

## REQUIREMENTS DETERMINATION PROCESS

**1. Introduction.** The Army constantly upgrades and changes the way it fights in order to maintain battlefield superiority over all potential adversaries.<sup>1</sup> Determining our future warfighting requirements is the centerpiece of the Army's race to maintain an "overkill" capability in each of its significant functional areas. Maintaining our margin of land warfare dominance is becoming increasingly difficult because technology is growing by leaps and bounds, and there are few, if any, limitations on who obtains these technologies. Today any country or organization can acquire extremely sophisticated warfighting capabilities by purchasing them from the open market. Facing this kind of challenge and the Army's steadily dwindling resources, our modernization decisions must be both well-reasoned and accurate. We cannot afford to guess, and be wrong; today's decisions will determine what our military is capable of, 20 years hence. Accurately identifying requirements today may literally be the difference between future victory or future defeat.

**2. Learning Objectives (LOs).** Upon completion of this unit of instruction, you should be able to:

- a. Identify and define TRADOC's mission, vision, command priorities, and domains.
- b. Identify and define the role, mission, and goals of the Combat Developer.
- c. Describe the Requirements Determination Process.
- d. Discuss the roles and responsibilities of the Integrated Concept Teams (ICTs).

**3. Background.**

a. TRADOC PAM 71-9, Force Developments Requirements Determination, dated 5 November 1999, implements the way of determining requirements described in TRADOC Black Book #3 and AR 71-9. This pamphlet details the Army's process to determine, document, and staff warfighting concepts, future operational capabilities, and warfighting requirements.

b. At the end of the Cold War, HQDA and TRADOC recognized a need to change its requirements process. The threat that had been the centerpiece of the Concept Based Requirements System (CBRS) was gone. More diverse threats emerged from nations with potential for highly robust and technically capable forces. These new threats, reduced resources, and the use of U.S. forces in nontraditional roles, demanded that the Army change from a forward deployed force to a force projection Army. TRADOC formed the Battle Labs to help refocus the force, experiment with new methods for determining requirements, and to make the requirements and acquisition process more efficient.

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<sup>1</sup>TRADOC Cdr.'s Black Book #3, *Requirements Determination*, dtd Mar 96, Forward by Army Chief of Staff,

c. Former Army Chief of Staff (CSA) General Dennis J. Reimer reflected on the need to change: “We must find smarter ways to do business, streamlining our management processes, reduce overhead, leverage outside resources, and use what we have more efficiently in order to become more effective.”

d. The Army of the 21st century will be an integral part of a rapidly changing world. New technologies will emerge almost daily to be rapidly proliferated around the globe. The explosive growth of the Internet, Global Positioning System (GPS) navigation, and cellular communications technology demonstrate how new technologies can change the environment in which future combat operations will take place. To achieve Army XXI objectives and to keep and maintain a land combat force that can accomplish the wide array of missions, the new requirements determination process must promote horizontal requirements integration (HRI). HRI is the holistic process of developing future, "total force-oriented" requirements based upon approved concepts and related future operational capabilities (FOCs).

#### **4. TRADOC’s mission, vision and command priorities.**

a. TRADOC Mission: Access the Force, Train the Army for War, Set the Army’s Standards and Requirements, and Command Assigned Activities and Installations. Although all missions are important, the first and third missions are where combat developers focus most of their efforts to achieve force modernization.

b. TRADOC’s Vision: To prepare the Army for decisive victory in the full range of required Joint and Coalition Operations through:

(1) Accessing and training the Army’s soldiers and leaders and providing disciplined Combined Arms Training environments for units.

(2) Balanced development of concepts, requirements, and products in Doctrine, Training, Leadership, Organizations, Materiel, and Soldiers (DTLOMS).

(3) Providing readiness infrastructure for training and projecting Army Forces.

(4) Building a command environment that promotes safe, values-based, and disciplined operations.

c. TRADOC Command Priorities:

(1) Remain committed to Army near-term readiness:

- ✓ Train the force.
- ✓ Access the force.
- ✓ Provide mission support required to train the force.

(2) Sustain TRADOC's readiness capability to perform our mission:

- ✓ Maintain core requirements for the daily business of TRADOC.
- ✓ Improve soldier quality of life.
- ✓ Maintain and operate installations and facilities.

(3) Prepare the Army for the future:

- ✓ Develop soldiers, leaders, doctrine, materiel, training, and organizations to meet tomorrow's land combat challenge.

**5. TRADOC Domains:** Doctrine, Training, Leader Development, Organization, Materiel, and Soldier (DTLOMS) requirements. These domains are the means by which TRADOC transforms the Army into a (envisioned) future state. These changes or modifications are adjustments to the Army's doctrine, training, leader development, organizations, materiel, and soldiers (DTLOMS). The domains can be divided into two distinct groups: non-materiel alternatives (DTLOS) and materiel alternatives (M). Requirements determination occurs in the order of doctrine, training, leader development, organization, soldiers, and materiel, based on the expense and timeliness to field a capability. Each domain will be defined later in this chapter.

**6. Combat Developer's role, mission and goals.** TRADOC serves as the Army's Combat Developer. The Commanding General of TRADOC is the Army's warfighting requirements "Gate Keeper".

a. TRADOC's Office of the Deputy Chief of Staff for Combat Developments (ODCSCD) Mission: To formulate the Army's warfighting requirements by providing policy, guidance, and resources to execute the requirements determination process. Our disciplined approach to change is characterized by: development of warfighting concepts and supporting Organization and Operational concepts (O&O); identification of Objective Force Capabilities and Future Operational Capabilities (FOCs); focus of the Army's science and technology effort; rigorous analysis and experimentation; determination of warfighting requirements; conduct periodic reviews to ensure operational requirements remain nested in emerging concepts; and assisting Department of the Army in presenting and justifying requirements to the Joint Staff, Office of Secretary of Defense, and Congress.

b. TRADOC ODCSCD Vision: Lead the HQ TRADOC Army transformation effort to ensure the force is strategically responsive and dominant at every point on the spectrum of operations, now and into the future. Efforts will preserve the overmatch ability of the legacy force (mechanized and light), while simultaneously supporting the transformation process (emerging interim and objective forces).

c. TRADOC ODCSCD Goals: The Combat Developments community is actively engaged in transforming the Army to meet 21<sup>st</sup> Century requirements by creating the operational force designs to realize improvements in the warfighting capability and strategic responsiveness in

joint operations. Key efforts focus on transforming the operational force to provide full-spectrum capability to better deal with small scale contingencies without risk to the Army's primary role to fight and win major theater wars. Crucial to this effort is development of capabilities for the objective force.

- DCSCD Goal 1. Create operational force Organization and Operational Concepts (O&Os) and designs which meet Army Transformation Campaign Plan (ATCP) objectives for Interim and Objective Force.
- DCSCD Goal 2. Develop future operational capabilities for the objective force, include collaboration with HQ Army Materiel Command (AMC) and Assistant Secretary of Army (Acquisition, Logistics, and Technology) (ASA(ALT)) to assure that Science and Technology (S&T) programs are focused on priority capabilities.
- DCSCD Goal 3. Develop and execute experimentation to provide critical insights for O&O and FOC development and subsequent generations of DTLOMS requirements.
- DCSCD Goal 4. Develop and defend key recapitalization activities to maintain legacy force's combat overmatch; includes collaboration with HQAMC and ASA(ALT) to assure the S&T programs are focused on priority capabilities.
- DCSCD Goal 5. Develop and defend requirements to meet O&O concepts. Includes a DTLOMSs integrated resourcing approach.
- DCSCD Goal 6. Develop and operationalize two Initial Brigade Teams at Fort Lewis, Washington.

## **7. Requirements Determination Background.**

a. Requirements determination was an area of study during the 1995 Table of Distribution and Allowances (TDA) Army Functional Area Assessment (FAA). The principal output of this assessment was a revised process endorsed by the CSA and CG, TRADOC. Significant aspects to this new process are:

(1) A holistic approach to requirements for joint and Army capabilities. These capabilities consider new threats in contrast with the full spectrum of Army operations and functions. This is a substantial change from the previous emphasis on Army deficiencies against a single, well-defined threat.

(2) Focus on requirements as a change to any DTLOMS domain, with materiel being the least desirable domain to change because of acquisition costs and schedules. Previously, materiel was the primary domain for developing requirements.

