



U.S. Army Space & Missile Defense Command



Requirements Determination Handbook

July 30, 1999



U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND
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This handbook describes the U.S. Army Space and Missile Defense Command (SMDC) staff and major subordinate element responsibilities and processes SMDC will utilize to determine, document, and obtain approval for Army space and missile defense warfighting requirements. The procedures cover all the domains of doctrine, training, leader development, organization, materiel, and soldier (DTLOMS). It is designed to assist and guide staff members and commanders/directs within SMDC, and the space and missile defense community, in implementing TRADOC PAM 71-9. The direction and guidance emanate from the U.S. Army Training and Doctrine Command (TRADOC) Black Book #3, *Requirements Determination*, dated March 1996; Army Regulation 71-9; TRADOC Pamphlet 71-9; and the Memorandum of Agreement between TRADOC and SMDC dated 18 February 1997.

This handbook provides guidance for the following processes: warfighting concepts of operation development and approval; future operational capability (FOC) determination and documentation; DTLOMS solutions determination for FOCs; requirement documents and TRADOC approval for each DTLOMS domain; and the detailed process for materiel requirement documents.

This handbook applies to all elements of SMDC. It also describes our processes to other members of the space and missile defense user community, to include TRADOC centers, schools, and battle labs, who assist SMDC in determining, documenting, and processing Army requirements. The handbook will be reviewed annually and updated, as required, to reflect changes in Army, TRADOC and internal SMDC processes. The proponent for this handbook is the Director, Force Development and Integration Center (FDIC), U.S. Army Space and Missile Defense Command.


JOHN COSTELLO
Lieutenant General, U.S. Army
Commanding

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Glossary

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Chapter 1 Introduction

1-1. Purpose. This handbook describes Space and Missile Defense Command (SMDC) procedures for conducting Army requirement determination activities. The handbook describes how SMDC elements will execute and integrate U.S. Army Training and Doctrine Command (TRADOC) and Army requirement determination processes. It also outlines SMDC and TRADOC coordination requirements and procedures to ensure effective implementation of the TRADOC/SMDC (formerly Space and Strategic Defense Command (SSDC)) Memorandum of Agreement (MOA). The handbook further describes SMDC procedures for support to Army Space Command (ARSPACE) in the U.S. Space Command (USSPACECOM) space planning and requirements system (SPRS), the Tactical Exploitation of National Capabilities Program (TENCAP) acquisition process coordinated by the Army Space Program Office (ASPO), and support to the Ballistic Missile Defense Organization (BMDO). This handbook will be widely distributed to members of the space and missile defense community. Selected space and missile defense organizations external to the Army will also receive information copies.

1-2. References. See Appendix A.

1-3. Abbreviations. The glossary contains abbreviations and acronyms used in this handbook.

1-4. Background.

a. SMDC is evolving to address space and missile defense needs and capabilities documented in *Army Vision 2010* and *U.S. Space Command Vision for 2020*. In addition, the command's organization and direction reflects insights from the Army After Next (AAN) process and other progressive examinations of warfighting in the 21st century. Each of these initiatives points to space and missile defense as increasingly important enablers of our future joint warfighting concepts.

b. The TRADOC and SMDC MOA, signed in February 1997, assigned SMDC specific requirements determination and validation responsibilities for the Army. SMDC is the specified proponent for space and national missile defense (NMD). The agreement further established SMDC as the Army integrating command for Army theater missile defense (TMD) and authorized establishment of the Space and Missile Defense Battle Lab (SMDBL).

c. SMDC organizational concept.

(1) SMDC will draw on its collective combat development, materiel development, test and evaluation, and operational experience to promote synergy among Army organizations. To those outside the Army, SMDC will be the focal point for Army space and missile defense. The intent is to develop organizational efficiency and facilitate rapid development, fielding, and sustaining of space and missile defense capabilities for the joint warfighter.

(2) This organizational approach is capabilities-based and tailored to develop innovative and operationally relevant capabilities. The organization will promote, integrate, and synchronize space and missile defense within the Army and on behalf of the Army within the joint community. These functions will require frequent coordination with other Army organizations and the other services.

d. Implementation. SMDC is organized to include combat, materiel, and technology developers as well as users, testers, and evaluators. SMDC staff elements may exchange liaison officers with appropriate organizations (i.e., Secretary of the Army for Research, Development, and Acquisition (SARDA), TRADOC, and Combined Arms Center (CAC)) to facilitate external coordination of critical requirements determination and experimentation tasks. Major subordinate organizations and missions are summarized below:

(1) Force Development and Integration Center (FDIC). FDIC is responsible for the command's proponenty and integration efforts. Its mission is to coordinate and execute SMDC's specified proponenty and integrating responsibilities for space and missile defense. FDIC will integrate and synchronize space and missile defense DTLOMS solutions across the Army and, as appropriate, among joint warfighters (CINCS). FDIC includes a core of space and missile defense action officers and analysts who are task organized to perform requirement determination functions to integrate solutions horizontally and vertically.

(2) Space and Missile Defense Battle Lab (SMDBL). SMDBL plans and conducts warfighting experiments and analysis in support of the requirements determination process. Progressive and iterative mixes of constructive, virtual, and live exercises and experiments will be used that incorporate soldiers and units. The warfighting insights developed from this process will serve as waypoints to plot the Army's future space and missile defense courses of action. Additionally, SMDBL is chartered to develop modeling and simulation tools, conduct studies and analyses, and to support exercises and training related to space and missile defense.

(3) Missile Defense and Space Technology Center (MDSTC). MDSTC will continue as the Nation's research and development hub of space and missile defense technology excellence. As SMDC's technology developers, MDSTC focuses its efforts on the identification and development of improvements to current systems, and development of new materiel technologies in support of Joint and Army Visions 2010 and the ideas emanating from the AAN wargames. MDSTC will emphasize horizontal technology integration (HTI) and search for opportunities to leverage technologies developed outside of Army organizations such as BMDO, the Defense Advanced Research Projects Agency (DARPA), the other services, agencies, academia, and industry to keep the Nation's space and missile defenses well ahead of potential adversary threats.

(4) Space and Missile Defense Acquisition Center (SMDAC). SMDAC will centralize materiel development functions and testing and evaluation activities. SMDAC will develop, field, and sustain low-density space and missile defense systems for the warfighter.

SMDAC includes ASPO, the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Project Office, the Joint Targets Program Office, the U.S. Army Kwajalein Atoll (USAKA) missile range, and the High Energy Laser Systems Test Facility (HELSTF). SMDAC will develop working relationships with organizations such as the Test and Evaluation Command (TECOM), the Operational Test and Evaluation Command (OPTEC), and the Communications and Electronics Command (CECOM).

(5) U.S. Army Space Command (ARSPACE). ARSPACE conducts space and missile defense operations that support USSPACECOM, North American Aerospace Defense Command (NORAD), other joint forces and commands, and Army-designated elements. ARSPACE will provide Army input to the USSPACECOM SPRS process. In addition, ARSPACE serves as the Army's operator for the ground-based element of NMD and will provide the operator's perspective to combat development, materiel development, logistics support, fielding, and other plans. ARSPACE also provides direct interface to the warfighter through a variety of means to include Army space support teams (ARSST), Defense Satellite Communications System Operations Centers (DSCS OC), Regional Space Support Centers (RSSC), and the Joint Tactical Ground Station (JTAGS). These teams will be enhanced with increasingly capable space applications developed through the SMDBL and the MDSTC.

Chapter 2 Army Space and Missile Defense Requirements Determination Process Overview

2-1. Introduction. Reference: TRADOC Black Book #3, Army Regulation (AR) 71-9, and TRADOC Pamphlet (Pam) 71-9 (Chapter 2).

2-2. SMDC Requirements Determination Process.

a. The requirements determination process. The Army continually upgrades and changes the way it fights. Within the Army process, SMDC in conjunction with the TRADOC community will continually assess, upgrade, and change the way the Army conducts space and missile defense operations based on desired joint and Army capabilities. The TRADOC process SMDC will use to identify space and missile requirements is illustrated in Figure 2-1 and will be defined in the following chapters.

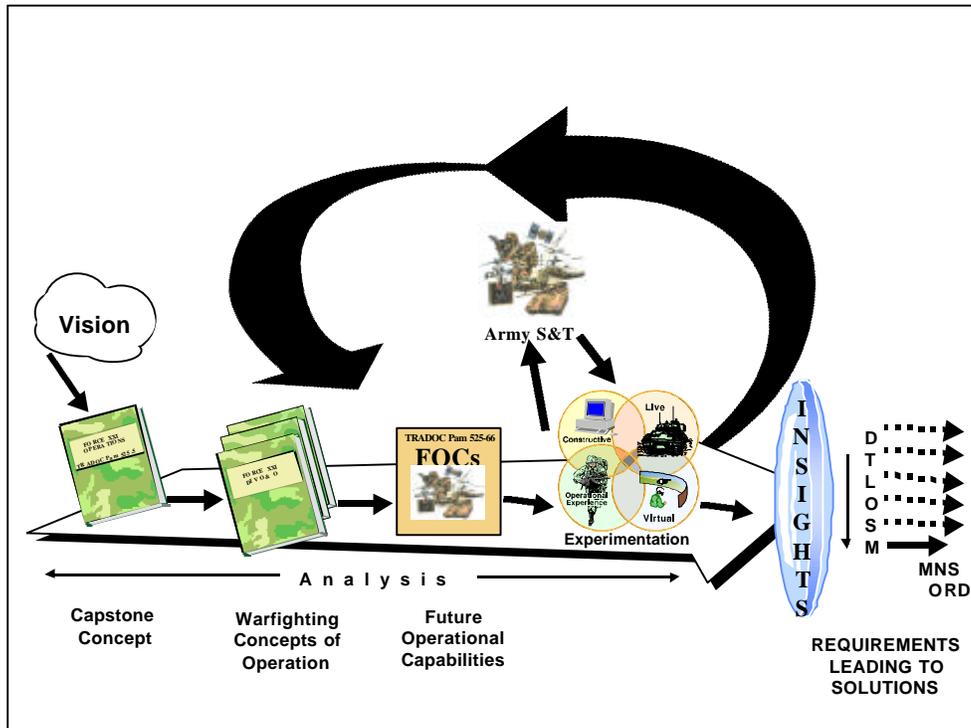


Figure 2-1. TRADOC Requirements Determination Process (TRADOC Pam 71-9)

b. The vision. The TRADOC Commander develops the Army future warfighting vision. This vision is a rudimentary abstract description of a desired goal for the future Army. The vision is influenced by the national security and military strategies with scientific and technological innovations providing a frame of reference. When fully developed, the vision is translated into a much more detailed description of the desired goal in the form of a capstone concept (TRADOC Pam 525-5). The SMDC Commander, as the proponent for space and NMD and overarching integrator for TMD, will develop his supporting vision statement and implementation plan from which will evolve space, NMD, and TMD warfighting concepts. These visions will also evolve into the TRADOC Pam 525-series warfighting concepts.

c. Capstone warfighting concept. The capstone warfighting concept reflects direct linkage to the National Military Strategy (NMS), Defense Planning Guidance (DPG), the Joint Vision, the Army Plan (TAP), and other documents. The capstone warfighting concept, developed at TRADOC, in coordination with SMDC and other major Army commands (MACOMs), is a holistic view of future warfighting that becomes the primary guide for development of space and missile defense concepts for the Army. The capstone warfighting concept describes capabilities for global deployment and employment of U.S. Army forces across the full range of military operations conducted at the strategic, operational, and tactical levels in joint, multinational, and interagency activities. Within SMDC, the FDIC will ensure that the capstone warfighting concept forms the basis for subsequent space and missile defense concept development as well as for other components of the space and missile defense requirements determination and DTLOMS solutions processes.

d. Warfighting concepts of operation. SMDC FDIC will oversee development of space and missile defense warfighting concepts of operation to augment the macro-level description of the future Army contained in the capstone warfighting concept. Specifically, SMDC is the proponent for TRADOC Pam 525-60 (Space Support to Land Force Operations) and TRADOC Pam 525-91 (Theater Missile Defense) as well as any future concept for NMD. SMDC will solicit input from TRADOC schools and centers with related branch proponentcy. These documents will influence the development of space and missile defense-related future operational capabilities (FOCs) contained in TRADOC Pam 525-66.

e. Future operational capabilities (FOCs). In conjunction with branch proponents, SMDC staff elements will develop or revise and update space and NMD FOCs and review TMD FOCs to reflect statements of operational capability required by the Army to achieve the goals stated in the approved space and missile defense warfighting concepts of operation. FDIC, Concepts and Doctrine Division will lead the integration of this effort. FOCs will be the control mechanism for requirements determination activities and will provide a cross-reference for all capabilities to ensure an approved warfighting concept is supported. FOCs also guide SMDC input to the USSPACECOM Space Planning and Requirements System (SPRS) and Army science and technology (S&T) initiatives as well as industry research and development initiatives and form the basis for experiments, analysis, and other requirements determination activities.

f. Experimentation and analysis. SMDBL warfighting experimentation and analysis is an integral part of the SMDC requirements determination process. These activities provide the means to better understand warfighting requirements and the contribution of technology initiatives. Experimentation and analysis not only provides the opportunity to refine warfighting concepts but also requirements across the DTLOMS domains.

g. Requirements leading to solutions. SMDC FDIC and SMDBL will ensure that insights gained through experimentation and analysis are transitioned to requirements. The FDIC will document these during the requirements determination process.

