the challenges and adversaries of the present day. The CoL aims to address, from a variety of perspectives, the challenges that the U.S. military will face in the near, mid, and far-term.

b. The CoL is organized along four functional lines of effort (LoEs) integrated with two cross-cutting LoEs. The successful accomplishment of objectives related to these LoEs will result in the production and approval of documents that inform and shape the following broader activities/frameworks:

(1) Legislative requirements (i.e. Quadrennial Defense Review).

(2) OSD Policy and Joint Staff Concept Development activities.

(3) HQDA Framework and Concept Development activities.

(4) JCIDS.

(5) Programming, Planning, Execution, and Budgeting.

(6) DAS.

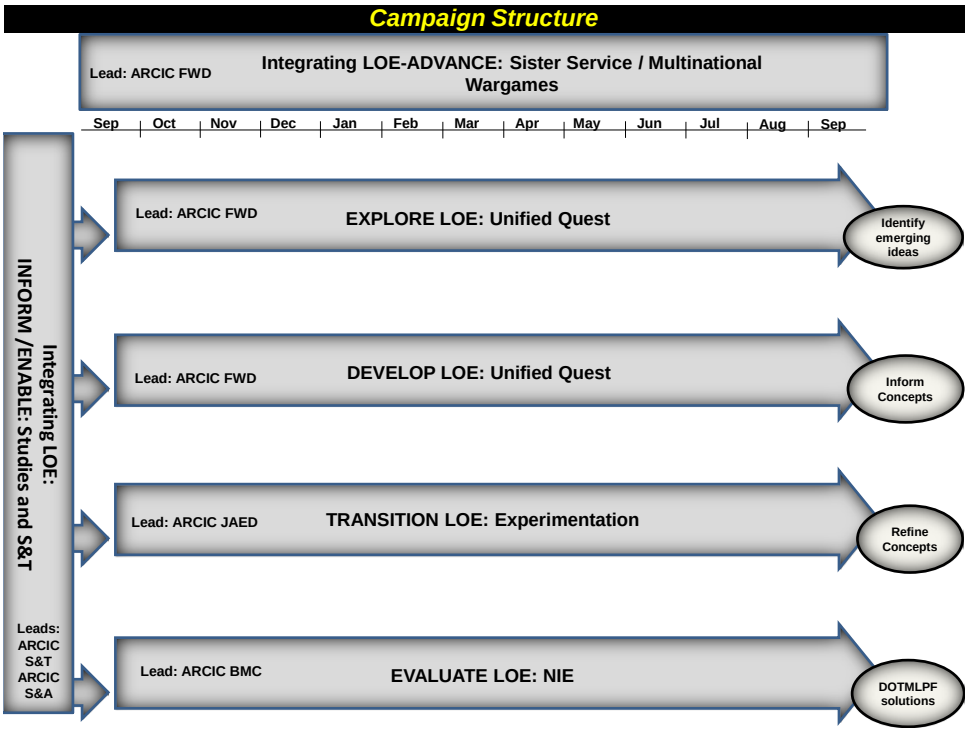


Figure 3-1. Campaign of Learning Lines of Effort

c. CoL LoE foundational-level learning derived from existing/future studies and S&T efforts form the underpinning of the CoL. See Figure 3-1. Interim results from these studies/efforts compose the integrating LoE (INFORM/ENABLE) from which we build and inform activities across the four functional LoEs. Specifically, the INFORM/ENABLE LoE will germinate ideas that will grow and coalesce into the concepts across two functional LoEs – Explore Ideas and Emerging Strategic Trends (EXPLORE) & Develop and Mature Concepts (DEVELOP).

d. The INFORM/ENABLE Line of Effort is supported by our S&T efforts that inform CoL venues through technological context that communicates the "art of the possible," and enables future concepts by shaping the Army's Basic (6.1), Applied (6.2) Research and Advanced Development (6.3).

e. The EXPLORE and DEVELOP LoEs encompass Unified Quest (UQ), the Army's "greenhouse of ideas" which employs seminars and wargames to explore the future and develop the ideas that frame our concepts. The EXPLORE LoE will scan the international security environment to identify future political, military, economic, social, information, and infrastructure trends that may potentially characterize the future operational environment and force transformation requirements. Activities in the EXPLORE LoE will seek to identify previously unknown / unforeseen trends that could lead to strategic surprise. Given approved forecasts of the operational environment and identified strategic trends from the EXPLORE LoE, the DEVELOP LoE will develop and refine emerging Army concepts and RCs for the Army Transition Force. The DEVELOP LoE will focus on mid-term events including the formulation of the ACF and Quadrennial Defense Review.

f. Once activities in the DEVELOP LoE are complete, the CoL transitions matured concepts into potential DOTMLPF solutions via experimentation in the near/mid-term. This LoE (TRANSITION) focuses on CDID experimentation efforts in the Army WfF to test concepts of relevance for solution sets. The CoL will ensure the integration and synchronization of the TRANSITION LoE with the emerging Campaign Plan for Experimentation.

g. Once DOTMLPF solution sets are identified and developed, the CoL will make the final LoE shift to activities and events where capabilities solution sets are tested and evaluated – the EVALUATE LoE. With the EVALUATE LoE, the CoL will seek to inform near-term senior leader decisions on the integration of existing DOTMLPF solutions into the current force via the ACLCP (i.e., Agile Process).

h. The CoL will also integrate the functional LoEs with top-down senior OSD, Joint, and Army leader perspectives and unified action partner concepts. This LoE (ADVANCE) will seek to integrate existing and emerging unified action partner concepts and capabilities with CoL efforts in order to provide senior leadership with an appreciation of the Army's future concepts, capabilities, and recommended solutions.

i. CDL CoP. The CDL CoP includes CDLD, CoEs or other designated organization who are representatives for CBAs or analyses/assessments, representatives for CNAs, S&T, BMC NIEs, TRAC, and other partners needed to assess progress on resolving the development of interim recommendations and solution strategies.

j. Governance. CDLD is the administrative and integration lead for the overall CoL. ARCIC generates and provides specific content and format requirements as required, and coordinates required collaboration, planning and approval venues. Annually, ARCIC Operations, Plans and Policy Division (OPPD) will host a coordination event during which to disseminate ARCIC guidance on learning focus areas and prioritization. This will be followed by a CoL planning event during which the CoP will assess insights from across the CoL, determine LoE focus areas

and objectives incorporating ARCIC guidance, and populate each LoE with appropriate venues. Following this, OPPD will deconflict CoL venues through the ongoing ARCIC Integrated Events Matrix process. OPPD manages the ARCIC Integrated Events Matrix process to prioritize, schedule and deconflict venues and attendance across all CoL events. Quarterly, ARCIC CDLD and OPPD will collaborate to host a CoL integrating event, in order to assess in-stride learning and insights, disseminate guidance, and deconflict venues and resources as necessary. Insights from CoL wargames and experiments will be briefed to CDLD; Deputy Dir, ARCIC; Dir, ARCIC (through the Capabilities Integration Enterprise Forum; and CG, TRADOC Quarterly Futures Review for approval.

Chapter 4
Requirements (Capabilities) Determination

4-1. Capabilities development and integration in the Army

A joint and Army concept-centric capabilities identification process informed by lessons learned from current conflicts is required to define how new capabilities are identified and developed. Army forces must be prepared to conduct unified land operations, integrating their actions with unified action partners as part of a larger effort. Capabilities determination, also called capabilities development, is the Army's implementation of the JCIDS process used to identify, assess, and document changes in DOTMLPF that collectively produce the force capabilities and attributes prescribed in approved concepts, CONOPS, or other authoritative sources.

4-2. Joint Capabilities Integration and Development System (JCIDS) Application

a. The procedures established in JCIDS support the Chairman, Joint Chiefs of Staff and the JROC in their efforts to identify, assess, and prioritize joint military capability needs. JCIDS plays a key role in the process of identifying capabilities required by the warfighter to support unified land operations. The JCIDS process operates in an iterative manner with opportunities to enter the process in different phases, and supported by an integrated, collaborative review process. All JCIDS analysis and documentation must meet the standards outlined in the CJCSI 3170.01 and JCIDS Manual. This regulation, as supplemented by user's guides and the ArG, supports JCIDS requirements with a goal of a first pass approval for all Army DOTMLPF requirements.

b. Capabilities identification flows from Operations, Plans, and Roles/Missions which are informed by top-level strategic guidance. Future capability requirements, and proposed materiel/non-materiel approaches must relate directly to capabilities identified in the ACF and approved supporting concepts-based CONOPS and white papers.

c. The JCIDS deliberate staffing process is normally initiated through the execution of a CBA or other analyses. The CBA identifies the capabilities and operational performance criteria required to execute missions within a specified threat environment; identifies shortfalls in delivering those capabilities and the associated risks; and identifies possible solution approaches for the capability shortfalls. Throughout the CBA, the ICDT Chair or the force modernization

proponent ensures their analyses accounts for joint capabilities, concerns, and approaches. The completed CBA will provide the foundation for development of JCIDS documentation.

d. The AROC and/or JROC validates the need for DOTMLPF solutions, to include affordability and technical feasibility considerations. The ARCIC, AROC and/or JROC may also identify capability gaps where the operational risk is acceptable and return documentation with no action. For Materiel, an approved ICD becomes the basis for the DAS Materiel Solution Analysis (MSA) phase, which begins the DAS process. Information Systems also require an ICD (IS ICD), but the formats and follow-on requirements differ from that of a regular ICD. Finally, a Joint DCR or Army DICR serves as a DOTMLPF requirements document when those requirements rise to the level of leadership awareness and approval.

e. An overview of DAS/JCIDS interactions can be found in the CJCSI 3170.01 (JCIDS Instruction) and is also discussed in Chapter 9 of this regulation.

4-3. Alternative studies and paths into JCIDS

The JCIDS analysis and documentation processes are tailorable. The JROC, through the publication of the CJCSI and JCIDS Manual, identified several alternative paths that allow various types of studies, analyses, and assessments to satisfy the data requirements necessary to support the development of JCIDS documents. There are also other means of identifying immediate or near term needs justifying entry into JCIDS without the normal capability requirements and gap identification. These means include the Army ONS, the joint urgent operational need (JUON), and the joint emergent operational need (JEON). In some cases, other sources of data may be used to justify entering the JCIDS process without an ICD. The studies, analyses, and assessments that may satisfy JCIDS requirements are found in the JCIDS Manual. They include new requirements that result from JCIDS analysis, ONS, JUON/JEON, operational lessons learned, exercises, studies, experiments, Joint Improvised Explosive Device Defeat Transition Packets or CDRT Packets, or senior leader decisions to accelerate the fielding of future capabilities to the force. The normal documentation process is discussed in Chapter 8 of this regulation. The rapid acquisition documentation process initiated by a CCMD is discussed in the JCIDS Manual and in the ACD chapter (Chapter 10) of this regulation.

4-4. Joint capability areas (JCA)

a. JCAs are the organizing construct for FCBs to make functional portfolio assessments. They support prioritization, capability analysis, strategy development, investment decision-making, capability portfolio management, and capabilities-based force development and operational planning. The JCAs are maintained by the Joint Staff J7, Joint Concepts to Capabilities Division, and are available on their website at http://www.dtic.mil/futurejointwarfare/cap_areas.htm. JCIDS requires establishment of linkages to one or more JCAs from the tier 1 and tier 2 levels within capability documents. JCA attributes can be found in the JCIDS Manual (Appendix A, Enclosure A) while the framework and definitions are available on the J7 website at http://www.dtic.mil/futurejointwarfare/cap_areas.htm.

b. There are currently nine tier 1 JCAs: force application, building partnerships, command and control, net-centric, battlespace awareness, protection, logistics, force support, and corporate management and support. FCBs are aligned with the JCAs, which define portfolios of functionally similar capabilities within which each of the FCBs can focus their efforts.

4-5. Army implementation of JCIDS

a. Implementation of the JCIDS within the Army is through guidance contained in AR 71-9 and this regulation. These regulations establish policies and assign responsibilities for the identification, determination, and integration of required warfighting capabilities. ARCIC supports the CG, TRADOC and the Army's force modernization proponents in the design, development, and integration of force capability requirements and provides the management structure for approving capability gaps, confirming and integrating requirements needed to resolve those gaps, and synchronizing the development of DOTMLPF solutions across the Army.

b. ARCIC is designated by HQDA General Order Number 2006-04 (http://www.army.mil/USAPA/epubs/pdf/go0604.pdf), AR 71-9, and AR 5-22 as the Army's lead to identify capability gaps and to direct analytical support for DOTMLPF capabilities development. ARCIC does this through an analysis of needs expressed in integrated priority lists, ONS, JUON, JEON, lessons learned, and an analysis of the Army's ability to meet warfighting requirements articulated in joint and Army concepts to determine a single, integrated list of capability gaps. This list drives capabilities development processes (e.g., Army experimentation plan, studies and analysis program, and JCIDS) and POM decisions across the Army. The outcome of this work includes a common RCs foundation, as well as prioritized lists of DOTMLPF capability gaps, solutions, developmental priorities, and gap to solution strategies. ARCIC directs and manages development efforts of proponents through the ArG, TASKORDs and approved ICDT Charters.

c. ARCIC establishes multi-disciplinary teams to address JCIDS and acquisition processes through the early, collaborative involvement of key stakeholders and SMEs. The centralized management of these teams allows the capabilities and materiel development communities to prioritize, integrate, and synchronize key developments and maximize the use of limited resources. ICDTs for SAPs will not be established.

(1) ICDTs or force modernization proponent teams conduct JCIDS analyses, participate as TRADOC representatives in CPRs, and/or prepare capability documents. Other DOTMLPF domain-specific or unique functional analytical efforts may be directed on an extremely limited basis.

(2) Generally, ICDTs focus on broad, complicated, high visibility one-time analysis efforts involving more than one proponent. Any request by HQDA DCS, G-3/5/7 for ARCIC to establish an ICDT to assist in the development of a joint concept, the conduct of a joint CBA, joint DOTMLPF assessment and/or the development of capability documents to resolve a gap in joint capabilities must come through TRADOC G-3/5/7 and OPPD and address required resources. On the other hand, recurring analysis efforts, especially those conducted by a CoE/CDID, will be conducted by interdisciplinary teams outlined in this regulation and the ArG. Any specific teaming arrangements will be outlined in a TASKORD.

d. The ARCIC publishes the ArG as the management structure to provide guidance for prioritizing limited resources and provide direction on addressing TRADOC Core Functions for which ARCIC has lead responsibility. Approved by Dir, ARCIC, the ArG provides top driven guidance based on desired outcomes. Outcomes drive the ArG major objectives, which are clearly defined, measurable, and quantifiable statements of key tasks and outputs that collectively lead to the achievement of a respective outcome. ARCIC OPPD develops the ArG in collaboration with ARCIC's Directorates and BMC, ARSTAF (DCS, G-3/5/7; DCS, G-4; CIO/G-6; DCS, G-8), ASA(ALT), force modernization proponents, the TRADOC Staff, and AMC.

4-6. Accelerated capabilities development

The ACD process, which includes both CDRT and the ACLCP, is addressed in Chapter 10 of this regulation.

4-7. Security and program protection

a. Protecting sensitive technology and capability development information is a critical consideration throughout the JCIDS and acquisition process. Original classification authorities are required to issue security classification guidance for each system, plan, program, or project in which classified information is involved, IAW AR 380-5. PMs are required to formally assess their program to identify whether it contains critical program information (CPI), IAW DoDI 5200.39 and AR 70-1, and must produce a formal protection plan for any CPI found. However, measures must be initiated well before the inception of the acquisition program to protect sensitive information which may later rise to the level of being classified, or determined to be CPI. Means and practices available for this early protection include:

(1) Use of distribution restriction statements IAW AR 25-30 and DA Pam 25-40.

(2) Use of the "For Official Use Only" marking IAW AR 25-55.

(3) Operations security (OPSEC) measures IAW AR 380-5 and AR 530-1.

(4) Information assurance (IA) measures IAW AR 25-2.

(5) Public disclosure processes IAW AR 360-1, including developing communications plans.

b. Foreign disclosure requests are coordinated through TRADOC DCS, G-2 Foreign Disclosure Office. Instances of inappropriate requests from foreign entities will be reported through the activity security manager to the supporting regional 902^{d} Military Intelligence Group (Counterintelligence) office.

c. TRADOC DCS, G-2, through Army Research and Technology Protection Center - TRADOC, works closely with ARCIC and proponents to ensure the protection of the Army's sensitive information and critical technologies.

Chapter 5
Capabilities Integration

5-1. Overview

a. Capabilities integration is the process of comprehensive analysis, design, and assessment of requirements, concepts, and resources to merge, de-conflict, and synchronize functional, organizational, and DOTMLPF capability requirements and solutions to unify and improve warfighting capabilities. Fielding synchronization is a companion process which coordinates the delivery of capabilities to provide warfighting capability within organizations when needed.

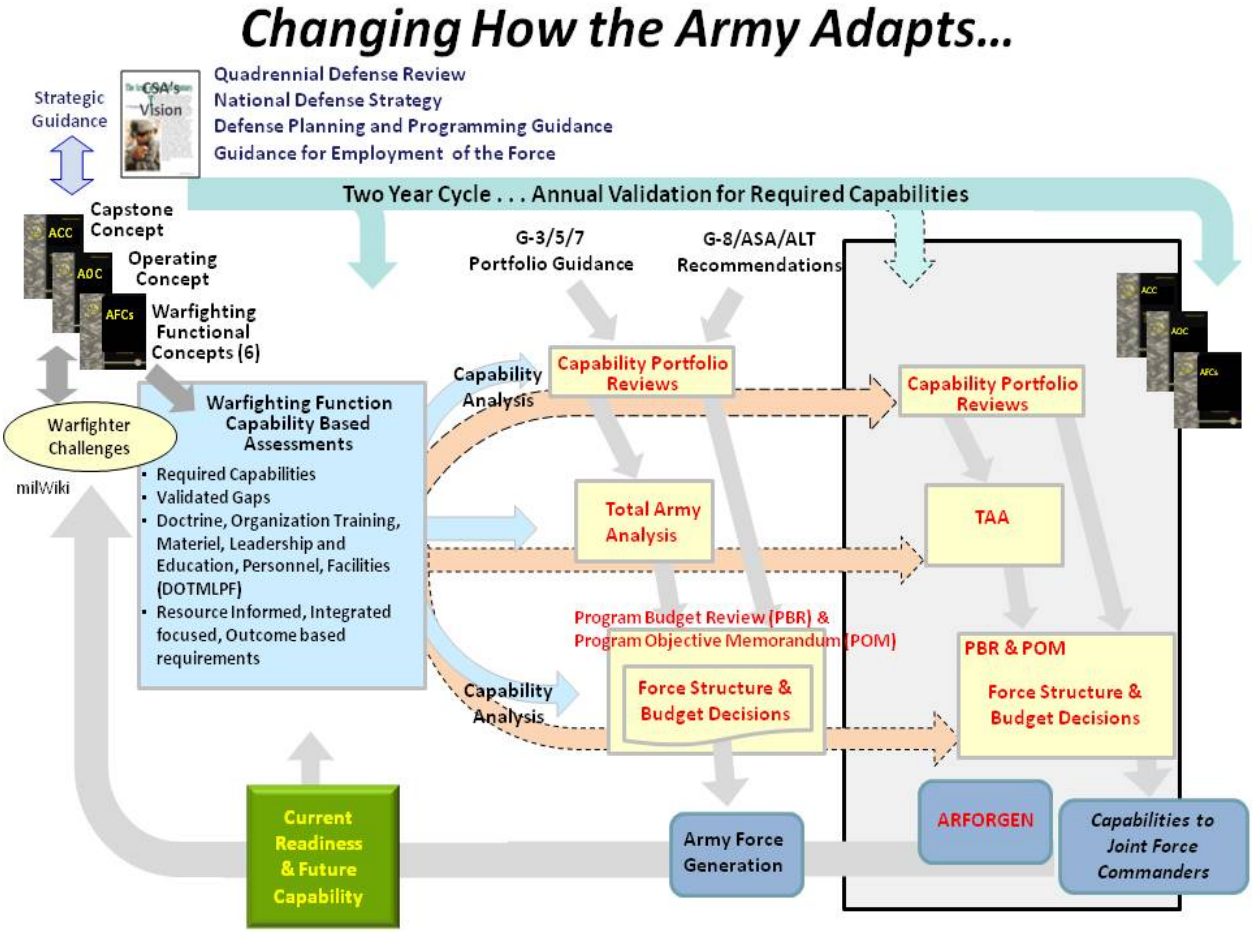


Figure 5-1. Concept-to-Capability framework

b. The ArG provides the guidance for prioritizing our limited resources and provides direction to address the TRADOC Core Functions of Concept Development, Requirements (Capabilities) Determination, and Capabilities Integration. It synchronizes key activities and products over a 2-year cycle integrating the CoL, ACF, CNA revisions, ACLCP, capability developments, the development of the TAA, and POM recommendations (see Figure 5-1).

Evolving results provide updates throughout the cycle to ensure TRADOC is capturing requirements derived from strategic guidance and the impacts of operational lessons learned. The Two-Year Cycle is continuously executed and can be found on Army Knowledge Online (AKO) at uniform resource locator (URL): https://www.us.army.mil/suite/files/37265819 in the "Two Year Cycle" folder. Even though we are in a 2-year cycle, the organizational assessment process via the TAA is now under an annual update cycle. See Chapter 8, paragraph 8-4 for more information on the TRADOC involvement with the TAA cycle.

c. All ARCIC directorates and force modernization proponents must integrate products and capabilities within their respective capability portfolios, including functions and formations, to facilitate integration of all Army capabilities. A "portfolio" includes all solutions across the DOTMLPF domains and recommended changes to the associated policies within TRADOC assigned functions and associated formations. These TRADOC capability portfolios are not identical to the ***Army*** portfolios used in the CPR process.

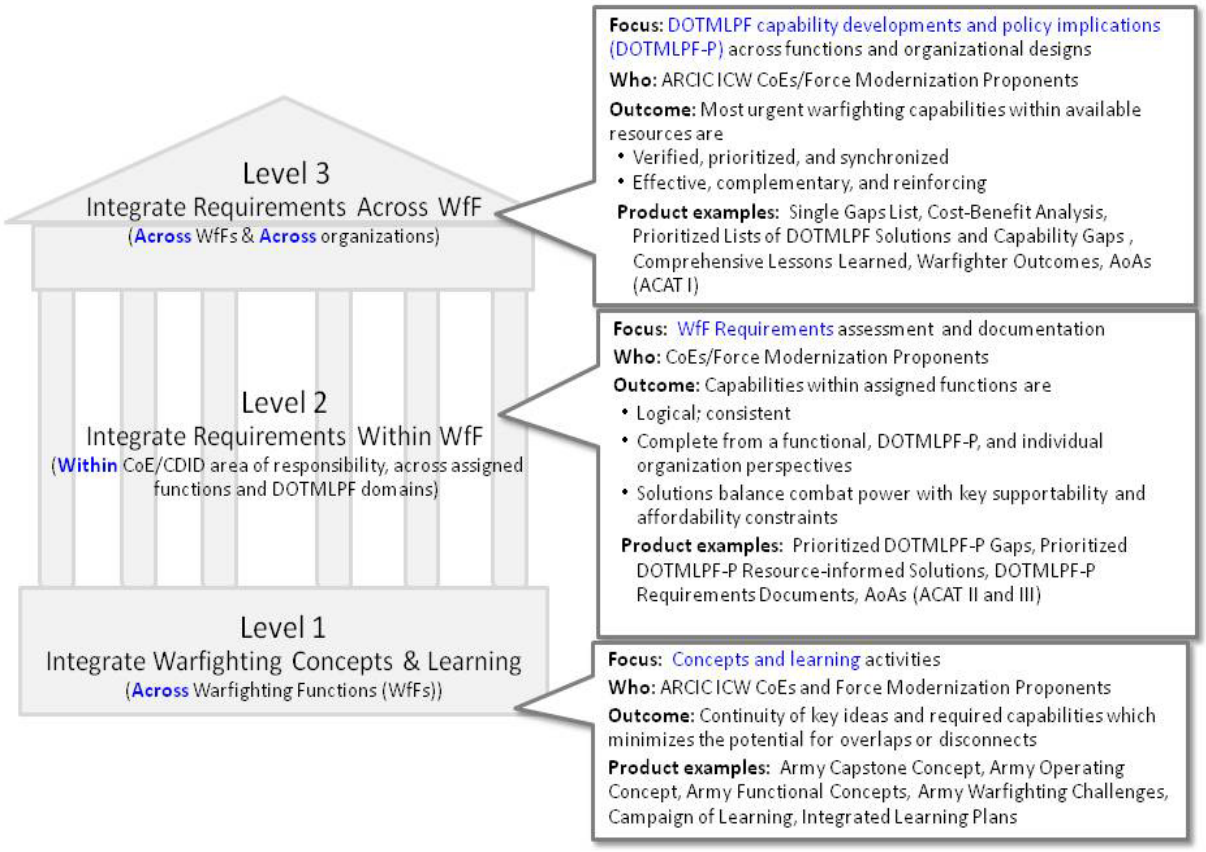


Figure 5-2. Construct for the levels of integration

5-2. Levels of integration construct

a. The Construct. Within the capabilities development (CD) CoP, concepts, learning, and requirements determination products and activities must be integrated and synchronized. The levels of integration construct is comprised of three levels as illustrated in figure 5-2. A summarized list of integration responsibilities is located in Appendix C.

b. Level 1: Integrate warfighting concepts & learning (across functions and formations). This is a shared process where ARCIC, ICW TRADOC CoEs ensures continuity of key ideas and RCs in concepts and learning activities to minimize potential overlaps or disconnects. ARCIC is the lead for Level 1 integration. Efforts of CoEs, ICW other force modernization proponents will remain focused on functions, updating functional concepts, and defining force modernization requirements that are resource informed and integrated across functional portfolios and/or formation-based portfolios.

(1) ARCIC develops concepts and learning activities in Level 1. These activities include development of the ACC, AOC, de-conflicting and synchronizing AFCs, leadership-directed concepts and existing CCPs. ARCIC also includes existing CCPs as it develops a single, coherent, and synergistic CoL. RCs and CONOPS/white papers are key outputs for Level 1 integration.

(2) The CoEs lead the development of functional concepts. They also lead investigations and learning activities. CoEs lead the development of functional concepts and provide subject matter expertise by assisting other CoEs to develop functional concepts and ensure accuracy and sufficiency of CoE specific topics areas.

c. Level 2: Integrate capabilities within their functional areas (within the CoE/CDID area of responsibility, across assigned functions, formations, and DOTMLPF domains). CoEs/CDIDs serve as leads for Level 2 integration and are responsible for integrating requirements within their assigned areas of responsibility. This includes integration of DOTMLPF enablers that lie within other CoE/CDID portfolios when required. The CoEs/force modernization proponents must ensure capabilities within assigned functions are logical, consistent, and complete from functional, DOTMLPF, and formation perspectives. Proposed solutions must consider feasibility, supportability and affordability.

(1) ICDTs or CoE/CDID-led development teams conduct the assessments necessary to establish functional and/or formation-based requirements. Designated formation-based assessments will be conducted based on Army priorities and senior leadership guidance in the ArG, and executed via TRADOC tasking orders. For proponents not engaged in the formation-based assessments they will continue to do functional assessments as necessary to support warfighter requirements. The CBA or other analyses provides the primary analytic basis to support ICDs, CDDs, CPDs, and DCRs/DICRs, and ultimately support the decisions made in the CPRs.

(2) Based on RCs identified in Army concepts, CoE/CDIDs and force modernization proponents identify prioritized DOTMLPF capability gaps and recommend solutions and potential trades within their assigned areas. If directed to build a new requirements document, CoEs must develop a list of potential trades in cost, schedule, and performance to give Army leaders some options for solution development. ICW ARCIC, CoE leads provide Army functional input to joint developments.

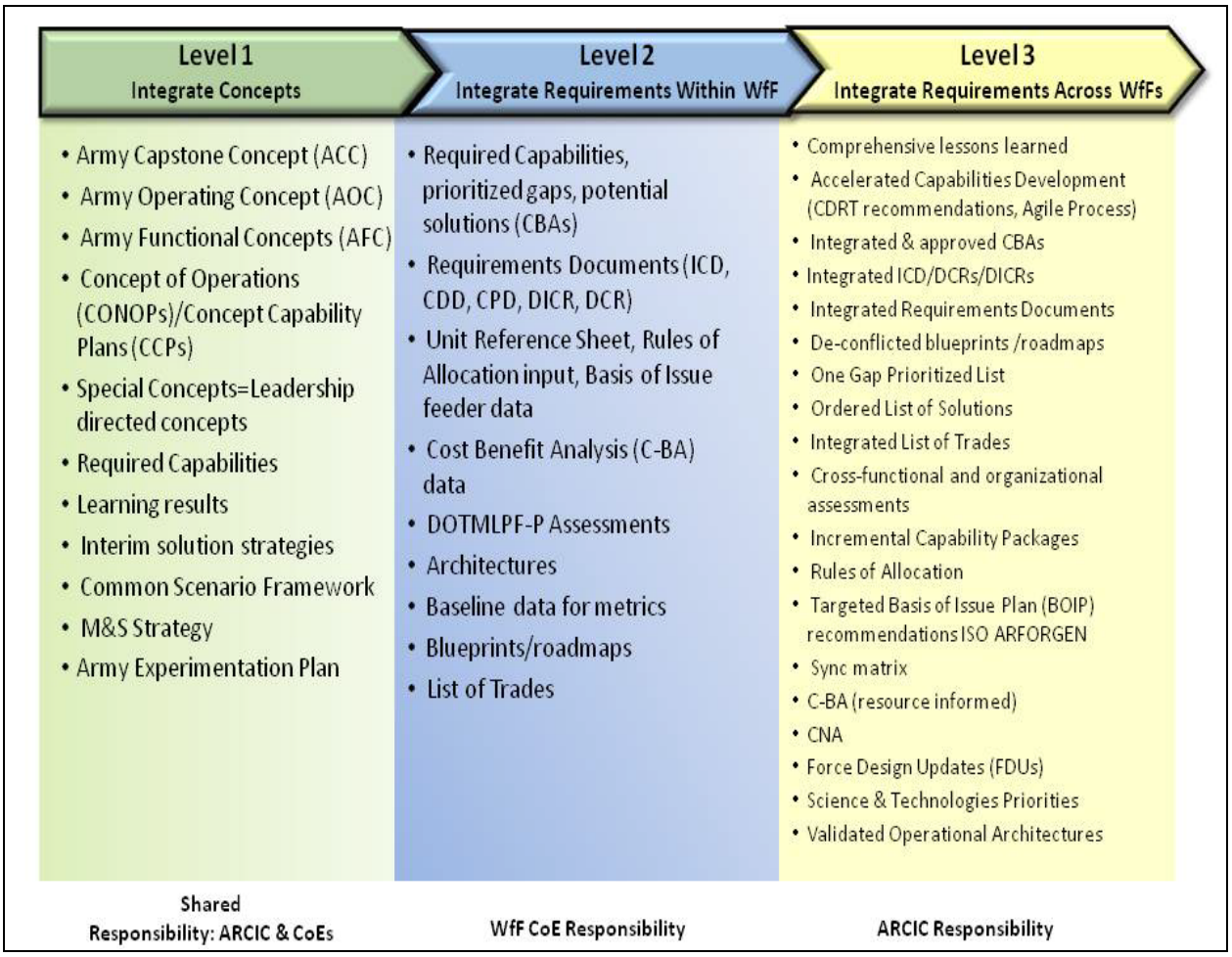


Figure 5-3. Examples of Levels of Integration products

(3) ARCIC provides staff management to facilitate coordination and dissemination of JCIDS analysis results; assists and coordinates proponent's efforts; and analyzes, monitors, and develops capability recommendations for CG, TRADOC.

d. Level 3: Integrate capabilities across functions and formations. At this level, ARCIC verifies, prioritizes, and synchronizes DOTMLPF capability developments across functions and organizational designs to enable effective, complementary, and reinforcing capabilities that provide the most urgent warfighting capabilities within available resources. As the lead for Level 3, ARCIC's primary focus is to integrate and synchronize across functions, formations, and DOTMLPF domains, with CoEs/CDIDs assisting as required.

(1) ARCIC's role is threefold - 1) identify realistic cost, schedule, and performance trades for the Army leadership; 2) eliminate unnecessary redundancies; and 3) balance risks across proponent capability portfolios to deliver optimal capabilities to the Army within resource constraints. Essentially, the ARCIC prioritizes capability development efforts across the Army to mitigate the highest risk capability gaps, given all known constraints. Warfighting requirements are also synchronized with joint initiatives as required.

(2) ARCIC, in conjunction with the CoEs, develops a prioritized gap list, a prioritized programs list, and a prioritized integrated list of trades across functions, formations, and DOTMLPF domains to provide CNA products and recommendations to HQDA.

(3) ICW the Army and Joint Staffs, force modernization capability documents are validated by Dir, ARCIC or Dir, RID and submitted to the AROC/JROC for validation, approval and implementation (see Appendix B). Upon approval, ARCIC synchronizes planned milestones with other related activities to ensure capabilities arrive on schedule and in a synchronized manner.

(4) ARCIC develops incremental capability sets for selected brigades to recommend modernization fielding priorities based on fiscal realities, the delivery of solutions to the Army, and the timing of the ARFORGEN rotations. In addition, ARCIC conducts physical integration and evaluations of the Network, capability packages and other adaptive and core capabilities in order to provide DOTMLPF recommendations to the Army.

(5) With support from force modernization proponents, ARCIC BMC participates in the operational test and evaluation of systems under test approved by the test schedule and review committee.

(6) ARCIC updates the ArG as required directing capability development activities and ensuring requirements are consistent with priorities established during CBAs or other analyses.

(7) The CoEs/CDIDs provide assistance on cross-functional assessments (for example, CNA), the development of a prioritized gap list, a unified prioritized DOTMLPF programs list, and a list of potential trades across functions and formations.

5-3. Governance principles

a. Governance processes and procedures are developed to ensure integration and synchronization across Army concepts, JCIDS analysis, and subsequent development activities. A recurring 2-year cycle for concept and capabilities development, along with the ArG and TRADOC Strategic Plan Battle Rhythms, is leveraged to support governance requirements for integration across the concepts and CD CoP. This biennial approach prepares senior leaders to make timely decisions and drives the Army to meet Warfighter needs within a much shorter decision cycle.

b. Governance mechanisms support the execution of the Army Campaign Plan (ACP), TRADOC Strategic Plan, and ArG. Governance forums vary depending on the leadership's need to focus on the various ACP and TRADOC Strategic Plan decision points. The governance mechanisms permit the leadership to assess progress, ensure compliance and prioritization, provide guidance, and prepare recommendations for higher and lateral level forums.

c. ARCIC's TR 10-5 core functions are synchronized by use of the synchronization matrix which aligns these functions along governance lines with TAA and POM events. Examples of senior leader governance forums are: the biweekly CDID teleconferences; Strategy and Future Force Reviews; monthly CSA Futures Engagements; Quarterly Futures Reviews; ACP meetings; TRADOC Synchronization Meetings; TRADOC G-3 Synchronization meetings; Army Leader Development Program (ADLP) forums; Capabilities Integration Enterprise Forums; and CPRs. TRADOC has a formal role in CPR governance and reviews. The ARCIC Dir updates CG TRADOC on relevant portfolio issues in order to provide opportunities for CG oversight and action, and participates in the reviews or delegates this to Dir, RID. CPRs are chaired by the VCSA, Under Secretary of the Army, CSA, or Secretary of the Army depending on the objectives. Further information on these forums can be found in the ArG.