(3) Requirement of a multidisciplinary team effort, Integrated Concept Teams (ICT). Previously, combat developers developed requirements with minimal input from the other DTLOMS agents.

(4) Cost as an independent variable (CAIV) to ensure the preferred solution will include an affordable life cycle cost. The Army can no longer expect performance at any cost or everything it wants. CAIV will not, however, preclude consideration of a new, high potential, leap-ahead technology (often referred to as a “potential silver bullet”).

(5) Assignment of CG, TRADOC as the single approval agent for all warfighting requirements. Also, the requirement for all Army commands and the Army staff to follow CG, TRADOC established procedures for determining and documenting requirements. Approval is no longer split between and within HQDA and Army proponent commands (e. g., TRADOC, MACOMs, and separate commands). Different procedures and approval authorities previously applied to all DTLOMS areas. For example, within materiel, separate procedures and approvals existed for clothing and individual equipment (CIE); non-system training aids, devices, simulations, and simulators (TADSS); information systems; Acquisition Category (ACAT) I and II materiel programs; and ACAT III and IV materiel programs. Recent changes in DOD 5000 series, AR 70-1, AR 71-9, and AR 25-1 series emphasize one process for all materiel programs.

b. As a result of the Federal Acquisition Streamlining Act of 1994, Congress stated a preference for using commercial and nondevelopmental items to satisfy new requirements. Part of the implementing guidance in the law states that requirements must be modified in appropriate cases to ensure that the requirements can be met by commercial or, nondevelopmental items. The new law was codified into the Federal Acquisition Regulation (FAR) Parts 10 and 11, to recognize the need to conduct market research prior to finalizing requirements in the operational requirements document (ORD). The FAR states, “Acquisitions begin with a description of the Government’s needs stated in terms sufficient to allow conduct of market research.” The changes in the law and the implementing guidance in the revised FAR will affect how the Army’s materiel requirements determination process is conducted.

c. Combat Developers (CBTDEVs) spend much of their time and effort shaping the future Army. Proponents first determine the current level of ability (unit, functional area, branch, etc), then identify the desired level of ability that will be needed in the future, and finally make whatever changes in method, organization or equipment as required to achieve it.

## **8. New Method of Doing Requirements Business: An Overview**

**8-1. Requirements determination process.** The Army continually upgrades and changes the way it fights so it can maintain battlefield superiority over all potential adversaries and can achieve complementary capabilities with other Services and nations determined holistically, based on desired joint and Army capabilities versus known deficiencies. Requirements are driven by concepts focused on the future and on experimentation in our battle labs providing insights to discern viable requirements. A full description of the requirements determination process can be found in paragraphs 8-2 through paragraph 8-10.

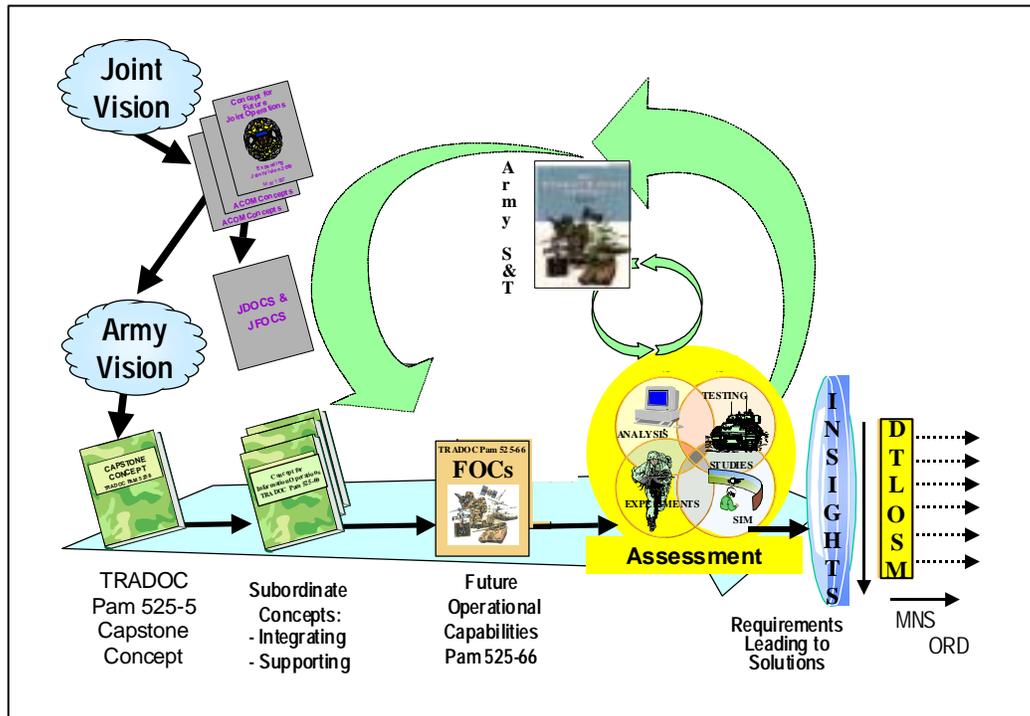


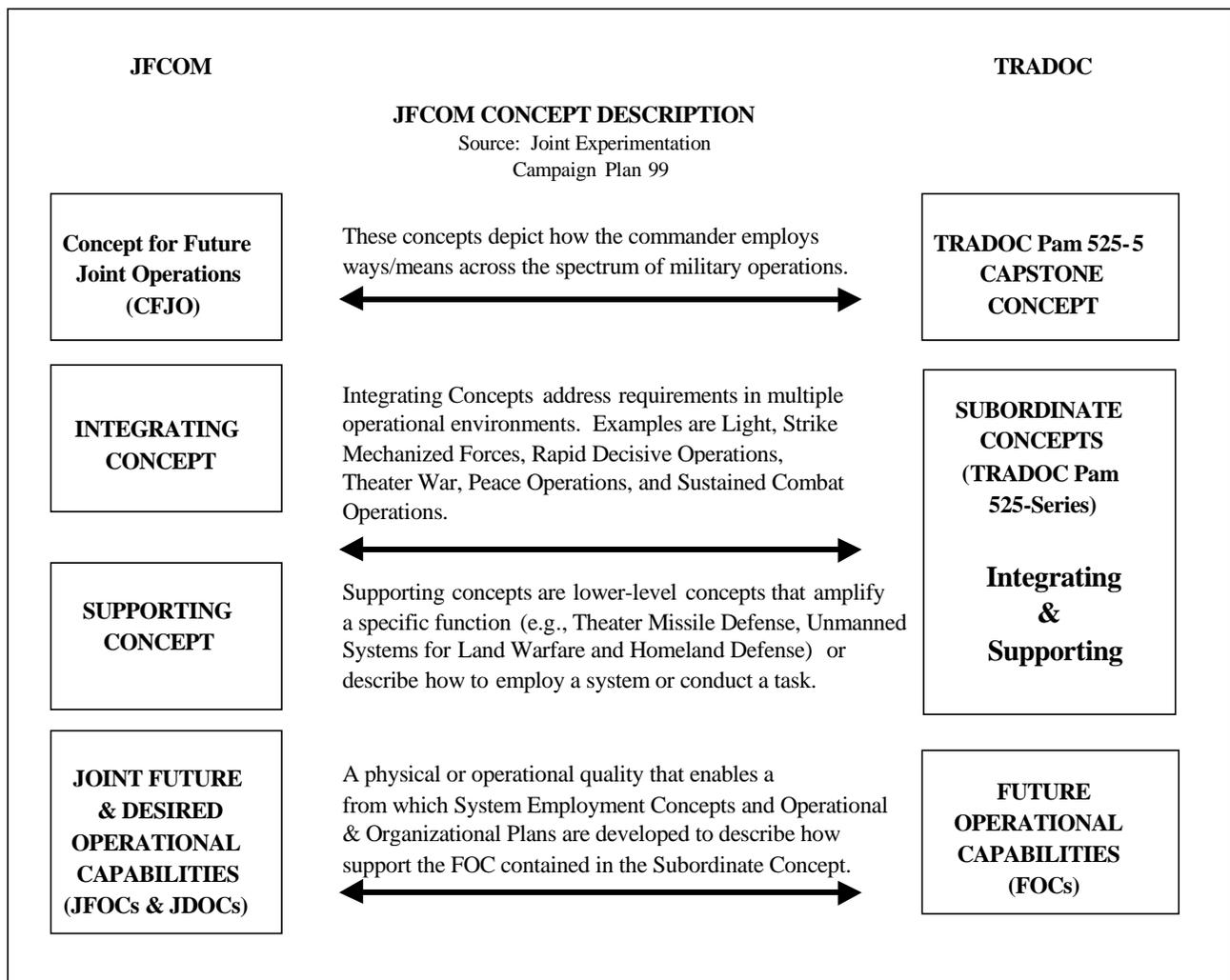
Figure 1-1. Requirements determination process overview

**8-2. Joint Vision.** The process begins when the Chairman of the Joint Chiefs of Staff (CJCS) issues a Joint Vision that provides a conceptual overview of their armed forces in the future. The Joint Vision establishes the initial conceptual template for how the forces will channel the vitality of their people and leverage their technological opportunities to achieve new levels of effectiveness in joint warfighting.