2-3. Space and Missile Defense Requirements Coordination and Integration.

a. The Commanding General (CG), SMDC identifies Army space requirements through participation in two processes. As the Commander, ARSPACE, he/she plays an integral role in the execution of the USSPACECOM SPRS; as the CG, SMDC, he/she is intimately involved in the TRADOC requirements determination process. In the SPRS process, ARSPACE assists in the development of the USSPACECOM Long Range Plan (LRP) and LRP Action Plan, operational concept six-year roadmaps and capability assessments that ultimately result in the establishment of USSPACECOM's Integrated Priority List (IPL). The other SMDC major staff elements (MSEs) provide input to ARSPACE. As the Army space proponent, CG, SMDC leverages work accomplished for the Commander-in-Chief (CINC) to further develop Army space concepts, FOCs, and DTLOMS requirements. Figure 2-2 illustrates how CG, SMDC integrates efforts conducted as part of the SPRS and TRADOC requirements determination process. The SPRS is discussed in more detail in Chapter 13.

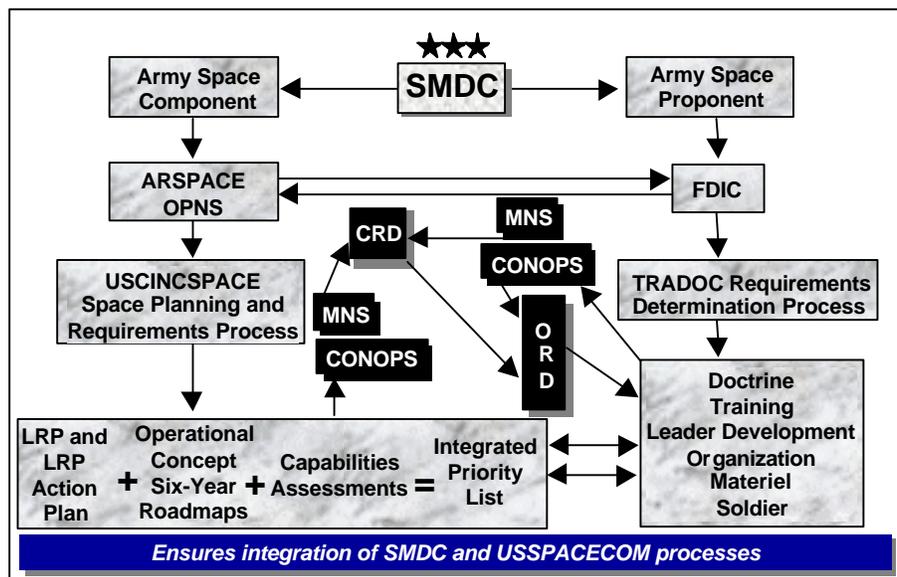


Figure 2-2. Army Space Requirements Process

b. As the specified proponent for space, SMDC is the horizontal integrator for TRADOC for all Army functional space requirements. Figure 2-3 illustrates coordination

required by Army branch proponents with SMDC to ensure identified requirements are properly integrated to enhance military space functions. Note that the specific functions listed in Figure 2-3 are illustrative, not all inclusive. In this role, SMDC will review all space-related requirements documents developed by TRADOC branch proponents and participate in branch proponent space-related integrated concept teams (ICTs). SMDC, FDIC will also coordinate internally generated space requirement documents with appropriate branch proponents. CG, SMDC forwards these requirements documents to CG, TRADOC for approval. CG, SMDC forwards these requirements documents to CG, TRADOC for approval.

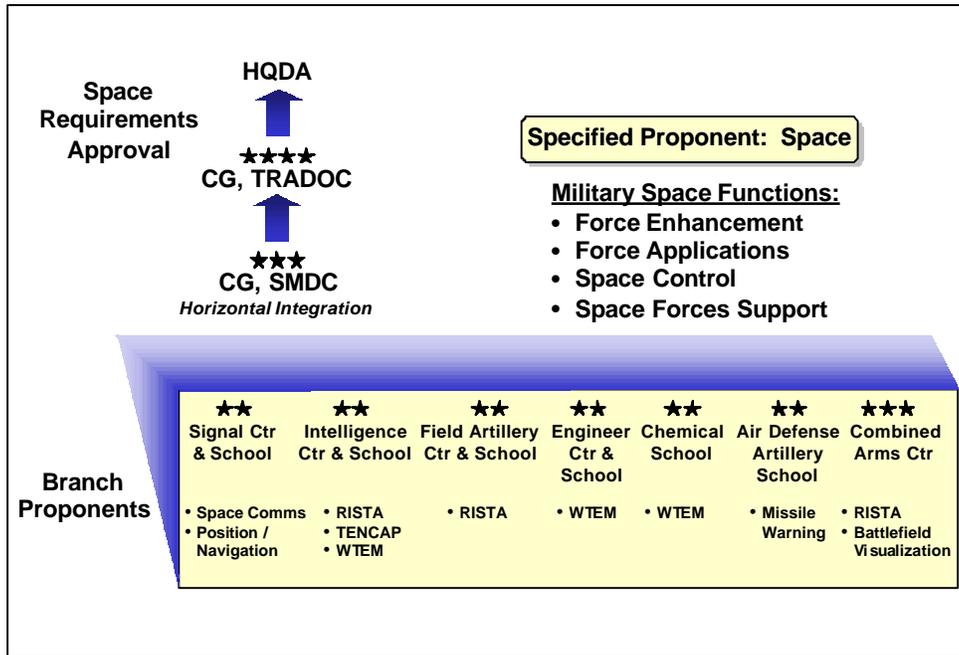


Figure 2-3. SMDC Is the Proponent and Integrator

c. SMDC is also the specified proponent for NMD and the Army’s overall integrator for TRADOC for TMD. Figure 2-4 illustrates the internal Army coordination points required to execute these responsibilities. Externally, these functions will be coordinated with the joint staff, the services, USSPACECOM (ARSPACE), and BMDO as well.

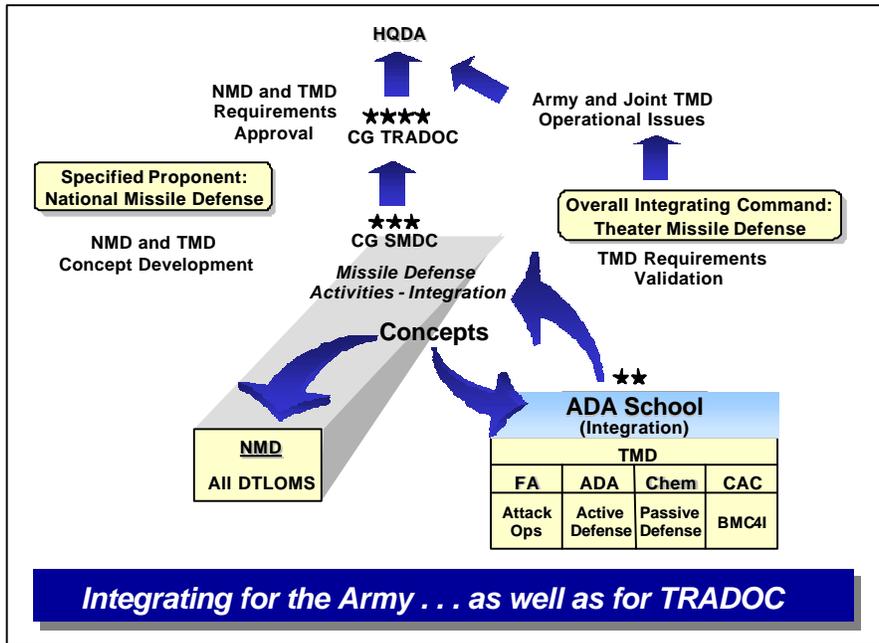


Figure 2-4. SMDC Is the NMD Proponent and TMD Integrator

Chapter 3

Organizational and Functional Roles

3-1. Introduction.

a. Reference:

- (1) AR 71-9
- (2) AR 70-1
- (3) TRADOC Pam 71-9
- (4) USSPACECOM Unified Policy Directive (UPD) 16-1
- (5) USSPACECOM SPRS, UI16-101
- (6) USASMDC Regulation 10-1

b. Purpose. Determining space and missile defense warfighting requirements requires a coordinated effort within SMDC and other members of the space and missile defense community. Effective coordination requires detailed knowledge of the responsibilities of all organizations, internal and external, that will be included in the development of space and missile defense requirements. Succeeding paragraphs in this chapter summarize the overarching organizational and functional roles within SMDC.

3-2. Force Development and Integration Center.

- a. Performs as combat, concept, doctrine, and training, developer for USASMDC.
- b. Develops space, NMD, and TMD overarching warfighting concepts of operation.
- c. Leads the development of space and NMD FOCs. Validates TMD FOCs to accurately reflect the TMD warfighting concepts of operation. (TMD FOCs are developed by the Army Air Defense Artillery School, Army Signal Center and School, Intelligence Center and School, Field Artillery Center and School, Engineer Center and School, Chemical School and the Combined Arms Center.)
- d. Participates in warfighting assessments, exercises, and space and missile defense experiments.
- e. Reviews warfighter assessments for significance and combat developments concurrence.
- f. Determines, documents, modifies, coordinates, and defends space and missile defense DTLOMS requirements by leading designated ICT.
- g. Integrates and leads prioritization efforts for space and missile defense requirements.
- h. Assists ARSPACE in executing its role in the SPRS process.

i. Participates in the Analysis of Alternatives (AoA) for Acquisition Category (ACAT) I, IA, II, and IIA space and missile defense programs.

j. Leads designated ICTs to conduct the requirements trade-off analysis for materiel requirement documents. Provides recommendations to SMDBL for conduct of the operational analysis, as required.

k. Conducts, with the materiel developer (MATDEV), a crosswalk of NMD and space Operational Requirements Documents (ORDs) and request for proposals (RFPs). Participates in TMD ORD and RFP crosswalks.

l. Participates in integrated product teams (IPTs) for space and missile defense programs.

m. Represents the user for all NMD and designated space DTLOMS requirements and ensures development of DTLOMS products for proponent materiel programs when a TRADOC System Manager (TSM) is not assigned.

n. Develops space and missile defense warfighting concepts of operation for battle lab experimentation.

o. Reviews Warfighter Rapid Acquisition Program (WRAP) and Concept Experimentation Program (CEP) resume sheets prior to submission.

p. Acts as SMDC point of contact (POC) for Experimental Force (EXFOR) Working Group (EWG).

q. Participates in SMDC S&T reviews, S&T Objective (STO) reviews, Advanced Concepts Technology Demonstration (ACTD) reviews, Advanced Concepts and Technology (ACT) II reviews, and the Army S&T Working Group (ASTWG).

3-3. Space and Missile Defense Battle Lab.

a. Provides DTLOMS insights, impacts, and recommendations.

b. Provides opportunities to streamline and improve requirements determination by teaming with members of the space and missile defense community and other proponents to identify compelling success from experimentation for WRAP application and by teaming with OPTEC to maximize use of experimentation data during acquisition evaluations. Responsible for SMDC WRAP process.

c. Plans, conducts, and reports the results of experimentation (i.e., Advanced Warfighting Experiment (AWE), CEP, ACT II, and others). Serves as the SMDC lead, with the S&T and acquisition communities, on experiments and demonstrations for ACT II.

d. Provides the command link with the Army S&T and acquisition communities and the assigned CINC on experiments and demonstrations for ACTDs and Advanced Technology Demonstrations (ATDs).

e. Participates in SMDC S&T reviews, STO reviews, ACTD reviews, ATD reviews, ACT II reviews, and the ASTWG.

f. Provides input to development of space and missile defense concepts and FOCs.

g. Participates in ICTs and IPTs.

h. Identifies and submits Battle Lab modeling and simulation (M&S) requirements in accordance with appropriate M&S domain procedures.

i. Participates in ICTs for space and missile defense warfighting concepts of operation development, warfighting DTLOMS requirements determination, and developing, documenting, and coordinating materiel and organizational requirements.

j. Develops CEP candidate resume sheets.

k. Teams with industry, other battle labs, and SMDC MSE to conduct warfighting experiments.

l. SMDC lead for the Army Experimentation Campaign Plan (AECPP). Develops the SMDC experimentation campaign plan.

m. Prepares and submits AWE results to the appropriate combat developer (CBTDEV).

n. Develops the annual Army Space Exploitation and Demonstration Program (ASEDP).

o. Provides experiment insights for warfighting concepts and requirements across DTLOMS for incorporation into space and missile defense concepts and requirements documents.

p. Participates in CINC exercises to gain insights relevant to space and missile defense.

q. Develops AR 5-5 study requirements for space and missile defense and provides analytical support within SMDC.

r. With other MSEs, submits AR 5-5 study requirements for space and missile defense to HQ TRADOC, Deputy Chief of Staff for Simulations and Analysis (DCSSA).

s. Identifies and submits CBTDEV M&S requirements for space and missile defense to TRADOC in coordination with other SMDC MSE.