Chapter 6
Activities Supporting Concept Development, Capabilities Determination, and Capabilities Integration Core Functions

There are required activities that support the three core functions addressed in this regulation. These activities include M&S, studies and analysis, experimentation, operational architecture development and integration, and science and technology.

6-1. Modeling and simulation

a. TR 5-11 (US Army TRADOC Models and Simulations and Data Management) establishes TRADOC policies, procedures, and responsibilities for development and management of TRADOC M&S and data management. ARCIC JAMSD serves as the office of principal responsibility and lead for the M&S activities in TRADOC.

b. Army policies on development and usage of M&S are principally derived from DoDD 5000.59 (DoD Modeling and Simulation [M&S] Management) and AR 5-11 (Management of Army Models and Simulations). See the glossary for definitions of models, simulations, and data. Types of simulations include: live, virtual, constructive, and gaming.

c. The domain agents and domain managers for the three domains; ACR, Training, Exercises, and Military Operations (TEMO), and Research, Development and Acquisition (RDA) execute the management of Army M&S. Domain managers are designated at the HQDA level and domain agents are designated at the ACOM level. The domain agents and domain managers provide guidance and vision for the domains, identify and coordinate requirements, prioritize investments, and manage the domain's activities.

d. HQDA DCS, G-3/5/7 is the Army domain manager for two of the three M&S domains - ACR and TEMO, while TRADOC is the Army domain agent for both of these domains. Managing M&S activities is essential to align tools, data, architectures, scenarios, and networks.

e. The Dir, ARCIC has executive oversight of TRADOC M&S activities. TRADOC governs its M&S Enterprise through the implementation of several hierarchical accountability boards. ARCIC JAMSD manages TRADOC M&S activities through the implementation of a TRADOC M&S Enterprise Governance process. For more information on M&S activities, contact JAMSD, ATTN: ATFC-ES, 950 Jefferson Avenue, Fort Eustis, VA 23604-5763.

6-2. Studies and analysis (S&A)

a. The purpose of S&A is to provide the information Army leaders require to make informed decisions or to gain understanding of complex problems. The DoD and Army vision of concept development, capabilities development, integration, and fielding of DOTMLPF solutions requires the carefully managed and focused commitment of analytic resources. TRADOC conducts research studies, wargames, experiments, CBAs, AoAs, and force development analyses to inform the development of concepts and capabilities. Figure 6-1 depicts the general framework for defining the right type of analysis to address key questions on the concept and capability development path. The process shown in the top right box below, requirements analysis, is an informal process conducted by CAPDEVs resulting in the identification of key requirements and performance attributes for JCIDS documents.

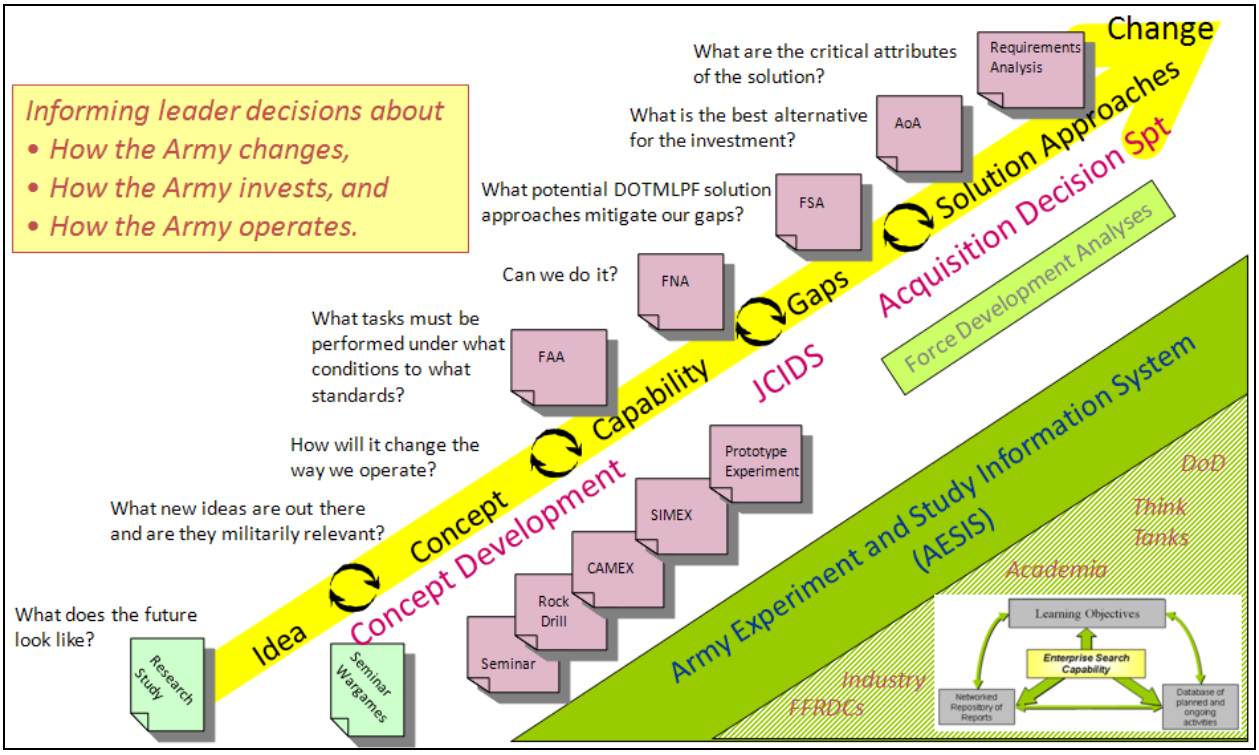


Figure 6-1. Matching analysis types to stages of development

(1) ARCIC S&AD leads venue analysis to determine the appropriate analytic venue (e.g., research study, wargame, experiment) and commitment of analytic resources necessary to answer high priority learning demands. S&A is one of the learning venues. Results from S&A support by informing the leads of relevant studies for the running estimate and assessment, and may also inform ISS.

(2) ARCIC S&AD is the TRADOC lead for the commitment and management of TRADOC analytic resources across the full breadth of analytic activities for JCIDS and materiel acquisition related activities ongoing at any given time. Dir, ARCIC or Dir, A&ID on behalf of Dir, ARCIC establishes priority of effort and provides focused direction for the execution of studies and analysis activities through the TRADOC Studies and Analysis Program. S&AD is also responsible for the analytic quality assurance of TRADOC analytic activities conducted by force modernization proponents, and as such TRADOC organizations (except TRAC) should coordinate with S&AD for a review of CBA, C-BA, and other analysis efforts to ensure analytic requirements are met.

(3) Research Studies. Annually, ARCIC S&AD commissions research studies as a component of the TRADOC Studies and Analysis Program and selects best-of-breed research organizations to perform them in order to leverage their free, and in some cases fee based, research capabilities. This provides a means for TRADOC organizations to address key strategic and operational issues, support development of concepts, and inform Army transition initiatives. In support of sponsors research study needs, S&AD commissions work with organic resources and also leverages Army Federally Funded Research and Development Centers (e.g., RAND, MITRE), Army Research Institute, Army War College (Strategic Studies Institute, Center for Strategic Leadership, Combat Studies Institute), United States Military Academy, the Library of Congress, Naval Postgraduate School, Advanced Civil Schooling Students, and government contractors.

b. Analytic practices.

(1) In the conduct of JCIDS, there are certain guiding principles that facilitate completion of structured, defensible analyses. Analyses must serve three purposes. First, it supports acquisition Milestone Decisions per DoD and JCS guidance. It provides defensible evidence to inform requirements generation, particularly CDDs. Finally, analyses will be used to determine the cost-effectiveness of resourcing a particular program. Refer to the JCIDS Manual, TRADOC CBA Guide, and Army C-BA Guide for additional guidance on conducting analysis.

(2) Constraints, limitations, and assumptions. Constraints, limitations, and assumptions are vital to a successful study. They bound (scope) a study effort by identifying what must (or must not) and can (or cannot) be accomplished; they frame the study space and set the stage for the study team's methodology development; they serve as a "contract" between the study sponsor and the study team; and they provide a basis for the sponsor to reconcile the study results. Constraints, limitations, and assumptions provide the framework for both the study team and the study sponsor to understand the conditions under which a study's results are applicable.

c. Documenting and storing results. Locating relevant information among the vast number of analytic reports in disparate and disjointed repositories is cumbersome and ineffective. Documenting results and storing relevant information regarding past, present and projected analytic efforts is important. Within TRADOC, the Army Experiment and Study Information System (AESIS) serves as the central repository for analytic reports and products.

d. Studies and analysis support informs CoL LOE leads of relevant studies for the running estimate and assessment, and are one of the learning venues. Results of studies may also inform ISS.

6-3. Experimentation

a. Role of Army experimentation.

(1) The Army develops warfighting concepts to prepare for a future operating environment with commensurate capabilities, to assess assumptions and prioritize capabilities development. The Army must have Soldiers and Leaders operate within a representation of the future in order to credibly assess, challenge and validate future warfighting concepts. Army experimentation fills this role by placing concept and capability development products into a representative environment to discover something unknown, test or validate a hypothesis, or establish/demonstrate some knowledge within a specific context.

(2) The Army conducts experiments to learn, to mitigate risk for current and future forces, and to deliver the right capabilities to the Soldier. It also helps understand the interactions between WfFs in order to identify such things as interdependencies, gaps and redundancies. Specifically, experiments provide (by method, model or live interaction) a measure of objectivity for learning in support of concept and capability developments. Experimentation provides the capability to learn in uncertain and complex environments, and helps guide our concepts by challenging our assumptions and ideas. Experiments are one method of learning in support of developments; the Army combines different ways to learn (e.g., experiments, lessons learned, studies and analysis) to create a robust, complementary CoL that preserves investigations of critical enduring concepts and capabilities. The desired end state is robust, credible insights and findings to inform key Army decisions leading to the Army of the future.

(3) Army Experimentation focuses its endeavors on priority questions derived from Army transition initiatives and the results of Unified Quest wargames and seminars, the ACF and associated required capabilities, and study questions posed by the senior leadership, which are directed to an appropriate experimental venue to support long range resource planning. An experiment is then conducted to examine or develop solutions and determine which solutions, if implemented, will result in the highest level of capability, effectiveness, and efficiency to the force. Experimentation facilitates the integration of concepts, ideas, developments, and capabilities within and outside of the joint community. Army Experimentation also enables us to recommend mature capabilities for evaluation in NIE and support resource decisions on competing capabilities.

b. Responsibilities of Army experimentation.

(1) Army experimentation integrates the efforts of a broad community of practice including TRADOC Battle Labs as well as unified action partner concept development and experimentation partners. CDLD is responsible for oversight of the experimentation program in terms of directing the development of campaign objectives and directing the design of integrating experiments, while integrating experimentation from an Army perspective (e.g., across WfFs). It incorporates specific CoE learning demands and rapid experimentation, when required, to address emerging challenges and opportunities. Battle labs conduct experiments within specific areas of expertise (WfFs), and also work together on large scale experiments that assess how WfFs integrate to create Army level capabilities - experiments that are purposefully constructed to be analytically defensible, credible and objective. Battle Labs were designed to support the CoE mission and require additional resources to support the Army-level mission. In addition, Battle Labs conduct prototype experiments to put capabilities in the hands of soldiers earlier) and provide experimentation services to the broader Army (PEO/PM, Army Research, Development & Engineering Centers, and others).

(2) The integrating nature of experimentation within capabilities development is explicitly reflected in DA General Order 2006-4. Learning – including experimentation – is a fundamental component of all ARCIC activities within CDLD and across RID, A&ID and BMC. As RID and A&ID conduct detailed analysis of RCs to develop DOTMLPF RCs, gaps and solutions they will both inform and be informed by experiments with concepts and prototypes. Prototype experiments are an ideal filter to scope the evaluations conducted by BMC.

(3) Battle Labs/organizations assigned as experiment leads are responsible for the planning, preparation, execution, assessment and transition for the experiment, consistent with policy, process and standards of practice maintained by the JAED. Participating organizations provide planners, research analysts, operational leads (optional), writers, scenario designers and other representatives as required.

c. Experimentation Campaign. TRADOC, via JAED, directs Army Experimentation. TRADOC tasks and resources the CoP battle labs with the missions to address objectives and LDs through experiments. This tasking process begins when TRADOC provides annual planning guidance and concludes with the publication of the ArG (or equivalent document). As TRADOC Experimentation lead, JAED conducts assessments of experimentation objectives against venues and scenarios, focuses experimentation design and development to best inform prioritized objectives, and collaborates with the Battle Labs and the experimentation CoP (which may include DCS, G-2 DART) to ensure insights and findings are reported IAW Army TRADOC directives. JAED develops the formal experimentation guidance, in collaboration with the CoP, which provides roles and responsibilities, defines activities and expectations for the experimentation campaign, summarizes the campaign timeline, and sets requirements for reporting insights, findings, and any other contributing information.

d. Expected Outcomes. In experimentation, we push to failure future concepts, doctrine, and technologies in order to determine what we don't know. Results will enable TRADOC to develop and integrate across DOTMLPF, balance DOTMLPF solutions and provide validated RCs and assumptions for capability investments.

e. Experimentation conclusions.

(1) Experiments immerse soldiers into future Joint operational environments, where they employ future warfighting concepts and capabilities against a multitude of threats. Experimenting provides the unique capability to learn in uncertain and complex environments. In practice, the Army combines these different ways to learn – wargames, experiments, experience, studies and analysis – to create a robust, complementary CoL that preserves investigations of critical enduring concepts and capabilities even as our emphasis shifts to engagement and projection.

(2) Army Experimentation allows us to generate the right capabilities that reflect incremental and affordable solutions to gaps - in force structure, time, and dollars. It is an essential factor in wisely investing the significant dollars for acquiring the future Army. Army Experimentation is only possible through the integrated efforts of the CoP, bringing together the parts to make the sum greater than its parts. This integration allows us to utilize all resources, conceptual, doctrinal and technological in the research of a modernized and more capable force. It is crucial that we discover our shortfalls through experiments so that we may allow our soldiers to have all tools available to survive in the field.

6-4. Operational architecture development and integration

a. DoD and joint directives mandate the use of architectures to support milestone decisions and capability document development (ICD, CDD, and CPD). From a compliance perspective, DoD's development of architectures is required by law and policy (e.g., Clinger-Cohen Act, Office of Management and Budget Circular A-130). The management of employing sophisticated systems and technologies in pursuit of joint missions demands a structured, repeatable method for evaluating investments and investment alternatives, as well as the ability to effectively implement organizational change, create new systems, and deploy new technologies. Towards this end, the DoD architecture framework (DoDAF) was established as a guide for the development of DoD architectures (i.e., operational, system, and technical). The DoDAF is intended to ensure that architecture descriptions can be compared and related across programs, mission areas, and ultimately, the enterprise, thus establishing the foundation for analyses that supports decisionmaking processes throughout the DoD.

b. CG, TRADOC is the operational architect of the Army and is responsible for developing operational architectures. Dir, ARCIC acts on behalf of CG, TRADOC to lead, manage, and provide guidance for the development of operational architectures through the A&ID via their AIMD. TRADOC proponents develop and validate operational architecture IAW DoDAF 2.02, AR 25-1, TR 10-5-2 and this regulation. ASA(ALT) is responsible for developing the system architectures and HQDA CIO/G-6 is responsible for developing the technical architectures.

TRADOC ensures that operational systems and technical architectures are integrated by validating that proposed solutions represented by the systems architecture satisfy the warfighter needs represented by the operational architecture.

c. TRADOC and designated non-TRADOC proponents, with support from AIMD, develop operational architectures in support of approved concepts, and ICW DoD and JCS concepts, directives, and policies in support of CG, TRADOC. AIMD develops policy for development, integration, validation/verification, and maintenance of operational architectures ensuring a consistent standard across TRADOC. AIMD manages the architecture validation process for integrated operational architectures and selected conceptual systems architecture products in support of JCIDS. AIMD is responsible for conducting verification and TRADOC/ non-TRADOC proponents are responsible for conducting validation. To facilitate verification and validation, operational architectures are developed IAW the guidance outlined in the Operational Architecture Verification and Validation Guide. Architecture not developed IAW this guide will not be validated.

d. Data formats for architecture deliverables will adhere to the standards set IAW the Army Architecture Data Management Plan provided by the Architecture Data Steward and published within the Army Capability-based Architecture Development Integration Environment (ArCADIE). The Architecture Data Steward for the Army is the Chief of AIMD. In order to achieve cost savings and increase efficiencies, all TRADOC CoE/CDID architecture objectives will use development tools, data storage (repository), and data utilization (reporting) services within ArCADIE. AIMD will maintain and enhance ArCADIE capabilities to satisfy DoD and DA IT Management Reform (ITMR) policies and continuously adapt the environment to meet stakeholder requirements. The Secretary of the Army designated ArCADIE as the single authoritative source for all Army architecture data and artifacts (ITMR Implementation Plan, 20 Feb13). Using ArCADIE architecture data for purposes beyond those for which it was validated may result in erroneous results and/or erroneous conclusions being made from that data. Therefore, any modification, addition, or deletion of architecture data from ArCADIE will require AIMD to recertify that architecture data before it can be considered authoritative. Training is available for authorized users of ArCADIE by contacting AIMD Operations at 757-501-5919, or DSN 501-5926. Access to the ArCADIE can be obtained by submitting a new account request form from the ArCADIE webpage at https://cadie.army.mil.

6-5. Science and technology

a. The prioritized joint and Army warfighting capabilities identified through the JCIDS process inform and focus the developmental efforts of the S&T community as specified in the Joint Warfighting S&T Plan and the Army S&T Master Plan. Army technology objectives identified in the Army S&T Master Plan provide the basis for the construct of advanced technology demonstrations (ATDs). ATDs are used by the Army to address selected high priority operating capabilities to demonstrate a new capability, similar to a JCTD. JCTDs, ATDs, and qualified prototype projects are important mechanisms in this process as they assess the military utility assessment of new capabilities, accelerate the maturation of advanced technologies, assist in providing cost data for possible solutions, and provide insight into non-materiel implications. These demonstrations and projects should be on a scale large enough

to demonstrate operational utility and end-to-end system integrity. These activities also serve as venues to accelerate solutions that address capability gaps in the current force. The JROC reviews and validates joint mission needs cited as the foundation of JCTDs. In the Army, the ATDs that receive TRADOC and ASA(ALT) endorsement must have a technology transfer agreement with a program of record or developmental program to transition the militarily useful results of the demonstration to an established program via the JCIDS process.

b. Results of the JCTDs, ATDs, and qualified prototype projects will comply with the JCIDS process as they transition into the acquisition process. ATDs are handled in a similar manner as JCTDs by the ARSTAF and ARCIC.

(1) The military utility assessment (MUA) completed at the end of the JCTD, or assessments conducted at the end of ATDs may be suitable for the required analysis used to prepare an ICD. MUAs that do not contain the critical elements of information presented in the ICD (description of the capability gap(s); associated tasks, conditions, and operational performance standards/metrics; associated risks; and how the materiel and non-materiel approaches and analyses from the JCTD addressed these factors) will be augmented with a final demonstration report to qualify the results as equivalent to an ICD. The MUA final demonstration report is used to support the development and subsequent JROC/AROC approval of the CDD or CPD. A CDD or CPD, as appropriate, is developed for the JCTD to transition into a program of record. Developed prototypes are used and disposed of as determined by the acquisition community.

(2) Results of prototype projects and operationally validated quick reaction technology projects intended for direct transition to fielded capabilities may also be eligible for consideration as joint/Army solutions. This consideration shall be based on mission need validation and MUA processes as applied to JCTDs. Army projects derived from operationally validated quick reaction technology projects proceed through the ACD process laid out in Chapter 10 for consideration as a joint/Army solution.

(3) When the sponsor of a JCTD, qualified prototype project, or quick-reaction technology project determines that the demonstration is complete, but additional development is required before fielding, the MUA is used to support the development of the CDD. The CDD, with the supporting MUA, is then submitted for staffing and approval prior to the Milestone B decision.

(4) If the sponsor determines that the demonstration is complete and the capability is ready for immediate fielding for other than limited quantities, a CPD is developed to support approval for production and fielding. The MUA is used to support the development of the CPD. The CPD with the supporting MUA will then be submitted for validation and approval prior to the Milestone C decision.

c. S&T products are occasionally classified as SAPs. When classified as such, they require special handling by a SAP representative who is working the science and technology efforts for the force modernization proponent. These products are managed as stipulated in AR 380-381 (Special Access Programs). For questions pertaining to the handling of SAP S&T products, contact the Science and Technology Division (S&TD), CDLD.

d. S&T is one of the learning venues for Army CoL. ARCIC S&TD will inform CoL LOE leads of relevant S&T learning activities and facilitate the inclusion of the results of ATDs into running estimates and solution strategies.

6-6. Scenarios

a. A scenario is a graphic, data, and narrative tool that describes the global conditions before, during, and sometimes after a conflict. It also provides the friendly and threat forces in details great enough to support capabilities development efforts such as experimentation, concepts, wargames, CNAs, operational based assessments, formation-based assessments, and the CBA. Scenarios provide a unique integration capability as they are intended to be used laterally within TRADOC, ARCIC, the CDIDs, the battle labs, and the various centers and schools; and vertically, for leadership and education, and training, through the common framework of scenarios (CFoS). DCG, Futures/Dir, ARCIC is the TRADOC staff proponent for TRADOC scenarios. Dir, CDLD will approve brigade and below scenarios, vignettes derived from TRADOC-approved corps and division scenarios, and similarly echeloned studies. Chief, JACD, will execute scenario responsibilities of the ARCIC and coordinate scenario activities for TRADOC. Dir, TRAC is the TRADOC executive agent for development of scenarios for use in studies and analyses. See TR 71-4, paragraph 1-4 for further information on the roles and responsibilities of TRADOC in regards to scenarios.

b. Purpose of scenarios.

(1) Support capabilities development. Since some changes may take DoD-level approval, capabilities development scenarios must be derived from or based upon SSA products.

(2) Support experimentation. Scenarios support experimentation by exploring innovative methods of operating, especially to assess their feasibility, evaluate their utility, or determine their limits to reduce risk in the current and future force. Experimentation includes the full range of experiments and Title 10 wargames conducted to examine or demonstrate the potential of new technologies or new concept based capabilities. All TRADOC live, virtual, and constructive experiments should use approved TRADOC scenarios or vignettes.

(3) Support studies and analysis. Scenarios provide the analytical space to measure and analyze the differences in performance and effectiveness among various military capabilities and resources, to include concepts, forces, systems, or tactics.

(4) Support testing and evaluation. ISC-derived TRADOC standard scenarios provide the foundation for testing of materiel systems and organizations. (See AR 381-11 and TR 381-1 for TRADOC DCS, G-2 support in testing and evaluation.)

(5) Support leadership and education, and training. The CFoS establishes a linkage between capabilities development, leadership and education, and training scenario processes that generate efficiencies in how these scenarios are produced and used to develop Soldiers, leaders, and the capabilities necessary for successful joint land operations. The CFoS institutes a

systemic method to produce a common scenario framework between the three domains (capabilities development, leader development and education, and training) while recognizing that unique requirements still exist. These domains may use scenarios developed for capabilities developments as the basis for leadership and education, and training scenarios.

Chapter 7
Capabilities Analysis

7-1. The Capabilities-Based Assessment (CBA) process

a. The JCIDS process begins with the execution of a CBA as illustrated in figure 7-1. The CBA is a structured, three-step process based on an approved Army Functional Concept (AFC), applicable concepts/CONOPS/white papers, or an identified operational need. It should be noted that when sufficient analysis exists to complete a CBA step, or even the entire CBA, that analysis can be captured and forwarded for approval to enter an assessment at a later step, or even complete the CBA itself. Supporting analysis such as the CNA should also be examined for usable information. The JCIDS CJCSI and Manual are prescriptive guidance that address the uses, functions, and considerations for conducting a CBA. The TRADOC CBA Guide is the descriptive source for guidance on conducting the CBA in the Army. The TRADOC CBA Guide supports guidance contained in the joint instructions and JCIDS Manual and incorporates Army guidance for this process.

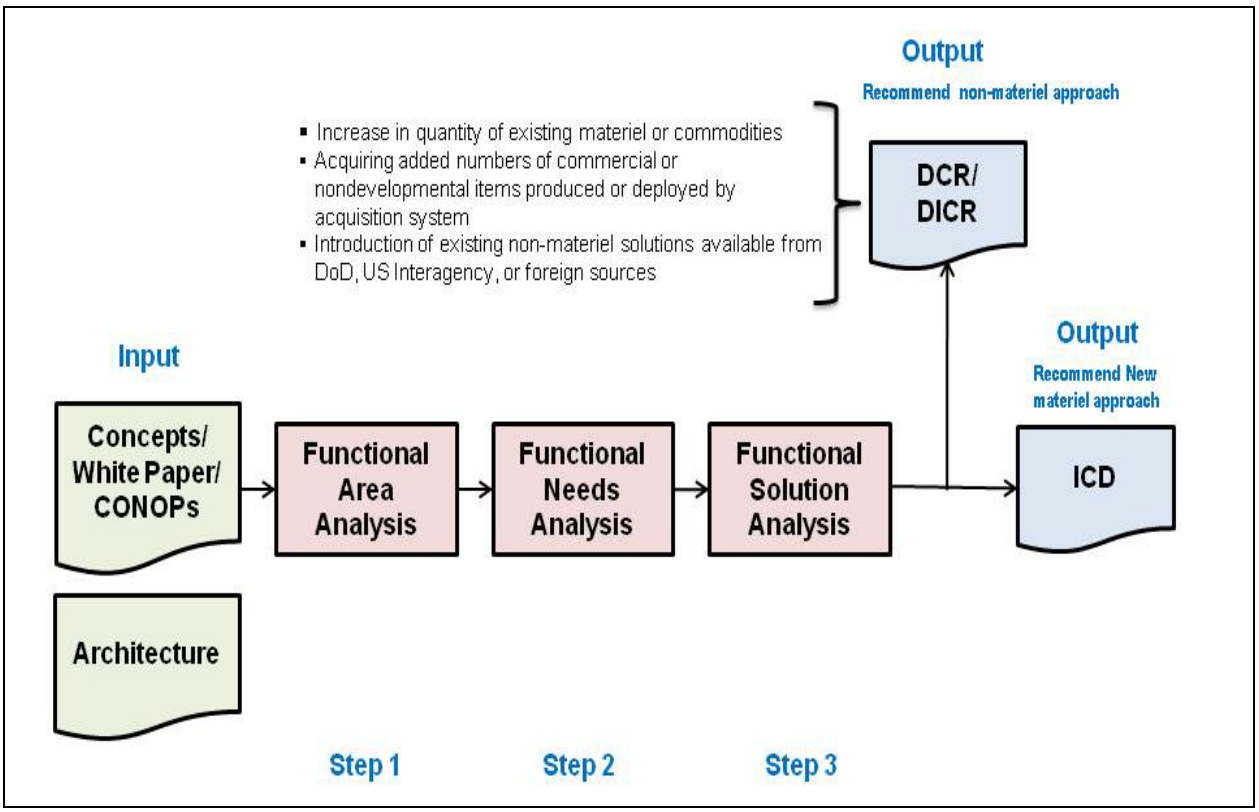


Figure 7-1. CBA

b. Warfighting and exercise lessons learned may serve as a basis to establish capability requirements, if the documentation indicates sufficient military utility of a certain capability. IAW AR 11-33, the Army Lessons Learned Program (ALLP) identifies and addresses systematic problems/issues within the Army. The ALLP, by identifying relevant Army issues and trends to be addressed and providing the analysis and supporting documentation, may lead to further analysis and development of JCIDS documents for validation in the deliberate or urgent/emergent staffing processes.

c. The preference is to avoid high rigor and time-consuming detail in the CBA, and concentrate on whether to recommend action. CBAs that are tightly focused on recapitalization, replacement actions, evolutionary needs, or information systems should take no more than 90 days, while more complex CBAs dealing with large uncertainties or new mission areas should take no more than 180 days. These timeframes are goals found in the JCIDS guidance. It is recognized that CBAs covering an entire WfF/function or DOTMLPF domain (with policy implications) may take a year to complete.

d. Table 7-1 depicts the management of the CBA in TRADOC in terms of functions, responsibilities, timing, output, and approvals. The results of the CBA are documented in one or more DICRs (for joint use a DCR) and/or ICDs, which are used to support the Milestone A (AoA) phase of the DAS.

Table 7-1. CBA functions and responsibilities

Analysis	Directed by	Performed by	When	Outputs/Use	Approved by
Step 1: Functional Area Analysis (FAA)	Dir, ARCIC	Proponent CoE/CDID or ICDT	Conducted for each approved AFC and concept/ CONOPS/white paper (when applicable)	Tasks, conditions, standards mapped to the required capabilities Basis for the FNA Basis for the initial threat environment assessment (ITEA)	ICDT Chair/proponent/ or study sponsor
Step 2: Functional Needs Analysis (FNA)	ICDT or proponent chair	Proponent CoE/CDID or ICDT	Following the FAA	Gaps in capability or performance Risk analysis identifies priority needs Basis for the FSA	Dir, ARCIC
Step 3: Functional Solution Analysis (FSA)	Dir, ARCIC	Proponent CoE/CDID or ICDT	After Dir, ARCIC approves which gaps to explore based on FNA results	Recommendation on whether to proceed with an ICD and/or DCR/DICR, forwarded to ARCIC	See below
-Ideas for non-materiel approaches (DOTmLPF analysis)		Proponent CoE/CDID or ICDT		Recommendations for the DOTMLPF solution approaches (RSA) substep below	See below

Analysis	Directed by	Performed by	When	Outputs/Use	Approved by
-Ideas for materiel approaches		Proponent CoE/CDID or ICDT with U.S. Army Research, Development, and Engineering Command support		Recommendations for the RSA substep below	See below
-Recommended DOTMLPF solution approaches		Proponent CoE/CDID or ICDT: Validates results Makes DCR/ DICR/ ICD recommendations to ARCIC leadership		List of resource informed and prioritized materiel & non-materiel approaches and their associated DOTMLPF implications. Modernization recommendations for decision by ARCIC directors.	- DD, ARCIC for special concepts - Dir, RID

e. DOTMLPF Analysis is part of all CBAs, but may be used independent of a CBA when the scope of an issue being studied is not likely to result in new materiel solution development. The DOTMLPF Analysis generally results in one or more DICRs (DCR for joint use) without an associated ICD. See Chapter 8 for more on DOTMLPF requirements.

f. A CNA or other analysis may be used in lieu of a CBA as long as the analytic rigor and results support the initiation of an ICD or DCR/DICR when required. The CBA steps and products below are still essential elements of a capabilities analysis.

g. When Warfighting function and selected formation CBAs are conducted as part of the CNA (see paragraph 7-8), separate CBAs are not needed.

Section I
CBA Steps

7-2. Functional area analysis (FAA)

a. Identification of the RCs or the FAA is the first analytical step of the CBA. For complex CBA efforts, S&AD is responsible for coordinating with TRAC for required analytic support. S&AD should be consulted and leveraged to review FAA results as they are developed. The capabilities in the FAA must be defined (with associated tasks, conditions, and standards) using the common lexicon for capabilities established in the JCAs. The FAA also identifies the joint interdependencies between other services and Army capabilities.

b. To ensure early and consistent consideration of threat and OE in the CBA process, the ICDT or proponent lead coordinates with TRADOC DCS, G-2 to ensure threat considerations were included in the proposed operational tasks, conditions, and standards. TRADOC DCS, G-2 ensures that DIA produces an initial threat environment assessment (ITEA) of the projected OE

and adversarial capabilities that could specifically affect the potential capability. The ITEA constitutes the baseline threat assessment for all JCIDS threat documentation and ongoing analysis. When completed, the FAA is approved by the ICDT or proponent chair.

7-3. Functional needs analysis (FNA)

a. The FNA is the second analytic step in the CBA. It identifies gaps in our ability to accomplish required capabilities at an acceptable level of risk. Validated baseline architectures (such as the existing approved JCIDS ICD/CDD/CPD and Brigade Combat Team/Brigade Organizational Based Architectures) can aid in providing input to support capability gap analysis.

b. ARCIC guidance on distribution of standardized benefits and metric descriptors assists in CBA efforts by identifying outcomes and requirements for capability gaps (Memorandum entitled "Standardized Benefits and Metrics Descriptors", signed 12 August 2010 by Dir, ARCIC posted on AKO Policy site at URL https://www.us.army.mil/suite/files/5234025, ARCIC Policy and References). Use of this guidance provides initial metrics that can be applied during the conduct of the FNA.

c. The FNA produces a prioritized set of gaps the Army should address, or concludes that no pressing gaps exist. You must research CCDR input to the JROC regarding what they perceive as military requirements and gaps. The gap list may not include all the capability gaps discovered, but it must reflect the gaps that pose unacceptable risk to achieving the aims of the national and military strategies. Since the JCIDS process ultimately identifies which gaps are pervasive or important enough to address, the suggested gaps must be directly linked to operational situations and the consequences of failing to meet objectives. The FNA results in a prioritized list of gaps that are directly linked to priorities in strategic guidance. It must include sufficient information to illustrate how these priorities were developed. Conclusions in the FNA must be presented concisely, and compelling factors behind the recommended priorities must include the information senior leaders need to make adjustments to the results if required.

d. The ICDT or proponent chair forwards the prioritized list of capability gaps, redundancies, and the supporting final FAA and draft FNA Final Report to the ARCIC JCIDS Gatekeeper for review and Dir, ARCIC approval. Following the FNA, Dir, ARCIC will direct the ICDT or proponent chair to proceed with a functional solution analysis (FSA) for those needs considered critical to executing operations IAW the concept and the overall needs of joint and Army forces. Non-critical needs may also be approved for FSA exploration depending on resources available.

e. CBAs developed by non-TRADOC proponents should include TRADOC coordination of products as described in Table 7-1 (submitted through the ARCIC JCIDS Gatekeeper). See the TRADOC CBA Guide for more information.