**8-3. Joint Concept.** The Concept for Future Joint Operations (CFJO) serves as the joint concept document. The CFJO is a rudimentary, abstract description of a desired goal as seen by the CJCS, as he looks at the future battlefield. The CFJO expands the Joint Vision’s new concepts to provide a more detailed foundation for follow-on capabilities assessments. The CFJO also represents an important step toward the objective of achieving the right capabilities for the challenges the armed forces will face in the 21<sup>st</sup> century. America’s armed forces must be able to shape the strategic environment to prevent war, respond when deterrence fails, and begin now to prepare for an uncertain and challenging future. Toward these ends, the CFJO considers future joint operations in the context of the broad range of challenges anticipated. It also helps

concept developers identify Joint Desired Operational Capabilities (JDOCs) and Joint Future Operational Capabilities (JFOCs) which will drive development of better and faster processes for evaluating and adapting emerging warfighting capabilities.

**8-4. U.S., Joint Forces Command (JFCOM) Concepts.** The Secretary of Defense, in the Joint Warfighting Experimentation Charter, directed the Commander, JFCOM to develop concepts that will provide Joint Staff guidance to the military. The JFCOM staff has initiated the development of concepts that provide a more detailed view of the CFJO. JFCOM is working through the creation of two categories of subordinate concepts: integrating and supporting. Both JDOCs and JFOCs are derived from these concepts. JDOCs identify desired goals to be achieved. The relationship between JFCOM Concepts and TRADOC Army Concepts is shown in Figure 2-1.



**Figure 2-1. TRADOC & JFCOM Concept Relationships**

**8-5. Army Warfighting Vision.** The TRADOC Commander develops the Army's future warfighting vision. It is an abstract description of a desired goal and integrates the Joint Vision and Army requirements to accomplish the Army's role in that vision. It is influenced by national security and military strategies, with science and technology providing a frame of reference. It is promulgated through a series of white papers designed to provoke thought by the military, academia, industry, and futurists. When developed sufficiently, the vision is translated into capstone concept—still abstract, but a much more detailed description of the desired goal.

**8-6. Army Capstone Concept.** An Integrated Concept Team (ICT) is formed at HQ TRADOC to develop the capstone concept. The ICT is made up of members from TRADOC, U.S. Army Materiel Command (AMC), other Army commands, HQDA, other military Services, academia, industry, and others—taking advantage of the synergy of the group to translate the commander's vision into the next level of detail. The capstone concept reflects direct linkage to the National Military Strategy (NMS), Defense Planning Guidance (DPG), the Joint Vision, the Army Plan, and other documents. In this context, the capstone concept becomes the primary guide for all other Army concept development activities.

**8-7. Army Subordinate Concepts.** Because the capstone concept provides a macro-level description of the future Army, it must be enabled by more detailed subordinate concepts, called integrating and supporting concepts. The ICT approach is now used by Army school commandants and other Army leaders to develop the integrating and supporting concepts. These concepts describe the full range of future capabilities needed by the Army to execute the capstone concept and the CFJO.

**8-8. Objective Force Capabilities (OFC's) and Future Operational Capabilities (FOCs).** OFC's are structured statements of operational capability required by the Army to achieve its goals as stated in approved Capstone and Subordinate concepts. FOC's are structured statements of operational capability required by Army proponents (i.e. branches) to achieve its goals as stated in approved Capstone and Subordinate concepts. They are identified in each concept and consolidated in TRADOC Pam 525-66. This document will be the control mechanism for requirements determination activities and will provide a cross-reference for all capabilities to ensure they support approved subordinate concepts. It will also help guide Army Science and Technology (S&T) activities, as well as industry research and development initiatives. This strategy will form the basis for experiments, analyses, and other requirements determination activities.

**8-9. Assessments.** Assessments supported by warfighting experimentation and simulation, in combination with studies and analysis are key to the determination process. When properly planned and executed, warfighting experiments and analyses give the Army an unsurpassed means to understand future warfighting requirements. Progressive and iterative mixes of constructive, virtual, and live experiments, combined with operational experience and appropriate analyses, yield insights to better define not only concepts, but also requirements across the spectrum of DTLOMS. Developmental and operational testing may also support requirements determination assessments.

**8-10. Doctrine, training, leader development, organization, materiel, and soldier (DTLOMS) requirements.** Requirements determination occurs in the order of doctrine, training, leader development, organization, soldiers and materiel (D-T-L-O-S-M), based on expense and timeliness to field a capability.

a. **Doctrine.** A doctrinal modification involves changes or additions to the principles used to guide the employment of operational forces. These principles range from a multitude of tactics, techniques and procedures (TTP) to the Army's capstone document, FM 100-5 Operations. School combat developments directorates are responsible for preparing doctrine requirements and forwarding them to HQ, TRADOC for approval.

b. **Training & Leader Development.** A training modification involves changes or additions to any of the Army's training or professional development programs. These range from institutional training conducted at TRADOC schools to individual self-development and unit training programs conducted in the field [Army]. School training and doctrine directorates are also responsible for preparing training requirements and forwarding them to HQ TRADOC for approval. Leader development solutions can change the way in which leaders are being educated or trained. Alternatively, they could lead to a change in the kind of people we access into the Army.

c. **Organization.** An organizational modification involves changes or additions to any of the Army's tables of organization and equipment (TOE). These range from modifying the numbers or types of equipment in a current organization to documenting an entirely new organization. School combat development directorates and other combat development organizations are responsible for preparing organization requirements and then forwarding them to HQ TRADOC for approval. The TRADOC DCSCD reviews, integrates and prioritizes action. A list of approved TOEs is maintained in the Structure and Manpower Allocation System (SAMAS) Army Master Force (MFORCE) and are resourced based on overall Army Force Package needs.

d. **Soldier.** TRADOC POC for soldier requirements is Leader Development Division, Individual Training Directorate, DCST, HQ TRADOC (ATTG-IL). Detailed soldier requirements guidance is in ARs 600-3 and 611-1. Soldier requirements include additions, deletions, or modifications to the Army's military occupational classification and structure (MOCS) system. These range from proposals affecting the force and/or grade structure of existing occupational specialties to the creation of entirely new occupational specialties to accomplish assigned missions. Personnel proponency offices are responsible for preparing these soldier requirements, assuring their compatibility with other domains, and forwarding.

e. **Materiel.** A materiel solution will be considered only when non-materiel (DTLOS) answers cannot satisfy the identified need. Once a materiel solution is identified as the solution to a specific need, the combat developer initiates actions which (if successful) will lead to the fielding of a materiel system.

(1) The combat developer formally enters the acquisition process with the initiation of the Mission Need Statement (MNS). If a MNS is not required, the initial document will be an Operational Requirement Document (ORD). The MNS represents a formal request to begin defining requirements and exploring different technology concepts. The ORD details the results of that process in the form of detailed requirements leading to technically achievable systems.

(2) Figure 1-2 outlines the acquisition process. The point at which a program enters into the acquisition process and the extent the process is tailored depends on the thoroughness of the combat developer's pre-Milestone A activities and the maturity of the technology.

(3) In pursuing a materiel system, the most cost-effective solution over the system's life cycle will have priority consideration.

## **9. Integrated Concept Team (ICT)**

a. ICT is a management philosophy and tool employing the team approach to requirements determination actions. ICTs maximize the efforts of reduced resources by early resolution of issues through timely involvement of appropriate agencies/expertise as a team with commitment to aggressively identify and work issues. In its role as Architect of the Future, TRADOC employs these multi-disciplinary ICTs representing appropriate MACOMs and staffs, appropriate DOD organizations, and other federal agencies. Industry and academia may participate on a limited basis. ICTs are the primary means for horizontal integration in the DTLOMS requirements determination process. A single ICT may identify the need for several different DTLOMS requirements to support a warfighting capability that crosses multiple branches or enduring battlefield functions. A primary goal of the ICT process is to shorten the requirements determination event of the acquisition process.