3-4. Missile Defense and Space Technology Center.

a. Serves as the space and missile defense S&T focal point within SMDC and the Army staff.

b. Develops opportunities for international cooperation and partnerships as well as partnerships with academia, industry, and other government organizations.

c. Identifies space and missile defense technologies and applications developed by the Army, foreign governments, and other agencies and disseminates this information to all members of the space and missile defense community.

d. Develops the SMDC long-range space and missile defense research and development program to support the requirements determination process. This program focuses Army space and missile defense technologies on space and missile defense future warfighting concepts of operation.

e. Reviews space and missile defense technology initiatives in coordination with the SMDBL experimentation program to help focus the requirement determination efforts within SMDC.

f. Links technologies to space and missile defense warfighting concepts of operation and FOCs and provides results to the FDIC and the SMDBL. If appropriate, provides technology linkages to other proponents relevant to their concepts and FOCs via the MDSTC S&T Master Plan.

g. Performs space and missile defense S&T functions within SMDC.

h. Participates in ICTs for space and missile defense warfighting concepts of operation development, warfighting DTLOMS requirements determination, and developing, documenting, and coordinating materiel and organizational requirements.

i. Leads annual S&T, STO, ATD, and ACTD reviews to identify S&T significance and priorities within space and missile defense with participation of the SMDC MSEs.

3-5. U.S. Army Space Command.

a. Conducts space and missile defense operations that support USSPACECOM and other joint forces and commands. Provides operational insights and warfighter needs that the FDIC will use to update space and missile defense warfighting concepts of operation and to generate and validate new Army requirements when required.

- b. As the Army component to USSPACECOM, injects Army's requirements into the USSPACECOM SPRS process.
- c. Identifies space and missile defense warfighter needs.
- d. Performs operator tasks and provides operator input to NMD development and deployment planning.
- e. Maintains contact with USCINCSpace/SPACECOM and its components to determine needs for injection, through FDIC, into the Army's requirements determination process, when appropriate.
- f. Participates in ICTs, as appropriate.
- g. Ensures that USSPACECOM, when appropriate, is kept informed of Army DTLOMS requirements determination efforts and results of analysis.
- h. Supports evaluation of space, and MD S&T initiatives.
- i. Provides operator review and input to space and MD concepts and relevant FOCs.
- j. Provides USSPACECOM viewpoint, needs, requirements, and concerns to FDIC and Army organizations/forums as appropriate.
- k. Identifies and submits training, exercise, and military operations (TEMO) M&S requirements for space.

3-6. Space and Missile Defense Acquisition Center.

- a. Conducts space and missile defense materiel development functions and test and evaluation activities.
- b. Develops and maintains working relationships with external organizations including TECOM, OPTEC, and CECOM.
- c. Works in close cooperation with FDIC, SMDBL, MDSTC, ARSPACE, and ASPO to integrate black and white and foreign space capabilities.
- d. Participates in warfighting assessments, exercises, experiments, ICTs, and IPTs, AAN wargaming, and demonstrations, as appropriate..
- e. Exploits use of space and missile defense technology and identifies applications.
- f. Executes Exploitation of National Capabilities (TENCAP) Program as approved by HQDA General Officer Steering Group (TGOSG). The program encompasses material space

and selected theater/tactical airborne reconnaissance systems and capabilities in peace, crisis, and wartime.

3-7. SMDC, Deputy Chief of Staff, Intelligence.

a. Provides threat support for SMDC combat and materiel development and testing activities in accordance with AR 381-11.

b. Develops and produces:

- (1) Threat sections of Mission Needs Statement (MNS) and ORDs.
- (2) System threat and assessment report (STAR).
- (3) System threat assessment (STA).

c. Develops and submits intelligence production requirements (PRs) and other intelligence information needs.

d. Provides the interface between MACOMs, HQDA Deputy Chief of Staff for Intelligence (DCSINT)/senior intelligence officer (SIO), and FDIC within SMDC.

e. Ensures the threat assessment is based on Defense Intelligence Agency (DIA) or National Ground Intelligence Center (NGIC) approved threats.

f. Maintains intelligence and threat data base to support space and missile defense analysis and requirements documentation.

g. Participates in ICTs/IPTs.

3-8. Summary. Figure 3-1 summarizes organizational and functional roles previously described.

Organizations and Major Functional Areas							
	Concept Development	FOC	S&T Research	Warfighting Experiments	Insights to Rqmts	Warfighting Rqmts	SPRS
FDIC	<ul style="list-style-type: none"> Participate in Capstone Concept ICT Lead Space & Missile Defense Concept ICT Develop / Revise Overarching TMD, NMD, and Space Concepts 	<ul style="list-style-type: none"> Lead to Produce Space & NMD FOCs Lead to Validate TMD FOC Input 	<ul style="list-style-type: none"> Integrate S&T Products CBTDEV lead 	<ul style="list-style-type: none"> Participate in SMD Analytic Planning Lead AAN Space Game Development Participate in AEEP 	<ul style="list-style-type: none"> Lead ICT Integrate & Analyze Prioritize 	<ul style="list-style-type: none"> Lead to Integrate, Define, Document, & Defend DTLOMS Requirements Lead ICT(s) Participation in IPT 	<ul style="list-style-type: none"> Provide DTLOMS Assessment Input
SMDBL	<ul style="list-style-type: none"> Participate in ICT Assess Concepts Conduct Experiments 	<ul style="list-style-type: none"> Provide Analytic Support Conduct Experiments 	<ul style="list-style-type: none"> Evaluate S&T Products ACT II lead CEP 	<ul style="list-style-type: none"> Plan, Conduct, Report Lead for Experiments AEEP Support AWE, AAN, Exercises Conduct Studies & Analysis 	<ul style="list-style-type: none"> Provide Analytic Support Participate in ICT 	<ul style="list-style-type: none"> Provide Analytical Support Participate in ICT WRAP 	<ul style="list-style-type: none"> Provide Experimentation and Analysis Insights
MDSTC	<ul style="list-style-type: none"> Participate in ICT 	<ul style="list-style-type: none"> Provide S&T Input 	<ul style="list-style-type: none"> MATDEV Lead to Develop Linkage of S&T to Concepts and FOCs Prioritizes S&T Products 	<ul style="list-style-type: none"> Participate in AWE, AAN, Exercises 	<ul style="list-style-type: none"> Participate in ICT 	<ul style="list-style-type: none"> Participate in ICT 	
ARSPACE	<ul style="list-style-type: none"> Participate in ICT Advise USSPACE Advise SMDC of USSPACE Positions / Initiatives 	<ul style="list-style-type: none"> Provide User Input Advise USSPACE Advise SMDC of USSPACE Positions / Initiatives 	<ul style="list-style-type: none"> Support Evaluation of S&T Products Advise USSPACE Advise SMDC of USSPACE Positions / Initiatives 	<ul style="list-style-type: none"> Participate in AWE, AAN, Exercises Advise USSPACE Advise SMDC of USSPACE Positions / Initiatives Provide Exercise and TEMO Insights Participate in ICT 	<ul style="list-style-type: none"> Participate in ICT Advise USSPACE Advise SMDC of USSPACE Positions / Initiatives 	<ul style="list-style-type: none"> Coordinate with USSPACE Advise SMDC of USSPACE Positions / Initiatives 	<ul style="list-style-type: none"> Conduct Mission Area Analysis for USSPACE Advise SMDC of USSPACE Positions / Initiatives
SMDAC	<ul style="list-style-type: none"> Participate in ICT 	<ul style="list-style-type: none"> Provide Acquisition Input 	<ul style="list-style-type: none"> Support Evaluation of S&T Products Provide Technology Input & Determination 	<ul style="list-style-type: none"> Participate in Studies & Analyses Participate in AWE, AAN, Exercises, Experiments, & Demos 	<ul style="list-style-type: none"> Participate in ICT 	<ul style="list-style-type: none"> Lead or Provide IPT Support 	<ul style="list-style-type: none"> Analysis and Support as Needed
DCSINT	<ul style="list-style-type: none"> Participates in ICT/IPT Provide Threat Assessment 			<ul style="list-style-type: none"> Provide Threat Assessment 		<ul style="list-style-type: none"> Provide Threat Assessment 	

Figure 3-1. SMDC Organizational and Functional Roles Summary

Chapter 4 Integrated Concept Teams

4-1. Introduction.

a. Reference: TRADOC Pam 71-9 (Chapter 4 and Appendix B).

b. Purpose of integrated concept teams (ICTs). ICTs are the primary means for horizontal integration in the DTLOMS requirements determination process. ICTs are multi-disciplinary, representing appropriate MACOMs and staffs, appropriate Department of Defense (DOD) organizations, other federal agencies, academia, and industry. These ICTs are formed to develop warfighting concepts and associated FOCs, determine warfighting requirements or solutions across all DTLOMS domains, and prepare or direct the preparation of DTLOMS requirements documentation necessary to attain future capabilities. A primary goal of the ICT process is to shorten the requirements determination event of the acquisition process.

4-2. ICT Responsibilities Within SMDC.

a. FDIC is the SMDC focal point for all ICTs and will provide the lead(s) for all ICTs for which SMDC is the designated lead organization. FDIC will ensure that all space and missile defense ICT products are consistent with insights gained during the requirements determination process. Additionally, FDIC will ensure command participation in appropriate ICTs established by HQ TRADOC or TRADOC schools and centers. FDIC will coordinate establishment of space and missile defense ICTs with the appropriate HQ TRADOC functional directorate.

b. MDSTC will provide S&T participation in space and missile defense ICTs. MDSTC will ensure that ICTs established to develop and document operational or functional concepts consider insights gained from STOs, ATDs, ACTDs, and technological initiatives. The approved ICT product will guide MDSTC's development and refinement of space and missile defense community S&T initiatives for inclusion in the Army S&T Master Plan (ASTMP).

c. SMDBL will provide input to space and missile defense ICTs based on insights gained during experiments, exercises, and analysis conducted at SMDBL, other Army battle labs, and other service battle labs. Once finalized, ICT products may form the basis for additional experimentation and analysis to further refine the product. SMDBL will ensure that the space and missile defense ICT products are incorporated into experiments conducted by other battle labs, where appropriate.

d. ARSPACE input to space and missile defense ICTs will reflect U.S. Commander in Chief for Space (USCINCSpace) priorities and initiatives and other warfighter insights. This input can be derived from the CINC's IPL and USSPACECOM's Long-Range Plan (LRP), other operational considerations gained from support to a CINC, or an Army warfighter in the field.

e. SMDAC will provide ICT input based upon expertise gained from its materiel development functions and test and evaluation activities.

4-3. SMDC ICT Process.

a. General. The SMDC ICT process will follow ICT guidelines established by TRADOC. An ICT may be established at any time; it does not respond to an annual cycle for review of products. The TRADOC Combat Developments (CD) Home Page contains a listing of all current ICTs and ICT results during the last 12 months. The SMDC Home Page will contain a listing and description of those TRADOC-sanctioned ICTs in which the command is participating (Tier 1). Additionally, the SMDC Home Page will provide details on the ongoing internal SMDC ICTs (Tier 2).

b. Establishment of an ICT.

(1) Initiation. ICTs may be directed by the CG, SMDC, or be initiated as a result of ICT proposals surfaced to the FDIC from within the space and missile defense community. The Director, FDIC will normally appoint the appropriate functional division chief within FDIC to act as executive agent for the ICT initiative and to lead the ICT upon approval of its charter. The executive agent will staff the ICT proposal, determine whether a *tier one* or *tier two* ICT is required, and prepare the appropriate notification to CG, SMDC and/or TRADOC.

(2) Tier one. Tier one ICTs are approved and chartered by HQ TRADOC. FDIC will submit the tier one ICT proposal to the functional TRADOC proponent for approval via e-mail. The TRADOC proponent will normally provide a response within 15 working days with appropriate direction, usually to develop and submit a proposed charter for DCG, TRADOC approval. However, if other factors are involved (redundancy, change of scope, joint service implications, major command resources, 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.

(3) Tier two, within SMDC. Tier two ICTs will be established and conducted under the guidance of the CG, SMDC. Tier two ICTs will be used to develop or refine a functional concept unique to SMDC or to determine and document functionally unique requirements. FDIC will notify the appropriate HQ TRADOC functional directorate of the establishment of the tier two ICT via e-mail. TRADOC Pam 71-9 outlines details required in the e-mail.

(4) The SMDC ICT proposal will not exceed five pages in length and will contain the following information:

- Originating organization
- Title of ICT
- Date of request
- Purpose

- Scope
- Key objectives
- Related warfighting concepts and FOCs
- Products
- Participants (TRADOC Pam 71-9, Appendix B, Figures B-3, B-4, and B-5)
- Schedule
- Joint implications
- Resources/support summary
- Authorities
- Criteria for completion/termination
- POC (name, address, phone, fax, e-mail address)

(5) Once the ICT proposal is approved, the FDIC executive agent will draft the ICT charter and coordinate with other members of the ICT. CG, SMDC will approve the charter for tier two ICTs. DCG, TRADOC will approve the charter for tier one ICTs.

(6) After the charter is approved, the FDIC executive agent will establish an ICT “core” team and draft the ICT action plan. The action plan will contain a milestone schedule, issues and opportunities, and emerging taskings and support responsibilities. The FDIC executive agent will forward the action plan to ICT members and convene the ICT to finalize the plan.

(7) The FDIC executive agent will brief the ICT results and products to the senior leadership of all members of the ICT once the ICT has attained its objectives. Lastly, the FDIC executive agent will forward results to the TRADOC functional lead, transition any follow-on efforts to the responsible organization for execution, and then dissolve the ICT or transition to an IPT.