7-4. Functional solution analysis (FSA)

a. The FSA is the third analytic step in the CBA. It assesses potential DOTMLPF solutions and policy approaches to solving, or at least mitigating, one or more of the capability gaps identified in the FNA. The approaches identified should include the broadest possible range of joint/Army possibilities for addressing the capability gaps.

b. ARCIC guidance on distribution of standardized benefits and metric descriptors assists in CBA efforts by identifying outcomes and requirements for capability gaps (Memorandum entitled "Standardized Benefits and Metrics Descriptors", signed 12 August 2010 by Dir, ARCIC posted on AKO Policy site at URL https://www.us.army.mil/suite/files/5234025, ARCIC Policy and References). Use of this guidance provides updated metrics that can be applied during the conduct of the FSA.

c. Ideas for non-materiel approaches. The ideas for non-materiel approaches identifies whether non-materiel DOTMLPF approaches can address the capability gaps (needs) identified in the FNA. If the ICDT or proponent chair determines that the capability gap(s) can be addressed (fully or partially) by non-materiel and/or policy approaches, the ICDT or proponent develops appropriate requirements documents in addition to any required ICDs. See paragraph 8-2 for guidance on choosing the appropriate non-materiel documentation.

d. Ideas for materiel approaches.

(1) Materiel approaches run the gamut from new uses of fielded systems up to research, development, and fielding new capabilities on a grand scale. The emphasis in JCIDS is to fully examine and assess existing materiel before recommending new starts.

(2) The ICDT or proponent should leverage the expertise of all government agencies to include defense agencies; joint; interagency; other services; S&T; and research, development, and acquisition communities, as well as industry, in identifying possible materiel approaches within the guidelines established in AR 380-5. The ICDT or proponent should always consider existing or developmental materiel programs that can be modified to meet the capability needs.

e. Recommended DOTMLPF solution approaches (RSA).

(1) Although a detailed solutions analysis is no longer a formal CBA requirement under JCIDS (per current CJCSI), it is still necessary to provide advice in the form of DOTMLPF approaches and considerations for those gaps deemed to have an unacceptable level of risk to the force. It may be necessary to write a DCR/DICR and/or an ICD, so the elements for those documents must be addressed in the CBA results. While the level of analysis is reduced, it is still crucial to analytically defend the need for a new solution, especially a materiel solution. Things such as feasibility, affordability, supportability, etc. still need to be assessed at some basic level and all recommended approaches must reflect resource informed characteristics.

(2) The RSA utilizes a limited assessment philosophy and should be conducted in parallel for all gaps being explored. It may be discovered that certain non-materiel and or materiel approaches address multiple gaps under review. This strengthens the case for recommending those particular approaches as long as they meet the other characteristics, feasibility, affordability, supportability, etc.

(3) The final product of this step is a list of resource-informed materiel and non-materiel approaches (or combination of approaches) and their associated DOTMLPF implications evaluated against the metrics identified in the FAA. After the assessment is complete, some of the alternatives may be ruled out (as they apply to a particular gap) due to low technical maturity, high operational risk, etc. The remaining alternatives are then prioritized and the best combinations of those approaches will be ranked in priority order and listed in the CBA summary worksheet as contained in the CBA Guide.

f. The Post Independent Analysis (PIA) is an optional step in the FSA process. PIAs are only conducted on completed CBAs, not individual products like the FAA, FNA, or FSA. However, the draft FAA, FNA, and FSA documents (as they are being developed and before finalized for submission to the ARCIC JCIDS Gatekeeper) should be staffed with S&AD before finalizing the reports for approval. CBAs selected for PIAs might include broad ranging, high visibility efforts, and/or anticipated ACAT I programs. The ARCIC JCIDS Gatekeeper, when making distribution on approved CBA results, provides the final product to the Dir, RID for screening as a candidate for a PIA. Dir, A&ID, through S&AD, performs PIAs when required. The Dir, RID will coordinate directly with the ICDT lead for resolution of any issues that may arise from the PIA. If the CBA needs to be updated as a result of the PIA, a change 1 (one) will be produced to the CBA results.

g. The ICDT or proponent chair forwards the recommended non-materiel or materiel approach, or combination of approaches, the final FAA and FNA, and the supporting draft FSA Final Report to the ARCIC JCIDS Gatekeeper for TRADOC internal staffing and Dir, RID or Deputy Director, ARCIC (for Special Concepts) approval. As required, an ICDT Chair or proponent is then directed to compile the analysis and all necessary JCIDS data into a DICR (for joint, use a DCR), and/or an ICD, or both. ***Authorization from the Dir, ARCIC is required to proceed with an ICD. All regular ICDs and ACAT I IS ICDs will be validated by Dir, ARCIC***.

(1) When a materiel approach is required, the ICD will make a recommendation on the type of materiel approach preferred. The materiel initiatives fall within three broad types: information system approach which includes development and fielding of information systems or evolution of the capabilities of existing information systems (use of the IT Box may be an option); evolutionary development approach of an existing capability with significant improvement; transformational approach which includes breakout systems that differ significantly in form, function, operation, and capabilities from existing systems and offer significant improvement over current capabilities or transform how we accomplish the mission.

(2) The ICD also summarizes the DOTMLPF changes (non-materiel approaches) that were considered in satisfying deficiencies, in part or in whole.

(3) Document Analysis. Early analysis efforts must be initiated in support of the proposed solution (ICD) or materiel requirement (CDD/CPD) as follows:

(a) Notification will be sent via e-mail to the ARCIC JCIDS Gatekeeper; Dir, A&ID, and Chief and Deputy Chief, S&AD.

(b) Supported by on-site personnel, conduct C-BAs for ACATs I, II and III systems (required for CDD and CPD) when required.

(c) Supported by on-site Operations Research/Systems Analysis personnel, conduct AoA for all ACAT III, most ACAT II systems, and participate or support ACAT I AoA as directed.

Section II
Other Capabilities Analyses

The remainder of this chapter addresses analyses conducted by the CAPDEV, which expands on the work done in the CBA. These analyses include the AoA, requirements analysis (the analyses that supports the development of key performance parameters and performance attributes for a system), the CNA, the warfighter needs analysis and the C-BA. Table 7-2 describes the roles and responsibilities for the conduct of the analyses and how the analyses are used. During all analyses, to include the CBA, you must conduct trades to ensure that proposed solutions are resource-informed.

7-5. Conducting trades in a joint, resource constrained environment

a. The Army is operating in an environment where we cannot afford, nor is it necessary to obtain every capability to fully mitigate every gap. CAPDEVs must accept that some incremental increases in warfighting capability may not be necessary since the gap is within an acceptable level of risk. Because of these realities, CAPDEVs must make risk assessments and trades at every step in both the capabilities development and acquisition processes, from the initial analysis to the deployment of a solution. Trades must be considered to ensure that capability documents and the solutions they propose have resource informed characteristics. This means the proposed solutions account for and balance the resources required with the resources available to address the most critical gaps in operational capability.

b. Trades must be based on strong operational considerations, grounded in facts, and linked (through metrics) to missions. Trades should be evaluated across the DOTMLPF domains to determine the tactical, operational, and strategic impacts of trades in a holistic fashion. The effect of a change in one domain on another must be considered - to include the second and third order effects on other interdependent domains and materiel systems, and other warfighting organizations, both Army and joint. Trades also provide a means in which we can propose alternative paths to close or mitigate gaps. All trades must be analytically sound and risk-informed and they must consider integration with joint and other service capabilities. Proposed

trades must also take into consideration the results of the solutions (primarily materiel) in the most recently approved CNA (for example, how the solution competed in the CNA, how the solutions support the formation-focused CBA and their applicability to capability packages). Ensure that trades neither create new gaps nor increase current gaps unless solid analysis supports that recommendation.

c. Overarching trade considerations include, but are not limited to: organizational impacts; warfighting functional impacts; operational risk (risk to mission and risk to force, both Army and unified action partner); level of integrated capability; resource availability (dollars, personnel, etc.); C-BA (show the value to the force); technical feasibility (technical readiness), and cost, schedule, and performance.

d. Trades requirements and metrics are outlined in TRADOC CBA, DICR, ICD, CDD, and CPD Guides.

7-6. Analysis of alternatives (AoA)

a. This analysis is initially conducted following the MDD to support the first acquisition milestone decision review, along with updates for subsequent milestones, as required. The purpose of the AoA is to assess the potential materiel approaches and solutions to satisfy the capability need identified in the approved ICD or other validated requirements documents. S&AD is the ARCIC lead for all studies and analyses related to capabilities development and works with HQDA DCS, G-3/5/7 Capabilities Integration Directorate (DAMO-CI), TRAC, proponents, and other key stakeholders to determine the proper analytic requirements to support program milestone decisions. Once initiated, AoAs and designated high-priority studies will be guided by a Study Advisory Group (SAG). After SAG review and approval of final results, the AoA study final report will be forwarded by the SAG Chair with the SAG's recommendation to the milestone decision authority (MDA).

(1) When TRADOC is designated as AoA study lead by HQDA DCS, G-3/5/7 (DAMO-CI), then the Dir, ARCIC or Dir, A&ID will direct TRAC to conduct ACAT I and ACAT IA AoAs (see table 7-2). For most ACAT II and III solutions, ARCIC designates a proponent to conduct the AoA while S&AD provides technical oversight. Proponents, TRAC or other TRADOC elements may also be directed to support non-TRADOC-led AoAs. TRAC provides support and technical oversight for high visibility/special interest solutions within the confines of their resources. If required, other analytic resources (in particular, proponents, Army Materiel Systems Analysis Activity [AMSAA], or contractors) may be used. AMSAA and the Deputy Assistant Secretary of the Army for Cost and Economics (DASA-CE) provide specialized analytic support as required. Dir, TRAC submits a memorandum through ARCIC Dir, A&ID to CG, TRADOC recommending release of the AoA final report to HQDA DCS, G-3/5/7 (DAMO-CI). ARCIC A&ID coordinates the letter of endorsement/transmittal from CG TRADOC to HQDA DCS, G-3/5/7 (DAMO-CI) and below-HQ Army organizations. HQDA DCS, G-3/5/7 (DAMO-CI) approves the formal release of the final report to other HQDA elements, other Services, Joint Staff, and OSD as required.

(2) For AoAs led by other Army agencies or Services, TRADOC will provide support to the AoA as directed by HQDA DCS, G-3/5/7 (DAMO-CI).

(3) The inputs for the AoA are operational scenarios, architectures, behaviors (doctrine, tactics, techniques and procedures), OE, system performance data (alone and in combination with other systems), system cost data, and the RCs over time (described in the ICD and CDD). HQDA DCS, G-3/5/7, the MDA, and OSD Cost Assessment and Program Evaluation will provide specific issues and study alternatives that the AoA must address to ensure the AoA fully answers higher level HQs issues and concerns. Public Law 104-106, Section 5123; and 40 United States Code, Section 11313; mandate that there be a clear linkage between the AoA, system requirements, and test and evaluation (T&E) measures of effectiveness. The outputs are a measure of the comparative operational effectiveness and cost of specific solutions and combinations of solutions. TRAC provides the operational scenarios and supporting models used to analyze operational effectiveness and populates them with system performance data certified by AMSAA and behavioral data approved by the concept proponent or, in the case of multifunctional and SoS alternatives, by TRADOC as the user representative. AIMD provides approved architecture data and expertise as required. TRADOC Signal CoE provides electromagnetic spectrum supportability data and expertise as required. TRADOC DCS, G-2, TRADOC Intelligence Support Activity (TRISA) provides OE data, to include threat system performance and behavior. The office of the DASA-CE guides and/or provides cost analysis and develops the Army cost position. For all ACAT I pre-Milestone A AoAs, DASA-CE also conducts lifecycle cost analysis. TRAC, with DASA-CE and PM support, conducts cost analysis for Milestone B and later ACAT I AoAs and for other AoAs when directed by ARCIC. Proponents with ACAT II and III programs will coordinate with S&AD regarding the need for AoAs for their proposed systems. S&AD assists them in obtaining the required information from the organizations mentioned in this paragraph (as required) to allow them to conduct an AoA.

Table 7-2. Supporting analysis functions and responsibilities

Analysis	Directed by	Performed by	When	Product/Use	Approved by
Analysis for KPP, KSA, and performance attribute development	Dir, A&ID	• TRAC for ACAT I and IA programs • Designated proponent for ACAT II and III • AMSAA and DASA-CE support as required	As directed by ARCIC	• KPPs, KSAs, and other performance attributes for recommended solutions • Provides trade-space analysis • Basis for writing paragraph 6 of the CDD	Dir, ARCIC
TRADOC-led analysis of alternatives (AoA: DoD 5000-series)	Dir, ARCIC; Deputy Dir, ARCIC; or Dir, A&ID	• TRAC for ACAT I and IA programs • Designated proponent for ACAT II and III • AMSAA, and DASA-CE support as required • HQDA DCS G-8 for affordability analysis	As directed by ARCIC AMSAA provides system performance data and performance trade-off analysis DASA-CE reviews cost analysis and develops the Army cost position	• Provides preferred solution (cost-benefit/ effectiveness) • Refines the selected concept documented in the approved ICD • Provides the basis for the Technology Development Strategy (TDS) • Provides basis for prototyping requirements (analytical underpinning to inform requirements in CDD)	Dir, ARCIC or Dir , A&ID **validates** Senior Advisory Group (SAG) recommends analytic sufficiency MDA **approves**
CNA	Dir, A&ID	• ARCIC Capabilities Assessment and Reliability, Availability, and Maintainability Division • TRADOC staff and TRADOC/non-TRADOC proponents support	Annually	• Provides ordered list of Army required capabilities, banded by risk to mission accomplishment if not performed • Provides a list of Macro-level force capability gaps & a list of development priorities • Assesses whether programmed DOTMLPF solutions can accomplish the RCs • Informs CBAs and POM development • Informs Experimentation planning and the learning objective development	Dir, ARCIC
TRADOC Cost-Benefit Analysis (C-BA)	Dir, ARCIC; Deputy Dir, ARCIC; or Dir RID	CoEs/CDIDs or designated proponent	As required in conjunction with capabilities documents	Provides value analysis to inform TRADOC integration, prioritization, and programming decisions	Dir, ARCIC

b. The first AoA is normally conducted after MDD for completion before the next milestone. The AoA is updated in each of the subsequent phases of the acquisition life cycle as required. Chapter 9 provides additional details on AoAs in the context of the acquisition management process.

7-7. Requirements analysis (KPPs, KSAs, and performance attributes)

a. The analyses done during the CBA and AoA provide the basis for the KPPs, KSAs, and performance attributes. The CDD and CPD contain the KPPs, KSAs, and performance attributes that define the minimum requirements for producing an increment of capability to meet warfighter needs as described in the ICD. The KPPs, KSAs, and performance attributes set metrics for materiel developers to develop a system, inform S&T about investment decisions for future increments, and establish the limits of performance trade-offs that materiel developers can use in managing their programs. The CDD brings together the chosen materiel approach and the performance attributes of the materiel systems and organizations that host capabilities. **The joint staff issued a JROCM addressing KPP relief when the value of requirement is not commensurate with the cost** (see chapter 8 for details).

b. S&AD manages different types of requirements analyses that contribute to the selection of those KPPs, KSAs, and other performance attributes included in the CDD. Ultimately, the designated force modernization proponent is responsible for determining the KPPs, KSAs, and performance attributes. The supporting proponents assist by performing those portions within their areas of functional expertise. For other programs, S&AD tasks proponents to answer specific questions about minimum essential performance and determines, sometimes with TRAC support, the threshold values for each increment of capability. The AMSAA supports this process with system performance data and trade-off analysis on KPPs, KSAs, and other performance attributes.

c. There are six mandatory KPPs: survivability, force protection, sustainment, net-ready, training and energy. The sustainment KPP and its two mandatory supporting KSAs (reliability and ownership cost) are developed for all JROC interest programs and non-JROC interest programs as determined by the sponsor. For further information on these required KPPs/KSAs, see the JCIDS Manual or the TRADOC CDD Writer's Guide and CPD Writer's Guide. These guides are a descriptive source for assembling a CDD or CPD and provide electronic templates to assist in writing the documents.

d. Although not a KPP, ***an affordability target, delineated in a Milestone A Acquisition Decision Memorandum, will be treated by the PM like a KPP***. Reference Under Secretary of Defense for Acquisition, Technology, and Logistics memorandum, 14 September 2010, subject: *Better Buying Power: Guidance for Obtaining Greater Efficiency and Productivity in Defense Spending*.

e. Since KPPs and KSAs are major cost drivers and have the potential to kill programs, the goal is to limit them in CDD/CPDs. The number of KPPs (beyond the required mandatory KPPs) should be kept to three or less to maintain program flexibility. The number of KSAs (beyond those supporting the Sustainment KPP) should be kept to five or less to maintain program flexibility. The threshold value for a KSA must be the minimum acceptable value considered essential for an effective military capability and achievable within the available cost, schedule, and technology at low risk. The objective value for a KSA is the desired performance goal with a moderate risk in cost, schedule, and technology. There should be no more than ten additional performance attributes.

7-8. Capabilities needs analysis (CNA)

The CNA process is a TRADOC-led assessment of the Army's ability to perform future organizational and functional missions as defined by joint and Army concepts, taking into account existing and programmed DOTMLPF solutions. It can be used to fulfill analysis requirements in lieu of a normal JCIDS CBA. The CNA efforts are aligned to the ArG two-year concept and capabilities development cycle and are conducted from both formation and warfighting functional perspectives. Following guidance from the HQDA DCS, G-3/5/7 and the ArG, the CNA identifies, assesses, integrates, and orders the Army's required capabilities (RCs), DOTMLPF solutions, capability gaps, and gap solution approaches based on risk assessments. The CNA phases, as laid out in Appendix E are: Guidance and Direction; Preparation; Assessments; Aggregation; and Results Approval, and the AAR. Updated CNA details are provided in a TASKORD issued by the TRADOC G-3/5/7 to the Army force modernization community. The CNA TASKORD; description; technique, tools, and standards; products; and completed results are available at https://cna.tradoc.army.mil. The CNA products are used by HQDA to inform the Army's POM priorities and by the proponents to support the initiation of a JCIDS DCR, DICR and/or an ICD as required.

7-9. Warfighter outcomes analysis

The Warfighter outcomes analysis is an annual assessment led by the S&T Division of CDLD. This analysis is oriented on those capabilities and solutions required by or delivered to operational forces 10-20 years in the future commonly referred to as the extended planning period. This analysis has been incorporated into the CNA, and is an integral part of the adjusted CNA process.

7-10. Cost-Benefit Analysis (C-BA)

a. A VCSA memo (Cost-Benefit Analysis to Support Army Enterprise Decision Making) dated 30 Dec 2009 was published to address Army needs to develop stronger considerations of cost and benefit tradeoffs and to take steps to avoid too much capability redundancy. To facilitate these cost and benefit considerations, the VCSA provided additional cost guidance to the Army directing that each unfunded requirement and new or expanded program proposals be accompanied by a thorough C-BA. The analysis must identify the total cost of the proposal, the benefits that result, billpayers for the new capability, and the second and third order effects of the funding decision. The net result of the C-BA should be a strong "value proposition" – a clear statement that the benefits more than justify the costs and trade-offs."

b. The VCSA memorandum provides guidance on cost considerations for CAPDEVs to build on to conduct C-BAs for capability documents. A C-BA will be conducted for all new capabilities documents that generate an increase in programmed costs, including ones for fully funded programs. C-BAs are not required for ICDs, DCRs, or DICRs. The more cost-benefit analyses we conduct, the better we can estimate the cost impacts to the Army and joint force and assist our leadership in making fiscally informed decisions. TRADOC supports the VCSA memorandum and published guidance for C-BA considerations when CDDs, CPDs, and FDUs are prepared by force modernization proponents.

c. The C-BA is a straight-forward means to enable decisionmakers to determine whether the benefits of a proposed course of action (COA) outweigh its costs or, for competing COAs, whether one is preferred over the others based on cost-benefit considerations. For capabilities development, the benefits will be described in operational terms. While AoAs are among other things, a C-BA of specified alternatives, there is still a need for the user community to perform a C-BA whenever preparing one of the user documents (FDU, CDD, or CPD); these C-BAs enable decisionmakers to be resource-informed when establishing and defending requirements (for both system attributes and quantities). Due to their different purposes and timing, the C-BA and AoA are not intended to be duplicative. For example: AoAs are required by statue and regulation at Milestone A, and updated at Milestone B and Milestone C at the discretion of the MDA. If the MDA (normally the Army Acquisition Executive (AAE) or DAE for ACAT level I programs) decides an AoA update is required at Milestone B, which is normally the time the CDD is being worked, then it would not make sense to need a C-BA for the CDD for which the AoA is intended to inform. However, the planning and conduct of C-BAs and AoAs should be accomplished in cognizance of one another and reconciled where necessary.

d. The COAs considered in a C-BA should be linked to the RCs and capability gaps from the most recent functional concept FNA or CNA. The analysis must also consider the extent that each system or capability COA will be able to mitigate the capability gap risk.

e. Key elements of the C-BA are useable metrics within and across warfighting functions that are most relevant to the capability under analysis, its operational benefits and its costs.

f. C-BAs must include evaluation of "2nd and 3rd order" effects related to selection of a COA. Examples include synchronizing the delivery of dependent capabilities such as sensors, communications payloads or means, or personnel/leader qualification and training to complete the capability. If significant, these effects will impact the full decision cost.

g. The C-BA requires a cost and benefit comparison of two or more alternatives (one must be the status quo) in order to select the preferred alternative. As a general rule, the preferred alternative is the one that provides the greatest reward in relation to its cost.

h. All C-BAs supporting CDDs, CPDs, and FDUs will be prepared IAW the guidance published ARCIC memorandum (ATFC-RA), 15 Jun 2012, "Implementing Cost-Benefit Analysis (C-BA) Guidance for Joint Capabilities Integration and Development System (JCIDS) Capabilities Documents." Additional guidance for C-BAs in support of FDUs is provided in the Force Design Update Writer's Guide. Dir, ARCIC approves all TRADOC C-BAs incorporated into capabilities document before submission to HQDA. The general guidelines are outlined in the SOP for the Evaluation of C-BA and U.S. Army Cost Benefit Analysis Guide and will be followed (select DASA-CE to locate the guide). S&AD will review the C-BA during both worldwide and validation staffing, and uploads the C-BA to the DASA-CE Cost and Performance Portal for their initial look. DASA-CE reviews the C-BAs sent from the ARCIC JCIDS Gatekeeper to the AROC and makes recommendations regarding affordability of the proposed capability. A DASA-CE cost-benefit analyses checklist for the C-BA Guide can be found on AKO at https://www.us.army.mil/suite/files/23116369. Consult the ARCIC S&AD when doing C-BAs to ensure compliance with published guidance.

7-11. Business case analysis (BCA)

a. The BCA is a structured methodology and document that aids decisionmaking by identifying and comparing alternatives by examining the mission and business impacts (both financial and non financial), risks, and sensitivities. It underpins optimal "business" decisions during a product's life cycle that enable the weapon system to meet the warfighter-stated performance requirement, at the lowest Life Cycle Cost and smallest logistics footprint while complying with applicable statutes, policies and plans.

b. The BCA provides an analytic, standardized, and objective foundation upon which credible decisions can be made by the PEO/PM to:

(1) Initiate funding and execution of engineering change proposals to enhance product support and maintain reliable and relevant products.

(2) Waive competitive prototyping.

(3) Guide the decision to invest in a project and/or select among alternative approaches.

c. Guidance on the BCA is found in the Defense Acquisition Guidebook (DAG).

Chapter 8
Documenting Resource-Informed Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) Solutions

8-1. General

a. The Secretary of the Army designated TRADOC as the lead for designing, developing, and integrating force capabilities as well as synchronizing the development of DOTMLPF solutions across the Army. These TRADOC responsibilities are executed by the ARCIC. ARCIC's role as the lead Army capabilities development integrator is executed within TRADOC's authority to build the future Army.

b. The implementation of DOTMLPF meets the Army's intent to address cost throughout the JCIDS development process. DOTMLPF solutions are resource-informed (achieve optimal warfighting capabilities at an affordable cost); focused across the DOTMLPF domains and all capability areas taking into consideration policy implications; and they portray performance characteristics that are relevant and reflect the acceptance of prudent operational risk.

c. All Army force modernization and branch proponents are responsible for all DOTMLPF integration within their force modernization areas of responsibility as described in AR 5-22. CDIDs review the capability documents from a force modernization proponent perspective to ensure that integrated capabilities development products describe how DOTMLPF solutions mitigate validated gaps to ensure mission success at an acceptable level of risk to personnel and

equipment. When outlining an integrated set of proposed DOTMLPF solutions to achieve required capabilities, TRADOC's objective is to give gaining organizations the tools and solutions necessary to achieve mission success and sustain readiness. Proponents must also ensure that DOTMLPF changes required to support integration of the system/capability with existing capabilities are considered and documented as appropriate in capability documents.

d. DOTMLPF endorsements, including assessment of the Training KPP if applicable, are provided by J-7 for all Joint DCRs, and other documents that advocate DOTMLPF changes except those with a Joint Staffing Designator (JSD) of "Joint Information" or "Independent". To facilitate review of DOTMLPF considerations and interaction with other stakeholders, a J-7 representative will participate as a member of the Lead FCB working group, and will raise issues for discussion, as necessary, related to the DOTMLPF endorsement. As an advocate for DOTMLPF considerations during validation discussions, Vice Director, J-7 or designee will be present for joint capabilities board (JCB) discussions.

Table 8-1. TRADOC DOTMLPF domain leads with staff management responsibilities

Domain	TRADOC Org (domain lead w/ staff management)	Output Examples	If TRADOC CG or HQDA approval required: Validated by
Doctrine	CG, CAC	→ Army Doctrine Publications → Army Doctrine Reference Publications → Field Manuals → Army Technique Publications	CG, CAC and Dir, ARCIC
Organization	ARCIC, A&ID, Force Design Division (FDD)	→ Basis of issue plan → Organization & operations plan (as needed) → Unit reference sheet → Force structure DOTMLPF (formation-based) assessments → Force design update (FDU) → Any other force structure assessments → Table of organization and equipment (TOE)/modified table of organization and equipment (MTOE) → TAA Capability Demand Analysis input (Rules of Allocation (ROA), Engineer Construction Projects, Logistics Planning Data) → FDU Jr	Dir, ARCIC or designated representative
Training (includes Training Support)	CG, CAC	ICDT/proponent in collaboration with CAC-T (U.S. Army Training Support Center) → Training input to Army Modernization Plan → System training plan → Training support plans; such as BCTM → Training land acquisition strategic-level training concepts, plans, and strategies; such as BCTM training strategy → Training facilities (major range projects, CACTF facilities, battle command training centers, and classroom facilities) → Training analyses supporting a training KPP and required training resource requirements. → Delivery schedule for training product enablers (e.g., task lists and components) coordinated with MATDEV	CG, CAC and Dir, ARCIC
Materiel	ARCIC	ICDT/proponents in collaboration with ARCIC functional divisions → ICD, CDD, CPD, DCR, DICR	See Appendix B for Validator
Leadership and Education	CG, CAC	→ Professional military education redesign proposals → Professional military education Concept Plans → ALDP Integrated Priorities Lists, → Inputs to the ACP	CG, CAC and Dir, ARCIC
Personnel	TRADOC DCS, G-3/5/7, Leader Development Integration Directorate, Personnel Proponency Division	ICDT/Proponent & TRADOC DCS, G-3/5/7 → MOCS proposals → Health, welfare, and viability of the branch or functional area, including impacts on female Soldiers, regarding career development, utilization, and promotion opportunities ARCIC & TRADOC DCS, G-3/5/7 → Force Design assessments & Updates	TRADOC DCS, G-3/5/7 and Dir, ARCIC
Facilities	TRADOC G-1/4 (TRADOC Engineer)	ICDT/Proponent & TRADOC G-1/4: DD 1391___ → Military construction Army (MCA) → Major facility renovation for training facilities or materiel facilities	Dir, ARCIC; TRADOC DCS, G-1/4 (Engineer); and Assistant Chief of Staff for Installation Management

***Note*: HQDA DOTMLPF Leads can be found in AR 5-22.**

e. Each FCB will establish Joint priorities for all capability requirements submitted to their respective FCB portfolios in ICDs, JEONs, JUONs, or DoD Component urgent operational needs (UONs). Priorities determined by the Sponsor of each capability requirement will not be considered during FCB assessments of Joint priorities. FCBs will perform Joint assessments of the capability requirements within 90 calendar days of being uploaded to the KM/DS system.

f. CAC serves as the domain lead for T and L issues and proposals not directly tied to a specific system. They perform the following T and L review and integration efforts:

(1) As a key facilitator of ARCIC DICR staffing, they coordinate DICR review with those POCs on the ARCIC Validation Staffing List.

(2) Review ICD recommendations for non-materiel T and L approaches and determine if a companion DICR has been submitted (if required).

(3) For those T and L requirements lying outside the Acquisition Program Baseline or outside programmed resources, ensure the proponent has begun efforts to submit the proper requests for approval and resourcing to HQDA (via TRADOC).

(4) Work with the appropriate ARCIC functional division to determine impacts of the proposed T and L solutions on other DOTMLPF capabilities (if any).

g. Capabilities Assessment and reliability, availability, and maintainability (RAM) Division (CARD) will support on an as needed basis with personnel that have related T and L expertise.

(1) CARD will update CNA DOTmLPF database as required.

(2) CARD ICW the ARCIC staffing action officer will review CDDs and CPDs to determine if CNA DOTmLPF database updates are required.

(3) Provide the rank order of proposed DOTMLPF capabilities relative to the CNA.

Section I
Documenting non-materiel solutions

8-2. Joint and Army DOTmLPF Change Recommendations

a. ICDTs or proponents prepare DCRs/DICRs when it is necessary to implement changes in the DOTmLPF to resolve or mitigate a capability gap that cannot be resolved by using the domain's established procedures and resources (See top of Figure 9-2 for examples of established regulations and products not requiring a DICR, as well as paragraph 8-3 – 8-8). The DCR/DICR focuses on changes that are primarily non-materiel in nature, although there may be some limited materiel changes as well. For changes that are primarily non-materiel in nature, the Army and Joint Staff uses the acronym DOTmLPF. The letter "m" in the acronym is usually lower case since DCRs/DICRs do not advocate new materiel development, but may recommend increased quantities of existing materiel solutions. While it is recognized that system-specific

dotMlpf and policy changes are an integral part of any new start major acquisition program, those system-specific changes are normally addressed by the CDD and/or CPD. In cases where a DCR/DICR is not generated from a validated requirement in an ICD, it serves to document the new capability requirements and associated capability gaps being addressed by providing the appropriate details of an ICD. The JROC and AROC will review specific change recommendations for joint and Army warfighting utility and programmatic implications. Based on the findings, the JROC and AROC will provide recommendations for review and action. See the TRADOC DICR Guide for additional information, particularly the Rules of Engagement paragraph.

b. The DCRs/DICRs may be submitted to:

(1) Recommend a change, institutionalize, and/or introduce new joint and/or Army DOTmLPF change resulting from joint and Army experimentation, lessons learned, or other assessments to meet operational needs which do not require a new materiel start.

(2) Recommend a change, institutionalize, and/or introduce new joint and Army DOTmLPF change resulting from the CBA, DOTMLPF analysis, or other study which is outside the scope or oversight of a new defense acquisition program.

(3) Request additional numbers of existing commercial or non-developmental items previously produced or deployed via the JCIDS process in addition to other considerations of DOTmLPF. For capability solutions fielded in response to a UON, JUON, or JEON, submit an update to the UON, JUON or JEON rather than a DCR to request additional quantities, unless the capability has transitioned to the deliberate requirements and acquisition processes. An ONS is a DoD Component (Army) UONs.

(4) Leverage existing non-materiel solutions available from U.S. interagency or foreign sources.

c. The ICDT or proponent team forwards the draft DCR/DICR to the ARCIC JCIDS Gatekeeper for review, internal HQ TRADOC staffing and Dir, ARCIC validation. Following Dir, ARCIC validation, the ARCIC JCIDS Gatekeeper forwards the DCR/DICR to HQDA DCS, G-3/5/7 (Future Warfighting Capabilities Division, DAMO-CIC) for review and AROC validation and approval. JROC review will occur for DCRs and joint policy changes.

d. The DCR and its format are described in detail in the JCIDS Manual. The Joint DCR is limited to maximum of 30 pages for the nine primary paragraphs and Appendix A (NR-KPP). The DICR, its format and additional preparation guidance is described in AR 71-9 and TRADOC DICR Guide. The goal for each DICR is to be as short and concise as possible.

8-3. Documenting doctrine requirements

a. TR 25-36 establishes policy for the TRADOC doctrine program (also applies to non-TRADOC proponents), which includes the detailed guidance for establishment of doctrinal requirements. CAC, Combined Arms Doctrine Directorate (CADD) manages this policy.

b. A doctrine requirement is a validated need to implement actions in the doctrine process to develop new or revised doctrine publications to sustain or achieve desired operational capabilities. Doctrinal requirements may be generated through the JCIDS process for achieving a required capability or in support of the other solution set domains. As a result of the CBA or other analysis, the ICDTs or proponents may prepare DICRs when it is necessary to implement doctrinal changes (across the Army) to resolve or mitigate a capability gap outside the TRADOC doctrine program, especially when HQDA visibility is desired.

c. The doctrinal solution set is considered the most desirable within the DOTMLPF domains because it is considered the most cost effective to develop and implement. A doctrinal solution may impact other domains and drive other requirements to achieve the desired capabilities validated in the concept. New or revised doctrine may drive organizational change, new training products to teach implementation, modification of ranges or other training facilities, and other non-doctrinal changes. New or revised doctrinal requirements may also be generated to support employment of new materiel solutions to the force.

d. Doctrinal requirements are also generated as a result of other change catalysts. Some of these catalysts are:

(1) An 18-month assessment of current doctrine for relevancy and currency.

(2) Changes to the National Security Strategy, National Defense Strategy, and NMS.

(3) Other DoD policy changes.

(4) Senior leader guidance.

(5) New or revised Army capstone doctrine.

(6) Joint doctrinal changes.

(7) Changes in the common operating environment.

(8) Operational lessons learned.

(9) Mission, organization, architecture, and/or equipment changes.

(10) Technological changes.

e. If the doctrinal requirement is generated through the JCIDS process, proponents' CDIDs will review the capability documents for the doctrine domain requirements from a force modernization proponent perspective to ensure the specifics of the requirements contained in the document accurately reflect doctrinal needs. As the TRADOC doctrine domain lead, TRADOC CAC will ensure a review of doctrinal documents from a HQ TRADOC perspective.

f. For TRADOC, the program directive (PD) approval authority is normally the CG, CAC. Non-TRADOC doctrine proponents must staff through CAC for coordination and obtain appropriate ACOM approval. Once the PD is approved, the proponent is authorized to apply appropriate resources for the development, approval, publishing, and distribution of the doctrinal publication (Army Doctrine Publication, Army Doctrine Reference Publication, FM; Army Techniques Publication) to provide a solution to support an identified capability gap or the employment of new equipment being fielded to the force.