### b. Fundamental characteristics. ICTs

- (1) Are multi-disciplinary.
- (2) Have members who are empowered to make decisions.
- (3) Have a holistic, total force perspective.
- (4) Seek DTLOMS solution sets.
- (5) Consider both conventional and innovative concepts and solutions.
- (6) Consider near, mid, and long term capabilities and opportunities.
- (7) Can be tier one or tier two. Tier one ICTs are chartered by HQ TRADOC.
- (8) Promote HRI/HTI.

c. ICTs are formed to:

- (1) Develop warfighting concepts and associated FOCs (i.e., ICT [Warfighting Concepts]).
- (2) Determine and document warfighting mission needs across all DTLOMS domains (Mission Needs Analysis) (i.e., ICT [DTLOMS Mission Needs]).
- (3) Prepare or direct the preparation of DTLOMS requirement documentation necessary to attain required future capabilities (i.e., ICT [DTLOMS Requirements Document]).

#### **10. Integrated Concept Team (ICT) establishment and general guidelines.**

a. Initiation. ICTs will be initiated by the TRADOC CG, Deputy Commanding Generals (DCGs), DCSs, or School Commandants/Center Commanders. The individual initiating the ICT must make a determination whether to establish a tier one or tier two ICT.

b. Tier one.

(1) Scope. Tier one ICTs are established for warfighting concepts, mission needs determination, and requirements documentation where there are multiple proponents or where pronency has not yet been determined; have high management interest/visibility (HQDA, OSD, or Congress); have major joint Service impact; or will require HQ TRADOC delegated authority or command level resources to conduct. These ICTs are approved and chartered by HQ TRADOC.

(2) Proposal. Tier one ICTs will be initiated by submitting an ICT proposal to the appropriate HQ TRADOC functional directorate. This will allow expeditious coordination of the emerging ICT at the idea stage before major command resources are expended. An e-mail submission is acceptable. The appropriate HQ TRADOC functional directorate (CAD, C4I, or CSSD) will review the proposal for potential integration with other ICTs and with other TRADOC requirements determination efforts. A proposal response will normally be provided back to the originator within 15 working days with a suggested core membership list and appropriate directions; usually to develop and submit a charter to the HQ TRADOC functional directorate for Chief of Staff, TRADOC approval. However, if other factors are involved (redundancy, change of scope, joint Service implications, major command resource commitments, etc.), the HQ TRADOC functional directorate will accomplish necessary coordination (internal and external) prior to a final decision on the ICT's scope and lead. Following this coordination, appropriate instructions, including a designation of the ICT lead, will be forwarded back to the originator and other impacted organizations. Under these circumstances, the lead for the ICT may be an organization other than the originator of the proposal.

c. Tier two. Tier two ICTs will normally be established and conducted under the guidance of School Commandants or Center Commanders who designate the ICT lead and charter the ICT. These ICTs are used to develop or refine a warfighting concept of operation unique to a single proponent or to determine and document branch or function unique mission needs and requirements. The ICT lead will notify HQ TRADOC (appropriate functional directorate—CAD, C4I, or CSSD) via e-mail of the establishment of a tier two ICT. The notification will provide the following information, as a minimum: ICT name, originator, deliverables and/or products, estimated completion date, participating organizations, and POC name and contact information. HQ TRADOC (ATCD-RP) will post this information on the DCSCD Homepage.

d. ICT membership. The principal objective of the ICT is to improve requirements determination products by involving a broad spectrum of responsible and knowledgeable individuals early and by focusing on issue identification and resolution throughout the process. In general, there are two groups of ICT membership—the Core membership and the Staffing membership. The Core membership has primary responsibility for developing and coordinating the product, working resolution of issues, and submission of the product for approval. Dedicated Core ICT members serve as the ICT’s nucleus, accomplishing a majority of the planning and work. On-call Core ICT members provide input to the product and assist in resolution of issues within their specialized expertise or provide experimentation, analytical, operations, and technology advice and support to the dedicated Core team. Staffing ICT members review the draft product and provide their issues and comments. Resolution of issues to the satisfaction of the Staffing ICT member constitutes concurrence by that member’s organization. Unresolved issues from either the Core or Staffing ICT members constitute a nonconcurrence by that member’s organization to be addressed and resolved during the approval process. ICT membership and participants will vary depending on the specific product to be produced . The ICT charter will identify membership and participating organizations. While industry and academia will not be a member of the ICT, their input is a key ingredient to the process. Techniques to obtain industry and academia input must be executed properly to avoid significant consequences for government, academia, and industry participants. ICT leaders must seek advice and assistance from their legal and contracting offices early during ICT strategy planning and continually during the ICT process .

e. ICT process.

(1) Charter. The ICT lead will draft and coordinate the charter with all Core ICT member organizations. The ICT charter will address, with sufficient detail for ICT planning and resource decisions, the same areas included in the ICT proposal. For tier one ICTs, a copy of the draft charter will be provided to the HQ TRADOC functional directorate for review and approval by the Chief of Staff. The ICT charter must have enough detail to allow HQ TRADOC to prioritize ICT support resources (analysis, battle lab experimentation, etc.) and coordinate with other requirements determination efforts. For tier two ICTs, a copy of the Commandant/Commander approved charter will be forwarded to the HQ TRADOC functional directorate. Resourcing for tier two ICTs is the responsibility of the proponent and membership. Warfighting concepts of operation and DTLOMS Mission Needs Reports from tier two ICTs are approved by the chartering commander.

(2) Read-ahead for Core ICT. The ICT lead develops and provides a read-ahead package to the Core ICT member organizations. Packages include background information; strawman ICT Action Plan with milestone schedule, issues and opportunities, and emerging taskings and support responsibilities; and, when applicable, strawman materiel requirements documents with initial drafts of the operational mode summary/mission profile (OMS/MP) and the system training plan (STRAP). These strawman documents are not expected to be complete, ready to coordinate documents, but rather are to be first-cut documents which require input from Core ICT members to develop a document ready for coordination. Forwarding memorandum for the read-ahead will include a request for designation of an individual to serve as an ICT Core member representing their organization. The individual will be empowered to actively participate in the ICT, provide advice and input to the product, identify issues, and represent their organization on any issues, opportunities, or taskings identified in the Action Plan. The Action Plan must address how an assessment of industry and academia technology capabilities will be obtained by the ICT.

(3) Convene the Core ICT. The Core ICT may be convened by any appropriate mechanism (e.g., exchange of papers/electronic media, video teleconference, telephonic conference(s), or meeting). The Core ICT includes both Dedicated and On-call members. On-call members provide their input to the product but are not required for full participation (e.g., a battle lab may be required early to identify need for experimentation and later to explain experiment results). The mission of the Core ICT is to produce the ICT product for coordination and assist the ICT Chair in resolution of comments and issues received during staffing. The first order of business is to finalize the ICT Action Plan including supporting analysis, experimentation, resources, and taskings/responsibilities essential to develop ICT products and deliverables. A critical element of the ICT planning and operations is establishing appropriate linkages with related ongoing ICTs and other affected or supporting organizations. The second order of business is to implement and execute the Action Plan.

(4) ICT products. The draft products produced by the ICT are coordinated with full ICT membership. Products produced by applicable ICT are as follows:

(a) ICT (Warfighting Concepts). ICT produces both the draft warfighting concept (capstone or concept of operation) for coordination and the final warfighting concept for submission to HQ TRADOC for approval. The ICT also publishes minutes that describe the resolution and disposition of each issue, identifies supporting information that cannot be provided in the product, and conveys any issue for further study.

(b) ICT (DTLOMS Mission Needs). ICT produces a DTLOMS Mission Needs Report for approval by the authority who chartered the ICT. The report identifies specific DTLOMS needs to solve a warfighting concept identified future operational capability. The ICT also publishes minutes that describe the resolution and disposition of each issue, identifies supporting information that cannot be provided in the product, and conveys any issues for further study.