Chapter 5

Developing and Managing Warfighting Concepts

5-1. Introduction.

a. Reference: TRADOC Pam 71-9 (Chapter 5 and Appendix C), TRADOC Pam 525-5, and SMDC Vision 2010.

b. Warfighting concepts of operation terms of reference. Concept development begins with a statement of the commander's vision. The TRADOC Future Warfighting Vision is normally a 15- to 20-year projection of the holistic view of Army capabilities that leads toward a desired end state. The SMDC vision supplements this vision by articulating space and missile defense capabilities during the same timeframe. Warfighting concepts of operation translate the vision into a more detailed description of the end state of the future period, normally 3 to 15 years. These concepts provide a proposed structure of future military operations and are the basis for analyses leading to the determination of DTLOMS requirements. Warfighting concepts of operation help focus modernization efforts and guide technological development. Because concepts are dynamic, they change as perceptions and circumstances vary. Concepts are evaluated using analyses, simulations, experiments, exercises, tests, actual operations, and senior military judgment. The capstone warfighting concept is published in TRADOC Pam 525-5. Concepts of operation are not developed to justify a system or piece of equipment. Specific and detailed concepts of operation, organization, support, and training are developed as part of the normal requirements documentation process and are submitted during normal DTLOMS procedures.

c. Space and missile defense warfighting concepts of operation development. As the proponent for space and NMD and the Army integrating command for TMD, SMDC will lead the development and coordination of space and missile defense concepts of operation. These concepts of operation will guide the development of space and missile defense FOCs, requirements across all DTLOMS, and modernization efforts. Concept development, review, and refinement will be a continuous process within SMDC. Space and missile defense concepts of operation will be widely coordinated within the command, the Army, and the joint space and missile defense community.

5-2. Concept Development Responsibilities Within SMDC.

a. FDIC will ensure that all space and missile defense warfighting concepts of operation are formally reviewed at least every two years for relevance. If a major revision or a new concept is required, FDIC, Concepts and Doctrine Division, will establish and lead an ICT to produce the new concept or revision. The Concepts and Doctrine Division will staff the draft concept/revisions developed by the ICT, integrate/resolve comments, and forward the final concept to TRADOC for approval and publication.

b. MDSTC will provide ICT membership to ensure that S&T initiatives are considered during preparation of the space and missile defense concepts.

c. SMDBL will provide ICT membership to ensure that results of experimentation and analysis efforts conducted at SMDBL and other Army and service battle labs are considered during development. As appropriate, SMDBL will conduct experimentation and analysis to assist in the refinement of the concepts of operation before being finalized and forwarded to TRADOC for approval.

d. ARSPACE will provide ICT membership to ensure that operational inputs and USSPACECOM perspectives are considered during the preparation of the space and missile defense concepts. Additionally, ARSPACE will assist FDIC in obtaining USSPACECOM and CINC concurrence with the proposed concepts of operation, as appropriate.

e. SMDAC will provide ICT membership to ensure that current and future hardware and software capabilities are considered during the concept development process. ASPO will provide ICT membership to ensure national and airborne reconnaissance concepts initiatives are evaluated for consideration of warfighting concepts.

5-3. SMDC Concept Development Process.

a. General. The TRADOC requirements determination process is concept based. All warfighting requirements must lead to the achievement of an FOC, all of which will be cross referenced to a specific future concept as shown in Figure 5-1. The process requires that all warfighting requirements have a lineage through warfighting concepts of operation back to the Army's capstone warfighting concept. Together, these concepts form the basis for DTLOMS requirements and focus the Army's modernization efforts. All warfighting requirements must have a lineage back to the capstone warfighting concept through one or more FOCs and its associated warfighting concepts of operation.

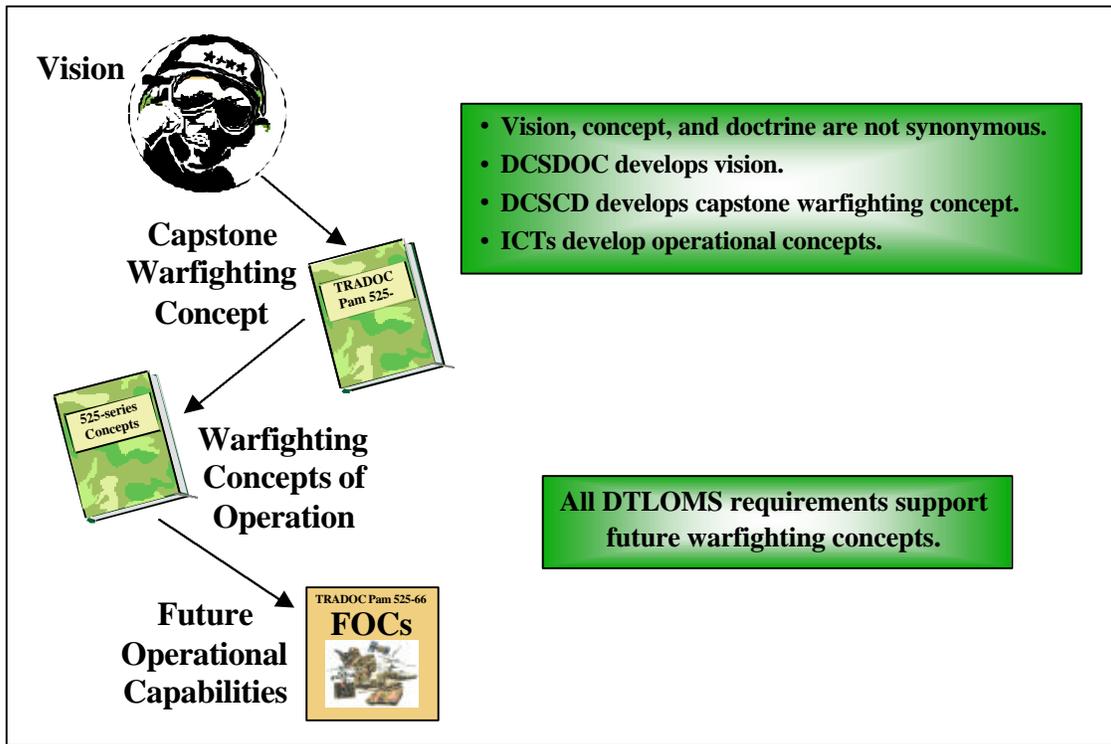


Figure 5-1. Concept Development Process

b. Preparation for concept development. FDIC will coordinate a formal review of all space and missile defense concepts every two years, or sooner if significant changes to the capstone warfighting concept occur, to ensure relevancy. Normally, this function will be performed by the Chief, Concepts and Doctrine Division. The Chief, Concepts and Doctrine Division will recommend development and review or updating of space and missile defense concepts of operation based on the TRADOC Future Warfighting Vision, the capstone warfighting concept, the SMDC vision, analyses and experimentation results, or S&T innovations.

5-4. Concept Development.

a. If a space or missile defense concept or concept revision is required, FDIC will initiate the concept development process by developing a concept statement for approval by HQ TRADOC, Deputy Chief of Staff for Combat Developments (DCSCD). The concept statement will provide the general thrust of the proposed concept. Concept statements are very brief, have no specific format, and will not exceed two pages in length. Approval of the concept statement is the charter to establish a tier two ICT. If a tier one ICT is required, the FDIC will be required to submit only the ICT proposal to the appropriate HQ TRADOC functional directorate in lieu of a concept statement.

b. The space and missile defense concept development ICT, normally led by the Chief, Concepts and Doctrine Division, FDIC, will prepare the coordinating draft of the warfighting

concept. This document will be the first attempt to capture the details of what is to be accomplished in the concept. The ICT will prepare the space and missile defense concept in the format prescribed in TRADOC Pam 71-9, Appendix C.

c. Doctrine developers, training and leader developers, materiel developers, and representatives for soldier issues should be members of the ICT.

d. Once the coordinating draft concept is completed by the ICT, FDIC will forward the document to TRADOC for review and approval for release to worldwide staffing.

e. FDIC will staff the coordinating draft concept worldwide. As a result of the staffing, FDIC/ICT will review/revise the draft based on comments selected for inclusion and prepare the final draft.

f. Once the final draft concept is completed by the ICT, FDIC will prepare a decision paper to obtain CG, SMDC approval, and then send the final draft to HQ TRADOC with a recommendation for approval.

g. After the concept is staffed with each of the TRADOC Deputy Chiefs of Staff (DCSs) and approved by the CG, TRADOC, the Concepts and Scenarios Division, TRADOC DCSCD, will ensure the concept is edited, printed, and distributed.

Chapter 6

Future Operational Capabilities

6-1. Introduction.

a. Reference: TRADOC Pam 71-9 (paragraph 2-5, Chapter 6, and Appendix D), TRADOC Pam 525-66.

b. Overview of future operational capabilities. FOCs are statements of operational capabilities required by the Army to achieve ideas outlined in the warfighting concepts of operation. FOCs are used to accomplish changes in all DTLOMS areas. Potential solutions to an FOC must span the DTLOMS. All warfighting requirements must link back to the capstone warfighting concept through an FOC(s) and its associated warfighting concept. FOCs are used for assessing the relevance of individual S&T efforts at S&T and STO reviews. FOCs guide the S&T investment and independent research and development and facilitate horizontal technology insertion (HTI). FOCs are used in the ASTMP process to provide a warfighting focus to technology base funding. TRADOC Pam 525-66 compiles and integrates FOCs. The pamphlet provides the basis for conducting studies, warfighting experiments, and analyses.

c. Space and missile defense FOC development. FOC development is continuous, however, FOC reviews, integration, and documentation occur annually. FDIC, Concepts and Doctrine Division, will continuously accumulate FOC inputs from insights at S&T reviews, commanders in the field, experimentation, analyses, and concept revisions. As proponent for space and NMD, SMDC is the Army lead for coordinating FOCs identified as “space” or “NMD”. In the case of TMD, many FOC-related tasks will be coordinated by USAADASCH and synchronized by SMDC. The format for stating FOCs is provided in TRADOC Pam 71-9, Appendix D.

6-2. FOC Responsibilities Within SMDC.

a. FDIC is responsible for development and execution of the FOC process within SMDC. FDIC will prepare FOCs for inclusion in warfighting concepts of operation under development and for submission and inclusion in TRADOC Pam 525-66. FDIC will ensure that all space and missile defense warfighting requirements have linkage to a warfighting concept of operation through at least one FOC. SMDC FOC responsibilities go beyond FOCs identified as “space” or “missile defense” FOCs. FDIC will review all FOC input from the perspective of space and NMD proponent and TMD integrator. USAADASCH is the TRADOC integrator for TMD FOC development. FDIC, however, has integrating responsibilities with respect to TMD since the TMD FOCs are an integral part of the TMD warfighting concept prepared by FDIC. For this reason, FDIC will work in close cooperation with USAADASCH as it leads the Army TMD FOC development effort. Chief, Concepts and Doctrine Division will manage the SMDC FOC process in coordination with other SMDC MSEs. These functions include coordination with TRADOC, Battle Lab Integration, Technology, and Concepts Directorate (BLITCD); development of annual review and assessment instructions for the space and missile defense community; conducting SMDC FOC workshops; obtaining CG, SMDC approval; and

defending submissions to TRADOC. Typically, the following organizations will be invited to contribute to space and NMD FOC development: DAMO-FDE, USAADASCH, Assistant Secretary of the Army for Research, Development, and Acquisition (ASA(RDA)), DAMO-FDI, DAMO-FDJ, DAMO-FDC, U.S. Army Signal Center, CECOM, U.S. Army Intelligence Center, U.S. Army Chemical School, U.S. Army Engineer School, U.S. Army Field Artillery School, and others. As a routine effort, Concepts and Doctrine Division will review all SMDC space and missile defense requirements initiatives to ensure FOC linkage.

b. MDSTC will develop FOC input based upon insights obtained from S&T reviews. MDSTC will review TRADOC draft FOCs and provide comments. MDSTC will ensure that FOCs are used within the ASTMP process to provide a warfighting focus to technology base funding. Once published, FOCs will be used by MDSTC to assess the relevance of individual space and missile defense S&T efforts. In addition, MDSTC will focus its ATD efforts on high priority FOCs that demonstrate a capability that does not currently exist. MDSTC will also use the FOC to assess the relevance of ACT II broad agency announcements (BAAs).

c. SMDBL will develop FOC input based upon insights gained from experimentation and analysis conducted at the battle lab and insights gained from participation in activities at other battle lab-sponsored events. Sources of input include activities such as AWEs, AAN wargames, ACT II, etc. Once approved, the FOCs will form the basis for SMDBL experiments that define and refine space and missile defense requirements.

d. ARSPACE FOC input will reflect USCINCSpace priorities and initiatives and insights from field commanders. Input may be drawn from USSPACECOM operational and planning efforts to include CINCSpace's IPL, USSPACECOM's LRP, and other operational or planning activities. Additionally, ARSPACE will provide operational warfighter considerations based on ARSPACE unit interface with warfighters in the field.

e. SMDAC will develop FOC input drawn from insights gained from its materiel development and acquisition functions and test and evaluation activities. Sources also include working relationships with academia, industry, the S&T community, TECOM, Research, Development, and Engineering Center (RDEC), and others. In coordination with the U.S. Army Intelligence Center, ASPO will assist in the development of FOCs that support TRADOC warfighting concepts of operation. These capabilities, in addition to information from other sources, will serve as the focal point for future studies, as well as participation in exercises and demonstrations.