8-4. Documenting organizational requirements

a. Organizations have their beginnings in concepts, existing CCPs, and architectures that are connected to the capstone concept for joint operations (CCJO) and the ACC. These concepts and architectures provide the basis for the proposed organization and address a unit's mission, functions, and required capabilities. The CAPDEVs, who have organizational development responsibilities, develop new designs or correct deficiencies in existing organizations by including the need among the RCs identified in functional concepts.

b. Organizational requirements are derived from continuous assessments by proponents to identify whether a new or modified organization is required for tomorrow's OE. CCMDs, HQDA, ACOMs, ASCCs, or field units may initiate these assessments. Organizational requirements are described through interrelated development processes, such as Administrative Adjustments; Military Occupational Classification and Structure (MOCS) Adjustments; Basis of Issue Plan (BOIP) development; Capability Development Documents (CDD); FDU process (include FDU Junior and Out of Cycle FDUs); and Major Redesign/Restructuring Initiatives. ICDTs or proponents' CDIDs will review the capability documents for the organization domain requirements from a force modernization proponent perspective to ensure the specifics of the requirements contained in the document accurately reflect organization needs. As the TRADOC organization domain lead, ARCIC, A&ID, Force Design Division (FDD) ensures a review of organizational documents from a HQ TRADOC perspective. To ensure Dir/Deputy Dir, ARCIC visibility, FDD acts as the gatekeeper for all organizational force structure assessments, reviewing and coordinating recommendations with the appropriate ARCIC functional division in RID prior to submission. FDD also ensures ARCIC, OPPD Tasking Branch is aware of the tasking for Dir, ARCIC Commander's Critical Information Requirements (CCIR).

c. Force design update. Usually, the FDU is the Army process used to develop new organizational requirements or changes to existing organizations and includes capabilities development, requirements approval and implementation decisions. It develops organizational design solutions to overcome identified capability shortfalls that cannot be accommodated by doctrine, training, leadership and education, or personnel solutions. As part of the solution development, ICDTs or proponents/CDIDs consider courses of action across the DOTMLPF with the intent of driving materiel and organizational solutions as a last resort. Once an organizational solution becomes the recommendation, the proponents/CDIDs assess and begin the integration process across the DOTMLPF.

(1) FDUs are conducted semiannually with submissions in May and December. Special out-of-cycle FDUs may be conducted to handle complex design issues or issues of special emphasis, such as those directed by HQDA. In addition, ICDTs or proponents CDIDs can submit an FDU junior issue at any time. FDU junior issues involve minor adjustments to designs that normally do not impact other proponents and do not contain personnel bills.

(2) FDUs begin with the ICDTs or proponents/CDID identifying a capability shortfall derived from a variety of sources that include (but are not limited to) organizationally based assessments, ONS, senior leader visits to units, lessons learned, commander conferences, and inputs from the field. ICDTs or proponents/CDIDs conduct a DOTMLPF analysis of the capability shortfall to determine the most appropriate DOTMLPF resource informed solution. If the CDID determines an organizational solution is the only/preferred means to address the shortfall, the ICDT or proponent/CDID prepares and submits an FDU packet. See the TRADOC Action Officer Guide to the Force Design Update (FDU) located on AKO at https://www.us.army.mil/suite/folder/12376023 for more details and illustrative examples.

d. In response to guidance from SecArmy, memorandum, Subject: Army Directive 2012-08 (Army Total Force Policy), ***HQDA has transitioned from a two year Total Army Analysis (TAA) cycle to an annual TAA cycle***. To meet HQDA's TAA guidance, TRADOC's inputs to TAA Capability Demand Analysis (CDA) and Resourcing have transitioned from a complete and detailed review of all inputs every two years to only providing annual adjustments of the previous TAA's submission. Until significant changes to concepts (like modularity), Army End Strength, and/or NMS-DPG occur, TRADOC's input will require only a refinement to previous year's submission rather than a complete review.

(1) TRADOC's inputs in the CDA Phase of TAA consist of Force Design Updates (FDUs), Rules of Allocation (ROAs), Logistics Planning Factors, Engineer Construction Projects, Concepts of Support, and Foundational Activities Vignette reviews. TRADOC's inputs in the Resourcing Phase of TAA consist of providing recommendations on Emerging Growth and offsets during Resourcing Panels, CoC, and GOSCs.

(2) All proponents review ROAs and the Vignette force lists and submit changes to FDD for subsequent submission to HQDA. SCoE receives input from all proponents to update Logistics Planning Factors that inform CDA modeling and coordinates with HQDA DCS, G-4 to update the Sustainment Concept of Support. Every other year, SCoE aligns logistics planning data with the Consolidated Table of Organization & Equipment (TOE) Update (CTU) used to conduct the campaign modeling by the Center for Army Analysis (CAA). Maneuver Support CoE provides updated Engineer Construction Projects to inform CDA modeling and coordinates with the Office, Chief of Engineers to update the Engineer Concept of Support. USASOC coordinates with SOCOM to update the SOF Concept of Support.

(3) TRADOC inputs are required on an annual basis to ensure Capability Demand Analysis reflects current/emerging designs, doctrine, and required capabilities. Limited refinements to inputs in the first year of the Capability Development Cycle then more complete adjustments in the second year (focused on changes) will continue to mature the force, provide credible adjustments, and retain flexibility to accelerate selected capabilities.

e. TAA is an annual multi-phased force structuring process consisting of both qualitative and quantitative analyses designed to develop the "operating and generating forces", modified TOE (MTOE) and table of distribution, necessary to meet the guidance issued by the President, Congress, OSD or Army leadership. The purpose of TAA is to determine the required and resourced force to be implemented in the Army Structure Message (ARSTRUC) and resourced in the associated POM.

8-5. Documenting training requirements

a. CG, CAC is the TRADOC lead for the core functions of training development, functional training, and training support. CAC also serves as the Training Domain lead and staff manager for current and future training requirements determination and capabilities development in support of ARCIC. CAC-T executes these responsibilities for CAC, ensuring a thorough review of training and leader development documents. Specific training requirements determination guidance is in AR 350-1, AR 350-10, AR 350-38, TR 350-70, and the TR 350-70 Series.

b. The appropriate proponent or TRADOC activity uses the JCIDS process to identify new DOTMLPF solutions that ultimately affect training and training support programs. They lead ICDT/proponent efforts that include representatives from across the Army and DoD to provide critical training information early in the process. The ICDT/proponent leads develop the assessments that identify training requirements, capability gaps, and potential resource-informed solutions to resolve or mitigate the gaps. These solutions are documented for validation and approval in the CDD/CPD for materiel solutions and in the DCR/DICR for non-materiel solutions. The Training GOSC (TGOSC), informed by the Army Training Strategy and Army Learning Model, provides the executive forum to review and approve potential training solutions.

c. The proponents for training systems, TADSS, and training strategies must document their training requirements and supporting analyses early in the JCIDS process to ensure visibility and appropriate resourcing. They ensure that all system training requirements developed and fielded by the PM are included as required attributes in the same context and paragraphs in the CDD and CPD as are the "materiel" system attributes. ICDTs, proponents and TRADOC activities review the documents to ensure the specifics of the requirements accurately reflect training needs. They also coordinate with CARD for integration of the Training and Leader Development requirements. The documentation requirements for non-system TADSS will be developed in accordance with JCIDS and AR 350-38.

d. When a Training KPP is identified in a CDD or CPD, a draft training plan and resource estimate for training must be submitted to the Under Secretary of Defense for Personnel and Readiness/Training Readiness and Strategy by HQDA. For JROC and JCB Interest documents, the AAE must sign the training plan and resource estimate. The detailed training plan must address full training requirements and associated cost data.

e. The appropriate proponent or TRADOC activity also develops training products (such as Warfighter and unit training publications, training support packages, and training strategies) in accordance with TR 350-70. Upon completion, these products are posted to the Central Army Registry. Additionally, they prepare Training Requirements Analysis System documents for TRADOC-developed courses and for Inter-service Training Review Organization (ITRO) consolidated courses developed at TRADOC centers, schools, and other service locations.

8-6. Documenting leadership and education requirements

a. HQDA DCS, G-3/5/7 is the ARSTAF lead for training, and leadership and education requirements.

b. CG TRADOC is the supported commander for execution of the ADLP.

c. CG, CAC is the TRADOC lead for executing leadership and education programs.

d. The Deputy Commandant, Command and General Staff College, is TRADOC lead for implementing leadership and education theory, concepts, doctrine, and programs for the total Army.

e. As the TRADOC leadership and education domain representative, CAC performs staff management of leadership and education policy, program development, and execution. They also ensure a review of leadership and education documents from a HQ TRADOC perspective.

f. ICDTs or proponents review capability documents for leadership and education requirements from a force modernization proponent perspective to ensure the specifics of the requirements accurately reflect needs.

g. TRADOC conducts a quarterly leader development review. This review provides a mechanism to develop new ideas about leadership and education; to build consensus; to bring recommendations to the attention of the Army senior leaders; to assess, develop, coordinate, prepare and submit action for decision and implementation; to monitor and accommodate the effects of change; and to ensure initiatives and issues are integrated and resolved at appropriate levels.

8-7. Documenting personnel requirements

a. TRADOC DCS, G-3/5/7, (Leader Development Integration Directorate, Personnel Proponency Division), ICW TRADOC DCS, G-1, assists proponents in developing the best personnel lifecycle policy for Warfighters and the Army. It facilitates unity of effort among HQDA, TRADOC, and the Reserve Component in personnel transformation studies and initiatives and serves as TRADOC's honest broker for input to the personnel lifecycle decisionmaking process for the Army. Proponents determine personnel requirements (see AR 600-3 and AR 611-1) for MOCS. ICDTs or proponents review the capability documents for the personnel domain requirements from a force modernization proponent perspective to ensure the specifics of the requirements accurately reflect needs. As the TRADOC personnel domain

representative, TRADOC DCS, G-3/5/7 ensures a review of personnel documents from a HQ TRADOC perspective. Refer to table 8-1 for additional coordination and validation information.

b. Personnel development offices prepare the documentation to support personnel domain requirements, ensuring compatibility with the other domains. Personnel requirements include changes to Army personnel management and utilization regulations and policy, as well as additions, deletions, or modifications to the Army's MOCS system per AR 611-1. MOCS proposals range from proposals affecting the force and/or grade structure of existing occupational specialties to the creation of entirely new occupational specialties to accomplish a new requirement.

(1) TRADOC personnel developers forward proposed changes to management and utilization regulations and policy, as well as MOCS proposals to TRADOC DCS, G-3/5/7 for TRADOC staff analysis. TRADOC DCS, G-3/5/7 coordinates the proposal and returns it to the originating personnel developers for changes and/or corrections, or forwards it to HQDA DCS, G-1 for Army-wide coordination and approval.

(2) Non-TRADOC personnel developers forward regulatory, policy, and MOCS proposals directly to HQDA DCS, G-1 and/or U.S. Army Human Resources Command, which then coordinates with TRADOC DCS, G-3/5/7 as part of an Army-wide review.

8-8. Documenting facilities requirements

a. Activities. Proponents are responsible for analyzing and justifying facilities requirements. TRADOC DCS, G-1/4 (Engineer Directorate) assists proponents as addressed in TR 10-5. They develop requirements, cite and program those requirements IAW master planning procedures in AR 210-20. Major maintenance, renovation and repair, or operations and maintenance, Army facilities solutions and projects are approved IAW AR 420-1. The longest lead-time facilities solution (typically 5 years from programming through construction) is through military construction (MILCON), typically military construction, Army (MCA). MILCON programming procedures are contained in DA Pam 420-1-2. ICDTs or proponents review the capability documents for the facilities domain requirements from a force modernization proponent perspective to ensure the specifics of the requirements contained in the document accurately reflect facility needs. TRADOC DCS, G-1/4 (Engineer Directorate), as the TRADOC facilities domain representative, ensures a review of facility documents from a HQ TRADOC perspective, with some exceptions. Exceptions include facilities sponsored, planned, and funded by IMCOM as part of installation infrastructure and Army-wide training support facilities resourced under the training program evaluation group and managed under the training domain. Refer to table 8-1 for additional coordination and validation information.

b. Identifying facility requirements. Installation directors of public works or equivalents can assist in identifying facilities impacts or requirements, or the proponent can contact TRADOC DCS, G-1/4 (Engineer Directorate). They can provide assistance identifying proper funding or programming streams to address facilities requirements as laid out in TR 10-5.

c. MCA facilities solutions.

(1) TRADOC DCS, G-1/4 (Engineer Directorate) gathers and processes mission unique TRADOC MCA project requirements identified by TRADOC proponents and sites, with some exceptions. An example of an exception would be training support facilities resourced under the training program evaluation group and managed under the training domain. The TRADOC staff validates requirements and rank-orders requirements for programming. TRADOC DCS, G-1/4 coordinates programming effort within the headquarters culminating in a CG, TRADOC approved MILCON priority list for submission to the Assistant Chief of Staff, Installation Management (ACSIM).

(2) The Office of the ACSIM executes day-to-day MILCON planning, programming, budgeting, and execution responsibilities. In concert with the ARSTAF, the ACSIM analyzes facilities construction requirements to determine if requests meet objectives and policies and recommends program priorities. HQDA DCS, G-3/5/7 approves Army program priorities or may submit them to Army leadership for final approval. Each project submitted for consideration has a HQDA staff proponent. A listing of facility types and HQDA proponency is in DA Pam 415-28.

d. Operations and maintenance, Army facilities solutions. Typically, operations and maintenance, Army projects are self-funded at less than statutory limits. Maintenance and repair project solutions exceeding certain limits must be documented and approval requested. ACSIM, Policy Branch (DAIM-FDF), approves maintenance and repair project requests that exceed designated limits.

Section II
Documenting Materiel Solutions

8-9. Documenting materiel requirements

a. The ICDTs or proponents prepare draft ICDs, CDDs, and CPDs to document materiel requirements and support the development and production of systems, family of systems (FoS), and SoS ***when directed by ARCIC***. These documents provide the formal communication of capability needs between the user and the acquisition, T&E, and resource management communities.

b. The document formats and the review process specified in the JCIDS manual are mandatory and used throughout DoD for all acquisition programs regardless of ACAT. A new materiel proposal initially proceeds to acquisition Milestone A, B, or C, depending on the criteria specified in DoDD 5000.1, DoDI 5000.02, and AR 70-1. Regardless of the initial acquisition milestone, all initiatives have a corresponding validated and approved CDD and/or CPD prior to entering Milestone B or C, respectively. If an initiative requires further research and development (expenditure of 6.x funds), a CDD is normally prepared prior to entering Milestone B vice a CPD.

c. When initiating an ICD, CDD, or CPD, the CoE CDIDs will notify by e-mail the ARCIC Dir, RID (ARCIC JCIDS Gatekeeper), Dir, A&ID, and Chief and Deputy Chief, S&AD. This notification e-mail will include the following information:

(1) Name of the proposed materiel approach or solution.

(2) Type of materiel requirements document (e.g., ICD, CDD or CPD).

(3) Statement of the approved CNA priority gaps the solution is to mitigate and/or satisfy.

(4) Estimated ACAT (see AR 70-1, paragraph 3-2).

(5) Responsible PEO, if known, and estimated fielding date (i.e., when the capability is needed).

(6) Specific assistance needed.

(7) An initial resource to requirements assessment. That is, can it compete in a future POM?

d. All Army requirements must be AROC validated before inclusion in other service or joint sponsored JCIDS documents. ICDTs or proponent teams will review and perform quality control checks on the capability documents to ensure the requirements contained in the document accurately reflect warfighter needs to include the pertinent CCMDs. It is recommended that proponents establish a single point of contact to act as their quality control monitor for document completeness. ***There will only be one TRADOC staffing of requirements documents.*** The checklists provided in the applicable user guide and the JCIDS Staffing Guide will be utilized by ICTDs, proponents and TRADOC staff-level reviewers to ensure all requirements for the documents are met.

e. As the Army DOTMLPF integration lead, ARCIC will review materiel documents to ensure they reflect resource informed characteristics (including C-BA considerations) prior to validation and forwarding to HQDA. Specifically, proponents are required to submit their documents to the ARCIC JCIDS Gatekeeper for final quality control checks prior to TRADOC staffing. ARCIC, RID, functional divisions coordinate adjudication of comments with the proponent prior to submitting validated documents back to the ARCIC JCIDS Gatekeeper for final quality control checks, final Dir, ARCIC validation, and forwarding to HQDA.

8-10. Initial Capabilities Document (ICD)

a. The ICD documents the requirement to resolve or mitigate a specific capability gap or a set of capability gaps for a given timeframe as identified in the CBA. It describes one or more capability gaps, identifies potential non-materiel approaches and recommends pursuing a materiel approach to address those gaps. More guidance, uses, and details on the purpose and functions of the ICD are found in CJCSI 3170.01, the JCIDS Manual, and the TRADOC ICD Writer's Guide. The JCIDS Manual and ICD Writer's Guide identify the mandatory ICD format,

appendices, and instructions for its preparation and is the authoritative source for ICDs. Limit the Cover page, Executive Summary and body of the ICD to no more than 12 pages in length. For Army specific requirements that must be included in the ICD and Information System (IS) variant, see the ICD Writer's Guide located on AKO at https://www.us.army.mil/suite/files/12376023.

b. Any capability requirements which have significant capability gaps typically lead to an ICD which can then drive development of capability solutions which are materiel, non-materiel, or a combination of both. The ICD summarizes the results of the CBA or other study documenting one or more new capability requirements and identifying the associated capability gaps using the lexicon established for the JCAs, the relevant range of military operations, and the timeframe under consideration. It guides the MDD; the follow-on AoA or other analysis, as required; the update of the DoD Enterprise Architecture; the development of the solution architecture; the technology development strategy; the T&E strategy; and the Milestone A acquisition decision.

c. IS-ICDs implement the "IT Box" model to provide IS programs greater flexibility to incorporate evolving technologies, and achieve faster responses from requirement validation processes than is typical for other kinds of materiel or non-materiel solutions. The "IT Box" model calls for fewer iterations of validating documents through the JCIDS process by describing the overall IS program in the IS-ICD, and delegating validation of detailed follow-on requirement and solution oversight to a flag-level organization other than the JROC or JCB (see Enclosure B of JCIDS Manual). CDDs and CPDs are not required as successor documents to an IS-ICD.

d. An ICD is generated, validated, and approved to define and review the options for a new capability in a joint context and to ensure that all DOTMLPF alternatives are adequately considered, even if the proposed program is proceeding directly to Milestone B or C. For those exceptional cases where ACAT II and below proposed programs may be proceeding directly to Milestone B or C, the ICDT or proponent may request a waiver to the requirement for an ICD by staffing the request through ARCIC and HQDA DCS, G-3/5/7 for approval from the Joint Staff J-8. The waiver request provides justification for not writing an ICD. Upon approval of the waiver, the ICDT or proponent can proceed with submitting CDDs or CPDs for approval. For ICD and/or CDD waiver request instructions, see Enclosure C of the JCIDS Manual.

e. An ICD is not the basis for the start of a new program. A new program is not established until Milestone B, when a CDD representing a new program, an Acquisition Strategy, and an Acquisition Program Baseline are approved by the MDA.

f. ICDs are not required when there has already been demonstration of the capability solution in an operational environment, such as from successful JUONs or JEONs transitioning for enduring use, successful, qualified prototype projects, quick reaction technology projects, lessons learned, integrated priority list, or joint improvised explosive device defeat initiatives. Also, mission-validated prototypes with formal MUAs do not require an ICD.

g. The ICDT or proponent prepares the ICD in collaboration with HQDA DCS, G-3/5/7; HQDA DCS, G-8; ASA(ALT); ARCIC; and FCB working groups. ATEC will advise on the testability of chosen measures of effectiveness/performance so that the system's performance measured in operational testing can be linked to the CBA.

h. All ICDs will be validated by Dir, ARCIC (see Appendix B or TRADOC ICD Writer's Guide). An ICD may lead to the creation of multiple CDDs and/or Joint DCRs, each of which contribute to satisfying the capability requirements and closing or mitigating capability gaps identified in the ICD. Conversely, two or more ICDs may lead to the creation of a single CDD, where the capability solution to be developed satisfies more than one capability requirement and closes or mitigates more than one associated capability gap.

8-11. Capability Development Document (CDD)

a. The purpose of a CDD is to provide traceability to predecessor documents, or identify capability requirements and gaps in cases where there are no predecessor documents, as well as to document proposed refinements of capability requirements, in the form of development KPPs, KSAs, and additional performance attributes, associated with a specific capability solution intended to wholly or partially satisfy validated capability requirements and close or mitigate associated capability gaps. The CDD defines authoritative, achievable, measurable, and testable parameters across one or more increments of a materiel capability solution, by setting KPPs, KSAs, and additional performance attributes necessary for the acquisition community to design and propose systems and to establish programmatic baselines. These attributes provide or contribute to the operational capabilities that are inserted into the performance section of the acquisition strategy and the acquisition program baseline. Measures of effectiveness and suitability, developed for the initial test and evaluation master plan (TEMP) at Milestone B, are based on the performance attributes and KPPs identified in the CDD.

b. The threshold value for a KSA must be the minimum acceptable value considered essential for an effective military capability and achievable within available cost, schedule, and technology at ***low risk***. The objective value for a KSA is the desired performance goal with a ***moderate risk*** in cost, schedule, and technology. The number of KPPs (beyond the required mandatory KPPs) should be kept to **three or less** to maintain program flexibility. The number of KSAs (beyond those supporting the Sustainment KPP) should be kept to **five or less** to maintain program flexibility. All JCIDs CDD document transmittal memorandums to the ARCIC validation authority must have the following statement entered verbatim and signed by a proponent general officer or senior executive servant: *"**I have personally reviewed and certify that each non-mandatory KPP and KSA threshold contained herein is absolutely critical for an effective increment of a military operational capability**"*.

c. For maximum flexibility, a CDD may be based upon a subset of an ICD and/or a consolidation of capability requirements and associated capability gaps from multiple ICDs. CDDs are not required for solutions to UONs, and various considerations of the deliberate acquisition process are streamlined or bypassed in the interest of timeliness. However, a CDD is the typical transition document for capability solutions requiring further development of the rapidly fielded capability solution for long term use.

d. A draft CDD, submitted to the ARCIC JCIDS Gatekeeper for staffing and validation, is required to inform the Technology Development Strategy (TDS) and RFPs for the Technology Development Phase following the Milestone A acquisition decision. Force modernization proponents will staff the draft CDD the same way the actual CDD is staffed and ensure requirements identified are of sufficient maturity to provide the basis for a valid RFP, and follow-on prototype(s) to address the warfighter's capability need. The format for the draft CDD is in the JCIDS Manual, Enclosure B. The actual CDD is not submitted for staffing and validation until the AoA or alternative supporting analysis is completed, provided to the studies repository, and reviewed by the validation authority.

e. The CDD is finalized during the technology development phase and is validated and approved before Milestone B. The primary objective of the CDD is to specify achievable operational performance attributes of the system that delivers the capabilities required to address the gaps identified in the ICD. The development of the CDD is guided by integrated architectures, the ICD, the AoA (unless waived by the MDA), and the technology development strategy. However, an ICD is not always required before creating a CDD if alternative studies or documentation sources make the ICD redundant. See the JCIDS Manual for ICD waiver request instructions.

f. The key documents and requirements associated with the CDD are identified in DoDI 5000.02 and the JCIDS Manual. Army requirements for the CDD (notably those found in paragraphs 14 and 16 or alternate format paragraphs 11 and 12) are specified in the TRADOC CDD Writer's Guide. **The procedures outlined in the CDD Writer's Guide for paragraphs 14 and 16 (or alternate format paragraphs 11 and 12) are prescriptive and must be utilized while drafting those paragraphs**.

(1) While the STRAP is not included as part of the CDD, the key aspects of training and leader development needed, as well as necessary resources must be included in CDD.

(2) Variations to the JCIDS established format must be approved by ARCIC and HQDA DCS, G-3/5/7 prior to staffing. The body of a CDD and Appendix A shall be no more than 45 pages long.

g. When the sponsor of a JCTD, qualified prototype project, or quick-reaction technology project determines that the demonstration is complete but additional development is required before fielding, a CDD is developed to guide the development process. The MUA/final demonstration report is used to support the development of the CDD. The CDD with the supporting MUA/final demonstration report is then submitted for staffing and approval prior to the Milestone B decision.

h. Sponsors of rapidly fielded capability solutions transitioning from the Urgent/Emergent to the Deliberate requirements and acquisition processes will submit a CDD for validation ahead of a Milestone B decision if additional development is necessary for the enduring capability solution. The supporting assessment of operational utility for the rapidly fielded capability

solution will be provided to the studies repository prior to submitting the associated CDD for staffing and validation.

i. The ICDT or proponent applies lessons learned during the technology development phase, plus any other appropriate risk reduction activities, MUAs, JCTD, qualified prototype projects, quick-reaction technology projects, market research, experimentation, T&E, capability and schedule tradeoffs, and affordability and supportability analysis in the development of the CDD.

j. Condition-based maintenance plus (CBM+), as described in DoDI 4151.22; common logistics operating environment (CLOE), directed by ASA(ALT); chemical, biological, radiological, and nuclear (CBRN) survivability, as described in DoDI 3150.09; and inclusion of the Radiation Protection Factors for Mission Critical will be considered during development of all CDDs. The protection factors are required for manned combat vehicles or shelters, and are identified in the CBRN survivability criteria provided by USANCA (issued in support of the CDD).

k. The ICDT or proponent prepares the CDD in collaboration with HQDA DCS, G-3/5/7; HQDA DCS, G-8; ASA(ALT); ARCIC; and FCB working groups. The ICDT or proponent also collaborates with proponents of other or related CDDs and/or CPDs that are required in FoS or SoS solutions, particularly those generated from a common ICD. See the TRADOC CDD Writer's Guide and the JCIDS Manual for the details associated with the CDD.

l. The CDD will include a C-BA that incorporates people, time, and money linked to operational value. Per HQDA guidance, an unfunded requirement, new or expanded program proposal submitted to the Secretary of the Army, CSA, Under Secretary of the Army or VCSA will be accompanied by a thorough C-BA which will result in a strong "value proposition" – a clear statement that the benefits more than justify the costs and required tradeoffs (U.S. Army Cost-Benefit Analysis Guide, 1 Feburary 2013).

m. In order to decrease program risk and still meet warfighter requirements we must consider risk-informed trades throughout the life cycle of programs and when needed, revisit previously validated KPPs. In an effort to encourage flexibility in cost, schedule, and performance trades, the Joint Staff now allows official requests for requirements relief when KPPs appear to be out of line with an appropriate cost-benefit analysis. These requests for KPP (threshold) relief are especially appropriate where cost savings may be achieved with marginal impact to operational capability. While all requests for requirement relief will be carefully considered, requests for relief should be prioritized where the cost of fully achieving a requirement significantly exceeds the operational benefit. Requests for KPP relief will be staffed through the appropriate requirements validation authority within 21 days of receipt. Subsequently the TRADOC recommendation will be forwarded to HQDA for final Army action. Relief from JROC approved KPPs, must then be forwarded to the JROC. The JROC is also committed to handling these requests in an expedited manner with final JROC action expected within four weeks of receipt. See JROC Memorandum (JROCM) 015-13 and the JCIDS Staffing Guide for further information.

n. CDD Updates. See the TRADOC CDD Writer's Guide and JCIDS Manual for specific requirements when updating CDDs.

8-12. Capability production document (CPD)

a. The CPD provides traceability to predecessor documents (or identifies capability requirements and gaps in cases where there are no predecessor documents) and documents proposed refinements of capability requirements. The CPD provides authoritative, testable capability requirements, in terms of KPPs, KSAs, and additional performance attributes, for the Production and Deployment (P&D) phase of an acquisition program, and is an entrance criteria item necessary for each Milestone C acquisition decision. It is prepared during the engineering and manufacturing development (EMD) phase and is validated and approved before Milestone C. The CPD reflects operational requirements, informed by EMD results, and details the performance expected of the production system.

b. The CPD refines the threshold and objective values for performance attributes and KPPs that were validated in the CDD. Each production threshold listed in the CPD depicts the minimum performance that the PM is expected to deliver for the current increment based on the system design. The refinement of performance attributes and KPPs is the most significant difference between the CDD and the CPD and is discussed further in the TRADOC CPD Writer's Guide. The KPP and KSA requirements specified for the CDD in para 8-11.b. are also mandatory for a CPD (e.g., senior leader endorsement of KPPs and KSAs).

c. The key documents and requirements associated with the CPD are identified in DoDI 5000.02 and the JCIDS Manual. The JCIDS Manual is the authoritative source for the CPD. Army specific requirements for the CPD (notably those found in paragraphs 14 and 16 or alternate format paragraphs 11 and 12) are specified in the TRADOC CPD Writer's Guide. **The procedures outlined in the CPD Writer's Guide for paragraphs 14 and 16 (or alternate format paragraphs 11 and 12) are prescriptive and must be utilized while drafting those paragraphs**.

(1) While the STRAP is not included as part of the CPD, the key aspects of training and leader development needed, as well as necessary resources must be included in CPD.

(2) Variations to the JCIDS established format must be approved by ARCIC and HQDA DCS, G-3/5/7 prior to staffing. The body of a CPD and Appendix A shall be no more than 40 pages long.

d. When the sponsor of a JCTD, qualified prototype project, or quick-reaction technology project determines that the demonstration is complete and the capability is ready for immediate fielding for other than limited quantities, a CPD is developed to support approval for production and fielding. The MUA/final demonstration is used to support the development of the CPD. A CPD may also be based on commercial off-the-shelf or government off-the-shelf sources if the capability solution is sufficient to meet the identified gaps, it does not require additional development prior to fielding, and it is not being implemented as part of a broader DCR/DICR.

e. A proponent may request a waiver to use an approved CDD in lieu of a CPD to support a Milestone C in those cases where the CDD accurately reflects the performance of the system to be delivered at initial production. The proponent submits the waiver request through ARCIC for validation. Once validated, it is loaded in CAMS for HQDA DCS, G-3/5/7 assessment of the waiver request. If supported by the ARSTAF, the waiver is AROC validated after appropriate review/ staffing. If a CDD was designated Independent, Joint Information, or Joint Integration, HQDA is the approval authority for the waiver request. If the JSD is JROC & JCB interest, it is loaded in KM/DS as an FCB draft. The J8 Gatekeeper assigns the waiver request to the lead FCB for review and recommendation to approve/disapprove the request. The Joint Staff's Vice Director J8 (DJ8) is normally the approval authority for the waiver.

f. The proponent applies lessons learned during the EMD phase, lessons learned from previous increments, risk reduction activities, MUAs, experimentation, T&E, M&S, capability and schedule tradeoffs and affordability analysis in the delivery of the CPD capabilities. The previously defined KPPs may be refined (with a rationale provided) and should be tailored to the proposed system to be procured (such as, range, probability of kill, platform survivability, and timing of the need).

g. CBM+, as described in DoDI 4151.22; CLOE, directed by ASA(ALT); CBRN survivability as described in DoDI 3150.09 will be considered during development of all CPDs.

h. The proponent prepares the CPD in collaboration with HQDA DCS, G-3/5/7; HQDA DCS, G-8; ASA(ALT); ARCIC; and FCB working groups. Continuous collaboration with the systems acquisition PM is essential. The ICDT or proponent also collaborates with proponents of other related CDDs and/or CPDs that are required as part of FoS and SoS solutions, particularly those generated from a common ICD.

i. The CPD may require a C-BA. Contact ARCIC S&AD for guidance.

j. In order to decrease program risk and still meet warfighter requirements we must consider risk-informed trades throughout the life cycle of programs and when needed, revisit previously validated KPPs. In an effort to encourage flexibility in cost, schedule, and performance trades, the Joint Staff now allows official request for requirements relief when KPPs appear to be out of line with an appropriate cost-benefit analysis. These requests for KPP (threshold) relief are especially appropriate where cost savings may be achieved with marginal impact to operational capability. While all requests for requirement relief will be carefully considered, requests for relief should be prioritized where the cost of fully achieving a requirement significantly exceeds the operational benefit. Requests for KPP relief will be staffed through the appropriate requirements validation authority within 21 days of receipt. Subsequently the TRADOC recommendation will be forwarded to HQDA for final Army action. Relief from JROC approved KPPs, must then be forwarded to the JROC. The JROC is also committed to handling these requests in an expedited manner with final JROC action expected within four weeks of receipt. See JROCM 015-13, 23 January 2013 and the JCIDS Staffing Guide for further information.

8-13. Staffing, validation, and approval

There will only be one TRADOC validation staffing of requirements documents.

a. The assignment of the JSD by the Joint Staff Gatekeeper (Vice Director, J-8) determines how capability documents are staffed, validated, and approved. The JSD designation specifies the JCIDS validation, approval, and interoperability expectations. Proponents recommend and ARCIC validates the potential JSD when an ICD is reviewed within TRADOC, and uses this recommendation to staff the capability document with the appropriate organizations. When the document gets to the Joint Staff, the contents of the proposed document help the Joint Staff Gatekeeper assign a JSD of JROC Interest, joint capabilities board (JCB) Interest, Joint Integration, Joint Information, or Independent. The Joint Staff Gatekeeper then assigns the document to a lead FCB for further assessment and may designate other FCBs to support the process or return the document to the submitter if Independent.

b. **Proponents preparing capability documents for HQDA submission conduct one worldwide validation staffing**. Once the sponsor feels the document is sufficient for staffing, they will submit the draft capability document, briefing, and C-BA to the ARCIC JCIDS Gatekeeper for ARCIC RID review. Once the staffing packet meets the criteria published in regulations and published guides, the gatekeeper will release the package for proponent worldwide staffing. Once the proponent resolves all comments, documents are returned to the ARCIC JCIDS Gatekeeper for final ARCIC validation as specified in Appendix B of the regulation.

c. During staffing, all action officers listed on the validation staffing list (linked though the TRADOC JCIDS Document Staffing Guide**)** must review the documents for integration and synchronization with any other interdependent requirements and ensure they are in compliance with all joint, Army, and TRADOC JCIDS documentation requirements. ARCIC action officers participate in all JCIDS document staffings, but concentrate on programs where the capabilities have a significant impact on joint warfighting; have a potentially significant impact across services; or have interoperability considerations in allied and coalition operations. ARCIC reviews JCIDS documents to: 1) determine whether they affect the joint force; 2) to ensure they are integrated and synchronized across the Army; 3) and to ensure they fit with joint and Army priorities, to include the needs expressed by the pertinent CCMDs. ARCIC reviews each document regardless of ACAT or proposed ACAT, previous designation or previous JSD decisions (in the case of a CDD or CPD). A TRADOC JCIDS Document Staffing Guide located on AKO at https://www.us.army.mil/suite/files/12376023 can assist users in the mechanics of the overall staffing process.

d. For a SAP review, the relevant information is articulated to the extent possible within an unclassified document, along with an overview of the projected process to develop the capability, an overview of TRADOC agencies' roles and responsibilities and the cycle of the projected process. Use the criteria in the JCIDS Document Staffing Guide as a checklist to meet the requirements for the capability document briefings.

e. The TRADOC standard for preparing the AROC/JROC briefing is the JROC Administrative Guide available via SIPRNET at URL https://www.intelink.sgov.gov/wiki/Joint_Requirements_Oversight_Council_Admin_Guide. This prescriptive guide applies regardless of the capability documents' recommended JSD or acquisition category. The briefing must be tailored to the audience (such as, request AROC validation, request JROC approval, etc.). DCRs are also included in this validation requirement.

f. Dir, ARCIC has delegated the validation authority to the Dir of RID for potential Joint Integration, Joint Information, and Independent CDDs and CPDs. Dir, ARCIC will personally validate potential JROC interest, JCB interest, and special interest CDDs and CPDs and all ICDs regardless of JSD.

g. Following ARCIC validation, the ARCIC JCIDS Gatekeeper loads the capability document into CAMS for review, 1-star staffing, and AROC validation. Once AROC validated, HQDA DCS, G-3/5/7 loads the capability document into KM/DS for joint staffing and JROC approval if appropriate. After joint staffing the document is returned to the ARSTAF for final approval. The CSA has delegated signature authority to finalize JCIDS documents to the DCS, G-3/5/7. The DCS, G-3/5/7 approval memo assigns a Catalog of Approved Requirements Documents System reference number to each capability document after approval and prior to publication and distribution.

h. The validation and approval authority is dependent upon the JSD assigned by the Joint Staff Gatekeeper during staffing. The specific validation and approval authorities are shown below:

(1) JROC for programs designated JROC Interest.