(c) ICT (Materiel Requirements Documents (MRDs)). ICT produces MNS, Capstone Requirements Document (CRD), and ORD. The ICT develops the coordination draft and final draft MRDs. ICT also publishes minutes which provide an audit trail that describes the resolution and disposition of each issue and identifies any areas needing further study for resolution and/or attention of materiel developer IPT(s) (e.g., MANPRINT issues).

(5) Full ICT review of ICT product. Key to the success of the ICT process is the early identification and resolution of issues. While the Core ICT works numerous issues during preparation of the draft, staffing responses which specifically identify issues and provide comments are critical to quickly producing an adequate and supported document. Issues reflect an area of nonconcurrence if not resolved to mutual satisfaction of affected ICT members. Unresolved issues become decision issues for the document approval authority. Comments reflect suggestions for consideration by responsible ICT members. Staffing ICT member organizations will identify the individual empowered to represent their organization during issue resolution.

(6) Resolution of issues identified. Issues will be resolved within the ICT, when possible. Core ICT members review the issues identified from staffing. For those issues that cannot be resolved in the ICT, the issues will be raised immediately to Director or to General Officer levels within affected member organization for resolution. Those issues not resolved will be submitted with the ICT product to HQ TRADOC (or, when applicable, to the chartering Commandant/Commander) for decision during the final approval. Senior leadership will be briefed, as necessary, to build support for results and products.

(7) Forward ICT product to HQ TRADOC, ATTN: appropriate DCS(s) (i.e., DCSDOC for doctrine products/actions; DSCT for training, leader development, and soldier products/actions; or DCSCD for concepts, organization, and materiel products/actions, as applicable) for action or decision.

(8) Publish and forward to ICT members and HQ TRADOC functional directorate(s) final ICT minutes that show the status, resolution, and disposition of each issue raised during the ICT. Specifically identify any issues beyond the scope of the ICT requiring work of the combat developer, training developer, doctrine developer, force developer, and/or materiel developer.

(9) Transition any follow-on ICT related efforts to responsible organizations for execution.

(10) Dissolve ICT or transition to an appropriate follow-on ICT or AMC/PEO IPT.

f. Coordination. HQ TRADOC functional directorates will coordinate individual ICTs with other ongoing TRADOC ICTs. Once an ICT is completed, these directorates will coordinate the results with other requirements determination and warfighting concept development efforts.

g. DCSCD Homepage (<http://www.tradoc.army.mil/dscsd/index.htm>). A listing of all ongoing ICTs will be maintained on the DCSCD Homepage. DCSCD directorates are responsible for reporting updates to ICT information to the DCSCD Homepage POC.

## Appendix A

### References

#### Section I Required Publications

AR 5-5

Army Studies and Analyses

AR 5-11

Management of Army Models and Simulations

AR 70-1

Army Acquisition Policy

AR 70-75

Survivability of Army Personnel and Materiel

AR 71-9

Materiel Requirements

AR 71-11

Total Army Analysis (TAA)

AR 71-32

Force Development and Documentation—Consolidated Policies

AR 73-1

Test and Evaluation Policy

AR 200-1

Environmental Protection and Enhancement

AR 200-2

Environmental Effects of Army Actions

AR 350-10

Management of Army Individual Training Requirements and Resources

AR 350-38

Training Device Policies and Management

AR 381-11

Threat Support to U.S. Army Force, Combat, and Materiel Development

AR 385-16  
System Safety Engineering and Management

AR 600-3  
The Army Personnel Proponent System

AR 611-1  
Military Occupational Classification Structure Development and Implementation

CJCSI 3170.01  
Requirements Generation System

CJCSI 6212.01A  
Compatibility, Interoperability, and Integration of Command, Control, Communications, Computers, and Intelligence Systems

DA Pam 70-3  
Army Acquisition Procedures

DA Pam 350-58  
Leader Development for America's Army

DODD 5000.1  
Defense Acquisition

DOD Reg 5000.2-R  
Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs

TRADOC Pam 11-8  
Studies and Analysis Handbook

TRADOC Pam 350-70-8  
Total Army School System (TASS) Training Requirements Analysis System (TRAS)

TRADOC Pam 525-5  
Force XXI Operations

TRADOC Pam 525-66  
Future Operational Capability

TRADOC Reg 5-3  
U.S. Army Training and Doctrine Command (TRADOC) Study Program

ALM-31-6232-C

TRADOC Reg 5-11  
U.S. Army Training and Doctrine Command (TRADOC) Models and Simulations (M&S)

TRADOC Reg 11-8  
TRADOC Studies and Analyses

TRADOC Reg 25-32  
TRADOC Doctrinal Literature Master Plan

TRADOC Reg 71-12  
TRADOC System Management

TRADOC Reg 71-17  
Organizational Design, Unit Reference Sheets (URS), and Automated Unit Reference Sheets (AURS)

TRADOC Reg 350-32  
The TRADOC Training Effectiveness Analysis (TEA) System

TRADOC Reg 350-70  
Training Development Management, Processes, and Products

TRADOC Reg 381-1  
Threat Management

TRADOC Reg 385-2  
TRADOC Safety Program

## **Section II**

### **Related Publications**

AR 1-1  
Planning, Programming, Budgeting, and Execution System

AR 5-22  
The Army Proponent System

AR 11-40  
Functional Area Assessment (FAA)

AR 25-1  
The Army Information Resources Management Program

AR 25-30  
The Army Integrated Publishing and Printing Program

AR 34-1  
International Military Rationalization, Standardization and Interoperability

AR 37-100  
Account/Code Structure

AR 40-10  
Health Hazard Assessment Program in Support of the Army Materiel Acquisition Decision Process

AR 40-61  
Medical Logistics Policies and Procedures

AR 70-38  
Research, Development, Test, and Evaluation of Materiel for Extreme Climatic Conditions

AR 310-50  
Authorized Abbreviations, Brevity Codes, and Acronyms

AR 350-35  
Army Modernization Training

AR 380-19  
Information Systems Security

AR 602-1  
Human Factors Engineering Program

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

AR 700-127  
Integrated Logistics Support

AR 700-129  
Management and Execution of Integrated Logistics Support (ILS) Program for Multiservice Acquisitions

DA Pam 25-40  
Administrative Publications: Action Officer Guide

DA Pam 73-2  
Test and Evaluation Master Plan Procedures and Guidelines

DA Pam 73-3  
Critical Operational Issues and Criteria (COIC Procedures and Guidelines)

**ALM-31-6232-C**

DOD 5000.3-M-4  
Joint Test and Evaluation Procedures Manual

FM 100-5  
Operations

FM 100-11  
Force Integration

FM 100-14  
Risk Management

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

TRADOC Pam 25-34  
Desk Guide to Doctrine Writing

TRADOC Pam 25-35  
Desk Guide to Doctrine Management

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

TRADOC Reg 25-31  
TRADOC Armywide Doctrinal and Training Literature Program

TRADOC Reg 25-35  
Preparing and Publishing United States Army Training and Doctrine Command (TRADOC)  
Administrative Publications

TRADOC Reg 71-4  
TRADOC Standard Scenarios for Combat Developments

## Appendix B

### Integrated Concept Team (ICT) Guidelines

**B-1. Introduction.** This appendix provides guidance and supporting information in the following areas:

- a. General ICT guidelines.
- b. Typical steps for conducting an ICT.
- c. ICT proposal.
- d. ICT membership examples.
- e. ICT helpful hints.