6-3. SMDC FOC Process

a. SMDC FOC review. The SMDC FOC review occurs within the annual TRADOC FOC review cycle. The process begins with the issuance of the TRADOC FOC Memorandum of Instruction (MOI) and continues through the approval of TRADOC Pam 525-66.

b. Preparation for FOC review. Approximately 60-90 days prior to the anticipated receipt of the TRADOC MOI, FDIC will prepare for the annual update of TRADOC Pam

525-66 and develop guidance. FDIC will issue a warning order to ARSPACE, MDSTC, SMDBL, ASPO, HELSTF, and divisions in FDIC that will enable early preparation of the space and missile defense input to TRADOC. FDIC will request each action agency assess required changes to existing FOCs in the space section of TRADOC Pam 525-66 as well as other FOCs that have relevance to space and NMD and/or propose new FOCs.

c. FOC annual review cycle.

(1) HQ TRADOC, DCSCD, BLITCD initiates the annual update cycle by publishing and disseminating an MOI with specific guidance and a milestone schedule. The memorandum provides instructions for format and schedules.

(2) Upon receipt of the TRADOC FOC MOI, FDIC will refine its draft guidance and establish SMDC milestones and requirements necessary to integrate space and missile defense input into TRADOC FOC process. The SMDC-implementing MOI will set the date and location of the space and missile defense FOC workshop to be attended by appropriate SMDC action agencies and members of the Army space and NMD communities. Workshop participants will be asked to submit input to FDIC approximately three weeks prior to the workshop.

(3) FDIC, Chief, Concepts and Doctrine Division will chair the SMDC FOC workshop. The workshop will be held not later than two to three weeks prior to the TRADOC integration workshop to allow time for resolution of issues. The purpose of the workshop is to review input submitted by SMDC agencies and other space and missile defense representatives to determine a recommended position for CG, SMDC consideration and approval. If there are no major issues, the workshop may be conducted via video teleconferencing (VTC). FDIC will brief the CG and present the coordinated new and updated space and NMD FOC input to HQ TRADOC, DCSCD. DCSCD will disseminate draft FOCs to other concept and materiel developers to solicit comments. CBTDEVs will review other proponent FOCs for context, as well as potential overlap, redundancy, omissions, and impacts on others.

(4) HQ TRADOC, DCSCD conducts a FOC integration workshop to consolidate similar FOCs, as appropriate, and identify branch/functional area unique FOCs for inclusion in TRADOC Pam 525-66. Chief, Concepts and Doctrine Division will present the SMDC FOC input at this workshop.

(5) HQ TRADOC, DCSCD, incorporates any new and/or changed FOCs and tasks TRADOC schools and specified proponents to review draft TRADOC Pam 525-66 for concurrence/comment.

(6) Once TRADOC, BLITCD distributes the draft TRADOC Pam 525-66 for staffing, FDIC will circulate the draft document to SMDC action agencies for review. In addition, space and NMD FOC review will be conducted in cooperation with appropriate organizations in the Army space and NMD communities. This review ensures that SMDC input is integrated into the pamphlet, unless agreed to otherwise during the integration workshop, and

that input previously submitted remains relevant. FDIC is responsible for obtaining CG, SMDC approval once the staffing is completed. In those cases where consensus within the space and NMD community is not achieved, FDIC will develop a position for CG, SMDC consideration. The FDIC will send the space and NMD proponent position to TRADOC, BLITCD. BLITCD consolidates inputs from the combat developers.

(7) Approved TRADOC Pam 525-66 is published, distributed, and submitted as input to the ASTMP.

Chapter 7 Science and Technology

7-1. Introduction.

a. Reference: TRADOC Pam 71-9 (Chapter 7) and ASTMP (Chapter 2).

b. S&T process overview. SMDC will develop space and missile defense S&T input to support three annual TRADOC reviews: the S&T Review, the Joint User/Developer STO Review, and the ATD Review. Although these reviews are conducted separately, each process overlaps and feeds the next process in the cycle.

(1) SMDC will participate in the S&T Review as a CBTDEV, battle lab, and MATDEV to review and assess the Exploratory Development (6.2) and Advanced Development (6.3) S&T programs, and to determine the warfighting value of the individual work packages relative to the FOCs. As such, the command will have three votes at the STO/ATD Reviews. The SMDC review will include assessment of 6.2 and 6.3 programs with relevance to space and missile defense.

(2) During the TRADOC Joint User/Developer STO Review, SMDC, MDSTC will nominate STO candidates for space and missile defense. FDIC, SMDBL, and MDSTC will review and assess the proposed STO programs to determine the relevance to space and missile defense FOCs, technological merit, and to establish the relative priority of the individual STO proposals prior to the TRADOC review to develop a command consensus.

(3) ATDs demonstrate the potential of mature technology from STOs and/or other work packages to provide enhanced military operational capability and/or greater cost effectiveness. SMDC will participate as a member of the TRADOC/MATDEV Council of Colonels to review the ATD candidates and generate an order of merit list for submission to the ASTWG.

c. Space and missile defense S&T development. S&T development in SMDC will focus on identifying S&T initiatives that are relevant to space and missile defense FOCs and warfighting concepts of operation.

7-2. S&T Responsibilities Within SMDC.

a. MDSTC is the MATDEV lead within SMDC to develop potential space and missile defense technologies work packages to be reviewed during the TRADOC S&T reviews. As part of the work package development, MDSTC will interact with the FDIC, SMDBL and USAADASCH and other TRADOC proponents, to review the latest updates to TRADOC Pam 525-66 and to determine the applicability of SMDC S&T work packages to space and missile defense-related FOCs. FDIC and SMDBL will support MDSTC to ensure this applicability is easily discernible by other CBTDEV agencies as they review and vote on the work packages. For the STO review, MDSTC will determine S&T endeavors to be nominated as candidate

STOs and provide fact sheets to HQ TRADOC. MDSTC will participate in the Joint User/Developer STO Review as a MATDEV. MDSTC will conduct a peer review of their STO candidates as an input for voting consideration. MDSTC will rate each STO based on its technical merit. MDSTC will participate in the Army STO/ATD review as a MATDEV to create an order of merit list for ATDs that are submitted to the ASTWG. MDSTC is responsible within SMDC for Annex D of the ASTMP.

b. SMDAC will provide input to the MDSTC regarding potential S&T initiatives on space and missile defense. ASPO will develop and implement, as appropriate, S&T initiatives in support of FOCs in accordance with the Army TENCAP technology and acquisition streamlined process. ASPO will also lead the MERIT Program for the Army.

c. FDIC will provide the focus for the SMDC S&T investment strategy through development of space and missile defense concepts and FOCs. As the CBTDEV, FDIC (Combat Developments and Concepts and Doctrine Divisions) will assess space and missile defense S&T work packages during the annual S&T Review to ensure relevance with approved or emerging concepts and FOCs. FDIC will also ensure that space and missile defense S&T priorities are consistent with the overall priorities developed in coordination with the Army space and missile defense community. FDIC will attend the Army STO/ATD review as a CBTDEV. During the conference, FDIC will rate each STO based on its relevance to FOCs. FDIC will review MDSTC input to the ASTMP and provide comments as required.

d. SMDBL will ensure that promising S&T initiatives, including examination and assessment of other battle lab initiatives, are integrated into the SMDC experimentation and analysis program or examined and assessed as a result of other battle lab initiatives. Whenever possible, examination of these technologies will be conducted in joint experiments or exercises. SMDBL will assist in the development and review of measurable metrics for proposed space and missile defense-related STOs. The Battle Lab also reviews S&T work packages and votes on these at TRADOC/Army Materiel Command (AMC) user/developer reviews.

e. ARSPACE will provide space and missile defense input from an operational user's perspective, as appropriate, to SMDC internal S&T reviews.

7-3. SMDC S&T Process.

a. The S&T process. The SMDC S&T process is a subset of the annual TRADOC process. The TRADOC process consists of a series of three reviews to provide a warfighting focus to the Army S&T investment: the S&T Review, the STO Review, and the ATD Review.

b. Preparation for space and missile defense S&T program development. Preparation for development of space and missile defense S&T initiatives will follow a pattern similar to other internal SMDC processes. The SMDC S&T process will begin within 30-60 days after the distribution of the ASTMP. FDIC, MDSTC, SMDBL, and SMDAC will jointly begin preparation for the next annual TRADOC S&T cycle by collecting and linking space and missile

defense-related S&T work packages to space and missile defense FOCs and concepts outlined in the most recent version of TRADOC Pam 525-66.

c. S&T annual review cycle.

(1) HQ TRADOC, DCSCD, BLITCD initiates the annual cycle with an MOI with specific dates of events and additional administrative instructions. Based on the TRADOC MOI, SMDBL, MDSTC, and FDIC will establish SMDC milestones and requirements necessary to integrate space and missile defense S&T input into the TRADOC process. The SMDC implementing MOI will set the date and location for S&T reviews attended by the SMDC elements and appropriate members of the space and missile defense community.

(2) The MATDEVs review the latest update to TRADOC Pam 525-66, FOCs, and update their S&T work packages in the Army S&T Management Information System (ASTMIS).

(3) HQ TRADOC, DCSCD will download the summaries of the MATDEV S&T work packages from the ASTMIS data base to create the S&T Review data base. The S&T Review data base includes fields to enter the FOCs to which a particular work package is applicable and to enter the rating score. FDIC and SMDBL will receive the S&T Review data base electronically from TRADOC, DCSCD.

(4) FDIC (Combat Developments Division) will lead the review of the S&T Review data base in coordination with other SMDC MSE. The initial review will consist of the following actions:

(a) Review work packages for applicability to space and missile defense FOCs.

(b) Identify all FOCs to which each work package applies.

(5) Once the initial S&T review is completed, FDIC, SMDBL, and MDSTC will hold a final review to achieve space and missile defense community consensus on the S&T assessment.

(6) HQ TRADOC, DCSCD consolidates the CBTDEV assessment reports and publishes the consolidated S&T Review report. FDIC will circulate this consolidated S&T Review report to the appropriate members of the space and missile defense community.

d. Army STO/ATD Review.

(1) The MDSTC will begin preparation for the STO review cycle after the distribution of the S&T Review. MDSTC will conduct internal reviews prior to review and identify the number of STOs requiring replacement or revalidation. For each completed STO, a

minimum of two STO candidates are required to assure sufficient voice and vote by users. MDSTC will inform users of the results of their review.

(2) MDSTC determines the S&T endeavors to be nominated as candidate STOs. FDIC, SMDBL, MDSTC, and other elements of SMDC will interact to ensure user input to the STO development process. MDSTC will identify STO candidates, get CG, SMDC approval, and provide STO candidate fact sheets to HQ TRADOC, DCSCD.

(3) FDIC as CBTDEV and SMDBL will review and comment on STO fact sheets. FDIC, SMDBL, and MDSTC will cochair an internal SMDC STO fact sheet review to build consensus and identify any issues requiring resolution. FDIC will provide the results of this review to CG and DCG, SMDC along with recommended solutions for any issues. FDIC will also be responsible for forwarding the SMDC CBTDEV fact sheet review to TRADOC, DCSCD. However, FDIC will not be the only CBTDEV element reviewing STO candidates; therefore, MDSTC may have to respond to other CBTDEV issues on their STO candidates. HQ TRADOC, DCSCD is responsible to coordinate with the MATDEV headquarters to resolve any reclaims.

(4) Joint User/Developer STO Review.

(a) HQ TRADOC, DCSCD hosts the Joint User/Developer STO Review. FDIC as the CBTDEV, MDSTC as the MATDEV, and SMDBL will represent SMDC at this conference.

1. MDSTC will submit a minimum of two candidates for each available STO slot to be filled.

2. MDSTC may conduct a peer assessment of STO candidates to be voted on during the TRADOC STO Review. STO candidates will be assessed based on their technological importance, relative uniqueness, contribution to advancing the state of the art, achieving a technological breakthrough, risk, and potential return on investment. These peer assessments will be forwarded to the TRADOC STO Review for voting consideration. FDIC, SMDBL, and MDSTC will use the same criteria during the preassessment of STO candidates.

(b) DCG, SMDC is a member of the ASTWG.

e. ATD Review.

(1) ATDs are groupings of STOs and/or work packages that seek to demonstrate the potential for enhanced military operational capability and/or cost effectiveness. ATDs are a category of technological demonstrations characterized by the following:

(a) Large scale in both resources and complexity;

(b) Operator/user involvement from planning to final documentation;

(c) Testing in a real and/or synthetic environment;

(d) Finite schedule, usually five years or less;

(e) Cost, schedule, and objective performance baselines in an Army Technology Demonstration Plan approved by the Deputy Assistant Secretary of the Army for Research and Technology (DAS(R&T)).

(2) TRADOC and the MATDEV (MDSTC) jointly develop a demonstration plan with agreed upon exit criteria to execute the ATD.

(3) MDSTC will represent SMDC materiel developers at the Joint Council of Colonels ATD Review at HQ TRADOC. This review is normally held in May after the STO Review. The result of the ATD Review is an order of merit list that is submitted to the ASTWG. The SMDC CBTDEV (either FDIC or Battle Lab) will also attend this review.

f. ASTWG is a two-star body that oversees the Army S&T program and planning. DCG, SMDC represents the command on this working group. ASTWG provides input to the Army S&T Advisory Group (ASTAG), a four-star body. ASTWG meets to review the STOs and ATDs and the initial draft of the ASTMP. The group again meets to review the ASTMP briefing for ASTAG.