(2) JCB for programs designated JCB Interest.

(3) HQDA for programs designated Joint Integration, Joint Information, or Independent.

Section III
Critical Supporting Documents for Milestone B
This section addresses documents which the force modernization proponent will initiate, prepare, coordinate with the materiel developer, and/or finalize to support the proposed materiel solution.

8-14. Basis for Milestone B
Approval of the CDD becomes one of the key factors in the final decision by the MDA to initiate a development program at Milestone B and supports performance trades by the program manager (ICW the CAPDEV) during the EMD phase.

8-15. Milestone B supporting documents
The documents that support Milestone B and the CDD include: the STRAP; operational mode summary/mission profile (OMS/MP); basis of issue (BOI) guidance; the critical operational issues and criteria (COIC); AoA, TEMP; PD and the system threat assessment report (STAR). Although these documents support CDD development, they are not mandatory appendices to the CDD.

8-16. Pre- Milestone B condition-based maintenance plus and common logistics operating environment
CBM+, as described in DoDI 4151.22; and the CLOE, as directed by ASA(ALT), will be considered during development of all CDDs.

8-17. Pre-Milestone B AoA
If significant changes have occurred to the system and the MDA requires a new or updated AoA for the Milestone B decision review, the AoA will be updated after the CDD is approved (refer to paragraph 7-6 for more information on AoAs).

8-18. System training plan (STRAP)
The STRAP outlines the development of the total training concept, strategy, and training support system resourcing estimates for integrating the system or family of systems into the operational, institutional, and self development domains. It is a living document that supports the development and acquisition of a system. The proponent working group preparing a capability document uses information found in the STRAP to outline training requirements in the "development of KPPs, KSAs, and additional performance attributes", "DOTMLPF Considerations", and "Program Affordability" paragraphs. This includes the training strategy, required TADSS at the institution and unit, required resources (both within and outside the program), a description of training products, doctrine products, and associated resources needed to develop the training products and train Soldiers on the system.

8-19 Operational Mode Summary/Mission Profile (OMS/MP)

a. An OMS/MP is a time phased representation of planned operations at the tasks, conditions and standards level across the full range of military operations. The proponents responsible for the function prepare the OMS/MPs. There are two forms of OMS/MPs that serve to identify both formation and system level operational environments. For procedural guidance, see the Action Officer Guide for the Development of the OMS/MP found on the AKO Policy website to prepare the OMS/MP.

(1) A formation OMS/MP provides a detailed operational understanding of expected peacetime and wartime usage and requirements expressed in a structured and quantitative format. The primary use of the formation OMS/MP is as a supporting document for CDD and CPD development. Formation OMS/MPs support the materiel developers', testers', and AMSAA's efforts to field systems that are effectively integrated within a brigade and across the full range of military operations.

(2) A system OMS/MP contains the tasks, conditions and standards that a system must perform so the overall formation's missions can be completed. A system OMS/MP is used as a tool to focus overall system design for both the Materiel Developer and Contractor communities. It is used to establish the key attributes of RAM and serves as the benchmark document for establishing test plans and procedures to assess RAM and other system capabilities. A system OMS/MP supports test planning by providing quantitative testable metrics defining qualitative operational conditions (e.g., mathematical representations of soft soils for mobility studies, slope and obstacle traversing measures, temperature and other climatic conditions, etc). Use the Action Officer Guide for the Development of the OMS/MP found on the AKO Policy website to prepare the OMS/MP.

b. Formation OMS/MP development.

(1) The CDID develops the OMS/MP responsible for each formation develops and conducts proponent-wide staffing of the formation OMS/MP ARCIC-approved common scenarios designated by ARCIC JACD for the current 2-year concept-to-capability cycle describing the expected missions, units or mix of units, peacetime and wartime uses, geographical environments, and the support and maintenance plans as identified in the formation's respective doctrine and concepts. Formation OMS/MPs are developed by: the Maneuver CoE for the Brigade Combat Teams and Reconnaissance and Surveillance Brigades; the Fires CoE for the Fires Brigade; the Aviation CoE for the Combat Aviation Brigade; the Maneuver Support CoE for the Maneuver Enhancement Brigade; and SCoE for the Sustainment Brigade.

(2) For consistency across capability documents, the formation OMS/MP begins with the use of the ARCIC-approved common scenarios designated by ARCIC JACD for the current two-year Concept-to-Capability Cycle. These scenarios cover the full range of military operations. The CDID responsible for each formation identifies the appropriate systems for inclusion within the formation OMS/MP and coordinates with the capabilities developer responsible for those systems.

(3) The CDID responsible for each formation type is responsible for generating, updating, archiving, and making the OMS/MP available for use across all force modernization proponencies. As doctrine, concepts, or organizational structures change during the two-year Concept-to-Capability Cycle, the formation proponent evaluates the formation OMS/MP in order to determine if an update of the document is necessary. The capabilities developer responsible for systems impacted by the changes to Doctrine or Concepts will update their portions of the formation OMS/MP. The formation OMS/MP must be staffed with all force modernization proponents, TRAC, ATEC, AMSAA, and the ASA(ALT).

c. System OMS/MP development.

(1) A system level OMS/MP is a time phased representation of a system's operation, at the tasks, conditions and standards level, describing expected peacetime and wartime system usage and requirements expressed in a structured and quantitative format. This OMS/MP is focused on a system and derived from CONOPS supporting the materiel systems JCIDS documents. It is

used by the capability and materiel developers, and the experimentation and T&E communities in requirements development, system design and testing.

(2) A system level OMS/MP must be developed for all ACAT I systems as well as those systems identified by the proponent as requiring RAM attributes. The proponent develops the system OMS/MP describing expected missions, units, peacetime and wartime uses, geographic environments, and support and maintenance. System OMS/MPs must be consistent with the OMS/MP of the organization that contains the system. To ensure this, system OMS/MPs must make use of the ARCIC-approved common scenarios designated by ARCIC JACD for the current 2-year concept-to-capability cycle and used for the formation OMS/MPs where the system is located. A system that is in several formation types must contain mission profiles depicting its use within each formation.

(3) The system's capability development proponent is responsible for generating, updating and archiving the system OMS/MPs. System OMS/MPs are approved concurrently with the approval of the associated CDD or CPD. System OMS/MPs will be updated only when its associated CDD or CPD is revised. If formation or system concepts-of-use change between updates of the CDD or CPD, the proponent will perform an impact assessment of the newly emerging versus previously approved usage to identify any required capability changes that may have occurred.d. Approval of OMS/MPs. All formation level and ACAT I system level OMS/MPs will be forwarded to Dir, ARCIC for approval. All ACAT II and III system level OMS/MPs will be approved by the Dir, RID.

8-20. Basis of issue guidance

As supporting information to the CDD, BOI considerations need to be started at this point in the process. Although information may be fairly lean at this point, the BOI considerations are integral to determining overall program costs and affordability (and some of this analysis is required at Milestone B). The BOI guidance is the proponent recommendation for which units receive the system (active, reserve, and institutional training base), what quantities of systems per unit, and the TRADOC center and/or school where the institutional training will take place. It supports development of the BOIP feeder data by the materiel developer. Appropriate representation from the U.S. Army Force Management Support Agency (USAFMSA) documentation team and FDD **must** be included during the development of BOI guidance or at any other meetings where BOI concerns arise. Upon receipt of an approved capability document, the materiel developer prepares the BOIP feeder data, which in turn, feeds the BOIP document, which is developed by USAFMSA (see AR 71-32 for more on the BOIP). The relatively general BOI information is later refined during CPD development. BOIs should be limited to one page or less.

8-21. Critical operational issues and criteria (COIC)

Developed by the proponent, COIC are those key operational concerns, with bottom line standards of performance that, if satisfied, signify the system is operationally ready to proceed beyond the full rate production (FRP) decision review. They are prepared and approved for inclusion in the initial TEMP for program initiation at Milestone B. They focus and support milestone decisions and reduce the multitude of operational considerations to a few operationally significant and relevant mission focused issues and criteria. COIC apply to all systems

(irrespective of ACAT level) and all acquisition strategies during acquisition and developmental modification. COIC for ACAT I and II systems, as well as joint or OSD oversight programs are TRADOC validated by the director for RID on behalf of the Dir, ARCIC (unless specifically waived by that GO). The COIC are then used in the TEMP. COIC for ACAT III programs which are not OSD or joint oversight programs are TRADOC validated by the appropriate functional proponent representative to the T&E working integrated process team. See AR 73-1 and DA PAM 73-1 for more information on COIC.

8-22. Test and evaluation master plan (TEMP)

The TEMP is a materiel developer document that the proponent provides input to in the form of the COIC. The TEMP summarizes the program schedule, test management strategy and structure, and the required resources to address and assess the adequacy to achieve a system requirement. It is the basic planning document for all system life cycle T&E. The acquisition and T&E communities use the TEMP to generate detailed T&E plans and to ascertain the schedule and resource requirements associated with a given system. While documenting the T&E strategy, the TEMP provides the road map for integrating M&S, testing, evaluation plans, schedules, and resource requirements necessary to accomplish the T&E program. Copies of the approved ICD or CDD and the validated STAR accompany the TEMP when it is submitted for HQDA approval. The TEMPs for ACAT I, ACAT II, and joint or OSD oversight programs are signed off on by the ARCIC, RID director who manages functional areas for Dir, ARCIC. The signature validates that the TEMP accurately reflects the CAPDEV identified requirements. TEMPs for ACAT III programs are validated by the appropriate functional proponent representative to the T&E working integrated process team.

8-23. System threat assessment report (STAR)

a. The STAR summarizes the approved threat assessment provided to capability and materiel developers for all ACAT I and II systems and information systems. It is not normally required for ACAT III systems, but may be prepared upon request for special interest programs. The STAR provides an assessment of potential threat capabilities as to their ability to neutralize or degrade a specific U.S. system. It provides a more refined and specific threat assessment than the ITEA because it is focused on the system under development.

b. The STAR contains an integrated assessment of the OE, projected enemy capabilities (doctrine, tactics, hardware, organization, and forces) at initial operational capability plus 10 years, to limit, neutralize, or destroy the system. It explicitly identifies critical intelligence parameters. The STAR also describes the system, characteristics, and its operational use such that the threat community can analyze the system to determine potential weakness. The proponent is responsible for writing the operational description and operational use materiel.

c. The STAR is a dynamic document updated at each milestone decision review and every 2 years thereafter while the program is under development. It will be approved and validated in support of ASARC/Defense Acquisition Board review. It is the primary threat reference to be used in preparation of threat portions of a CDD, CPD, integrated program summary, AoA, TEMP, and threat test support package (TTSP). TRADOC centers and schools with threat managers and TRADOC DCS, G-2 for centers and schools without threat managers, prepare

initial STARs. The STAR accompanies the CDD for the Milestone B decision. TRADOC responsibilities for the STAR are listed below. For more information on the STAR, see AR 381-11.

(1) TRADOC DCS, G-2 prepares or reviews, then HQDA DCS, G-2 approves, and DIA validates the STAR for all ACAT ID programs.

(2) TRADOC DCS, G-2 prepares or reviews, then HQDA DCS, G-2 validates the STAR for all other ACAT I programs. The STAR is updated at Milestone C.

(3) TRADOC DCS, G-2 prepares or reviews and forwards the STAR for ACAT II programs to HQDA DCS, G-2 for review and approval, unless specifically waived.

(4) STAR waivers may be granted for ACAT III programs considered as Army or DoD special interest programs. If required, TRADOC DCS, G-2 prepares or reviews and validates the STAR for all ACAT III programs.

8-24. Post Milestone B decision activities
Immediately after the Milestone B decision, other activities and documents must be completed to implement this decision. A good example of this would be the development of a PD to modify or establish doctrine to support this new/modified system or capability. Refer to paragraphs earlier in this chapter, and applicable domain specific regulatory guidance to review non-materiel DOTMLPF required activities and documentation for the system or capability.

Section IV
Critical Supporting Documents for Milestone C

8-25. Milestone C supporting documents
The approved CPD becomes the basis for the MDA decision to approve low rate initial production of the system at Milestone C. The documents supporting Milestone C and the CPD include: the AoA, STRAP, OMS/MP, BOIP, STAR, TTSP, and the reliability failure definition and scoring criteria (FDSC). Although these documents support CPD development, they are not mandatory appendices to the CPD.

8-26. Pre- Milestone C CBM+ and CLOE
CBM+, as described in DoDI 4151.22; and the CLOE, as directed by ASA(ALT), are also considered during development of all CDDs. The memorandum signed by ASA(ALT) with guidance on CBM+ and the CLOE can be found on the Policy AKO website at https://www.us.army.mil/suite/files/9706961.

8-27. Pre-Milestone C AoA
The Milestone C AoA may support BOIP development, especially when affordability issues impact quantities. If significant changes have occurred to the system and the MDA requires a new or updated AoA for the Milestone C decision review, the AoA is updated after the CPD is approved (refer to paragraph that discusses the AoA earlier in the document, paragraph 7-6).

8-28. Updated STRAP
The capability training developer updates the approved STRAP as specified in AR 350-1.

8-29. Updated OMS/MP
If an OMS/MP exists as a supporting document of the CDD, the proponent updates the OMS/MP for the CPD as required. The OMS/MP is developed from the CONOPS summary contained in the CDD and updated in the CPD. If no predecessor CDD exists, the proponent develops an OMS/MP to support the CPD.

8-30. Basis of issue plan (BOIP)
This document builds on information contained in the capability documents. Appropriate representation from the USAFMSA documentation team and FDD **must** be included during the development of BOI plans or at any other meetings where BOI concerns arise. Upon receipt of an approved capability document, the materiel developer prepares the BOIP feeder data. When the BOI guidance information is included in the BOIP, it is expanded to include all the elements necessary to provide an organization fully capable of accomplishing its doctrinal mission. The approved organizational design captures the personnel and equipment requirements as accurately and completely as possible. The BOIP describes in detail a new item, its capabilities, the component items of the equipment, where the item is used, and identifies the associated support items of equipment and personnel. The BOIPs include personnel changes caused by the introduction of new items to the Army inventory and address the military occupational specialty needed to operate and maintain the equipment. If possible, BOIs should consist of one page or less. USAFMSA, or the proponent ICW USAFMSA, produces the BOIP. See AR 71-32 for more information on the BOIP.

8-31. Updated STAR
A STAR is based upon a Capstone Threat Assessment (CTA) and derived from an initial threat warning assessment (ITWA). A CTA is the DoD intelligence community's official assessment of the principal threat systems and capabilities within a category of warfare that a potential adversary might reasonably bring to bear in an attempt to defeat or degrade US systems and capabilities. CTAs are a primary source of intelligence threat for preparation of an ITWA, threat portions of JCIDS documents, and STARs. CTAs are NOT meant to replace STARs, which are system specific. They are a starting point for evaluating the impact of baseline intelligence on development of a specific capability. An updated STAR accompanies the CPD for the Milestone C decision. The updated STAR is validated and approved in support of an ASARC or Defense Acquisition Board review. See AR 381-11, for more information on the STAR.

8-32. Threat test support package (TTSP)
The TTSP is the only threat test document that identifies threat portrayal in the test of a new system. It is derived from the STAR, other approved intelligence products, and the threat database from the scenario represented in the test. For the test to have a valid/approved threat portrayal during the test, a TTSP is required (see AR 381-11 and TR 381-1). A TTSP is prepared to support developmental test, operational test, live fire T&E, and experimentation. Threat managers at the TRADOC centers and schools prepare TTSPs in support of tests by their respective center and school. TRADOC DCS, G-2 approves TTSPs for TRADOC. The

document approval process includes HQDA DCS, G-2 and potentially others, dependent upon the ACAT and OSD oversight of the new system.

8-33. Reliability failure definition and scoring criteria (FDSC)
The reliability FDSC details essential functions and failure definitions associated with reliability requirements. Furthermore, it supports the T&E process by establishing a framework for classifying and changing reliability and maintainability related test events. Both AR 70-1 and AR 71-9 outline the combat developer/CAPDEV responsibility for defining or providing the FDSC to support the reliability requirement and T&E. As a minimum, FDSC is reviewed and updated as needed prior to each phase of testing. While it supports the reliability and maintainability requirements in a CPD, it is focused at supporting the T&E process. The FDSC does not accompany the CPD being processed for approval.

8-34. Post Milestone C decision activities
Immediately after the Milestone C decision, other activities and documents must be completed to implement it. A good example is the COIC. During systems acquisition, the initial system will have a set of COIC applicable to the FRP decision review. Each follow-on increment, if an evolutionary acquisition strategy is pursued, will have its own COIC. As before, the COIC for ACAT I and II systems, as well as joint or OSD oversight programs are TRADOC validated by the ARCIC director for RID on behalf of the Dir, ARCIC (unless specifically waived by that GO). COIC for ACAT III programs which are not OSD or joint oversight programs are updated and approved by the appropriate functional proponent representative to the T&E working integrated process team. A breach of a criterion is reason to delay entry into full-rate production unless other evidence of acceptable system operational effectiveness and suitability is provided. Refer to paragraphs earlier in this chapter, and applicable domain specific regulatory guidance to review non-materiel DOTMLPF required activities and documentation for the system or capability.

Chapter 9
Supporting JCIDS and Acquisition Activities

9-1. Focus

a. This chapter outlines those documents required by the materiel developer to develop systems and meet the joint commander or land force commander's needs, as well as mandated and recommended training for CAPDEVs. The family of JCIDS writer's guides, posted on the ARCIC OPPD policy site, should be referenced when assembling these documents. Figure 9-1 illustrates the relationship between the JCIDS and acquisition processes and their supporting documents. DoDD 5000.01, DoDI 5000.02 as supplemented by the Defense Acquisition Guidebook, AR 70-1, and DA PAM 70-3 also provide specific information and guidance on these documents.

b. The JCIDS process is closely linked to the acquisition process. The documentation developed during the JCIDS process provides the formal communication of capability needs between the operator and the acquisition, T&E, and resource management communities. The document formats and review processes specified in the JCIDS Manual are mandatory and will be used throughout DoD for all acquisition programs regardless of ACAT.

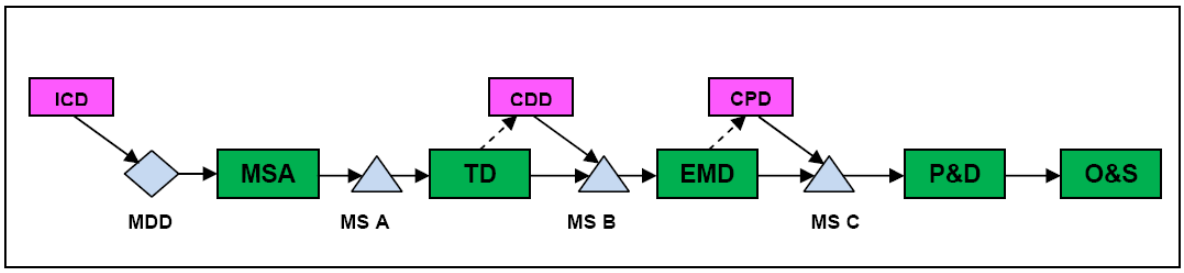


Figure 9-1. Relationship of the Defense Acquisition System to JCIDS

c. CAPDEV mandated and recommended training.

(1) DoD Level. In order to participate in documenting DOTMLPF needs and solutions, CAPDEVs must take training mandated by law in the National Defense Authorization Act of 2007. Training courses have been set up by OSD at the Defense Acquisition University (DAU) to meet the intent of the law under the title of Requirements Management Certification Training (see Appendix D-Capabilities Development Training Specifics). A summary of the training is listed in Appendix D.

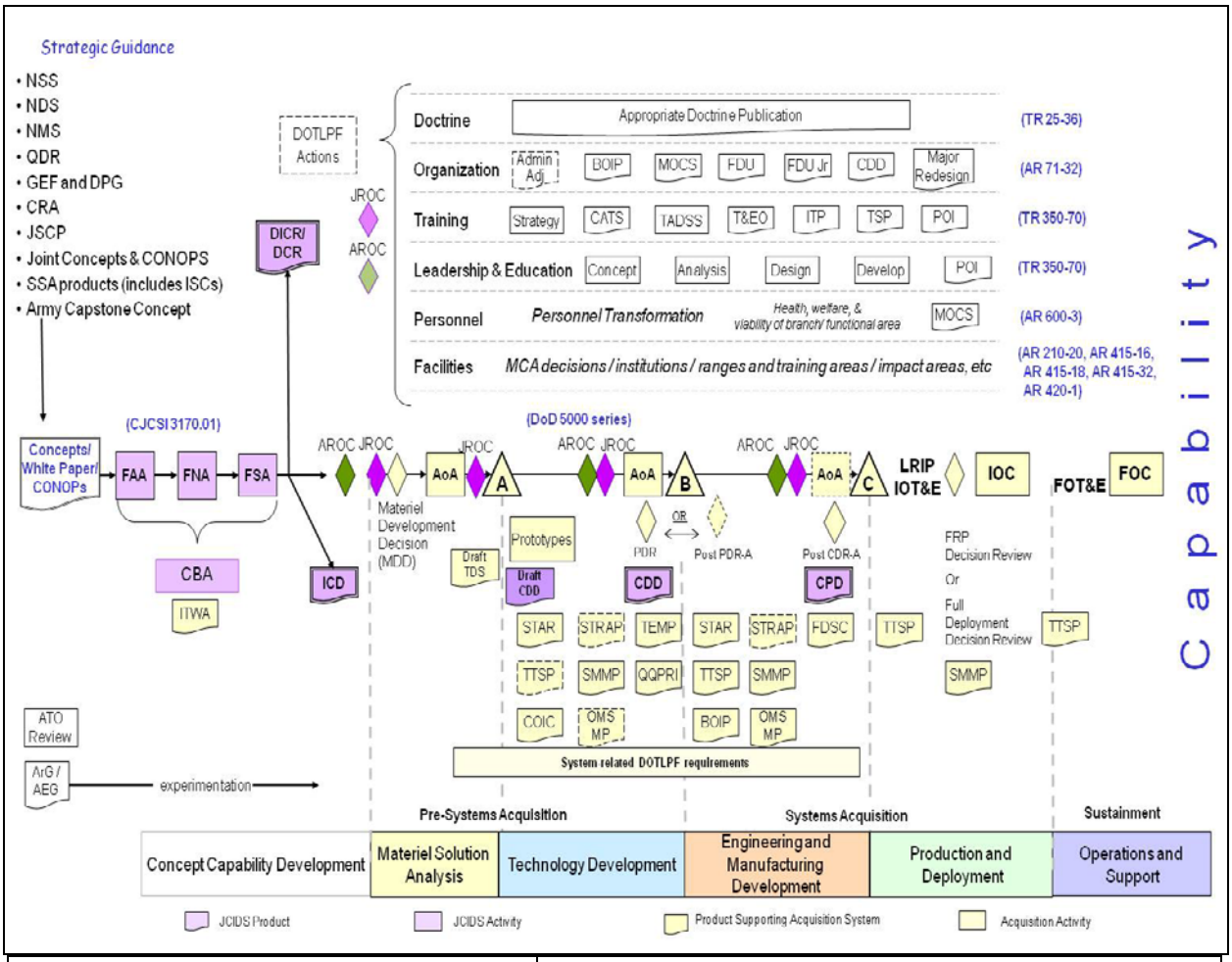
(2) Army Level. Army CAPDEV training is strongly encouraged for those who work these efforts on a daily basis to familiarize personnel with current policies and procedures that allow execution of capability development missions. The main training for action/staff officers and middle managers is entitled "Capabilities Development Course" available at the Army Logistics University, Fort Lee, VA or through mobile training teams. Training is also available through the Army Force Management School via the "Army Force Management Course". This course is recommended for capabilities development middle managers who are TCMs/O-6 or equivalent (2 week executive version), and for force developers who work organizational compositions of functional units in TRADOC (4 weeks). Details on available Army training for CAPDEVs are in Appendix D.

(3) Military personnel who attend the "Capabilities Development Course" training can request award of an additional skill identifier for course completion. Civilians in Career Program 32 can also get credit for attending this same course as part of their functional training plan.

9-2. The Defense Acquisition Management System

a. The Defense Acquisition Management System consists of a series of management decisions made in DoD and the Army as the development of a materiel system progresses from a stated materiel approach to a fielded or sustained system. It is the management process by which

DoD provides effective, affordable, and timely systems to users. It exists to manage the nation's significant investment in technology, programs, and product support necessary to achieve the National Security Strategy and support the U.S. Armed Forces. The acquisition process is structured in logical phases separated by major DPs called milestones. It is initiated by the MDD, with decision reviews occurring at various other times (figure 9-2). Entry into the acquisition process can occur at any point, consistent with phase-specific entrance criteria, statutory requirements, and approval of the MDA.



ADP	Army doctrine publication	ITWA	initial threat warning assessment
ADRP	Army doctrine reference publication	JPG	joint planning guidance
AEG	Army Experimentation Guidance	JSCP	Joint Strategic Capabilities Plan
ATO	Army technology objective	LRIP	low rate initial production
ATP	Army technical publication	MOCS	military occupational classification structure
BOIP	Basis of issue plan	O&O Plan	organization and operations plan
CATS	combined arms training strategy	PD	program directive
CDR	Critical Design Review	PDR	Preliminary Design Review
COIC	critical operational issues and criteria	POI	program of instruction
CRA	Chairman's Risk Assessment	QQPRI	qualitative and quantitative personnel requirements information
FDSC	failure definition and scoring criteria	SMMP	system MANPRINT management plan
FDU (Jr)	Force Design Update (Junior)	SSA	support for strategic analysis
FM	field manual	STAR	system threat assessment report
FOT&E	follow-on test and evaluation	T&EO	test and evaluation operations

FRP	full rate production	TADSS	Training aids, devices, simulators, &simulations
GEF	Guidance for Employment of the Force	TOE/MTOE	Table of Organization & Equipment/Modified TOE
IOT&E	initial operational test & evaluation	TSP	training support package
ISC	integrated security construct	URS	unit reference sheet
ITP	individual training plan		

Figure 9-2. JCIDS and the Defense Acquisition Management System

(1) The materiel acquisition process is divided into three distinct activities (pre-systems acquisition, systems acquisition, and sustainment). The three activities are subdivided into five phases: MSA; technology development; EMD; production and deployment; and operations and support. Detailed information on the rest of the acquisition system can be found in the references listed in paragraph 9-1.

(2) The MDA uses three major Milestones; A, B, and C to monitor the progress of a system from its inception to its fielding.

(3) All acquisition programs use the defense acquisition management framework and apply the terms of reference as specified in the acquisition management process. Dollar thresholds for the different ACATs and the appropriate MDA are outlined in AR 70-1.

b. Proponent CAPDEVs, ICW ARCIC, initiate proposals for new program initiations. Once the VCSA approves and authorizes a proposed system for the Army, it will go through the acquisition management process and the ASA(ALT), as the AAE, becomes responsible for approving all requests to initiate new Army managed acquisition programs, and validating higher level programs.

c. A new program will not be initiated without the specific written approval from the MDA.

(1) For those programs that the Army has oversight authority, the MDA is the AAE or a PEO of general officer grade or civilian equivalent to whom the AAE has delegated that authority.

(2) For DoD or Joint Staff interest programs, the MDA is the Defense Acquisition Executive.

(3) PEOs/PMs being established in support of the initiation of a new program approved by the MDA must coordinate with the capabilities development force modernization functional proponent responsible for that function, must submit their request to stand up the acquisition organization supported by an authorization(s) to the ASA(ALT) and AAE, must execute a tenure and program management agreement with and receive a formal charter from the AAE, submit an ICD prepared by the CAPDEV, and proposed AoA study guidance prepared by the CAPDEV for MDA approval. The designation of a PM will be made before Milestone A or, if there is no Milestone A, no later than program initiation (that is usually Milestone B).

d. There are numerous milestone reviews and decision points within the Defense Acquisition Management System. Each review results in a decision to initiate, continue, modify, or

terminate a project or program. The review associated with each decision point typically addresses program progress, risk, affordability, supportability, program tradeoffs, acquisition strategy updates, and the development of exit criteria for the next phase or effort. The type and number of decision points are tailored to program needs.

e. At each acquisition process review the decision body (that is, AROC, CSB, etc.) reexamines materiel development efforts to ensure: the concept is still applicable, new lessons learned do not drive document changes, requirements (including KPPs/KSAs) remain valid, test results were reviewed and addressed, adequate analysis and cost-benefit data is provided, and joint interoperability and integration with other systems is considered.

Section I
Pre-Milestone A

9-3. The Materiel Solution Analysis Phase (MSA)

a. The materiel solution analysis phase begins with the MDD. The following activities occur during this phase and are executed by force modernization proponents working in conjunction with the TCMs and the materiel developer.

b. MDD requirements. The MDD review is the formal entry point into the acquisition process and shall be mandatory for all programs. In the Army, the organization that completes the CBA and subsequent ICD is usually the force modernization proponent responsible for producing a presentation that outlines for the Milestone Decision Authority the following:

(1) The ICD.

(2) The preliminary concept of operations.

(3) A description of the needed capability.

(4) The operational risk.

(5) The basis for determining that non-materiel approaches will not sufficiently mitigate the capability gap.

c. When all required information is submitted, the MDA approves the AoA study guidance; determines the acquisition phase of entry; identifies the initial review milestone; and designates the lead for the MSA.

d. The analysis of alternatives (AoA). This analysis, a DoDI 5000.02 process, informs milestone decision reviews. In preparation for the Milestone A decision, the AoA is conducted after the ICD is validated by Dir, ARCIC, and directed as part of the MDD.

(1) The AoA recommends the most operationally effective and affordable solution from among materiel systems that provide similar capabilities. The AoA considers the sensitivity of each alternative to possible changes in key assumptions or variables. It analyzes the cost and operational effectiveness of materiel systems, employed IAW operational concepts, and integrated architectures, under operational conditions, to accomplish operational missions. In today's budget environment, available funding is often a key constraint and must be traded off against performance to determine how much capability can be delivered with the dollars available. Decisionmakers use the AoA to choose the most effective systems and combinations of systems necessary to provide a required capability for a given cost. By treating cost as an independent variable, analysts can relate cost to risk in ways that are useful and meaningful to decisionmakers as they seek to balance needs with resources. The analysts develop recommendations about how much of a capability to acquire, where investments in new capabilities will produce the most improvement in capability and the affordability and capabilities of various force mixes. If an AoA determines that none of the proposed solutions can affordably provide required capabilities, leaders must consider revisiting decisions about materiel approaches or making new ones.

(2) The focus of the AoA at the Milestone A decision is to refine the selected approach documented in the approved ICD. The AoA assesses the critical technologies associated with these concepts, including technology maturity, technical risk, and, if necessary, technology maturation and demonstration needs. To achieve the best possible system solution, emphasis is placed on innovation and competition. The results of the AoA provide the basis for the TDS, to be approved by the MDA at Milestone A.

Section II
Milestone A

9-4. Basis for Milestone A

a. The Milestone A decision depends upon completion of the AoA, a proposed materiel solution, a draft TDS, and full funding for the TDS phase activity.

b. The TDS Phase. The TDS documents the rationale for adopting an evolutionary strategy (for most programs) or a single step to full capability (for example, common supply items or commercial off-the-shelf items). The TDS is reviewed and updated upon completion of each developmental increment. Updates shall be approved to support follow-on increments. The ASA(ALT) has the lead for the TDS, with input from ARCIC and the proponent.

c. For evolutionary acquisition, the TDS includes a preliminary description of how the program is divided into developmental increments (if applicable). Two or more competitive prototype teams must be funded. But, it also describes an appropriate limitation on the number of prototype units that may be produced and deployed during technology development, and how these units are supported. The TDS provides specific performance goals and exit criteria that must be met before exceeding the number of prototypes that may be produced under the research and development program.

Section III
Milestone B

9-5. Basis for Milestone B
Approval of the CDD becomes one of the key factors in the final decision by the MDA to initiate a development program at Milestone B and supports performance trades by the program manager (ICW the CAPDEV) during the EMD phase.

9-6. Pre-Milestone B AoA
If significant changes have occurred to the system and the MDA requires a new or updated AoA for the Milestone B decision review, the AoA will be updated after the CDD is approved as a precursor to the decision review (refer to paragraph 9-3.d for specifics on the AoA). If the MDA does not require the CDD be approved for the Milestone B decision review, the CDD can be updated after the decision review.

9-7. Post Milestone B decision activities
Immediately after the Milestone B decision, other activities and documents must be completed to implement this decision. These are the responsibility of both the materiel developer and the CAPDEV. A good example of this would be the development of a PD to modify or establish doctrine to support this new/modified system or capability. Refer to Chapter 8 and applicable domain specific regulatory guidance to review non-materiel DOTMLPF required activities and documentation for the system or capability.

Section IV
Milestone C

9-8. Basis for Milestone C
The approved CPD is the prime basis for the MDA decision to enter the Production and Deployment Phase.

9-9. Pre-Milestone C AoA
The AoA previously conducted in support of Milestone A and/or B may require updating for a Milestone C decision. The pre-Milestone C AoA may support BOIP development, especially when affordability issues impact quantities.

9-10. Threat test support package
See paragraph 8-32 for information on the TTSP.

9-11. Reliability failure definition and scoring criteria (FDSC)
See paragraph 8-33 for information on the FDSC.

9-12. Post Milestone C decision activities
Immediately after the Milestone C decision, other activities and documents must be completed to implement this decision. A good example of this would be the development of draft doctrine to support this new/modified system or capability. Refer to Chapter 8 and applicable domain

specific regulatory guidance to review non-materiel DOTMLPF required activities and documentation for the system or capability.