**B-2. General ICT guidelines.**

a. Overview. ICT members must be familiar with key Army long range planning documents; e.g., Force/Army XXI plans and objectives, Joint/Army Vision 2010 documents, and Army After Next emerging results. ICTs are structured to seek both conventional “What is” and innovative “What could be” solutions to future warfighting capabilities. Challenging existing DTLOMS paradigms is encouraged; especially if it opens up new, more efficient options to fight or support the force. ICTs will be conducted in an environment where all practical ideas and options are sought out and evaluated from a total force perspective. Emerging digital capabilities to network action offices through telecomputers, e-mail, and video teleconferencing should be used to the maximum extent possible to improve efficiency and minimize travel.

b. Membership. A fundamental characteristic of an ICT is that all organizations having a significant interest in a warfighting capability or having critical supporting capabilities will be invited to have representation. ICT members must be empowered by their parent organization to negotiate and make decisions. The early involvement of these empowered “share holders” provides the ICT the means to promote more efficient, total force focused solutions while shortening the overall requirements determination process. They are responsible for both horizontal and vertical coordination within their parent organization. ICT members’ proactive issue identification and resolution replaces much of the traditional, time consuming staff, rewrite, and restaff process of the past. A one-time staffing is the ICT objective. Stable representation on an ICT is necessary for continuity and efficiency of the team. While industry and academia will not normally be an ICT member, their views should be sought as input to the ICT (see para B-3).

c. Operational environment. ICTs will also consider both AC and RC options and opportunities. ICTs will assess the full range of Army and joint Service operations impacted by the capability and all appropriate scenarios that the Army is likely required to operate within and support. ICTs will also consider the impacts/opportunities to improve the Army ability to rapidly deploy worldwide, and more efficiently support both light and heavy force operations and special mission task forces.

d. Horizontal focus. ICTs must seek DTLOMS solution sets that include near, mid, and long term capabilities. ICT will promote horizontally integrated requirements and solutions to future concepts and capabilities to include multi-role combat and support systems and common training device solutions, where they are feasible. HRI principles will be used to the degree possible. If an ICT identifies a specific HTI solution/option, the team should prepare and submit an HTI proposal .

e. S&T role. It is especially important that ICTs have active participation by the S&T/PEO/PM communities to ensure that all viable options are considered and that there is an awareness of the art-of-the-possible to preclude unnecessary risk and/or dead-end requirements.

f. Non-DOD participation. Care must be used to ensure that all industry/academia, allied/other government, and non-DOD participation in ICTs complies with all applicable statutory and regulatory limitations. If their participation is desired in ICTs, appropriate legal, contractual, disclosure, and/or security advisers must be sought. Guidelines for industry and academia participation are addressed in para B-3. Allied LNO participation depends on their credentials and should be addressed on a special request basis. Participation of other countries in joint programs/efforts depends on agreements in place between participating countries and disclosure restrictions applicable. Participation of other U.S. Government agencies must also comply with security and disclosure limitation.

**B-3. Industry/academia participation.** Industry/academia may not participate in an ICT as active/sitting members. Industry/academia information and input for the ICT may be accomplished by responses to a public announcement(s) soliciting written input or one-time participation during early ICT information gathering by use of an industry association representative, the AMC RDECs/Labs, or an independent contractor to canvas industry/academia; or by participation in a symposium or conference, often in cooperation with the materiel developer. Industry/academia should be invited to provide information in the early idea stage of the ICT to promote an open assessment of all feasible concepts and solution options (hardware, software, and technologies). Since the ICT will generally make an assessment of near, mid, and long term solution options, academia and industry system developers and technology communities should have an opportunity to contribute their ideas and concepts. Generally, industry should not participate as described in B-3b, c, and d below; however, if industry input is warranted, a request for comments should be widely disseminated such as through the publication of a public announcement in the Commerce Business Daily (CBD). The publication of such a public announcement should always be subject to a legal review. Request for industry input should be forwarded to the AMC TILO to arrive no later than 30 days prior to

the scheduled industry forum. The TILO will in turn provide the announcement to the CBD and post an announcement on the TILO web page.

a. The results of ICT meetings should be shared with industry representatives who make a request for such information while taking into consideration procedures for disseminating classified and proprietary information (see para B-3e). Government responses to industry inquiries should also be widely disseminated. No ICT activity should compromise industry or academic proprietary rights or affect an existing competitive advantage.

b. Industry or academia should not participate in ICT solution determination activities once specific solutions are being considered for elimination or support. Care must be used to ensure that all industry/academia participation in ICTs meets applicable federal laws and Army and acquisition regulations guiding materiel acquisition and interaction with industrial representatives. Industry and academia shall not participate in the approval of any contractual documents, to include documents defining requirements.

c. Industry and academia should not participate in the actual development of a materiel requirement document to avoid creating an unfair advantage in any future solicitation or a perception of improper bias or influence. Industry input on near, mid, and long term operational capabilities may be sought early during the MRD ICT information gathering effort by using suitable broad industry solicitation for input.

d. The participation of industry or academia in the activities described above in paras B-3b and c may result in their exclusion from a follow-on procurement.

e. Proprietary data. An industry representative providing information to an ICT may not wish to reveal proprietary data to potential competitors during the ICT process. Therefore, upon request, the government shall provide these industries with necessary protection of their proprietary information. This shall be accomplished by offering industry representatives the option of submitting proprietary information to only the government members of the ICT. Such information shall not be provided to other industry representatives. Industry representatives must be reminded that proprietary information should be prominently marked when submitted to an ICT. Government participants in the ICT process must not improperly disclose such proprietary information. Industry representatives participating in an ICT may also sign a statement of non-disclosure. All statements of non-disclosure should be subjected to legal review.

f. Voluntary participation. All industry and academia representatives who participate in an ICT shall sign a waiver of any entitlement to compensation before their participation with the ICT begins, or shall be compensated for their services during their participation with the ICT.

g. Follow-up with industry/academia. An ICT may follow-up with specific industry participants to clarify points raised during ICT–industry/academia forum. Legal and contracting advisers can assist with methods and guidelines.

**B-4. Typical steps for conducting an ICT.** This information is provided as a guide to assist TRADOC action officers in conducting a successful ICT. These steps are not mandates, but should be tailored to the specific ICT based upon complexity, scope, issues, and level of impact/visibility.

a. ICT initiation and charter development/approval. Determine and establish working relationship with responsible legal and contracting office/agency which will provide statutory and regulatory guidance and oversight support throughout the duration of the ICT.

b. The ICT lead assembles background read-ahead information (i.e., warfighting concept of operation, applicable FOC, charter, previous ICT minutes, studies/analyses/experiment reports, white papers, etc.) and prepares strawman draft ICT Action Plan and, when applicable, strawman draft materiel requirements document.

c. ICT planning considerations.

(1) Step 1. Convene ICT Core team—usually 6-10 dedicated members with most direct interest and experience in the ICT's area of focus and products and other on call members (e.g., Battle Lab, S&T, analytic/simulation, etc. representatives) as needed to plan the ICT effort. Provide team members read-ahead information and applicable strawman draft documents. Team members must be prepared to provide active participation and represent their organization in all ICT activities upon initiation of ICT activities.

(2) Step 2. Develop draft ICT Action Plan including the following items:

(a) Detailed milestone schedule.

(b) Overview of the operational context for the capability (Army and joint operations, peacetime and combat, etc.).

(c) ICT objectives and products.

(d) Tasks necessary to achieve each objective or product.

(e) Initial list of issues and opportunities for consideration.

(f) Organizations participating in the ICT (impacted directly or indirectly or can provide ICT support).

(g) Plans for conducting or analyzing, and documenting the results of experiments or analyses/studies.

(h) Plans for soliciting and managing industry and academia input to the ICT. Legal and contracting advisory oversight of industry and academia participation should be provided in the plan.

(i) Plans for disclosure and security controls if participation by Allied/other foreign governments or other U.S. Government agencies is planned.

(3) Step 3. Forward draft ICT Action Plan with initial opportunities/issues to team members and other appropriate organizations. To the degree possible, any major issues or positions affecting the member's home organization will be established/coordinated prior to the ICT meeting(s).

(4) Step 4. Convene full Core ICT. Electronic measures are encouraged. Figure B-1 provides a possible agenda for consideration.

- Brief draft Action Plan and refine as necessary.
- Confirm appropriate membership; identify any organizations not represented.
- Identify all available capability contributors and necessary supporting enablers.
- Brainstorm all known DTLOMS opportunities and solutions, and identify issues for consideration.
- Prepare study, analysis, and experimentation plan.
- Confirm ICT objectives, products, and deliverables.
- Develop ICT tasks list with timelines.
- Layout specific task responsibilities.
- Establish links/interfaces with other warfighting concepts, FOCs, ICTs, or related AMC/PEO/joint IPTs.

**Figure B-1. Possible ICT agenda**

(5) Step 5. Provide minutes and updated ICT Action Plan to all members. Provide information copy to HQ TRADOC functional directorate.

d. ICT execution.

(1) Step 6. Execute ICT Action Plan.

(a) Solicit industry and academia input to the ICT in accordance with the Action Plan. The legal or contracting office can advise on which solicitation technique best suits the need.

(b) Assess existing information.

1 Previous ICT minutes/report.

2 Existing, applicable experiment, analyses, and study reports

3 Related warfighting concepts and FOCs .

4 Government/DOD laboratory, industry, and academia input. Implement plans for industry and academia per ICT Action Plan (see para B-3).