7-4. USASMDC Technology Planning.

a. The USASMDC Technology Planning Strategy for space and missile defense is necessary to ensure critical enabling technologies are available at the right time to enhance combat effectiveness, reduce casualties and protect the forces. The Space and Missile Defense Command technology initiatives developed by the MDSTC support the Joint Warfighting Capability Objectives (JWCO) defined in the Joint Warfighting Science and Technology Plan (JWSTP) which are the foundation of success for JV2010. Army Vision 2010 also depends on future space and missile defense capabilities. They enable a full spectrum of operations by contributing to force projection and force sustainment. Future Space and Missile Defense capabilities will also enable information dominance and shaping of the battlespace through advanced technology applications, and will be made available quickly through a rapid prototyping process. Army Space and Defense Missile contributions to Army Vision 2010 include; sensor fusion, national missile defense, situational understanding, total asset visibility, assured space access, precision navigation, precision targeting, global missile warning, near-real time weather, global communications, sensor-to-shooter links and multi-element Joint Theater Missile Defense.

b. Figure 7-1. shows the interactions between the Space and Missile Defense Technology Plan and other Master Plans. The Space And Missile Defense Technology Plan describes the process USASMDC uses to identify, plan for, develop and transition space and missile defense technology for use by the Warfighter now and into the next millennium. The

information developed and published in the SMDTP also supports other plans and programs developed by the Army and Department of Defense; it both illustrates Army needs and provides input on technology development programs for space and missile defense solutions to deficiencies.

c. The USASMDC Space and Missile Defense Technology Plan (SMDTP) addresses both far-term and near-term space and missile defense technology needs and requirements. These are developed by integrated teams of representatives from the USASMDC including the Missile Defense and Space Technology Center, Force Development Integration Center, ARSPACE, the Acquisition Center and the Space and Missile Defense Battle Laboratory. The teams also include representatives from the PEO AMD, U.S. Army Aviation and Missile Command (AMCOM), and the USAADASCH DCD. The USAADASCH, DCD provides input specifically in reference to the Future Operation Capabilities (FOC) development process for Air and Missile Defense. The SMDTP includes a brief description of the missile and space based threats to the U.S. and its allies. The SMDTP is a strategy to provide the Army and DoD with a solid technology foundation for future capabilities.

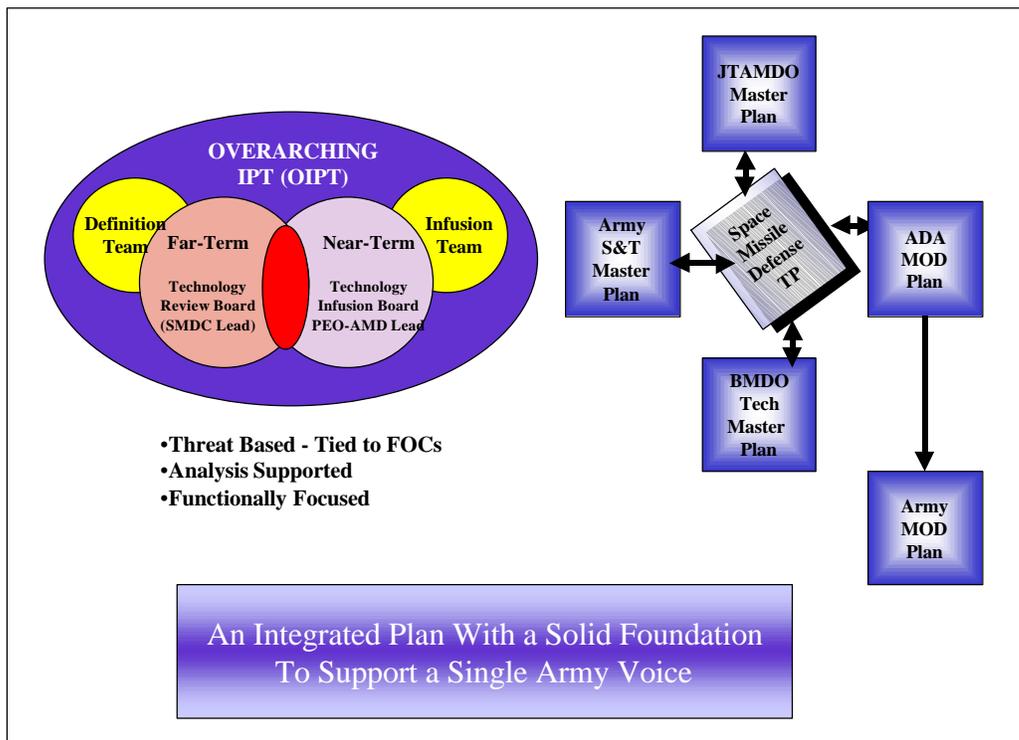


Figure 7-1. SMDTP Philosophy

d. The SMDTP addresses both near-term and far-term technology programs. Near-term technologies support ongoing programs that typically provide a risk mitigation alternative to the Program Managers and cover zero to five years. In this document, mid-term technologies that address Pre-Planned Product Improvement (P3I) and next-generation efforts to counter known threats are also included under the near-term technologies. Far-term technologies are

initiatives, which typically address Future Operational Capabilities and projected/evolving threats and focus on the efforts with payoffs five years and beyond.

e. The SMDTP describes the Army space and missile defense technology strategy and is the basis for Army Space and Missile Defense inputs to the overall Department of Defense (DoD), BMDO and Army Science and Technology Planning Strategies, Figure 7-2.

f. The linkage between Future Operational Capabilities (FOCs) and the technology being developed is a key element in the technology development process. Throughout this document, every opportunity will be made to link technology to the fundamental needs of the warfighter as expressed in the FOCs. Concept development, science and technology initiatives, warfighting experimentation, threat assessment, and the existence of urgent and immediate operational needs all impact the process of developing and validating new operational requirements for Doctrine, Training, Leader Development, Organization, Materiel and Soldiers (DTLOMS).

g. The SMDTP and process includes a technology taxonomy, which has been developed to define the core technology capabilities in USASMDC and MDSTC. The MDSTC's missions and goals are tied directly to the development of advanced technology, the demonstration of "bundled" technology capabilities to defeat the projected threats and to enable defined FOCs. These technologies have been broken into eleven technology areas: kinetic energy weapons; sensors; space technology; phenomenology; battle management; command, control, and computers; communication and intelligence; survivability and lethality; modeling and simulation; directed energy weapons; targets; directed energy weapons; materials and components; and operations research and systems analysis.

h. The SMDTP and process represents a combined initiative by SMDC, TRADOC and the PEO AMD to provide a missile defense and space technology development and transition roadmap to address the evolving needs for joint operations of the warfighter through 2015. The SMDTP objective is to provide a coordinated Army position for missile defense and space technology development, needs, and requirements.

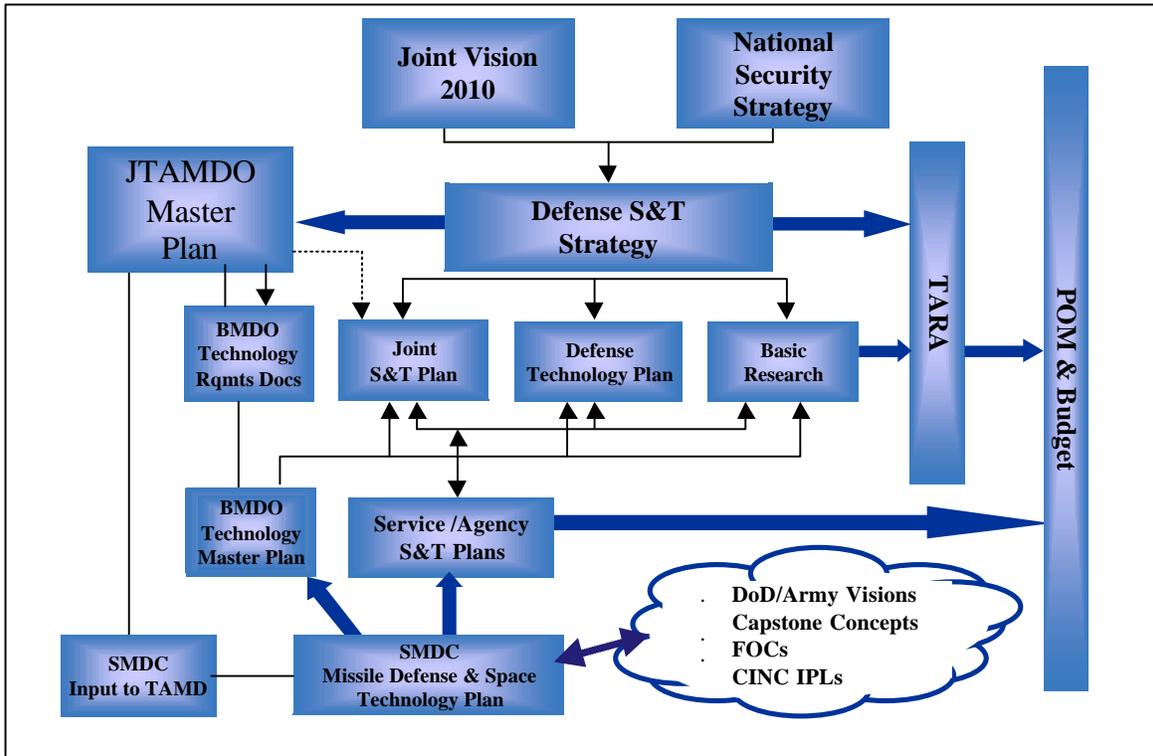


Figure 7-2. SMDC Science and Technology Planning Process

Chapter 8

Conducting Warfighting Experiments and Demonstrations

8-1. Introduction.

a. References:

- (1) TRADOC Pam 71-9
- (2) Army Experimentation Campaign Plan
- (3) USACOM Joint Experimentation Campaign Plan

b. SMDC Warfighting Experiments.

(1) Purpose. The Space and Missile Defense Battle Lab (SMDBL) is responsible for experiments. Insights, impacts, and recommended changes to DTLOMS, based upon inputs from soldiers and leaders, as well as emerging technologies and materiel initiatives are the products generated by the Battle Lab. SMDC Experiments support the development of Army and Joint requirements, Army and Joint Visions, Army and Joint concepts, Army Future Operational Capabilities (FOC), and Joint Desired Operational Capabilities (DOC). They are designed as discrete, single events or progressive, iterative simulations (constructive, virtual, or live) to assess the military utility/potential for a new or revised DTLOMS concept or new technology to satisfy Warfighter needs.

(2) Mission. To conduct Army and Joint Space and Missile Defense experiments to:

- Create and explore new Space and Missile Defense Warfighting concepts and technologies.
- Refine, assess, and recommend to TRADOC, AMC, and Joint Agencies, such as JTAMDO and USACOM, the most promising Space and Missile Defense concepts, technologies, and capabilities.
- Coordinate, integrate, and leverage to the maximum extent possible, Army and Joint Experiments.
- Identify breakthrough Warfighting capabilities necessary to achieve Army Vision 2010 and Army After Next.
- Provide recommendations to improve Army Space and Missile Defense operations in terms of DTLOMS.
- Ensure that a summary of lessons learned from various experiments are forwarded to SMDC DCSOPS who will forward to the Center for Army Lessons Learned (CALL).

(3) SMDC Experimentation goals:

- Validate the operational utility of advanced Space and Missile Defense technologies and concepts.
- Identify the most promising Space and Missile Defense technologies and concepts for rapid acquisition and fielding.

8-2 Warfighting Experiment Responsibilities within SMDC.

a. The Director, SMDBL will:

(1) Plan, coordinate, conduct, and report on the results of Space and Missile Defense related Warfighting experiments in accordance with Joint requirements, TRADOC requirements, and CG, SMDC priorities.

(2) Participate in both Army and Joint exercises and experiments to gain insights in refining Space and Missile Defense DTLOMS and technology.

(3) Serve as a Core Member to the TRADOC Battle Lab Board of Directors (BoD) in accordance with TRADOC Pam 71-9.

(4) Ensure Space and Missile Defense Warfighting Experiments meet requirements in accordance with TRADOC Pam 71-9, when appropriate.

(5) Identify and execute SMDC Experiments in support of the Army Experimentation Campaign Plan and the USACOM Joint Experimentation Campaign Plan.

(6) Recommend to TRADOC candidate Space and Missile Defense technologies for WRAP.

(7) Serve as the lead for ACT II programs.

(8) Maintain a prioritized list of candidate experiments.

b. The Director, FDIC will:

(1) Develop Space and Missile Defense Warfighting concepts of operations and recommend high payoff areas for experimentation.

(2) Coordinate the development and approval of Space and Missile defense related FOCs and DOCs.

(3) Identify Army and Joint requirements for experimentation to meet Joint Vision 2010, Army Vision 2010, SPACECOM Vision 2020, Joint Forces After Next, and Army After Next.

(4) Plan and execute space and missile defense franchise AAN wargame events in support of the TRADOC AAN program.

c. The Director MDSTC will:

(1) Identify and recommend candidate technologies for Space and Missile Defense Warfighting Experiments.

(2) Provide technical expertise in support of Space and Missile Defense Warfighting Experiments.

d. The Director, SMDAC will:

(1) Identify and recommend candidate technologies for Space and Missile Defense Warfighting Experiments.

(2) Provide candidate materiel solutions to SMDBL for evaluation during Warfighting experiments and exercises.