9-13. Interaction with Other Processes
In terms of post-validation processes and interactions, see the JCIDS Manual for further information on implementation, procedures, and approval of the following:

a. Integrated Priority Lists/Capability Gap Assessment (CGA).

b. JROC/JCB Tripwire.

c. Nunn-McCurdy Unit Cost Breaches.

d. Major Automated Information System (MAIS) Critical Change Reports.

e. Program and Budget Review.

f. Chairman's Program Recommendation/Assessment.

g. Chairman's Risk Assessment (CRA).

h. Capability Portfolio Management (CPM).

Chapter 10
Rapid Acquisition/Rapid Equipping (RA/RE)

10-1. Focus

a. This chapter supports responsibilities and roles of TRADOC delineated in AR 71-9 and Chapter 2 of this regulation. TRADOC assists in all areas associated with RA/RE and leads in three activities: CONOPS and DOTMLPF development; pre-deployment and post-deployment capability assessments; and way ahead determination for rapidly equipped capabilities using the CDRT process. ARCIC is the TRADOC lead for the RA/RE process, with Accelerated Capabilities Division as the primary agent.

b. RA/RE activities were developed to address deployed force operational needs. The DoD formalized a process in DoD Directive 5000.71 to rapidly fulfill CCMDs UONs. Services are directed to establish policies and procedures consistent with the directive to expeditiously address UONs and develop, resource, acquire, field, train, sustain and determine disposition of solutions. This regulation addresses that guidance.

(1) The Rapid Equipping Force (REF) and Asymmetric Warfare Group (AWG) are chartered to address critical operational gaps through a process outside of normal acquisition activities. REF uses ONS and internally generated 10 Liners to initiate RA/RE activities. The REF 10 Liner is a HQDA requirements authorization document that allows the REF, and

authorized procurement agencies acting in direct support of the REF, to acquire rapid capabilities for Army forces employed globally in order to improve operational effectiveness. AWG operates in a similar manner with a focus on training and organizational gaps and uses the REF's acquisition authorities to support select initiatives.

(2) The ARCIC, A&ID, ACD works closely with RA/RE organizations to ensure equipped capabilities are integrated within organizations. Primary responsibilities include development of CONOPs and DOTMLPF assessments, as well as conducting in-theater capability assessments in conjunction with ATEC.

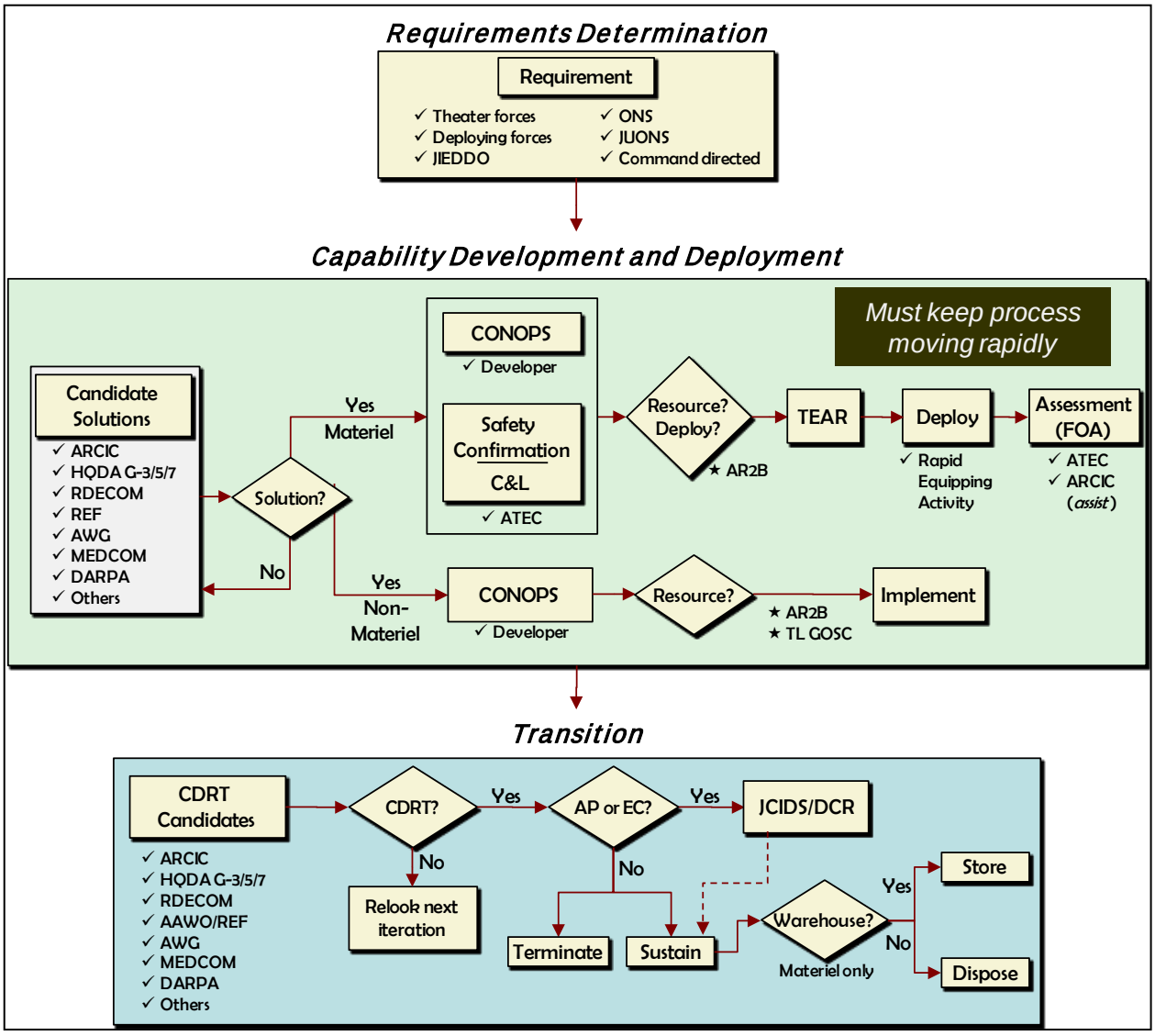
c. When Warfighters report situations that put lives at risk or risk critical mission failure, and the situation is a joint problem, the JUON process applies. JUONs apply to ongoing combat operations; JEONs apply to anticipated contingency operations. The JCIDS Manual provides guidance for the JUON process. The fielding of capabilities to address CCDR immediate needs is done through the JUONs, JEONs, and/or Army ONS processes (see DoDD 5000.71 and JCIDS Manual for JUONs, and AR 71-9 for Army ONS). Urgent needs are worked through the joint rapid acquisition cell, the appropriate CCMD per DoDD 5000.71 and the JCIDS Manual. An Army directed requirement, or the ONS process is worked via the equipment common operating picture (ECOP) accessible on SIPRNET at the following URL: www.ecop.hqda-s.pentagon.smil.mil/ecop2/logon.aspx. The fielding of immediate needs will not create placeholders for future funding or provide a means to bypass the normal capabilities and acquisition processes. The CDRT process will be used on rapidly fielded solutions to determine whether they will transition into programs of record via the JCIDS and Agile processes.

(1) The JUON/JEON document generation, staffing, and validation processes are codified in Enclosures B, C and E of the JCIDS Manual.

(2) All CCMD JUONs and JEONs submitted to the Army will be reviewed by the Warfighter Senior Integration Group (SIG) established by OSD in DoDD 5000.71. The intent is to recognize, respond to, and mitigate the risk of operational surprise associated with ongoing or anticipated near-term contingency operations.

(3) New JUONs and JEONs, and modifications to the capability requirements in previously validated JUONs and JEONs, must be endorsed by the CCDR, Deputy Commander, or Chief of Staff. Administrative modifications to previously validated JUONs or JEONs may be endorsed by the CCMD J8.

d. Figure 10-1 depicts the components of RA/RE and TRADOC's role in this process. DoD, HQDA, and TRADOC all conduct portions of the process.



AMC	Army Materiel Command	C&L	Capabilities & Limitations (report)
AP	Acquisition program	MEDCOM	Medical Command
AWG	Asymmetric Warfare Group	TEAR	Theater Equipment Acceptance Report
EC	Extended Capability	FOA	Forward Operational Assessment

Figure 10-1. Components of RA/RE

e. RA/RE generally consists of three phases: identification of a capability requirement and candidate solutions; solution development, assessment, and deployment; and a program and employment decision. A more in-depth discussion of each phase is below:

(1) Requirements and solutions. ONS and JUONs are the primary sources of requirements for ACD. HQDA DCS, G-3/5/7 validates ONS (the Joint Capabilities Board validates JUONS with final approval by the Warfighter SIG) and various Army agencies develop candidate solutions to address the operational need.

(2) Develop, assess, and deploy. Responding to the documented accelerated capability requirement, the developing or procuring agency develops or purchases the candidate solution. The ATEC evaluates the solution to ensure it is safe for warfighters producing at a minimum a safety confirmation prior to the responsible agency providing the initial capability. Once that is completed, the developing/procuring agency deploys the selected solution. The ATEC may conduct a very limited pre-deployment assessment, putting the findings in a capabilities and limitations report. On a selected basis either ATEC (via a forward area assessment) or TRADOC may conduct a post-deployment assessment to ascertain operational usefulness. A post deployment assessment usually takes place 3 to 6 months after equipping the deployed force. In addition, these assessments are used as the basis for supporting future development as a formal acquisition program, if appropriate.

(3) Program and employment decision. ARCIC uses all available assessments as inputs to determine a path forward for a selected rapidly equipped capability, using the CDRT process to make a recommendation on the options explored.

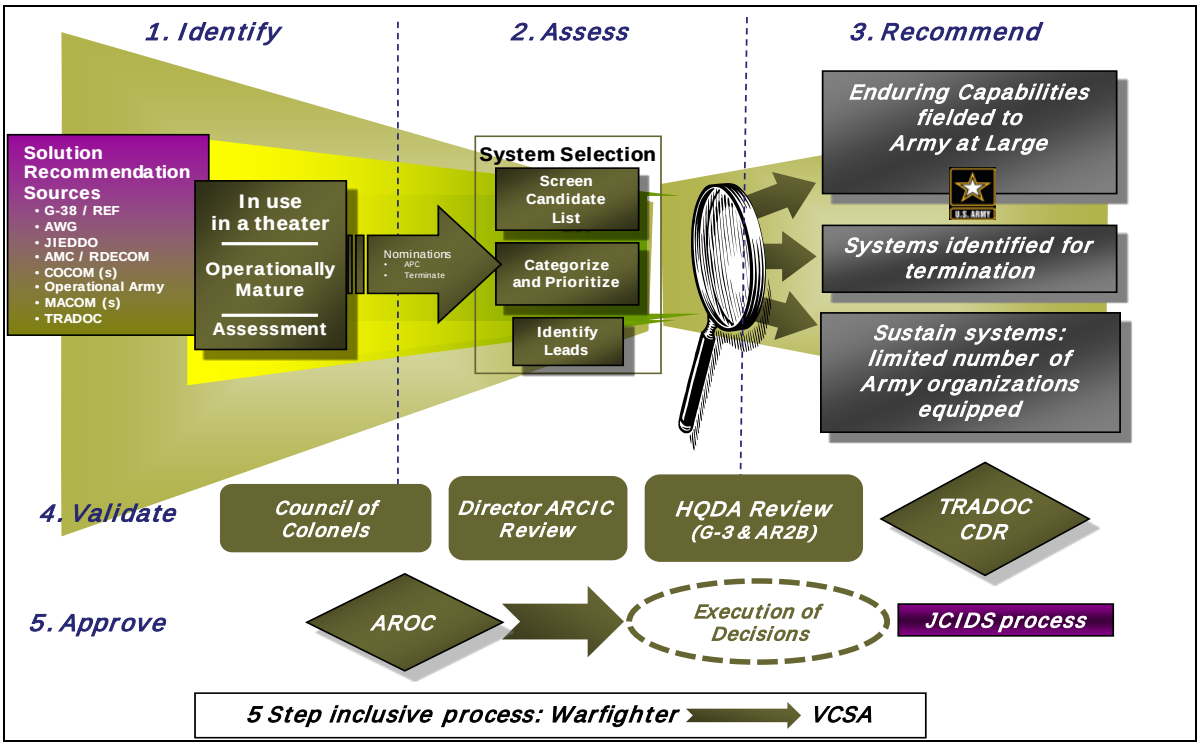


Figure 10-2. Capabilities development for rapid transition process

10-2. Capabilities development for rapid transition (CDRT)

a. The Army views CDRT as a means for determining the future disposition for rapidly equipped capabilities. Figure 10-2 illustrates the CDRT process. ARCIC conducts the CDRT initiative to identify promising capabilities, determine operational support for identified capabilities, and make a recommendation to senior Army leadership for future action. The CDRT process takes the assessment input and recommendations from operational Army units to

select qualified high-value and combat-proven materiel capabilities for advanced placement within the JCIDS process. In addition, the CDRT process identifies other DOTMLPF solutions as enduring, providing additional justification for action in the respective DOTMLPF domains.

b. CDRT process.

(1) In conjunction with Joint Improvised Explosive Device Defeat Organization the AWG, REF, HQDA DCS, G-3/5/7 (DAMO-CI), and ACD develop a list of CDRT candidates. To qualify as a candidate for consideration, a capability must meet the following criteria: be in use in an operational theater for at least 120 days; be operationally mature; fill a validated current force need; and be applicable as an enduring element of the future force. Materiel solutions must also be capable of production without major modification; not be an existing acquisition program; and have undergone an operational assessment.

(2) ARCIC Accelerated Capabilities Division (ACD) distributes the initial CDRT candidate list for review to the Generating Force and the ARSTAF. The list contains information about the system and/or DOTMLPF capabilities, to include the proposed lead for each system or domain solution. Each organization verifies the information, ensuring the appropriate system lead assignment, correct system nomenclature and description, and program status verification. During this review, these organizations also recommend additional systems for consideration. Once the input is received and assessed, the division develops a final candidate list.

(3) ARCIC ACD staffs the final list to the operational Army for review and evaluation as to its disposition (acquisition program, sustain in theater, termination, or in the case of a non-materiel capability, enduring or non-enduring). The division also staffs the final list with the Generating Force for comment. The result is a recommended list of candidates for acquisition, sustain, terminate, or enduring consideration. A CDRT CoC co-chaired by HQDA DCS, G-3/5/7 (DAMO-CIC) and the Chief, ACD reviews and revises the list as appropriate. Other members of the council include, as a minimum, representatives from the ARSTAF (G-2; G-4; G-6; G-8; and Office of the Surgeon General), AWG, REF, ATEC, AMC, ASA(ALT), U.S. Army Forces Command, and TRADOC G-3/5/7. A lead identified during the staffing process provides an information briefing to the council for each capability or system recommended to become enduring, with a recommendation as to the appropriate category for its future. The council votes on the candidates within each category and forwards their recommendations through the senior Army leadership to the AROC for VCSA approval.

(4) ARCIC functional divisions aligned with force operating capabilities providing capability development oversight for JCIDS documents participate in this process by reviewing the different iterations of the candidate lists.

(5) The respective subject matter expertise resides at a CoE, and it is a CDID that develops the JCIDS documentation. These capabilities development SMEs, on a system-by-system basis, assume the role of lead for a CDRT candidate, develop a position (advocate or contest) and present that position to the CDRT CoC to inform decisionmaking. For those candidates approved by the AROC to become acquisition programs, the lead takes ownership and

capabilities development responsibilities for integrating the capability into the current and future force.

(6) Should the CDRT CoC recommend a system as a final candidate for transition to an acquisition program, the TRADOC lead prepares a detailed system description chart and conducts an abbreviated DOTMLPF assessment ICW the program/project manager and HQDA DCS, G-8; TRADOC DCS, G-3/5/7; ACD; and ARCIC functional divisions. Should the AROC/VCSA select a recommended system to become an acquisition program, the TRADOC lead prepares appropriate JCIDS documents. DOTMLPF capabilities selected as enduring are developed IAW the appropriate process for that capability (such as the FDU for organizational capabilities).

(7) Non-Standard Equipment (NS-E) AROCs are convened by HQDA DCS, G-3/5/7 to determine future utility and disposition of select NS-E candidates based on a functional portfolio strategy. VCSA NS-E AROC decisions for a given capability take precedence over previous CDRT decisions. Equipment for which guidance has been issued as result of an NS-E AROC will not be submitted/re-submitted to the CDRT Process.

10-3. Operational needs statements and the TRADOC review process

a. TRADOC responsibilities in the ONS process reside in two areas: determining the cross DOTMLPF impact of a particular ONS prior to approval and determining the impact of an approved ONS on capability development activities.

b. When directed by HQDA G-3/5/7, TRADOC reviews an ONS and conducts a hasty DOTMLPF analysis for implications to current or future DOTMLPF if an ONS is executed. The WfF or force operating capability determines the lead, and requires a written response to the HQDA regional security officer as directed in the HQDA tasking. Actions could include identifying possible capabilities development solution sets and ensuring ONS systems have training and sustainment support. In some cases, schools and centers support this effort with training teams that conduct limited new equipment training and may establish contingency training venues to support deploying forces.

c. TRADOC functional CoEs review all ONS for implications to current and future DOTMLPF and policy if an ONS is executed. CoEs monitor ONS, attempt to identify trends and recurring shortcomings, and incorporate current force operations feedback into the CNA annual assessment. CoEs review these ONS to ensure sufficiency shortages are not symptomatic of problems associated with current force organization design, doctrine, and training, as well as identifying new capabilities the Army does not have. ONS to increase quantities of standard Army type equipment above MTOE or table of distribution and allowances authorizations for specific identified organizations, and ONS for standard Army type equipment not currently on the unit's MTOE or table of distribution and allowances may be symptoms of needed change. The latter type of ONSs is of significant interest to CAPDEVs as they may generate new requirements that proponents must consider in future force developments.

10-4. Agile Capabilities Life Cycle Process (ACLCP)

a. The ACLCP is designed to change the way the Army develops, acquires, and fields Network and some non-network capabilities. The purpose of the ACLCP is to identify and evaluate readily available candidate solutions that help mitigate key capability gaps in order to support fielding decisions and expedite the acquisition process. The focus of the process is on Network modernization, which is at the core of a smaller yet still highly capable force. The objective of the ACLCP is to improve efficiency and effectiveness, thereby reducing the amount of time and resources necessary to respond to requirements associated with current operations, emergent technology and modifications to the Army Force Structure.

b. The success of each iteration of the ACLCP hinges on the NIEs and the follow-on implementation plan for recommended candidates. NIEs are semi-annual evaluations designed to integrate and mature the Army's tactical network; conduct operational tests of select Army programs; and evaluate emerging network and non-networked capabilities in an operational environment. These evaluations assess the Army network and other capabilities, and provide insights and recommendations to support Army fielding decisions. The concept for future NIEs is to expand the focus on Warfighting Capabilities to evaluate enterprise Army and Joint networks supporting tactical formations, and to incorporate multi-Service and Joint capabilities, while still meeting Army T&E objectives.

c. TRADOC provides focus for each ACLCP iteration by defining near term requirements. In conjunction with HQDA DCS, G-3/5/7, iterative NIE and associated Capability Set objectives are examined to ensure consistency. Specific gaps and opportunities are published in an ARCIC-approved Gaps and Opportunities Memorandum, provided to HQDA. TRADOC assigns a CoE to assist in prepping, assessing, and the DOTMLPF follow-up for each SUE. This includes the assignment of a CAPDEV and/or TCM to: provide SMEs to assist in the BMC evaluation; develop a CONOPS; validate and further enhance the package to train Soldiers and leaders; identify key evaluation issues; and any other actions necessary to properly field a full DOTMLPF package to Soldiers.

d. The ACLCP does not replace or circumvent the DoD 5000 Series Defense Acquisition Management System, the CJCSI 3170.01, or Army regulations. However, changes to these overarching processes/documents may be considered by the Army in concert with development of the follow-on DA PAM for the ACLCP.

e. ARCIC (BMC) leads the NIE to conduct an operational assessment of each candidate and its associated DOTMLPF implications. BMC provides the TRADOC DOTMLPF Recommendations Report to Dir, ARCIC for his review and comments. The report includes the TRADOC Implementation Recommendations Annex. Dir, ARCIC provides it to the TRADOC Commander for approval before forwarding to HQDA DCS, G-3/5/7 for their Network Synchronization Working Group review. HQDA DCS, G-3/5/7 is responsible for leading the Network Synchronization Working Group (NSWG), and for NIE recommendations taken to a G-3/5/7 ACP GOSC.

f. The ACLCP consists of seven phases that start with the continuous identification of capability gaps and requirements, and candidate capability solutions (Fig 10-3).

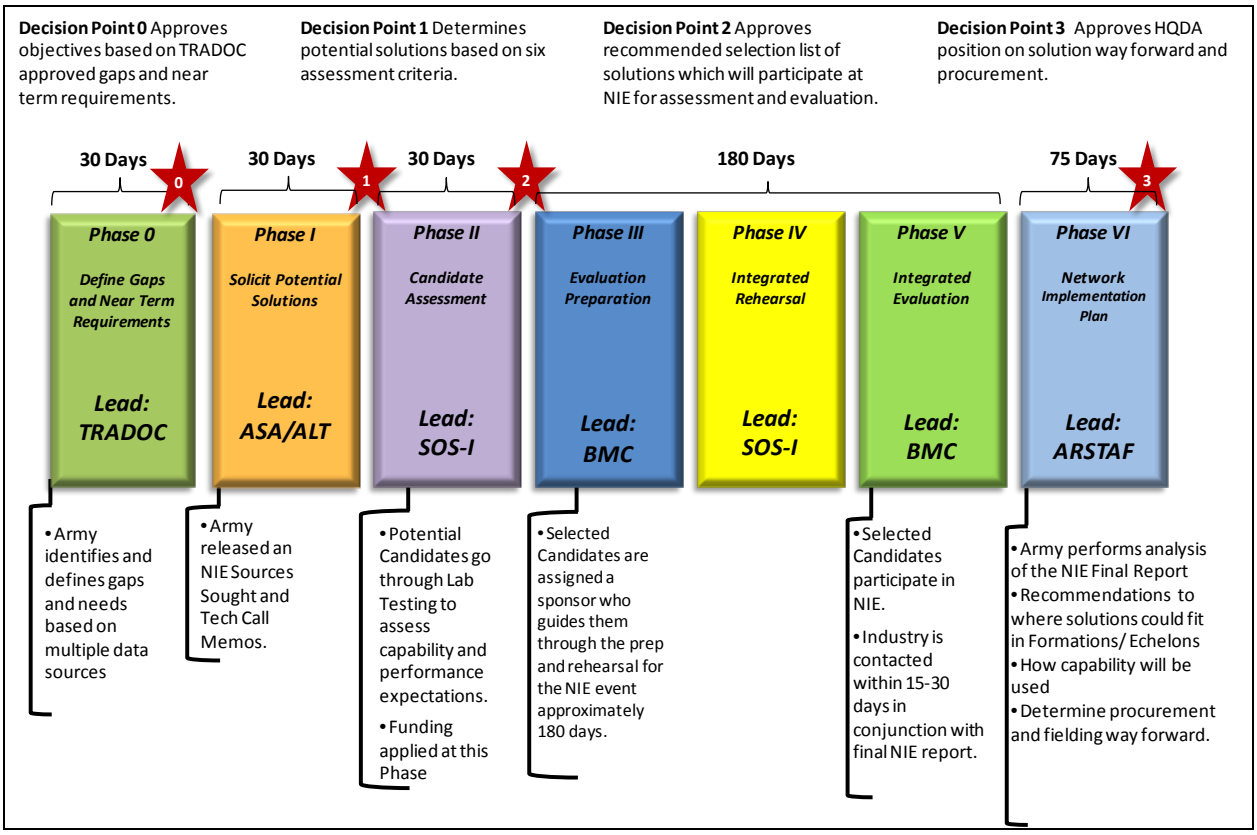


Figure 10-3. Agile Capabilities Life Cycle Process (ACLCP) Overview

g. It includes the screening assessment and selection of solutions to be tested and assessed/evaluated; an integration evaluation (IE) by BMC leaders/Soldiers within a field environment at Fort Bliss, Texas, and White Sands Missile Range, New Mexico; and concludes with an acquisition/fielding decision. These seven phases constitute the ACLCP (Figure 10-3, Agile Capabilities Life Cycle Process Overview). See the VCSA approved DA SOP, Agile Capabilities Life Cycle Process, Final v.1, 7 August 2012 and the TRADOC Agile Capabilities Life Cycle Process Execution Directive, dated 27 Nov 12 for more details on the process. Table 10-1 lays out the roles and responsibilities of participants within TRADOC.

Table 10-1. Roles and Responsibilities in the Agile Capabilities Life Cycle Process (ACLCP)

	Phase 0	Phase I	Phase II	Phase III	Phase IV	Phase V	Phase VI
Purpose	**Define Gaps and Opportunities**	**Solicit Potential Solutions**	**Assess Candidates**	**Evaluation Preparation**	**Integration Rehearsal**	**Integrated Evaluation**	**Implementation Plan**
Centers of Excellence	**-- Provide technology opportunities to ARCIC (A&ID)** **-- MC: Additionally, supprted by Signal CoE, Network-related Gaps and Opportunities** **-- Signal: Support MC CoE in developing Gaps and Opportunities**	**-- Provide subject matter expert (SME) to participate in TIM**	**-- Responsible for Candidate:** **· ID Capability and Training developers** **· Develop CONOPS, tactics, techniques and procedures and eval issues** **· Validate training support package and provide enhancements** **· ID SME for Phase V** **-- Initiate Plan of Action and Milestones** **-- Participate in recurring events**	**-- Support NET/NEF** **-- Support data collection and analysis plan development** **-- Finalize SME for Phase V** **-- Participate in recurring events**	**-- Provide personnel to attend NIE Academy** **-- Support rehearsals and training** **-- Participate in recurring events**	**-- Provide SME to support evaluation** **-- Based on integrated eval and any other related activities, provide CoE CG-approved position for each candidate** **-- Participate in recurring events**	**-- Support ARCIC (A&ID) in developing implementation plan** **-- For each assigned recommended candidate, provide:** **· Min Essential BOI** **· Needed associated DOTLMPF products** **· Needed resourcing for entire suite** **· Recommended delivery timing of products** **· Review and update requirements documents** **· Monitor execution of needed DOTLMPF products**
ARCIC BMC		**-- Establish, lead and publish TRADOC participation in TIM** **-- Represent TRADOC at DP 1** **-- Begin Horse Blanket**	**-- Coordinate any TRADOC participation in candidate technical reviews** **-- Represent TRADOC at DP 2** **-- Determine support needs and prepare TRADOC Support Directive** **-- Develop detailed Horse Blanket**	**-- Develop eval plan** **-- Develop scenario, mission threads and operational vignettes** **-- Provide OPFOR** **-- Develop data collect and analysis plan** **-- Finalize Horse Blanket** **-- Plan and execute evaluation items installation** **-- Develop the test and eval C2 ("Camel Saddle")** **-- Conduct NET/NEF** **-- Certify unit ready for rehearsal** **-- ID simulation needs and develop simulations support plan**	**-- Coordinate TRADOC support for rehearsal, including VALEX and COMMEX** **-- Track system readiness status; conduct pre-test/eval checks** **-- Conduct and assess COMMEX prior to Phase V**	**-- Employ eval unit in integrated eval** **-- Lead execution of integrated eval** **-- Prepare and receive ARCIC Director and CG approval of DOTLMPF recommendations report NLT 4 weeks following eval**	

	Phase 0	Phase I	Phase II	Phase III	Phase IV	Phase V	Phase VI
ARCIC AI&D	-- ICW DA G-3 and G-6, establish specific objectives -- Provide DA G-3 Gaps and Opportunities Memo	-- Support ARCIC (BMC) with TRADOC participation in TIM	-- ICW RID, ID and develop TRADOC TASKORD with candidate list and assigned CoEs -- Support ARCIC (BMC) in developing Horse Blanket	-- ICW CoEs, develop operational architecture and provide to ARCIC (BMC) -- ICW ASA(ALT) and DA G-6, develop network design and technical standards; provide to ARCIC (BMC)	Support ARCIC (BMC) as required	ID TRADOC requirements to support DA in preparation for DP 3 and prepare TRADOC TASKORD	-- Lead TRADOC participation in DP 3 development -- Supported by ARCIC (RID), develop TRADOC DP 3 recommendations for ARCIC Director approval
ARCIC RID	-- Support ARCIC (A&ID) in develop of gaps and opportunities	-- Provide senior rep and functional rep to participate in TIM	-- Support ARCIC (A&ID) by recommending CoE candidate assignment -- Participate in recurring events	Participate in recurring events	Participate in recurring events	-- Support ARCIC (BMC) in developing TRADOC-approved report -- Participate in recurring events	-- Support ARCIC (A&ID) by providing requirements documents, recommendations and assessment plans -- Track execution of DOTLMPF products for recommended candidate
ARCIC CDLD	-- Validate Campaign of Learning activities -- Support ARCIC (BMC) JIIM planning for future iterations -- Support ARCIC (BMC and A&ID) in developing long-term objectives consistent with Army 2020 and emerging concepts						
ARCIC Fwd	Plan and execute TRADOC strategic communications and engagements						
ARCIC OPPD	-- Ensure provisions of this directive are incorporated in policy -- Schedule briefs in events, as requested						
CAC-T	-- Support ARCIC (AI&D) in preparing the Gaps and Opportunities Memo -- Ensure training support capabilities (as requested by BMC) can support the NIE	-- Ensure training candidate solutions are included in candidate development -- Assist CoEs in training support package development	-- Support candidate assessments and provide recommendations and training candidate solutions -- Conduct follow-on actions on training candidates from DP2	-- Provide input to evaluation criteria for each training candidate solution	Support ARCIC (BMC) in preparation, train-up, and evaluation of training-related candidates	Support ARCIC (BMC) in development of TRADOC-approved DOTLMPF report	Support CoEs and ARCIC (A&ID) in developing home station and CTC training needs for each recommended candidate
CADD							Support CoEs and ARCIC (A&ID) with doctrinal recommendations

	Phase 0	Phase I	Phase II	Phase III	Phase IV	Phase V	Phase VI
							and ensure changes are published
TRADOC Staff	-- G-2: provide overarching operational environment support -- G-3/5/7: I ICW ARCIC (BMC and A&ID), publish TRADOC TASKORDS					-- G-3/5/7: support ARCIC (BMC) by providing needed institutional expertise -- G-1/4, G-6 and G-8: support G-3/5/7	-- G-3/5/7: support ARCIC (A&ID) by overseeing needed institutional training modifications to support each recommended candidate -- G-3/5/7: monitor execution of these products -- G-1/4, G-6 and G-8: support G-3/5/7

Appendix A
References

Important note: It is the responsibility of the user of this TRADOC Regulation to ensure they are using the latest version of any publication listed in this Appendix. Check for the latest version of the references before using them to apply to guidance and policy contained in this document.

ARs, DA Pams, field manuals (FM), and DA forms are available at the Army Publishing Directorate Homepage at http://www.apd.army.mil.

ARCIC/TRADOC Writers Guides (e.g., DCR, ICD, CDD, CPD, etc) are available at https://www.us.army.mil/suite/kc/5232873.

CJCSIs are available at the Chairman of the Joint Chief of Staff Directives Electronic Library Homepage http://www.dtic.mil/cjcs_directives/.

DoD Issuances are available at the DoD Issuances, Official Department of Defense Website for DoD Issuances Homepage http://www.dtic.mil/whs/directives/.

JROCMs and the JROC Administrative Guide issued by the JROC are available on the SIPRNet KMDS website https://jrockmds.js.smil.mil/guestjrcz/gbase.guesthome or the Joint Staff J-8 Wiki site available on the SIPRNet at http://www.intelink.sgov.gov/wiki/.

TRADOC publications and forms are available at TRADOC Publications at http://www.tradoc.army.mil/publications.htm.