(c) Identify need for and have appropriate organization conduct experiments and analyses .

(d) Brainstorm potential ideas and alternatives and lead open discussions of potential compromises and trade-offs.

(e) Conduct any required follow-up actions with industry and academia under oversight of legal and contract advisors (see para B-3).

(f) If issues arise that the ICT is not able to quickly resolve, quickly brief appropriate staff and decision makers within the affected organizations to seek resolution or assistance. If this does not lead to issue resolution, forward the issue with alternatives and supporting rationale to the HQ TRADOC functional directorate using the normal chain of command.

(g) Develop draft new or revised warfighting concept, DTLOMS determination analysis report, or requirements document, as applicable .

(2) Step 7. Convene full ICT. This is normally initiated by a paper or electronic memorandum distributing and soliciting issues and comments on the Core ICT draft product. Core ICT members work to resolve issues with submitting ICT members employing appropriate media (i.e., telephone, e-mail, fax, VTC, meeting, etc.). Affected core ICT members consider comments received and make appropriate changes.

(3) Step 8. Prepare and submit products for approval including any unresolved issues for decision authority action or forwarding to HQ TRADOC for resolution. Prepare and provide minutes to ICT members and HQ TRADOC functional directorate recording the actions and results of the ICT and concerns recommended for future actions (e.g., considerations for FOC integration by HQ TRADOC, MANPRINT areas needing MATDEV attention, etc.).

(4) Step 9. Dissolve the ICT or transition it to the next phase. Criteria for ICT completion or termination is contained in the ICT proposal and charter (see para B-5).

**B-5. ICT proposal and charter.** The same content guidance applies to the ICT proposal (see Figure B-2). The documents are differentiated by the level of detail and timing.

- Originating organization
- Title of ICT
- Date of request/charter
- Purpose
- Scope
- Key objectives
- Related warfighting concepts and FOCs
- Products
- Participants (Dedicated and On-call Core members and others)
- Schedule
- Joint implications
- Resources/support summary
- Authorities
- Criteria for completion/termination
- Chairperson (name, address, phone, fax, e-mail address)
- Point of contact (name, address, phone, fax, e-mail address)

**Figure B-2. ICT proposal and charter content**

a. **ICT proposal.** The ICT proposal will be a concise summary document developed at the idea stage and before major effort/resources are expended. It will normally be only two pages in length—five pages maximum. After review by HQ TRADOC, the proposal serves as the initial ICT guidance until a charter is approved. The proposal may be submitted to HQ TRADOC as a memorandum or electronically via e-mail.

b. **ICT charter.** The ICT charter will expand on the proposal to provide the detail necessary for planning and executing its mission. An example of an ICT charter is provided in Appendix R.

**B-6. ICT (Warfighting Concept).** Chapter 5 details the processes used to develop, coordinate, and approve new or revised warfighting concepts using the ICT approach. Figure B-3 defines the ICT membership applicable to the warfighting concepts process. The charter will identify specific organizations and may include additional organizations deemed necessary. Para B-3 provides guidelines for industry and academia participation in ICTs.

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| <p>Chair: Designated in Charter</p> <p>Dedicated Core ICT Members (specified in Charter)</p> <ul style="list-style-type: none"> <li>• Doctrine/Tactics Expert(s)</li> <li>• Organization/Force Designer(s)</li> <li>• Combat Developer(s)</li> <li>• Trainer(s)</li> <li>• HQ TRADOC, DCSCD Action Officer</li> <li>• MANPRINT Representative</li> <li>• Other Services</li> <li>• SMDC (for space and missile defense programs)</li> </ul> <p>On-call Core ICT Members (specified in Charter)</p> <ul style="list-style-type: none"> <li>• Local Threat Manager or TRADOC DCSINT</li> <li>• TOE Units/CINC(s)</li> <li>• Reserve/National Guard</li> <li>• Recent Commanders</li> <li>• Command Sergeant Major/NCOs</li> <li>• Retired General Officer Advisors</li> <li>• MANPRINT Domain Experts (Manpower, Personnel, Training, Human Factors Engineering, Safety, Health Hazards, and Soldier Survivability)</li> <li>• Battle Lab</li> <li>• S&amp;T (ARL Lab(s) &amp; RDEC)</li> <li>• Analytical/Simulation/Wargame Agency(s)</li> <li>• CSS/Logistics Expert</li> <li>• Environment Expert</li> </ul> <p>Staffing ICT Members (specified in Charter)</p> <p>Those organizations listed in core staffing list for Concepts (see para C-11)</p> <p>Other Information Sources (Not ICT Members and Special Procedures Apply)</p> <ul style="list-style-type: none"> <li>• Industry/Academia (see para B-3)</li> <li>• Allied Army/Services LNOs (see para B-2f on restrictions)</li> </ul> |
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**Figure B-3. ICT (Warfighting Concept) representation**

### **B-7. ICT (DTLOMS Determination Analysis).**

a. DTLOMS determination solution strategy. Based upon approved warfighting concepts and associated FOCs, an ICT will first seek doctrine solutions to achieve a future capability. Then, the ICT will look for solutions in the training, leader development, organizational, and soldier areas. Finally, the ICT will assess materiel solutions; normally the most costly option that also takes longer to develop and field. The ICT-identified and decision authority-approved solutions are the DTLOMS solutions.

b. ICT (DTLOMS Determination Analysis) membership. The ICT membership will include those stated in Figure B-4. Others may be added as determined by the chartering organization. Specific organization for Core and On-call Core members will be stated in the ICT charter. Para B-3 provides guidelines for industry and academia participation in ICTs.

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| <p>Chair: Designated in Charter</p> <p>Dedicated Core ICT Members (specified in Charter)</p> <ul style="list-style-type: none"> <li>• Combat Developer(s) (in-house and external)</li> <li>• Organization/Force Design Expert</li> <li>• Doctrine/Tactics Experts</li> <li>• Training Developer</li> <li>• Personnel Proponent</li> <li>• HQ TRADOC, DCSCD Action Officer</li> <li>• MANPRINT Representative</li> <li>• Other Services</li> <li>• SMDC (for space and missile defense programs)</li> </ul> <p>On-call Core ICT Members (specified in Charter)</p> <ul style="list-style-type: none"> <li>• Battle Lab</li> <li>• S&amp;T/Materiel Developer (ARO, ARL Labs, RDECs)</li> <li>• Federated Labs/DARPA</li> <li>• Analytical/Simulation/Wargame Agency(s)</li> <li>• MANPRINT Domain Experts (Manpower, Personnel, Training, Human Factors Engineering, Safety, Health Hazards, and Soldier Survivability)</li> <li>• CSS/Logistics Experts</li> <li>• Environment Experts</li> <li>• Local Threat Manager or TRADOC DCSINT</li> <li>• TOE Units/CINCs Staff</li> <li>• Reserve/National Guard</li> </ul> <p>Staffing ICT Members—as specified in the Charter</p> <p>Other Information Sources (Not ICT Members and Special Procedures Apply)</p> <ul style="list-style-type: none"> <li>• Industry/Academia (see para B-3)</li> <li>• Allied Army/Services LNOs (see para B-2f on restrictions)</li> </ul> |
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**Figure B-4. ICT (DTLOMS Determination Analysis) representation**

c. Brainstorming sessions. Brainstorming activities are particularly important to bring forth both the traditional and innovative solution sets for the FOCs and warfighting concepts addressed.

d. Establishing senior level input and support. Brief ICT senior leader(s) and key impacted organizations on recommended DTLOMS solution set(s) to achieve the overall force capability (near, mid, and long term).

e. DTLOMS determination analysis report. Prepare report providing information described in Figure B-5 documenting DTLOMS ideas considered, analysis and/or experimentation, rationale/basis for discards, and recommendations. This report must be approved by the ICT convening official and forwarded to HQ TRADOC.