(3) Direct the Army Space Program Office to participate, where appropriate, in experiments, demonstrations, exercises, and wargames.

e. The Commander, ARSPACE will:

(1) Identify and recommend candidate technologies and concepts for Space and Missile Defense Warfighting Experiments.

(2) Participate in experiments and wargames, as appropriate, to provide operational input and expertise.

(3) Ensure that future Space and Missile Defense visions and operational concepts supporting USSPACECOM and SMDC are coordinated and integrated in the planning for and the conduct of Warfighting Experiments.

8-3. SMDC Experimentation Process.

a. The SMDC Experiments process is a continuing, evolving, and iterative process. It is composed of two major components, those factors (both internal and external to SMDC) that influence the development and conduct of Space and Missile Defense Experiments and SMDC's experiment implementation process (see Figure 8-1). Each of these components has different characteristics. Factors tend to be non-experiment specific and reflect the dynamics of military thinking. They include items such as system requirements, Army and Joint visions, operational concepts, Joint Desired Operational Capabilities, Army Future Operational Capabilities, and new and evolving technology. Additionally, they tend to evolve over time. On the other hand, the SMDC experiment implementation process is experiment specific. It deals with those issues required to effectively conduct an experiment. While the entire process is continuing and is iterative, it must be remembered that each experiment is static in nature. It is designed to meet

specific objectives and evaluate a given concept and/or technology at a given place and time. This duality of dynamic influencing factors and static experiment specific implementation continually influences the on-going process of Space and Missile Defense experimentation.

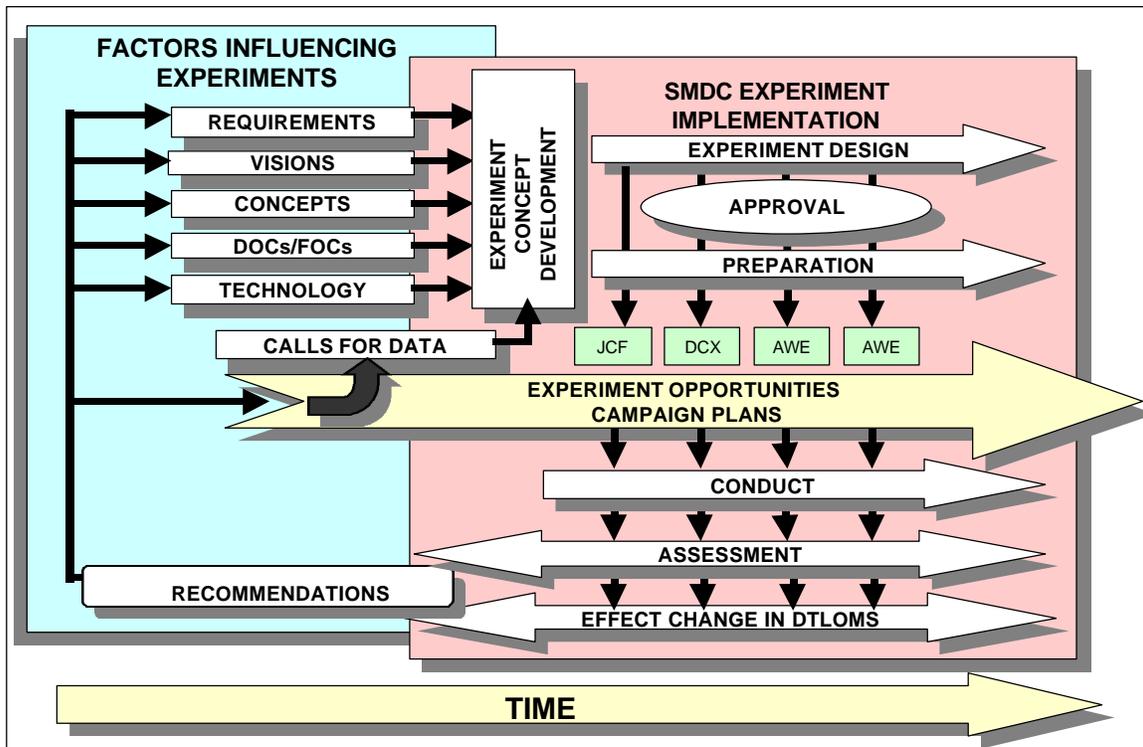


Figure 8-1 SMDC Experiment Process

Experiment opportunities. Opportunities for Space and Missile defense experimentation are many faceted and varied. They include programs to demonstrate and verify advanced technology for development and acquisition as well as major live force exercise testing organizational issues and TTPs for combat forces. They can be in the form of iterative programs or a one-time event. Sponsorship is also varied. It can be initiated by research and development agencies such as DARPA or major commands, Warfighting CINCs, TRADOC or Joint agencies such as JTAMDO, or USACOM. Because of this wide diversity in sponsorship, each individual opportunity has its own requirements for participation. Therefore, defined SMDC Space and Missile Defense experiments will be specifically designed to conform to these individual requirements. Some of the many experiment opportunities/programs are outlined in TRADOC Pam 71-9, U. S. Army Experiments Campaign Plan, and USACOM Experiments Campaign Plan. SMDC experiment opportunities include but are not limited to:

- Concept Experimentation Program (CEP).
- Advanced Warfighter Experiments (AWE).
- Technology Demonstrations (TD).
- Advanced Technology Demonstrations (ATD).

- Advanced Concept Technology Demonstrations (ACTD).
- Advanced Concepts and Technology Program II (ACT II).
- Joint Test and Evaluations (JT&E).
- Operational Test and Evaluations (OT&E).
- Joint exercises, training, and demonstrations.
- Army Space Exploitation Demonstration Program (ASEDP).
- Battle Lab Experiments (BLE).

b. The outcome of the experiment provides two major key products. First, it will make recommendations to effect change in the influencing factors. It provides feed back to the requirements specification, Army and Joint vision statements, military concepts, DOCs, FOCs, and technology development. The second product is that it can effect changes in Army DTLOMS. Lessons learned during experimentation help decision makers to refine and improve DTLOMS. An additional output may include findings that aid in making acquisition and fielding decision for advanced technology and concepts.

c. Factors influencing SMDC experiments:

(1) Requirements. Normally formal statements that define a mission need or provide technical standards to which Space and Missile Defense systems are designed, built, tested, and fielded. The primary requirements documents are Mission Need Statements (MNS), Capstone Requirements Document (CRD), and Operational Requirements Document (ORD). The MNS is a non-system-specific statement of operational capability need written in broad operational terms. The CRD documents the overreaching system requirements for a broad mission need (surveillance, missile defense, etc.). The ORD translates the MNS and CRD (if applicable) requirements into more detailed and refined performance capabilities. Technical standards are requirements to which systems (hardware and software) are built. This includes items such as Military Specifications (MIL SPEC), Common Operating Environments (COE), and Joint Technical Architectures – Army (JTA-A).

(2) Visions. Visions provide the objectives and goals for where we are going in the future. They provide “conceptual templates” for how we will focus our military capability and “leverage technological opportunities” to achieve new levels of effectiveness in warfighting. Current visions that impact Space and Missile defense experimentation include Joint Vision 2010, Army Vision 2010, U. S. Space Command Vision 2020, Joint Forces After Next, and Army After Next (AAN). SMDC experiments should be in concert with the goals and objectives of these vision statements.

(3) Concepts. Operational concepts provide the detailed operational description of vision statements. In effect they describe how we intend to operationalize and employ planned warfighting capability. They include items such as Operational Architectures

and Systems Architectures as well as TTPs. They may be of large scope (Joint force operations) or specific in nature (battery employment). Operational concepts provide the boundaries for the application of advanced technology. They identify how the Warfighter would use advanced Space and Missile Defense capabilities.

(4) DOCs/FOCs. Desired and Future Operational Capabilities are structured statements of desired operational capability that establish the foundation upon which requirements are based. Their purpose is identify progressive ideas articulated in approved warfighting concepts of operations. As such DOCs and FOCs serve as the cornerstone for the requirements determination process, to include conducting studies and experimentation. DOCs are statements of desired operational capabilities by the Joint Warfighting community. FOCs are statements of desired operational capabilities by TRADOC. FOCs are outlined in TRADOC Pam 525-66 and provide the focus for Army Science and Technology Programs.

(5) Technology. Technology is the process of applying science to meet our warfighting visions and concepts. There are three types of technology capabilities available to support experimentation, near-term, mid-term, and far-term. Near-term technologies support ongoing programs that typically provide risk mitigation alternatives to Program Managers and cover zero to five years in the future. Mid-term technologies address Pre-Planned Product Improvements (P3I) and next generation efforts to counter known threats. Far-term technologies are typically initiatives that address DOCs and FOCs and focus on efforts with payoff five years and beyond. Availability and usability of new and evolving technology are primary focuses of SMDC experimentation.

(6) Calls for Data. When an experiment opportunity occurs, the management of the experimentation venue normally initiates a Call for Data. These calls include the purpose of the venue, objectives, scenarios, time frames, milestones, exercise forces, hypotheses, and the venue's relation to Army and Joint Visions. Additionally, the calls provide instructions on how candidate experiments may be included in the venue.

d. SMDC Experiment Implementation. Implementation is the process by which SMDC personnel plan and implement Space and Missile Defense experiments. This process is normally tailored to meet the requirements of each individual experiment as identified in the Call for Data. There normally six major steps in this process.

(1) Experiment Concept Development. This step in the process synthesizes all the factors identified above into a single Space and Missile Defense experiment concept. The initiating event for this step is a call for data. All relevant factors are consolidated in an idea generation process to specify possible Space and Missile Defense experiments. Candidates are then refined so that they focus on a specific capability or technology opportunity. The output of this process is a experiment concept package formatted in accordance with the instructions in the call for data that can, once approved, be submitted to the venue's management.

(2) Experiment Design. Planning for the experiment is a critical step in efficient and effective implementation. All elements of the experiment should be considered. This includes an extensive list of issues including, purposes, objectives, Essential Elements of

Analyses (EEA), concept of operations, work breakout structure, schedule, budgeting, risks, environmental assessments, etc. Additionally, the experiment design including the analytical approach, scope, scenario, exit criteria, tools, as well as the analysis plan identifying measurement variables and the data collection methodology, must be identified. If required, a Limited Objective Experiment Plan (LOEP) in accordance with TRADOC Pam 71-9 will be developed.

(3) Approval. Two types of approval must be gained to ensure efficient and effective experiments. First, the Director, SMDBL must agree to the experiment in order to obligate SMDC resources experiment implementation. And second, the management of the venue in which the experiment will take place must agree to accept the experiment. Both of these approval processes are mandatory for all experiments.

(4) Preparation. Getting ready for the experiment can be an extensive activity. Hardware must be delivered to and software developed for the experiment site prior to installation, check out and testing, and personnel training. Schedules for training are often dictated by the Warfighter/user. Adequate time must be allowed to ensure successful experiment implementation.

(5) Conduct. Execution of the experiment plan is the heart of the experiment. This is where the soldier uses the Space and Missile Defense technologies and concepts. Data gathered during this step provides the analytical basis for proving or disproving the validity and/or usefulness of the experiment. The importance of the utility to the Warfighter is paramount.

(6) Assessment. Determining if the experiment met its objectives and developing required reports and documentation is the final step in the SMDC experiment implementation process. Data analysis and coordination of the findings determines the outcome of the experiment. Recommendations are developed and provide feedback to the influencing factors and/or DTLOMS development process. The finding and recommendation of the assessment step provide the foundation for new experiments.

8-4. Army Space Exploitation Demonstration Program (ASEDP).

a. The goal of ASEDP is to demonstrate to field commanders the latest, relevant space technology from the academic, commercial, and government research and development communities. SMDC objectives associated with the ASEDP are to:

(1) Educate tactical commanders on the use of space-based assets to enhance Army operations.

(2) Assist in defining requirements for Army development.

(3) Demonstrate new technology for possible further development.

(4) Influence the design and use of future space systems.

(5) Provide rapid prototyping in support of contingency operations.

b. SMDBL is responsible for planning and executing the ASEDP process.

c. The ASEDP provides an excellent opportunity to integrate space demonstrations into larger scale Army and joint exercises and experiments. SMDBL will continuously seek to obtain sponsors to help defray costs of experimentation and to provide a more thorough venue for evaluating space and missile defense capabilities.

Chapter 9

Studies and Analyses

9-1. Introduction.

a. References: TRADOC Pam 71-9.

b. Purpose. SMDC conducts studies and analyses to help assess space and missile defense warfighting concepts, determine requirements, and evaluate DTLOMS concepts and programs.

c. Scope. The Command is involved in the full range of study and analysis activities, from engineering level analyses to the force-on-force operational level analyses. The SMDC Study Program, executed by the SMDBL, focuses only on operational analyses. Individual MSEs may be responsible for various system engineering analyses directly under their purview. These are not in direct support of the requirements determination process and are not included in this Handbook.

d. SMDC studies and analyses process.

(1) SMDC analysis supports each phase of the requirements determination process and is a continuous and iterative subset of the process. Stemming from FOCs, analysis uses data and information from S&T research, technology opportunities, experimentation, simulations, T&E, and contemporary operational issues to develop analytical underpinnings which support the determination of requirements.

(2) Figure 9-1 depicts the SMDC analysis process leading to the determination of DTLOMS requirements and development of materiel requirements documents. SMDC analysis conducted by SMDBL will support missions needs determination, materiel operational requirements development, and materiel operational requirements refinement.