Section I
Required Publications

Army VCSA Memo (*Cost-Benefit Analysis to Support Army Enterprise Decision Making*, December 2009)
https://www.us.army.mil/suite/doc/20801893

TRADOC memorandum (ATFC-IBU), 27 November 2012, subject: *Agile Capabilities Life Cycle Process Execution Directive*

AR 70-1
Army Acquisition Policy

AR 71-9
Warfighting Capabilities Determination

AR 381-11
Intelligence Support to Capabilities Development

Capstone Concept for Joint Operations (CCJO), latest version
http://www.dtic.mil/futurejointwarfare/

CJCSI 3010.02C
Joint Concept Development and Experimentation (JCD&E)

CJCSI 3170.01H
Joint Capabilities Integration and Development System

CJCSI 3312.01B
Joint Military Intelligence Requirements Certification

CJCSI 6212.01F
Net Ready Key Performance Parameter (NR KPP)

DAG
Defense Acquisition Guidebook

Department of the Army General Order 2006-04
Redesignation of the United States Army Training and Doctrine Command Futures Center as the Army Capabilities Integration Center

DA Pam 70-3
Army Acquisition Procedures

DA Pam 73-1
Test and Evaluation in Support of System Acquisition

DoD 4120.24-M
DoD Standardization Program (DSP) Policies and Procedures

DoDAF 2.02
Department of Defense Architecture Framework Version 2.02

DoDI 3150.09
The Chemical, Biological, Radiological, and Nuclear (CBRN) Survivability Policy

DoDI 4151.22
Condition Based Maintenance Plus (CBM^{+}) for Materiel Maintenance

DoDD 5000.01
The Defense Acquisition System

DoDI 5000.02
Operation of the Defense Acquisition System

DoDD 5000.71
Rapid Fulfillment of Combatant Commander Urgent Operational Needs

DTM 09-025
Space Systems Acquisition Policy (SSAP)

DTM 09-027
Implementation of the Weapon Systems Acquisition Reform Act of 2009

DTM 11-003
Reliability Analysis, Planning, Tracking, and Reporting

Joint Requirements Oversight Council Memorandum 130-08
Assignment of Joint Potential Designators and Coordination by Combatant Commands on Capabilities Documents

Manual for the Operation of the Joint Capabilities Integration and Development System

TR 10-5
Organization and Functions, U.S. Army Training and Doctrine Command

TR 350-70
Systems Approach to Training Management, Processes, and Products

TR 381-1
Threat Management

TP 350-70-8
Total Army School System Training Requirements Analysis System

TP 525-3-0
The Army Capstone Concept

TRADOC CBA Guide
TRADOC Capabilities-based assessment Guide

U.S. Army Cost Benefit Analysis Guide
http://asafm.army.mil/Documents/OfficeDocuments/CostEconomics/guidances//cba-gd.doc

Section II
Related Publications

40 United States Code, Section 11313
Performance and Results-Based Management

The Army Campaign Plan (ACP)

ARCIC Concept and Capabilities Development Guidance (ArG)

Army Architecture Data Management Plan

Army S&T Master Plan

The TRADOC Strategic Plan (TSP)

AR 5-5
Army Studies and Analyses

AR 5-11
Management of Army Models and Simulations

AR 5-12
Army Management of the Electromagnetic Spectrum

AR 5-22
The Army Force Modernization Proponent System

AR 11-33
Army Lessons Learned Program (ALLP)

AR 25-1
Army Knowledge Management and Information Technology

AR 25-2
Information Assurance

AR 25-30
The Army Publishing Program

AR 25-55
The Department of the Army Freedom of Information Act Program

AR 70-1
Army Acquisition Policy

AR 70-75
Survivability of Army Personnel and Materiel

AR 71-9
Warfighting Capabilities Determination

AR 71-11
Total Army Analysis (TAA)

AR 71-32
Force Development and Documentation – Consolidated Policies

AR 73-1
Test and Evaluation Policy

AR 210-20
Real Property Master Planning for Army Installations

AR 350-1
Army Training and Leader Development

AR 350-10
Management of Army Individual Training Requirements and Resources

AR 350-38
Training Device Policies and Management

AR 360-1
The Army Public Affairs Program

AR 380-5
Department of the Army Information Security Program

AR 380-381
Special Access Programs (SAPS) and Sensitive Activities

AR 381-11
Intelligence Support to Capability Development

AR 415-28
Real Property Category Codes

AR 420-1
Army Facilities Management

AR 420-10
Management of Installation Directorates of Public Works

AR 530-1
Operations Security (OPSEC)

AR 600-3
The Army Personnel Proponent System

AR 611-1
Military Occupational Classification Structure Development and Implementation

AR 602-2
Manpower and Personnel Integration (MANPRINT) in the System Acquisition Process

CJCSM 3500.04F
Universal Joint Task Manual

CJCSI 5120.02C
The Joint Doctrine Development System

DA Pam 25-40
Army Publishing: Action Officers Guide

DA Pam 415-28
Guide to Army Real Property Category Codes

DoDAF 2.0
Architectural Framework

DIAI 5000.002
Intelligence Threat Support for Major Defense Acquisition Programs

DoDD 5134.09
Missile Defense Agency

DoDI 5200.39
Critical Program Information (CPI) Protection within the Department of Defense

FM 5-19
Composite Risk Management

FM 7-15
The Army Universal Task List

Joint Pub 1-02
DoD Dictionary of Military and Associated Terms

Public Law 104-106, Section 5123
Performance and Results-Based Management

TR 10-5-2
Futures Center

TR 25-30
Preparation, Production, and Processing of Armywide Doctrinal and Training Literature (ADTL)

TR 25-35
Preparing and Publishing U.S. Army Training and Doctrine Command (TRADOC) Administrative Publications

TR 25-36
The TRADOC Doctrine Publication Program

TR 71-4
TRADOC Standard Scenarios for Combat Developments

TR 71-12
U.S. Army Training and Doctrine Command Capability Management

TR 350-70
Army Learning Policy and Systems

TR 385-2
U.S. Army Training and Doctrine Command Safety Program

TP 350-70 Training series

TP 525-2-1
The United states Army Functional Concept for Intelligence 2016-2028

TP 525-3-1
The United States Army's Operating Concept 2016-2028

TP 525-3-3
The United States Army Functional Concept for Mission Command 2016-2028

TP 525-3-4
The United States Army Functional Concept for Fires 2016-2028

TP 525-3-5
The United States Army Functional Concept for Protection 2016-2028

TP 525-3-6
The United States Army Functional Concept for Movement and Maneuver 2016-2028

TP 525-3-7
The United States Army Concept for the Human Dimension in Full Spectrum Operations (2015-2024)

TP 525-4-1
The United States Army Functional Concept for Sustainment 2016-2028

TRAC-TD-05-011
Constraints, Limitations, and Assumptions Guide

TRAC-TD-05-012
JCIDS Analysis Code of Best Practices (COBP)

Section III
Prescribed Forms

There are no entries in this section.

Section IV
Referenced Forms

DD Form 1391
FY __ Military Construction Project Data

DA Form 2028
Recommended changes to Publications and Blank Forms

Appendix B
Requirements and Criteria for Capability Document Briefings

CRITERIA	Reviewed & Validated by Director Requirements Integration	Reviewed & Validated by Director ARCIC
• All ICDs regardless of JSD, including the ACAT I IS ICD • All ACAT I documents • CDDs and CPDs designated JROC or JCB Interest • → Select ACAT II and III programs designated as special interest programs		Y
All other JSDs for CDD/CPDs, and ACAT II and III IS ICDs	Y	

Mandatory requirements:

1. Draft capability documents must be compliant with the Manual for the Operation of the JCIDS templates.

2. Briefings must be prepared per the JROC Administrative Guide and tailored to request action from the appropriate agency (the initial submission requests AROC validation, subsequent entries reflect appropriate action from the joint staff: JROC or JCB approval).

3. The proponent commandant or his delegated representative must review and establish a proponent position on all capability documents, Cost-Benefit Analysis (C-BA), and briefings prior to submission to ARCIC. The transmittal memo forwarding the capability document to ARCIC must:

- Certify all non-mandatory KPP and KSA thresholds are critical for an effective increment of a military operational capability.
- Certify the Operational Architecture (OA) is valid in accordance with the metrics in the OA Verification and Validation Guide.

4. Submission of capability documents to the ARCIC initiates the validation process:

- The ARCIC JCIDS Gatekeeper notifies the appropriate ARCIC functional division(s) of the document's arrival, requests an ARCIC Action Officer (AO) be identified, and initiates validation staffing.
- The ARCIC AO manages the staffing, consolidates comments, and makes a recommendation on whether the document must be returned to the proponent to address critical comments.
- Once all critical comments are resolved, the ARCIC AO submits the document for validation by the appropriate director.

5. The appropriate ARCIC Director (ARCIC or RID) reviews and validates the document and briefing based on the criteria illustrated above.

- The format for briefings is the JROC Admin Guide plus any other requirements deemed appropriate by the general officer being briefed.
- Ensure briefings describe: why we need the system/thing, what value added it brings and why, resources necessary (including people, time, and money-what's its total rough order of magnitude cost). Must also describe the system or capability gaps it solves.
- Must have some level of analysis supported by some level of wargaming, or modeling, or experimentation/real world exercise.
- When do we need it and why; what comprises First Unit Equipped and why.
- What quantities are needed and why (**NOT** Army Acquisition Objective of entire Army every time).
- What is the BOIP-FD—incremental set of capabilities

6. Once validated, the ARCIC JCIDS Gatekeeper enters the validated documents, briefing, supporting documents, and memo (PDF file) into CAMS to initiate Army 1-star staffing.

Appendix C
Responsibilities Within Levels of Integration

This appendix addresses the responsibilities of CAPDEVs at various levels in the Army to perform capabilities integration of Army requirements. This list was vetted through ARCIC, CAC, school commandants, CoEs (and CDIDs), and major subordinate organizations (MSOs). This list was reviewed during the Capabilities Integration Enterprise Forum, approved by Dir, ARCIC and the CG, CAC and validated by MSOs for implementation.

Level 1
WfF & Special Concepts

ARCIC

- Develops ACF
- Develops Army capstone and operating concepts
- De-conflicts and pulls together AFCs across WfFs
- Develops and vets Army Transition Initiatives in collaboration with CoEs
- Creates CoL
- Integrates the CoE into a coherent, synergist CoL

Major subordinate organization (MSO) lead for TRADOC core functions listed in TR 10-5

- Assists in development of concepts from unit training, training support, and leader development perspective
- Leads development of training infrastructure and leader development strategy
- Leads development of learning strategy
- Integrates training infrastructure strategy RCs into the appropriate WfF functional concept
- Provides SMEs as necessary
- Participates in experiments

Lead CoE/force modernization proponent: WfF lead and/or Army force modernization proponent

- Provides SME input for development of capstone and operating concepts
- Reviews other AFCs and provides CoE SME input to ensure accuracy & sufficiency of CoE specific topic areas -- Assists other lead CoEs with SMEs to help develop functional concepts
- Leads team of SMEs to create the warfighting functional concept or other concepts for assigned functions – including dependent RCs from other associated functions and/or portfolios
- Develops concepts across DOTMLPF for assigned functional areas

Level 2
Requirements (Capabilities) Determination

Integration of CBAs, ICDs, and CDD/CPD development

ARCIC
- Develops ArG to direct capability developments activities
- Ensures capability development requirements are consistent with priorities established during CBAs
- Provides staff management of Level 2 processes and products
- Facilitates coordination and dissemination
- Assists and coordinates proponent's efforts
- Analyzes, monitors, assesses, and develops recommendations for CG, TRADOC

MSO lead for TRADOC core functions listed in TR 10-5
- Assists force modernization proponents in the integration of doctrine, training, training support, and leader development within their proponent assigned WfF

Lead CoE/force modernization proponent: WfF lead and/or Army force modernization proponent
- Leads ICDT; conducts CBA and all other related organizational and functional assessments
- ICW ARCIC CDLD, identifies RCs -- Identifies gaps and identifies redundant overlaps in capability supporting concepts
- Provides recommendations for DOTMLPF requirements directly supporting concepts based on relative priority of validated gaps and solutions from CBA
- Identifies capability relationships, dependencies/interdependencies, and redundancies
- Provides recommendations for trades and divestitures of concept-related capabilities based upon unnecessary redundancy given new solution recommendations or efficiencies gained in satisfying requirements given the new concepts or changes in required capabilities
- Recommends guidance and priorities ICW ArCP for concept-related requirements development efforts by force modernization proponents.
- Writes, staffs, and adjudicates requirements documentation for DOTMLPF solutions for designated lead & force modernization proponency areas within the Army
- Endorses all concept-related capabilities documents developed by force modernization proponents
- Develops operational architectures for assigned organizations
- Recommends guidance and endorses the operational architecture for solutions which directly enable the assigned concept and/or capabilities
- Leads CoE effort to evaluate resource and benefit implications with other stakeholders as required (cost-benefit analyses)
- Develops organizational designs and determines impacts of other organizational and functional developments on assigned organizations
- Coordinates with other CDIDs, force modernization proponents, other services, and joint HQs as needed to prioritize, integrate, and synchronize concept requirements
- ICW ARCIC, provides Army input to joint developments

- Integrates proponent missions assigned to CoE commander in AR 5-22
- Reviews development proposals for compliance with concept requirements

Level 3
Integration across functions and/or DOTMLPF domains

ARCIC

- Optimizes required capabilities, gaps, and DOTMLPF requirements across functional areas
- Assesses alternative means of achieving RCs given specific solutions from other functional areas
- Verifies capabilities provide the most urgent warfighting needs within available resources
- Ensures redundancies and trades are identified and risk expressed
- Validates the integration of functional requirements across all functions and DOTMLPF domains
- Synchronizes planned milestones with other related activities to ensure capabilities arrive as needed across time
- Synchronizes functional requirements with joint initiatives
- Coordinates/synchronizes capabilities development across DOTMLPF & across all functional areas ICW Army force modernization proponents across the Army, joint and other service development efforts
- De-conflicts required capabilities, gaps lists, and solutions across all functions and organizations
- Prioritizes capability gaps, solutions, and capability development efforts across the Army
- Develops incremental capability packages for selected brigades which recommend modernization fielding priorities based on realities in funding, delivery of solutions, and timing of ARFORGEN rotations
- Synchronizes execution of capabilities development activities
- Provides the architecture developmental environment and validates operational architecture products
- Submits requirements to HQDA for approval and implementation
- Capability packages
  - Develops and evaluates incremental capability packages for selected brigades which recommend modernization fielding priorities based on realities in funding, delivery of solutions, and timing of ARFORGEN rotations
  - Incorporates capability set solutions into capability packages as appropriate
  - Trains, evaluates, and tests incremental capability packages with support from force modernization proponent throughout process

MSO lead for TRADOC core functions listed in TR 10-5

- Identifies, ICW force modernization proponents, proposed doctrine, training, and leadership & education requirements
- Conducts feasibility assessment of CoE proposed solutions (doctrine, training, and leadership & education)
- Leads integration of T domain
- Leads integration of D domain

- Leads integration of L domain
- Assists in development of comprehensive lessons learned
- Ensures integration of doctrine, training, and leadership & education development across the Army

Lead CoE/force modernization proponent:

- WFF lead and/or Army force modernization proponent
  - Assists in cross-functional assessments (for example, CNA)
  - Assists in development of One Gap List, unified prioritized DOTMLPF solutions list and potential trades across functions and organizations
  - Conducts assessments of assigned organizations (for example, organization baseline)
  - Assists in identification of trades for requirements directly enabling functional capabilities
- Capability packages
  - Assists with identification of potential solutions in support of capability packages
  - Identifies and develops associated DOTMLPF solutions for each capability set

---

Appendix D – Capabilities Development Training

D-1. DoD Level.

a. CAPDEVs must take training mandated by law in the National Defense Authorization Act of 2007. Training courses have been set up by OSD at the Defense Acquisition University (DAU) to meet the intent of the law under the title of Requirements Management Certification Training. The training required is listed below, and is based on the type of capability development work being done. See Figures D-1 and D-2 provide the training level guidelines and descriptions of the courses. Additional details on the mandated training courses can be found in the JCIDS Manual-Enclosure H, or at https://learn.dau.mil.

b. The Level A and B training is done using the DAU link, not the Army Training Requirements and Resource System (ATRRS). The office of HQDA G-3/5/7 (DAMO-CIC) is the coordinating and approving organization for the resident Level C and D training.

(1) Level A: CAPDEVs, concept developers and personnel assigned to ARCIC must do the Level A online course. Training is optional but recommended for other concept and CAPDEVs in TRADOC and non-TRADOC organizations.

(2) Level B: CAPDEVs and concept developers executing their duties on a daily basis must do the Level B online course.

(3) Level C: All middle managers (O-6/GS-15, O-5/GS-14) working capability or concept developments that represent the Army in JCIDS forums such as the FCB Working Groups, FCBs, JCB and JROC meetings attend the Level C one (1) week resident course and must be identified and approved by position to attend the training by the office of HQDA G-3/5/7 (DAMO-CIC).

(4) Level D: General Officers/SES commanding a CoE, serving as a CoE Deputy and/or serving as Commandants, who are approval or validation authorities for concepts or capabilities attend the one (1) day in length Level 4 resident training course. This course can also be done via VTC but slots are limited to 3 per class.

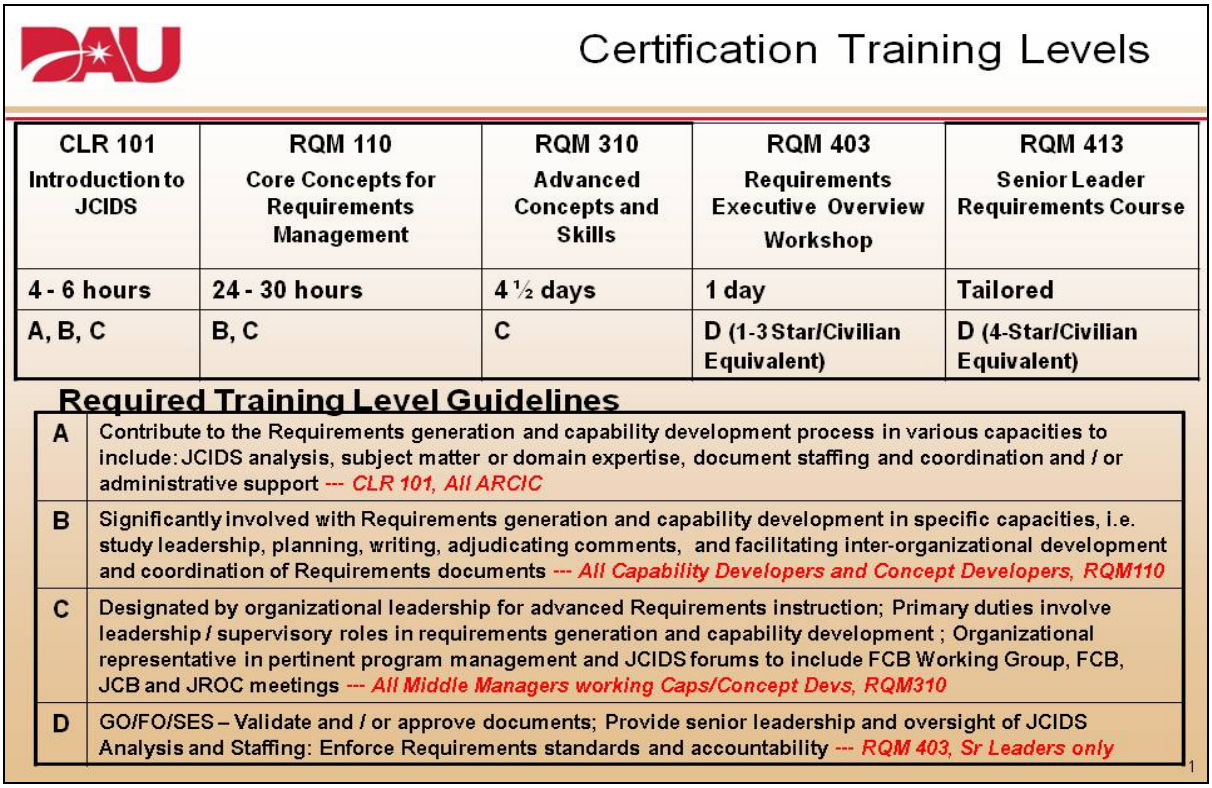


Figure D-1. RMCT Certification Training Levels

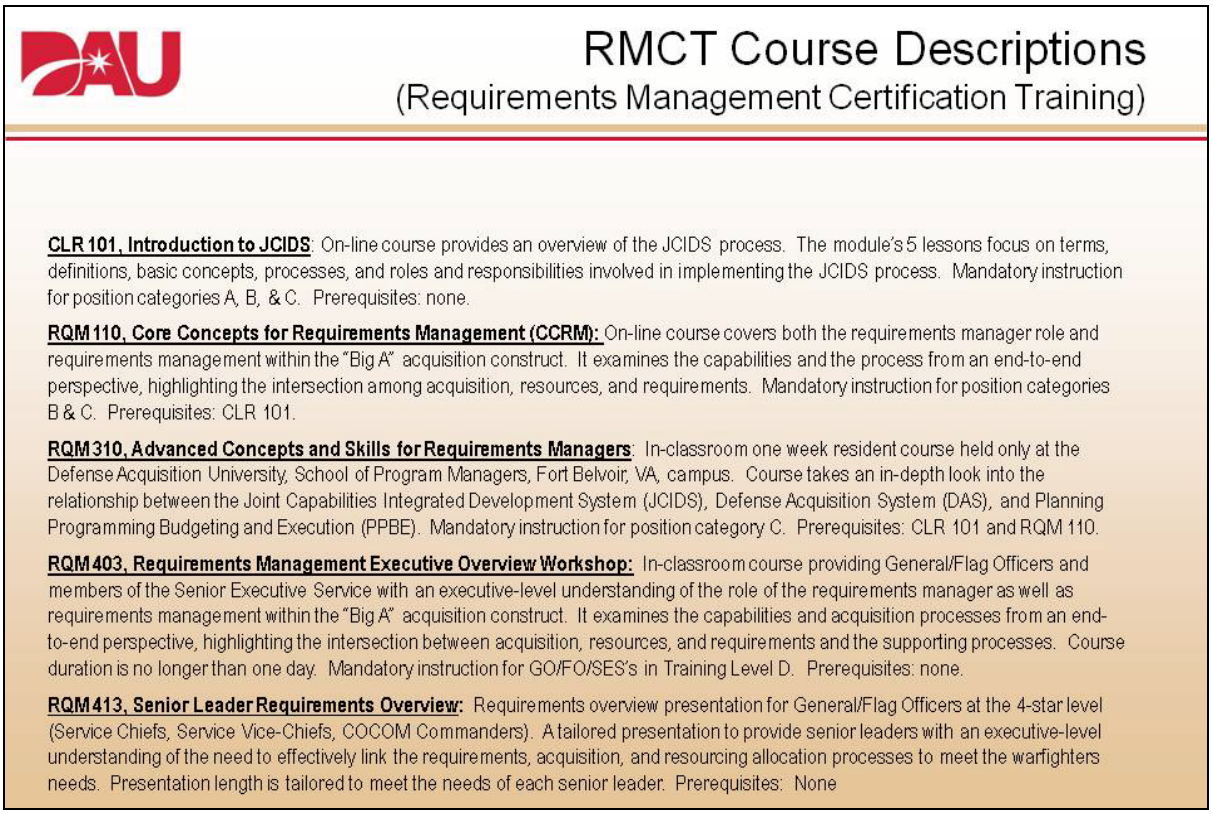


Figure D-2. RMCT Course Descriptions

D-2. Army Level.

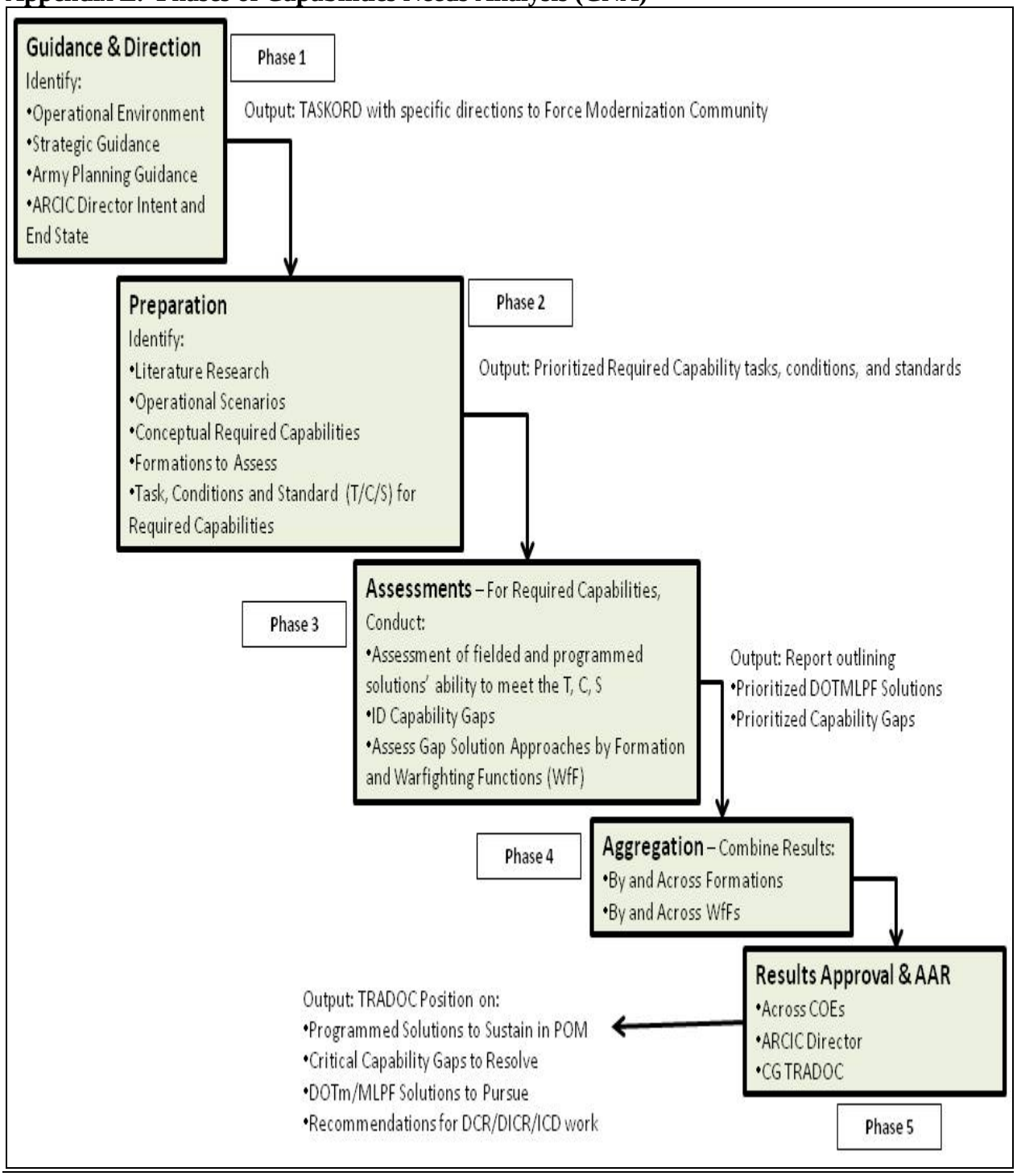
a. CAPDEV training is strongly encouraged for those who work these efforts on a daily basis. The main training for action officers and middle managers is entitled "Capabilities Development Course" available at the Army Logistics University, Fort Lee, VA or through mobile training teams. The link for details on the course is http://www.alu.army.mil/ALU_COURSES/ALMCCD-MAIN.htm.

b. Training is also available through the Army Force Management School (http://www.afms1.belvoir.army.mil/) that provides the "Army Force Management Course". The Army Force Management Course is recommended for capabilities development middle managers who are TCMs/O-6 or equivalent (2 week executive version), as well as for force developers who work organizational compositions of functional units in TRADOC (4 weeks).

c. Requests for slots must be obtained using ATRRS. Personnel can attend a resident course at Fort Lee based on prioritization of available seats, or arrangements can be made by CoEs/CDIDs through their installation training coordinator (usually through Career Program 32) to bring Mobile Training Teams to the installation. Slots for the 2 week executive version of the Army Force Management Course are requested through HQ TRADOC G-1/4, Manpower and Force Analysis Directorate.

d. Military personnel who attend the "Capabilities Development Course" training can request award of an additional skill identifier for course completion. Civilians in Career Program 32 can get credit for attending this same course as part of their functional training plan.

Appendix E. Phases of Capabilities Needs Analysis (CNA)



Glossary

Section I
Abbreviations

A&ID	Analysis & Integration Directorate
AAE	Army Acquisition Executive
ACAT	acquisition category
ACC	Army Capstone Concept
ACD	accelerated capabilities development
AC Div	Accelerated Capabilities Division (ARCIC)
ACOM	Army command
ACF	Army Concept Framework
ACP	Army Campaign Plan
ACR	advanced concepts and requirements
ACLCP	Agile Capabilities Life Cycle Process (also known as the Agile Process)
ACSIM	Assistant Chief of Staff for Installation Management
AESIS	Army Experiment and Study Information System
AFC	Army functional concepts
AIMD	Architecture Integration and Management Division (ARCIC)
AKO	Army Knowledge Online
AMC	Army Materiel Command
AMSAA	Army Materiel Systems Analysis Activity
AoA	analysis of alternatives
AOC	Army operating concepts
AR	Army regulation
ArCADIE	Army Capability-based Architecture Development and Integration Environment
ARCIC	Army Capabilities Integration Center
ArG	ARCIC Concepts & Capabilities Guidance
ARFORGEN	Army force generation
AROC	Army Requirements Oversight Council
ARSTAF	Army Staff
ASA(ALT)	Assistant Secretary of the Army for Acquisition, Logistics and Technology
ASARC	Army Systems Acquisition Review Council
ASCC	Army service component command
ATEC	U.S. Army Test and Evaluation Command
AUTL	Army Universal Task List
AWG	Asymmetric Warfare Group
BCTM	Brigade Combat Team Modernization
BMC	Brigade Modernization Command (ARCIC)
BOI	basis of issue
BOIP	basis of issue plan

CAC	U.S. Army Combined Arms Center
CAC-T	U.S. Army Combined Arms Center Training
CAMS	Capabilities and Army Requirements Oversight Council Management System
CAPDEV	Capability Developer
CARD	Capabilities Assessment and RAM Division
CASCOM	U.S. Army Combined Arms Support Command
C-BA	cost-benefit analysis
CBA	capabilities-based assessment
CBM+	condition based maintenance plus
CBRN	chemical, biological, radiological, and nuclear
CCJO	capstone concept for joint operations
CCMD	Combatant Command
CCP	concept capability plan
CDD	capability development document
CDID	Capability Developments Integration Directorate
CDL	Concept development and learning
CDLD	Concept Development and Learning Directorate (ARCIC)
CDRT	capability development for rapid transition
CG	commanding general
CIO	chief information officer
CJCSI	Chairman of the Joint Chief of Staff Instruction
CJCSM	Chairman of the Joint Chief of Staff Manual
CLOE	common logistics operating environment
CNA	capabilities needs analysis
COA	course of action
CoC	council of colonels
CoE	center of excellence
COIC	critical operational issues and criteria
CoL	Campaign of Learning
CONOPS	concept of operations
CoP	community of practice
CPD	capability production document
CPI	critical program information
CSA	Chief of Staff, Army
CSB	Configuration Steering Board
DA	Department of the Army
DAMO-CI	HQDA G-3/5/7 Capabilities Integration Directorate
DAMO-CIC	HQDA G-3/5/7 Future Warfighting Capabilities Division
DARPA	Defense Advanced Research Projects Agency
DART	Devil’s Advocate Red Team
DAS	Defense Acquisition System
DASA-CE	Deputy Assistant Secretary of the Army for Cost and Economics
DCG	deputy commanding general

DCR	joint doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTmLPF) change recommendation
DCS	Deputy Chief of Staff
DIA	Defense Intelligence Agency
DICR	Army DOTmLPF integrated capabilities recommendation
DIR	Director
DoD	Department of Defense
DoDAF	Department of Defense architecture framework
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DOTMLPF	doctrine, organization, training, materiel, leadership and education, personnel, and facilities (when used with lower case 'm' excludes new materiel development)
DTL	doctrine, training, and leadership & education
ECOP	equipment common operating picture
EMD	engineering and manufacturing development
FAA	functional area analysis
FCB	functional capabilities board
FDD	Force Design Division (ARCIC)
FDSC	failure definition and scoring criteria
FDU	force design update
FM	Field Manual
FNA	functional needs analysis
FoS	family of systems
FRP	full rate production
FSA	functional solution analysis
G-1/4	personnel, infrastructure, and logistics
G-2	intelligence
G-3/5/7	operations, plans, and training
G-6	command, control, communications and computers
G-8	resource management
GOSC	general officer steering committee
HQ	Headquarters
HQDA	Headquarters, Department of the Army
IAW	in accordance with
ICD	initial capabilities document
ICDT	integrated capabilities development team
ICW	in coordination with
ISC	integrated security construct
ISS	Interim Solution Strategy
ITEA	initial threat environment assessment
JAED	Joint and Army Experimentation Division (ARCIC)
JAMSD	Joint and Army Models & Simulation Division (ARCIC)
JCA	joint capability area
JCB	joint capabilities board

JCIDS	Joint Capabilities Integration and Development System
JCTD	joint capabilities technology demonstration
JEON	joint emergent operational need
JOpsC	joint operations concepts
JROC	joint requirements oversight council
JSD	joint staffing designator
JUON	joint urgent operational need
KMDS	knowledge management decision support
KPP	key performance parameter
KSA	key system attribute
M&S	modeling and simulation
MANPRINT	Manpower and Personnel Integration
MCA	military construction, Army
MDA	milestone decision authority
MDD	materiel development decision
MILCON	military construction
MOCS	military occupational classification and structure
MOS	military occupational specialty
MSA	materiel solution analysis
MSO	major subordinate organization
MTOE	modified table of organization and equipment
MUA	military utility assessment
NIE	Network Integration Evaluation
NMS	National Military Strategy
OE	operational environment
OMS/MP	operational mode summary/mission profile
ONS	operational needs statement
OSD	Office of the Secretary of Defense
PD	program directive
PEO	program executive officer
PIA	post independent analysis
PM	program manager
POM	program objective memorandum
RA/RE	Rapid Acquisition/Rapid Equipping
RAM	Reliability, Availability, and Maintainability
REF	Rapid Equipping Force
RFP	requests for proposal
RID	Requirements Integration Directorate (ARCIC).
RSA	recommended DOTMLPF solution approaches
S&AD	Studies and Analysis Division (ARCIC)
S&T	science and technology
SAG	senior advisory group
SAP	special access program
SCoE	Sustainment Center of Excellence
SME	subject matter expert
SoS	system of systems

SSA	support for strategic analysis
STAR	system threat assessment report
STRAP	system training plan
T&E	test and evaluation
TAA	total army analysis
TADSS	training aids, devices, simulators, and simulations
TDS	technology development strategy
TEMP	test and evaluation master plan
TOE	table of organization and equipment
TP	TRADOC pamphlet
TR	TRADOC regulation
TRAC	TRADOC Analysis Center
TRADOC	U.S. Army Training and Doctrine Command
TTSP	threat test support package, training test support package
URL	uniform resource locator
USAFMSA	U.S. Army Force Management Support Agency
USAMEDDC&S	U.S. Army Medical Department Center and School
USSMDC/ARSTRAT	U.S. Army Space and Missile Defense Command/Army Forces Strategic Command
USAWC	U.S. Army War College
VCSA	Vice Chief of Staff of the Army
WfF	warfighting function

Section II
Terms

acquisition category (ACAT)
Categories established to facilitate decentralized decisionmaking and execution and compliance with statutorily imposed requirements. The ACAT determines the level of review, validation authority, and applicable procedures. DoDI 5000.2 and AR 70-1 provide the specific definition for each ACAT.

Advanced Concept Technology Demonstration
An advanced concept technology demonstration is a demonstration of the military utility of a significant new technology and an assessment to establish clearly its operational utility and system integrity. Advanced concept technology demonstration s are being replaced by JCTDs, but work done on finalized advanced concept technology demonstrations can still be leveraged if relevant. See CJCSI 3170.01.

affordability
The degree to which the life cycle cost of an acquisition program is in consonance with the long-range investment and force structure plans of the DoD or individual DoD Components. Affordability procedures establish the basis for fostering greater program stability through the assessment of program affordability and the determination of affordability constraints.

analysis of alternatives (AoA)

An AoA is the evaluation of the performance, operational effectiveness, operational suitability, and estimated costs of alternative systems to meet a mission capability. It 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. The AoA is one of the key inputs to defining the system capabilities in the CDD.

The ICD and the AoA study guidance shall guide the AoA and Materiel Solution Analysis Phase activity. The AoA shall focus on identification and analysis of alternatives, measures of effectiveness, cost, schedule, concepts of operations, and overall risk. The AoA shall assess the critical technology elements (CTEs) associated with each proposed materiel solution, including technology maturity, integration risk, manufacturing feasibility, and, where necessary, technology maturation and demonstration needs. To achieve the best possible system solution, emphasis shall be placed on innovation and competition. Existing commercial-off-the-shelf (COTS) functionality and solutions drawn from a diversified range of large and small businesses shall be considered. See DoDI 5000.02 and AR 71-9.

approval
The formal or official sanction of the identified capability described in the capability documentation. Approval also certifies that the documentation has been subject to the uniform process established by the CJCSI 3170.01. See AR 71-9.

ARCIC Concepts & Capabilities Guidance (ArG)
ARCIC publishes the ARCIC Concepts & Capabilities Guidance (ArG) to provide guidance for prioritizing limited resources, provide direction, and address the TRADOC Core Functions for which ARCIC has lead responsibilities.

ARCIC Gatekeeper
Also known as the ARCIC JCIDS Gatekeeper, the ARCIC Gatekeeper acts as the entry and exit point for all JCIDS capability documents forwarded by TRADOC and non-TRADOC proponents for Army validation and other service capability documents sent to the ARCIC for review. The gatekeeper manages the TRADOC staffing of JCIDS capability documents and submits ARCIC validated and CG, TRADOC endorsed capability documents to the Army for AROC/JROC validation and approval. The ARCIC Gatekeeper is the gatekeeper for TRADOC.