- Title of ICT
- Purpose of ICT
- Timeframe of ICT action (begin and completion dates)
- Warfighting concepts and FOCs addressed
- Summary of any needs analysis done to date which helps define/support the need (testing, experiments, simulations, and studies).
- DTLOMS ideas considered for each warfighting concept and FOC
- DTLOMS ideas discarded for each warfighting concept and FOC and rationale/basis
- DTLOMS ideas recommended for adoption as a need against the warfighting concept and FOC and rationale/basis
- Record of analysis and experimentation reports used by the ICT to arrive at ideas considered, discarded, and recommended.
- Identify/describe any issues needing research either to determine whether it should be a need or to definitize a recommended need into a requirement

**Figure B-5. DTLOMS determination analysis report content**

**B-8. ICT (Materiel Requirements Document).** An ICT will normally produce appropriate materiel requirements documents (MNS, CRD, and/or ORD). MRD development normally responds to an approved DTLOMS Determination Analysis ICT recommended materiel solution (i.e., a materiel mission need). Chapter 11 details the materiel requirements development, coordination, and approval process. The ICT membership will include those stated in Figure B-6. Others may be added as determined by the chartering organization. Specific organization for Core and On-call Core members will be stated in the ICT charter. Para B-3 provides guidelines for industry and academia participation in ICTs. Requirements analysis performed by the ICT must provide the rationale for all KPPs and their associated threshold values, be approved by the ICT convening official, and be forwarded with the ORD to HQ TRADOC for ORD approval.

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| <p>Chair: Designated in Charter</p> <p>Dedicated Core ICT Members (specified in Charter)</p> <ul style="list-style-type: none"> <li>• Combat Developer(s)/TSM/TPIO</li> <li>• Materiel Developer</li> <li>• Independent Evaluator</li> <li>• Training Developer</li> <li>• HQ TRADOC, DCSCD Action Officer</li> <li>• Local Threat Manager or TRADOC DCSINT</li> <li>• MANPRINT Representative</li> <li>• Other Service(s) for joint programs</li> <li>• SMDC (for space and missile defense programs)</li> </ul> <p>On-call Core ICT Members (specified in Charter)</p> <ul style="list-style-type: none"> <li>• Organization/Force Design Expert</li> <li>• Doctrine/Tactics Experts</li> <li>• MANPRINT Domain Experts (Manpower, Personnel, Training, Human Factors Engineering, Safety, Health Hazards, and Soldier Survivability)</li> <li>• Battle Lab</li> <li>• Analytical/Simulation/Wargame Agency(s)</li> <li>• CSS/Logistics Experts</li> <li>• Environment Experts</li> <li>• Federated Lab/DARPA</li> <li>• TOE Units/CINC/Reserve/National Guard</li> </ul> <p>Staffing ICT Members (specified in Charter)<br/>Those organizations listed in MRD core staffing list on DCSCD Homepage</p> <p>Other Information Sources (Not ICT Members and Special Procedures Apply)</p> <ul style="list-style-type: none"> <li>• Industry/Academia (see para B-3)</li> <li>• Allied Army/Services LNOs (see para B-2f on restrictions)</li> </ul> |
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**Figure B-6. ICT (Materiel Requirements Document) representation**

**B-9. ICT helpful hints.**

a. How to think with a horizontal mindset.

(1) Understand Force/Army XXI warfighting concepts and “how to fight” principles/characteristics.

(2) Understand how this capability will support the Division/Corps Commander’s overall campaign objectives.

(3) Who else on the battlefield does these same type of operations, functions, tasks, or missions?

(4) In the early stages, think about the functions and concepts; suppress the desire to jump straight to a specific solution.

(5) Lead the ICT in a very unbiased manner. Look at today’s capabilities across the branches and in the joint environment including opportunities and limitations.

(6) Fill the plate with options, even ones that you know will be rejected; each one may stimulate others to add a different option or new knowledge about an area that has never been considered but may have promise with additional research/experimentation. Identify key areas of commonality or consensus, then build from that base to open up new options.

(7) Consider both traditional and non-traditional (innovative) solutions.

(8) Keep asking—“What could be.” Avoid the constraints of “What is today”—the Army is changing and new, more efficient solutions are essential to meet future capabilities with limited resources.

(9) Compare the needs of today against your best estimate of similar needs that will be on the battlefield of the future; when the 4th graders today will be the platoon sergeants or commanders in 2010/2015. Their Army will be different. They will need new capabilities. This can provide focus for future Army concepts and S&T investments.

(10) Think of all of the complexities of operating the system and appreciate the demands of the operational environment. Can a new, non-traditional approach work better in the future than just a new and better replacement for what we have in the Army today?

(11) Identify and address environmental protection and safety considerations.

b. Questions to “ask” the ICT.

(1) What are the appropriate levels of focus for this capability?

(2) How do Force/Army XXI warfighting concepts affect this capability? Do new ways to fight open new opportunities for requirements integration? How does the concept/capability impact each pattern of operation?

(3) How can the Army or the unit do this mission better? What needs to change to improve related capabilities of other combined arms members? Encourage a team attitude; reject the old competitive spirit of the past. The future Army needs cooperation, not multiple parochial solutions that are not affordable collectively.

(4) Is there more than one logical way this capability can be broken down into elemental operational functions? What needs to be accomplished? In the future, can someone else do the function more efficiently than with today's solution.

(5) How can this capability be provided so that it is operationally robust, yet simple to operate and support?

(6) How can the requirement be defined to allow future insertion of state-of-the-art technology that will outmatch the enemy's capability over a long period of time. How can it be capability based—effective even against a wide variety of threat systems and environments?

(7) What are the most efficient, total force solution sets—not just the party line or the old, conventional solution?

(8) What can be done to provide commanders and leaders more useful and flexible tools of battle? Avoid complex gadgets that are hard to employ and support in remote and hazardous environments.

c. Other factors in defining a horizontally integrated requirement.

(1) Joint service considerations.

(a) Expand the scope of the ICT to include joint Service or joint warfighting doctrine and concepts wherever possible.

(b) How would the CINC or Joint Task Force Commander see this capability from the big picture?

(c) Are there joint, national agencies (U.S. Coast Guard, CIA/FBI, etc.), or coalition issues/opportunities?

(d) Does another Service have a similar mission role? If so, then seek out joint solution options with vigor; help stamp out parochial views that add complexity and unnecessary cost to the force.

(2) Other operational and assessment considerations.

(a) Multiple scenarios and environments.

- 1 Peacetime support (O&S costs)/affordability.
- 2 Total spectrum of conflict.
- 3 Managing/protecting the electronic/information spectrum.

(b) Non-traditional operational considerations.

- 1 Peacekeeping/making.
- 2 Disaster relief.
- 3 Refugee control/support.
- 4 Shipboard operations (salt, EMI, insensitive munitions, etc.).

(c) Technology factors

- 1 Commercial off-the-shelf solutions options.
- 2 HTI opportunities (systems sub-system, software, and component levels).
- 3 Emerging S&T opportunities.

d. Leading a horizontally focused ICT.

(1) Keep the ICT broadly focused; especially in the initial phase.

(2) Avoid letting a single view/perspective dominate the thought process.

(3) Define the full scope of the capability. Be sure all ICT members get to express their views freely. Challenge the status quo advocates. NOTE: They may become very vocal, but they may not be in tune with the future.

(4) Lead the ICT to understand the rationale for why a function is done the way it is today. Then discuss—Is there a better, more efficient option?

(5) Define total force implications: combat, logistical support, force projection, training, organizational opportunities, and how to fight changes.

(6) Define why this capability is critical.

(7) Address risk implications in operational matters (positive and negative).

(8) Seek horizontal solutions that can be reconfigured to meet other missions.

(9) Define affordability impact and/or opportunities.

(10) Define future battle lab experiments or force/system analysis needed to support a solution (or solution set) decision.

e. Additional ICT topics.

(1) Look across Army, DOD, federal labs, and industry S&T communities for new, innovative opportunities (systems and technologies).

(2) Consider relevant operational lessons learned, battle lab experimentation and analysis results, and overall Force/Army XXI and Army After Next objectives.

(3) Are there other major force options that could alter or affect this requirement? If so, what are the issues/options? How does the ICT plan to get them resolved?

(4) Understand the impact of a digitized force and Information Warfare operations.

(5) What are the essential interfaces necessary to achieve this capability? Are there operational constraints that need to be addressed?

(6) Assess force deployability/projection impacts/opportunities.

(7) Consider affordability/cost as an independent variable.

(8) Describe the essential support (e.g., maintenance, supply, transportation, etc.) and training (embedded / institutional / simulations) capabilities that must be in place to execute the solution.

(9) What are the essential operational functions (target acquisition; intelligence; communications; situation awareness/C2; electronic warfare (EW); nuclear, biological, and chemical (NBC) warning or decontamination; etc.) that must be provided by other systems/organizations?

f. Consider all means of communication with ICT members—e-mail, VTC, teleconference, mail, and face-to-face meetings.

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