Army Campaign Plan (ACP)
The ACP is the operational expression of the Army's strategy. It directs planning and execution of Army operations and transformation within the context of ongoing strategic commitments, and it integrates a broad range of transformation initiatives and institutional processes which accomplish the Army mission and achieve the Army Vision. It holds the Army accountable.

Army capability-based architecture development and integration environment (ArCADIE)
The ArCADIE is designated by the SEC ARMY (Information Technology Management Reform (ITMR) Plan, 20 Feb 13) as the authoritative data source for all Army architecture data and artifacts. All Army organizations shall make available, and TRADOC shall maintain, all Army Architecture data and artifacts in ArCADIE. This will facilitate and enhance architecture data and artifact discoverability and reuse. Therefore, ArCADIE is TRADOC's source of

authoritative architecture data and the sole environment for the development of TRADOC architecture data and products, and Army components of joint and coalition architectures. It provides the ability to govern and configuration manage architecture projects and data based on established TRADOC policies and procedures. ArCADIE is managed and controlled by the ARCIC (AIMD) as part of an overall DoD-wide data strategy focused on the Core Architecture Data Model.

Army Concept Framework (ACF)
The ACF is the set of designated Army concepts that present the integrated foundation on how the Army would conduct military activities as part of the joint force in the mid-term future (6 to 18 years into the future). The ACF includes the capstone concept, operating concept(s), subordinate functional concepts, CG-directed concepts, and legacy CCPs. They are published as TRADOC 525-series pamphlets; JACD serves as the proponent for the TRADOC 525-series pamphlets.

Army functional concepts (AFCs)
AFCs describe how the Army force will perform military functions as part of decisive action, across the range of military operations, from national strategic to tactical levels, for a specified function, yet integrated across all functional concepts. The AFCs draw operational context from joint concepts, the Army capstone concept, and the AOC. An AFC develops sufficient required capability granularity in the body of the document or the appendices to initiate a CBA.

Army-DARPA Senior Advisory Group (ADSAG)
Army-Defense Advanced Research Projects Agency (DARPA) Senior Advisory Group (ADSAG)

Chartered by CSA to advise CSA and Directors of DARPA and ARCIC, providing assessments and recommendations related to how the Army transforms capabilities across DOTMLPF. Examines paths to the future Army for relevance to the Army's present and potential capabilities, and looks at advanced technology, particularly DARPA projects.

Army Experiment and Study Information System (AESIS)
AESIS provides a virtually distributed inter-library, with a web enabled enterprise-level search capability accessible to the entire analytic community (DoD, Army, industry, and academia).

Army Gatekeeper
The Army Gatekeeper assigned to HQDA DCS, G-3/5/7 (DAMO-CIC) is the POC for the HQDA DCS, G-3/5/7 to oversee and manage all documents submitted to the AROC and JROC staffing processes; the Army Gatekeeper has one primary and one alternate POCs that manage and execute staffing execution, usually to a staff action control officer, but it is by the directorate's or agency's call. TRADOC ARCIC has a gatekeeper to function as above on its behalf. See AR 71-9.

Army Geospatial Governance Board
The Army Geospatial Governance Board is a HQDA guidance body to address Army Geospatial-Enterprise issues (with associated Geospatial-Intelligence concerns) impacting current and future force. The long-term objective is to administer and facilitate the development

of a net-enabled Army geospatial enterprise with a distributed database coupled with an enabling information architecture based on enforceable policies and procedures, interoperable software, open standards, open data formats, and approved algorithms. Such a geospatial enterprise allows actionable geospatial information to be posted, processed, and used as needed vertically and horizontally, from peer to peer, and bi-directionally from national to the soldier level. The board will hear issues and recommendations on the state and status of the Army Geospatial Enterprise and provide advice and recommendations as appropriate.

Army operating concept (AOC)
It provides a generalized visualization of unified land operations. It describes how an Army force commander accomplishes operational or tactical level effects and identifies required capabilities to achieve objectives in land operations in support of a joint force commander's military campaign or operation. The AOC may not have the resolution required to initiate a CBA.

Army Requirements and Resourcing Board (AR2B)
The Army requirements and resourcing board is the mechanism (forum) for validating, prioritizing, and resourcing critical operational needs (ONSs and equipment sourcing document) for rapid senior leadership decisionmaking (accelerated fielding solutions) in support of a named operation. It identifies solutions in the Year of Execution and/or Budget Year that require possible resource realignment.

Army Requirements Oversight Council (AROC)
An advisory council that advises the CSA in the assessment and prioritization of capabilities integrated across the DOTMLPF. The AROC is the Army's approval authority for force modernization required capabilities. The council validates JCIDS documents prior to JROC consideration. This encompasses all JCIDS efforts including Army annexes to Joint and other service documents, and those documents where an Army proponent has been designated as a joint combat developer/capability developer. See AR 71-9.

Army Science and Technology Master Plan (ASTMP)
The Army Science and Technology Master Plan is published biennially, and with its associated websites, is the single source document describing the Army S&T program strategy, major technology objectives, research goals, as well as roles and relationships between S&T and strategic partners. The S&T program is shaped collaboratively through close partnerships with warfighting customers, related S&T developers across the DoD, other federal agencies, industry, academia, and international partners.

Army Systems Acquisition Review Council (ASARC)
The ASARC is the Army's senior-level review body for all ACAT I and ACAT II systems and command, control, communications and computers information technology programs. The ASARC is chaired by the ASA(ALT). It is convened at formal milestones to determine a program's readiness to enter the next phase in the materiel acquisition cycle. The ASARC makes recommendations to the AAE on those programs for which the AAE is the MDA.

asymmetric warfare

Asymmetric warfare focuses whatever may be one side's advantage against their opponent's lack of ability to see or defend against actions of that nature.

business case analysis (BCA)
The BCA is an expanded cost/benefit analysis with the intent of determining a best value solution for product support. The BCA assesses each alternative and weighs total cost against total benefits to arrive at the optimum solution. The BCA process goes beyond cost/benefit or traditional economic analyses by documenting how each alternative fulfills the strategic objectives of the program; how it complies with product support performance measures; and the resulting impact on stakeholders. The BCA identifies which alternative support options provide optimum mission performance given cost and other constraints, including qualitative or subjective factors.

capabilities-based assessment (CBA)
The CBA is the JCIDS analysis process. It includes three phases: the FAA, the FNA, and the FSA. The results of the CBA are used to develop an ICD. See the TRADOC CBA Guide for the FAA, FNA, and FSA. See the JCIDS Manual for the CBA.

Capabilities and Army Requirements Oversight Council Management System (CAMS)
CAMS is a tool used to automate the catalog of approved requirements document system.

capabilities determination
See capabilities development.

capabilities development
Sponsors (capability developer) identify, assess, and document capability requirements related to functions, roles, missions, and operations, and then determine if there are any capability gaps which present an unacceptable risk and warrant further action in JCIDS. Identification of capability requirements and associated capability gaps begins with the Sponsor's organizational functions, roles, missions, and operations, in the context of a framework of strategic guidance documents, and if applicable, overarching plans. These changes occur in doctrine, organization, training, materiel, leadership and education, personnel, facilities (DOTMLPF) and policy that collectively produce the force capabilities and attributes prescribed in approved concepts, CONOPS, or other authoritative sources.

capabilities development for rapid transition
A process used to determine the future disposition for rapidly equipped capabilities. ARCIC conducts the CDRT initiative to identify promising capabilities, determine operational support for identified capabilities and make a recommendation to senior Army leadership for future action. The result of the CDRT determination is a recommendation to convert the capability to an acquisition program, sustain it in theater, termination of the capability or, in the case of a non-materiel capability, make it enduring or non-enduring. See Chapter 10.

capability
The ability to execute a specified course of action. (A capability may or may not be accompanied by an intention.)

A capability is the ability to achieve a desired effect under specified standards and conditions through combinations of means and ways to perform a set of tasks. It is defined by an operational user and expressed in broad operational terms in the format of an ICD, DICR or a DCR. In the case of materiel proposals, the definition will progressively evolve to DOTMLPF performance attributes identified in the CDD and the CPD. A DICR will be the document used for Army managed DOTmLPF capabilities recommendations. See AR 71-9.

capability developer (CAPDEV)
A person who is involved in analyzing, determining, prioritizing, and documenting requirements for doctrine, organizations, training, leader development and education, materiel and materiel-centric DOTMLPF requirements, personnel, facilities and policy implications within the context of the force development process. Also responsible for representing the end user during the full development and lifecycle process and ensures all enabling capabilities are known, affordable, budgeted, and aligned for synchronous fielding and support.

The CAPDEV is the command or agency that formulates warfighting requirements for DOTLMPF. The acronym CAPDEV may be used generically to represent the user and user maintainer community role in the materiel acquisition process (counterpart to generic use of MATDEV). See AR 70-1.

capability development document (CDD)
A CDD is the 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. The CDD defines authoritative, measurable, and testable parameters across one or more increments of a materiel capability solution, by setting KPPs, KSAs, and additional performance attributes necessary for the acquisition community to design and propose systems and to establish programmatic baselines. See the JCIDS Manual.

Capability Developments Integration Directorate (CDID)
This organization develops Center of Excellence-related concepts and requirements, and conducts experiments to validate DOTMLPF integrated combined arms capabilities that complement joint, interagency, and multinational capabilities. A CDID is organized under a CoE.

capability documents
This is a generic term to refer collectively to ICDs, CDDs, CPDs, DCRs, and DICRs.

capability gaps
The inability to execute a specified course of action. The gap may be the result of no existing capability, lack of proficiency or sufficiency in an existing capability solution, or the need to replace an existing capability solution to prevent a future gap. See CJCSI 3170.01.

capability production document (CPD)
A CPD provides authoritative, testable capability requirements, in terms of KPPs, KSAs, and additional performance attributes, for the Production and Deployment (P&D) phase of an acquisition program, and is an entrance criteria item necessary for each Milestone C acquisition decision. See the JCIDS Manual.

Capability Solution
A materiel solution or non-material solution to satisfy one or more capability requirements (or needs) and reduce or eliminate one or more capability gaps. See JCIDS Manual.

Capability Solution Types
Evaluation categories used to group and assess/evaluate potential solutions during a Network Integration Evaluation (NIE). They are listed below in priority order.

1. ***Type I – Acquisition Programs [Systems Under Test (SUTs)]:*** Capabilities ready for formal Technical Field Tests (TFTs), Force Development Test and Experimentation (FDTEs), and/or Operational Tests (OTs) to inform an acquisition decision.

2. ***Type II –Developing Capabilities [Systems Under Evaluation (SUEs)]:*** Theater Provided Equipment (TPE), rapid equipping initiatives to satisfy Urgent Operational Needs /Joint Urgent Operational Needs/Joint Emergent Operational Needs (UONs/JUONs/JEONs), or existing acquisition programs with sufficient maturity levels (technology, integration, and manufacturing) to accelerate.

3. ***Type III –Emerging Capabilities SUEs***: Next generation warfighting technologies that have the potential for enhancement and could fill a known gap or improve current capabilities.

capstone concept
A capstone concept is a holistic future concept that is a primary reference for all other concept development. This overarching concept provides direct linkages to national and defense level planning documents. A capstone concept drives the development of subordinate concepts. For example, the CCJO drives development of joint concepts and service concepts. TP 525-3-0 drives the development of the Army operating and functional concepts.

center of excellence (CoE)
A designated TRADOC command or organization within an assigned area of expertise that executes assigned responsibilities for one or more TRADOC core functions; provides TRADOC the ability to develop and integrate DOTMLPF capabilities within and across the Army warfighting functions; and performs force modernization proponent responsibilities for the Army where assigned. Each warfighting CoE will have a CDID, to focus on concept development, experimentation and requirements determination in support of the CoE mission.

certification
This is a statement of adequacy provided by a responsible agency for a specific area of concern in support of the validation process. See the JCIDS Manual.

common logistics operating environment (CLOE)
CLOE is a full-spectrum approach to synchronize logistics concepts, architectures, organizations, and technologies into an integrated, netcentric logistics domain. CLOE documents the Army's logistics information infrastructure, from the weapon system up through national level. CLOE provides warfighters, logisticians, and commanders at all levels with logistics situational awareness, and increased unit combat power.

community of practice (CoP)
This is a group of organizations with a common interest in a subject area who interact to share information, processes, and products. A CoP is defined by three characteristics: the shared domain of interest, the relationships defining the community (typically networked, consisting of the organizations as nodes), and a shared set of practices for the subject area.

concept
A notion or statement of an idea – an expression of how something might be done – that can lead to an accepted procedure (CJCSI 3010.02C). A military concept is the description of methods (ways) for employing specific military attributes and capabilities (means) in the achievement of stated objectives (ends). An Army concept describes a problem or series of problems to be solved, assumptions, the future operational environment, the central idea, the components of the solution, the interaction of those components in solving the problem, and the required capabilities necessary to achieve desired effects and objectives.

concept capability plan (CCP)
A CCP is a plan that provides a description of how an Army commander could perform a specific operation or function 6-18 years into the future. It is typically more illustrative and descriptive than a concept, and more focused in its purpose. Development of new CCPs has been suspended, but legacy CCPs determined to remain relevant are being retained.

concept of operations (CONOPS)
A verbal or graphic statement, in broad outline, of a commander's assumptions or intent regarding an operation or series of operations (CJCSI 3170.01H). A concepts-based CONOPS is a statement, in broad outline, of a commander's assumptions or intent about an operation or series of operations. It is designed to give an overall picture and a useful visualization of how a future operation would be conducted (TP 71-20-3).

configuration steering board (CSB)
These boards will be established by each military department for every current and future ACAT I program in development. The CSBs will be chaired by the Army Acquisition Executive (AAE). CSBs must have a representative of the appropriate capabilities community as discussions will concern potential cuts or reductions in performance requirements. Those de-scoping options include those that will reduce program costs or moderate requirements. Final decisions on de-scope option implementation will be coordinated with the joint staff and the appropriate military department officials responsible for the requirements.

constraints, limitations, and assumptions
Constraints, limitations, and assumptions provide the framework for both the study team and the study sponsor to understand the conditions under which a study's results are applicable. Although commonly misrepresented or used interchangeably, these three terms are distinctly different in meaning and use in the context of a study. Constraints, limitations, and assumptions bound (scope) a study effort by identifying what must (or must not) and can (or cannot) be accomplished; frame the study space and set the stage for the study team's methodology development; serve as a "contract" between the study sponsor and the study team; and provide a basis for the sponsor to reconcile the study results with how the study was done.

critical operational issues and criteria (COIC)
Key operational concerns (issues) of the decisionmaker, with bottom line standards of performance (criteria) that if satisfied, signify the system is operationally ready to proceed beyond the FRP decision review. The COIC are not pass/fail absolutes but are "show stoppers" such that a system falling short of the criteria should not proceed beyond the FRP unless convincing evidence of its operational effectiveness, suitability, and survivability is provided to the decisionmakers/authorities. COIC are few in number, reflecting total operational system concern and employing higher order measures.

data
A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means (as it pertains to modeling and simulation).

doctrine requirements
This is a validated need to implement actions in the doctrine process to develop a new, or revise an existing doctrine publication.

DoD Enterprise Architecture
This is group of descriptions that provide context and rules for accomplishing the mission of DoD. These descriptions are developed and maintained at DoD, capability area, and component levels and collectively define the people, processes, and technology required in the "current" and "target" environments; and the roadmap for transition to the target environment.

DOTmLPF change recommendation (DCR)
A DCR documents the intent to partially or wholly address an identified capability requirement and associated capability gap with a non-materiel solution, recommending changes to existing capabilities of the Joint force in one or more of the eight DOTMLPF and policy areas. In cases where a Joint DCR is not generated from an ICD, it also serves to document the new capability requirements and associated capability gaps being addressed. See the JCIDS Manual.

DOTmLPF Integrated Capabilities Recommendation (DICR)
This is a recommendation for changes to existing Army resources when such changes are not associated with a new defense acquisition program. It is a tool used to apprise the ARSTAF of a recommendation for a major DOTmLPF change. See AR 71-9.

draft CDD
This document is required to inform the TDS and RFP for the Technology Development Phase following the Milestone A acquisition decision. It is not submitted to the joint staff Gatekeeper for staffing and validation.

endorsement
This is a statement of adequacy, and any limitations, provided by a responsible agency for a specific area of concern in support of the validation process. See the JCIDS Manual.

equipment common operating picture (ECOP)
ECOP is a web-based application that provides current policy information, libraries of approved equipment lists and a means to request critical equipment all in one tool. Commanders, operations officers, and logisticians can access the application on the classified internet to review MTOEs, Mission Essential Equipment Lists and initiate UONs requests for special equipment not on their MTOE or an approved Mission Essential Equipment List.

evolutionary acquisition
This is the preferred DoD 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. See CJCSI 3170.

experimentation
The exploration of innovative methods of operating, especially to assess their feasibility, evaluate their utility, or determine their limits to reduce risk in the current force (today's operations) and the future force (developments). Experimentation identifies and verifies acceptable solutions for required changes in DOTMLPF to achieve significant advances in current and future capabilities. Experiments aid in validating the feasibility of future requirements determination efforts. TRAC's Definitions for Analysts, TRAC-TD-05-010 dated May 2005 defines experimentation as: The use of an event or series of events designed to investigate concepts or prototypes.

experiment to action plans
An experiment to action plan summarizes the experiment insights and findings, and assigns offices of primary responsibility to ensure the insight or finding is acted upon in the appropriate manner. The experiment to action plan also includes recommended refinements to the questions architecture, concepts, and experimentation plans.

force modernization proponent
The HQDA principal official, commander, commandant, director, or chief of the respective center, school, institution, or agency with primary duties and responsibilities relative to DOTMLPF and related requirements for a particular function (i.e. Combined Arms Center is a force modernization proponent, but not a Center of Excellence). See AR 5-22.

functional area
A functional area is 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 JROC. See CJCSI 3170.

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. See CJCSI 3170.

functional capabilities board working group
The FCB working groups are the analytic support for the FCBs. They perform the review and assessment of JCIDS documents, work with the sponsors to resolve issues, and make recommendations to the FCB. See CJCSI 3170.

Guidance for the Development of Forces
The guidance for the development of forces is a key strategic planning document, drafted biennially. It is designed to guide the development of war and contingency plans. Previously called Strategic Planning Guidance, the guidance for the development of forces considers a 20-year view of the security environment to inform the construction of the Pentagon's spending plan. The guidance for the development of forces also replaces a handful of guidance documents previously issued on a 2-year cycle, including the Transformation Planning Guidance, the Posture Guidance, the Science and Technology Strategic Guidance and several others.

increment
This is 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. See CJCSI 3170.01.

initial capabilities document (ICD)
An ICD documents one or more new capability requirements and associated capability gaps. The ICD also documents the intent to partially or wholly address identified capability gap(s) with a non-materiel solution, materiel solution, or some combination of the two (includes IS ICD variant).

An ICD documents the need for a materiel or nonmateriel approach or an approach that is a combination of materiel and nonmateriel to satisfy a specific capability gap(s). It defines the capability gap(s) in terms of the functional area, the relevant range of military operations, desired effects, time, and DOTMLPF and policy implications and constraints. The ICD summarizes the results of the DOTMLPF analysis and the DOTMLPF approaches (materiel and nonmateriel) that may deliver the required capability. The outcome of an ICD could be one or more DCRs, DICRs, or CDDs. See the JCIDS Manual and AR 71-9. All ICDs are validated by the Dir, ARCIC.

integrated architecture
This is an architecture consisting of multiple views or perspectives (operational view, systems view, and technical standards view) that facilitates integration and promotes interoperability across capabilities and among related integrated architectures. See CJCSI 3170.01.

integrated capabilities development team (ICDT)
An integrated team of key stakeholders and SMEs from multiple disciplines chartered by Dir, ARCIC to initiate the JCIDS process through conduct of the CBA to identify capability gaps in a functional area, identify nonmateriel and/or materiel approaches to resolve or mitigate those gaps, and develop an ICD and/or a DCR or DICR, when directed.

integration construct
The construct is comprised of the 3 levels of integration. The three levels of integration are: Level 1-integrate warfighting concepts, Level 2-integrate requirements and Level 3-synchronize DOTMLPF capabilities developments.

integrated security construct (ISC)
Formerly known as Defense Planning Scenarios. ISCs are developed as part of the DoD Analytic Baseline in accordance with DoDD 8260.05 and DoDI 8260.2. ISCs contain scenarios for major combat operations. Military objectives of the ISCs provide a source for developing the list of required capabilities.

Interim Solution Strategy (ISS)
Presents action plans, a way ahead, and decisions points for actions addressing Army Warfighting Challenges, which can include initiating JCIDS actions across DOTMLPF; POM and TAA submissions to HQDA; context and input to capability package development; input to the CNA and organizational based assessment; S&T program input and warfighting future operating capability revisions; and feedback to concept developers for concept revisions.

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 DCR documents prior to their submission to the JROC. The JCB is chaired by the Director of Force Structure, Resources, and Assessment, Joint Staff J-8. It is comprised of general and flag officer representatives of the services. See CJCSI 3170.01.

joint capability area (JCA)
JCAs are collections of similar capabilities logically grouped to support strategic investment decisionmaking, capability portfolio management, capability delegation, capability analysis (gap, excess, and major trades), and capabilities-based and operational planning. JCAs provide a common capabilities language for use across many related DoD activities and processes and are an integral part of the capabilities-based planning process. See CJCSI 3170.01.

Joint Emergent Operational Need (JEON)
JEONs are urgent operational needs affecting two or more DoD Components and are driven by anticipated contingency operations. JEONs are submitted by Combatant Commands. Capability solutions for JEONs do not require associated ICDs, CDDs, or CPDs for initial fielding, but may require appropriate CDDs or CPDs to support transition for sustainment and/or further development of capability solutions for enduring use.

joint staffing designators (JSD)
A designation assigned by the Joint Staff Gatekeeper to determine the JCIDS validation and approval process and the potential requirement for certifications and/or endorsements. A system can be assigned one of five designations: JROC Interest, JCB Interests, Joint Integration, Joint Information, or Independent. See CJCSI 3170.01.

joint urgent operational need (JUON)
An urgent operational need identified by a combatant commander involved in an ongoing named operation. A JUON identifies and subsequently gains Joint staff validation and resourcing of a solution, usually within days or weeks, to meet a specific high-priority combatant commander need. The scope of a JUON will be limited to addressing urgent operational needs that: (1) fall outside of the established service processes; and (2) most importantly, if not addressed immediately, will seriously endanger personnel or pose a major threat to ongoing operations. JUONs should not involve the development of a new technology or capability; however, the acceleration of a JCTD or minor modification of an existing system to adapt to a new or similar mission is within the scope of its validation and resourcing process. See CJCSI 3170.

key performance parameter (KPP)
Those attributes or characteristics of a system that are considered critical or essential to the development of an effective military capability and those attributes that make a significant contribution to the characteristics of the future joint force as defined in the CCJO. KPPs must be testable to enable feedback from T&E efforts to the requirements process. KPPs are validated by the JROC for JROC Interest documents and by the Army for Joint Integration, Joint Information, or Independent documents. KPPs documented in the CDD and CPD are included verbatim in the acquisition program baseline. See the JCIDS Manual.

key system attribute (KSA)
An attribute or characteristic considered crucial in support of achieving a balanced solution/ approach to a KPP or some other key performance attribute deemed necessary by the sponsor. KSAs provide decisionmakers with an additional level of capability performance characteristics below the KPP level and require a sponsor 4-star, defense agency commander, or principal staff assistant to change. See the JCIDS Manual.

Knowledge Management/Decision Support (KM/DS) system
The KM/DS tool is used throughout the entire JCIDS process from initial submission of the document, gatekeeper review, staffing, JCB review, to JROC action and follow-up, if needed. The KM/DS system is used to maintain a repository of all Joint capability documents, and to track, monitor, and adjudicate action items and associated suspense dates. KM/DS maintains a repository of the Joint priority lists from the FCB , as well as for CBAs and other studies to facilitate sustainment and follow-on efforts.

Manpower and Personnel Integration (MANPRINT)
The comprehensive technical effort to identify and integrate all relevant information and considerations regarding the full range of manpower, personnel capabilities, training, human factors engineering, system safety, health hazards, and Soldier survivability into the system development and acquisition process to maximize Soldier and total system performance, and reduce the cost of ownership to an affordable level throughout the system's entire lifecycle.

materiel solution
Correction of a deficiency, satisfaction of a capability gap, or incorporation of new technology that results in the development, acquisition, procurement, or fielding of a new item (including ships, tanks, self-propelled weapons, aircraft, and others, and related software, spares, repair parts, and support equipment, but excluding real property, installations, and utilities) necessary to equip, operate, maintain, and support military activities without disruption as to its application for administrative or combat purposes. In the case of FoS and SoS approaches, an individual materiel solution may not fully satisfy a necessary capability gap on its own. See CJCSI 3170.01.

milestone decision authority (MDA)
The individual designated IAW criteria established by the Under Secretary of Defense for Acquisition, Technology, and Logistics or by the Assistant Secretary of Defense (Networks and Information Integration) for automation information systems acquisition programs, to approve entry of an acquisition program into the next phase of the acquisition process. See DoDI 5000.02.

militarily useful capability
A capability that achieves military objectives through operational effectiveness, suitability, and availability, which is interoperable with related systems and processes, transportable and sustainable when and where needed, and at costs known to be affordable over the long term. See CJCSI 3170.01.

models
A physical, mathematical, or otherwise logical representation of a system, entity, phenomenon, or process (as it pertains to modeling and simulation).

National Defense Strategy
A document approved by the Secretary of Defense for applying the Armed Forces of the United States in coordination with DoD agencies and other instruments of national power to achieve national security strategy objectives.

National Military Strategy (NMS)
A document approved by the Chairman of the Joint Chiefs of Staff for distributing and applying military power to attain national security strategy and national defense strategy objectives.

National Security Strategy
A document approved by the President of the United States for developing, applying, and coordinating the instruments of national power to achieve objectives that contribute to national security.

Network Integrated Evaluation (NIE)
The Agile Capability Life Cycle Process (ACLCP) changes the way the Army develops, acquires, and fields network and some non-network capabilities. The ACLCP hinges on the NIEs and the follow-on implementation plan for recommended candidates. NIEs are semi-annual evaluations designed to integrate and mature the Army's tactical network; conduct operational tests of select Army programs; and evaluate emerging network and non-networked capabilities in an operational environment. NIEs are also an important part of the Army Campaign of Learning, composing the "evaluate" Line of Effort within the campaign.

Non-materiel solution (DOTmLPF)
These are changes in doctrine, organization, training, materiel, leadership and education, personnel, facilities, or policy (including all human systems integration domains) to satisfy identified functional capabilities. The materiel portion is restricted to commercial or non-developmental items that may be purchased commercially, or by purchasing more systems from an existing materiel program. See CJCSI 3170.01.

non-TRADOC proponents
This is a generic term to refer collectively to the non-TRADOC force modernization proponents conducting DOTMLPF capability developments as designated by AR 5-22.

operational architecture (OA)
A description (often graphical) of the operational elements, assigned tasks, and information flows required to accomplish or support a warfighting function. It defines the type of information, the frequency of exchange, and what tasks are supported by these information exchanges.

operational environment (OE)
This is a composite of conditions, circumstances, and influences that affect employment of military forces and bear on the decisions of the unit commander. It is wide-ranging and geostrategic, encompassing geopolitics and globalization in economics, technology, and demographics, and incorporates both U.S. and threat military developments. See Joint Pub 1-02.

operational needs statement (ONS)
The ONS is the means by which combatant field commanders document and submit their urgent warfighting and training operational requirements to obtain support. Operational field commanders use an ONS to document the urgent need for a materiel solution to correct a deficiency or to improve a capability that impacts upon mission accomplishment. The ONS provides an opportunity to the field commander, outside of the acquisition and capability development communities, to initiate the requirements determination process. The ONS is not a requirements document. See AR 71-9.

post independent analysis (PIA)
An analysis conducted by the ARCIC on CBAs designated by Dir, ARCIC or Dir, RID. This analysis independently reviews the CBA to ensure it was thorough and that the recommended nonmateriel and materiel approaches are reasonable possibilities to deliver the capability identified in the FAA and/or FNA. This analysis considers the compiled analyses to ensure the study team followed usual and customary analytic procedures, that the scope was sufficient, and that the findings and recommendations follow logically from the analysis. The results will be used to confirm the decision to develop an ICD and/or a DCR or DICR to initiate the process to satisfy the capability needs.

proponent
Army organization or staff element designated by the HQDA DCS, G-3/5/7 which is an agency or command responsible for initiating, developing, coordinating, approving content, and issuing a publication and identifying them for removal. Each publication has only one proponent. See AR 5-22.

REF 10 Liners
This is a Headquarters, Department of the Army requirements authorization document. It allows the Rapid Equipping Force (REF), and authorized procurement agencies acting in direct support of the REF, to acquire rapid capabilities for Army forces employed globally in order to improve operational effectiveness. The REF is authorized use of the 10 Liner format to generate requirements.

requirement
An established need justifying the timely allocation of resources to achieve a capability to accomplish approved military objectives, missions, or tasks.

requirements determination
Assess required capabilities to identify gaps and develop DOTMLPF solutions against current and programmed requirements. See TR 10-5.

running estimate
An assessment of what is currently known; used to support development of Interim Solution Strategies.

scenario
This is a graphic and narrative description of area, environment, means (political, economic, social, and military), and events of a future hypothetical conflict. Scenarios provide a framework for assessing the U.S. force capabilities under specified situations; identifying potential improvements to Army, joint, and other service DOTMLPF; and evaluating proposed concepts and changes to the Army. See TR 71-4.

simulations
A method for implementing a model over time (see definition of models). Types of simulations include: live, virtual, constructive, and gaming.

sponsor
The DoD component, principal staff assistant, or domain owner responsible for all common documentation, periodic reporting, and funding actions required to support the capabilities development and acquisition process for a specific capability proposal.

synchronization
The process of coordinating the timing of the delivery of capabilities, often involving different initiatives, to ensure the evolutionary nature of these deliveries satisfies the capabilities needed at the specified time that they are needed. Synchronization is particularly critical when the method of achieving these capabilities involves a family of systems or system of systems approach. See CJCSI 3170.01.

System MANPRINT Management Plan (SMMP)
The SMMP is required for ACAT I and II programs, and is the Army's recommended strategy and plan for tracking issues and disposition and is designed to assist the PM in meeting the requirements of DoDI 5000.02, paragraph E7.1 for all programs. It serves as a planning and management tool and an audit trail to identify tasks, analyses, tradeoffs, and decisions that must be made to address MANPRINT issues during concept development, system development, and the acquisition process. Data from the SMMP (for example, MANPRINT issues and MPT constraints) shall be used in developing requirements documents, test plans, and contractual documents. See AR 602-2.

system threat assessment report (STAR)
An assessment of the potential foreign threat expected to be encountered by the U.S. defense system once it is deployed in its OE. The validated STAR must be submitted to the MDA at Milestone B and C.

system training
All training methodologies (embedded, institutional, mobile training team, computer, and web-based) that can be used to train and educate operator and maintainer personnel in the proper technical employment and repair of the equipment and components of a system and to educate and train the commanders and staffs in the doctrinal tactics, techniques, and procedures for employing the system in operations and missions. See CJCSI 3170.01.

system training plan (STRAP)
The STRAP is the master training plan and training tool for a new or modified system. It is prepared to support a Training Support System that meets the training requirements of the warfighter. It outlines the development of the total training concept, strategy, and training support system estimates for integrating the system or family of systems into the operational, institutional, and self -development domains. The STRAP will be an extension of the training information contained in the CDD and CPD, and will provide additional training support details. It is not a mandatory document for the CDD and CPD. But it can be submitted to provide supporting information. See CDD/CPD Writers' Guides.

TRADOC Strategic Plan (TSP)
The TSP is a mechanism for executing the TRADOC mission. It supports the ACP, and is applicable to all headquarters and units assigned to or under the administrative control of TRADOC. It will serve as the baseline reference for all of the commands and agencies that support TRADOC in the execution of TRADOC's mission. To keep up with the rapid pace of change inherent in the operational environment, this plan will be updated annually and managed dynamically.

TRADOC capability manager
TRADOC managers of selected CAs and ACAT I, ACAT II, or other high priority materiel systems which provide added intensive management when a need exists for management outside the normal capacity available to proponents for capability development integration, synchronization, and accomplishing user requirements in the materiel acquisition process. TCMs consist of two types within TRADOC: those that are functional proponents of Army functional organizations or areas which also tend to have SME/combat developer (CAPDEV) level involvement with specific materiel; and those that are strictly materiel-based. See TR 71-12.

TRADOC proponents
This is a generic term to refer collectively to the commanders of TRADOC centers and schools designated by AR 5-22 as force modernization proponents.

Training aids, devices, simulators, and simulations (TADSS)
A general term that includes combat training center and training range instrumentation, tactical engagement simulations, battle simulations, targetry, training-unique ammunition, and dummy, drill, and inert munitions. All of these are subject to the public laws and regulatory guidance governing the acquisition of materiel.

Training developer
The Army agency that determines requirements for a system's training subsystem and formulates, develops, and documents associated training concepts, strategies, plans, and required training support. IAW AR 71-9 is a subset of and included within capability developer; serves as the user's representative during development and acquisition of a system's training subsystem.

Training Requirements Analysis System
The purpose of the Training Requirements Analysis System is to ensure that students, instructors, facilities, ammunition, equipment, and funds are all at the right place and time to implement directed training as required by current and future proponent Combined Army Training Strategies (CATS) institutional strategies. The Training Requirements Analysis System is a management system that provides for the documentation of training and resource requirements in time to inject them into resource acquisition systems.

User representative
This is a command or agency that has been formally designated to represent single or multiple users in the capabilities and acquisition processes. The services and the service components of the combatant commanders are normally the user representatives. There should only be one user representative for a system (See CJCSI 3170.01). In the Army the user representative is TRADOC.

Validation
This is the review of documentation by an operational authority other than the user to confirm the operational capability. Validation is a precursor to approval. See JCIDS Manual.

Warfighter Outcomes
Stand alone statements that articulate capabilities needed for the Army warfighter by fiscal year 2024 and include a clearly articulated description of capability, a rationale explaining reason for the capability, and metrics to describe achievement of the capability. This term is used for Science & Technology efforts.

Warfighting Function (WfF)
A warfighting function is a group of tasks and systems (people, organizations, information, and processes) united by a common purpose that commanders use to accomplish missions. The Army's WfFs are fundamentally linked to the joint functions. They consist of mission command, intelligence, movement and maneuver, fires, sustainment, and protection. See Army Doctrine Publication 3-0.

Wargaming
Exercises or simulations to investigate the application of military force as it might exist in the future. 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. Note: Wargames generally have key human-in-the-loop participants making decisions at key junctures of the simulation. (JP 1-02, DoD Dictionary of Military and Associated Terms)

Section III
Special Abbreviations and Terms

This section contains no entries.