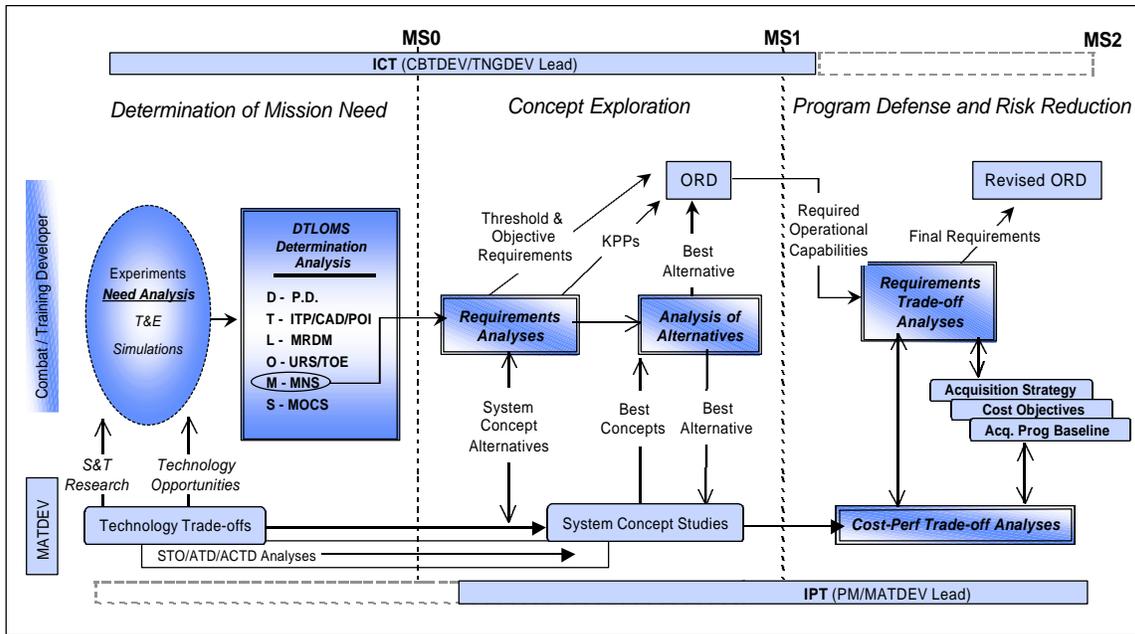


Figure 9-1. Analyses Supporting DTLOMS Requirements Determination & MRD Development

9-2. SMDC Studies and Analyses Responsibilities.

a. CG’s Strategic Planning Cell will provide written guidance that contains the CG’s priorities for critical requirements and experimentation issues during the next fiscal year.

b. FDIC. Director, FDIC will nominate SMDC space and missile defense studies and analyses for each fiscal year to the SMDBL. The FDIC will provide support, as required, in the development of CONOPS, TTPs, etc. for use in operational analysis.

c. SMDBL. SMDBL will be responsible for the development and execution of the SMDC space and missile defense studies and analyses program. This will include conduct of the analysis within in-house or contract resources. The SMDBL will incorporate appropriate models and simulations to demonstrate the warfighting value of space and missile defense solutions to the warfighter. To the extent possible, the SMDBL will use TRADOC standard scenarios to provide the operational context for analysis. The focus of SMDBL analysis efforts will be at the operational level.

d. MDSTC. MDSTC will nominate SMDC space and missile defense studies and analyses for each fiscal year to the SMDBL. MDSTC will provide technical support to the SMDBL to reflect new system and technology characteristics necessary to facilitate modeling efforts.

e. ARSPACE. ARSPACE will provide support, as required, in the development of CONOPS, TTPs, etc for use in operational analysis.

f. DCSINT. SMDC, DCSINT will provide threat support to the SMDBL in support of space and missile defense analytical efforts. The DCSINT will be the authoritative source of threat information within SMDC for all requirements determination processes.

g. Army Space Program Office will conduct studies and analysis to support requirements determination, evaluate future concepts of operations and technology viability to support DTLOMS efforts.

9-3. SMDC Study Program.

a. The SMDC study program will be developed annually to ensure that SMDC studies and analyses resources are programmed and allocated to support the CG, SMDC’s vision. The program provides a structure for programming, reporting, and managing SMDC’s analytical efforts. It also provides the basis for determining the status of SMDC’s analysis work and documents accomplishments. The study program will be submitted to the AR 5-5 Study Program by the S&A Division of SMDBL.

Figure 9-2 illustrates the SMDC study plan development cycle.

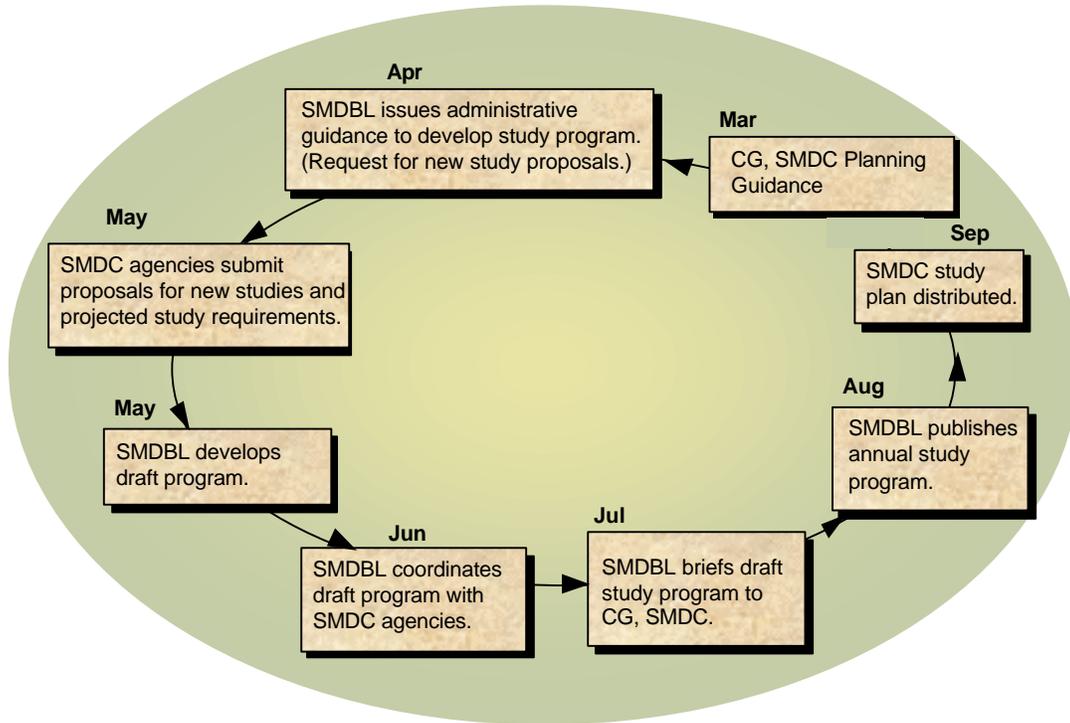


Figure 9-2. SMDC Study Plan Development Process

b. March. CG’s Strategic Planning Cell provides written guidance that contains the CG’s priorities for critical requirements and experimentation issues for the next fiscal year.

c. April. SMDBL issues the administrative guidance to facilitate development of the SMDC space and missile defense annual study program. The guidance will contain the CG's priorities for critical requirements and experimentation issues requiring potential analytical support during the next fiscal year.

d. May. SMDC elements submit proposals for new studies desired during the next year. Proposals will include a narrative of the purpose of the study, objective, and an estimate of resources required. SMDBL will review all study proposals and produce a draft prioritized SMDC study plan for review. Prioritization will consider:

(1) CG's written guidance

(2) Resourcing

(3) analytic viability

e. June. SMDC elements will review the draft prioritized space and missile defense studies and analysis plan. Review will include written concurrence/nonconcurrence and supporting documentation for reconsideration.

f. July. SMDBL will develop a final draft prioritized SMDC study plan and brief the draft program to CG, SMDC for approval. The draft briefing will include a projection of which studies and analysis will be conducted with SMDBL resources and identify efforts which require contractor support.

g. July-August. SMDBL will publish the annual SMDC space and missile defense study plan. The plan will be distributed to all members of the space and missile defense community and to the TRADOC Analysis Center.

Chapter 10 Documenting Warfighting DTLOMS Requirements

10-1. Introduction.

a. Reference: AR 71-9, TRADOC Pam 71-9.

b. Purpose. As the proponent for space and missile defense, SMDC will develop and document all warfighting DTLOMS requirements. Detailed procedures for each type of request are in the references provided at the beginning of each section. Figure 10-1 shows the requirements documents necessary to initiate resourcing for each DTLOMS domain.

Domain	Requirements Document(s)	See Paragraph
Doctrine	Program Directive (PD)	10-3
Training	Individual Training Plan (ITP) Course Administrative Data (CAD) Program of Instruction (POI)	10-4
Leader Development	Memorandum	10-5
Organizations	Unit Reference Sheet (URS) Table of Organization and Equipment (TOE)	10-6
Materiel (to include training devices)	Mission Needs Statement (MNS) Operational Requirements Document (ORD)	10-8
Soldier	Memorandum (MOCS)	10-7

Figure 10-1. Requirements Documents

c. Concept for documenting warfighting DTLOMS requirements. Documenting warfighting requirements is a continuous developmental process. The new SMDC organization will enhance the command's ability to address space and missile defense DTLOMS issues and ensure timely documentation of requirements. The SMDC warfighting DTLOMS products may be in direct use by or in support of the warfighter in training for and conducting operational missions (tactical or other) or connecting the warfighter to the sustaining base. SMDC will determine if warfighting requirements products are deployable or nondeployable. Deployable products are authorized on a table of organization and equipment (TOE), and nondeployable products are not taken to and employed in the area of operations. This chapter will define SMDC responsibilities on how DTLOMS requirements, identified by means of experiments, studies, and analyses, are documented for subsequent resourcing.

10-2. Documenting DTLOMS Responsibilities Within SMDC.

a. FDIC is responsible for all space and missile defense requirements documentation within the command. The responsibility will normally be delegated to the appropriate division within FDIC. FDIC will defend the requirements document during all reviews internal and external to SMDC.

b. SMDBL will be responsible for the conduct of all experimentation and analyses required to support the development and justification of space and missile defense requirements documentation.

c. MDSTC will provide S&T technical support required to develop and defend space and missile defense requirements documents.

d. ARSPACE will provide input to the requirements documentation process from a user perspective. Additionally, ARSPACE will help expedite the staffing process by conducting coordination with the joint space and missile defense community, as appropriate.

e. SMDC, DCSINT will develop all threat documentation required to support development of space and missile defense requirements documents and the supporting analyses and experiments.

f. ASPO will develop, in accordance with the streamlined acquisition process, the appropriate documents to support DTLOMS requirements.

10-3. Doctrine Requirements Overview.

a. The TRADOC POC for doctrinal requirements is the Joint/Army Doctrine Directorate (ATDO-A), DCSDOC, TRADOC. The doctrine development design process, depicted in Figure 10-2, shows the step-by-step process, from guidance through assessment to approval of a Program Directive that leads ultimately to the fielding of the manual.

b. The FDIC will conduct an annual review of all space and missile defense doctrine and assess relevancy to determine if revisions or new doctrine are needed. The Chief, Concepts and Doctrine Division will normally lead this review. The process, outlined in TRADOC Reg 25-32, describes the doctrine program and provides the FDIC, Concepts and Doctrine Division specific doctrine requirements determination guidance.

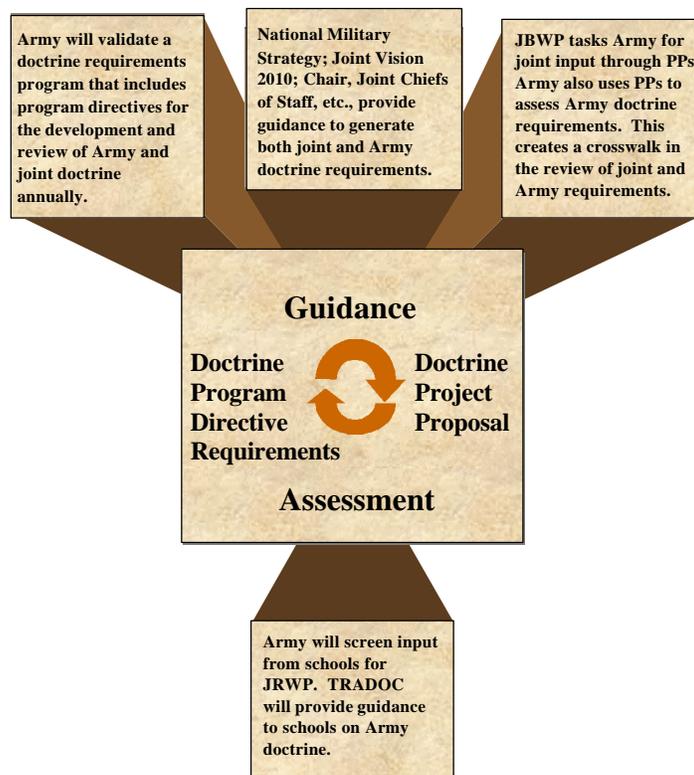


Figure 10-2. Doctrine Requirements Process

10-4. Training Requirements Overview.

a. The SMDC POC for training requirements is FDIC, Training and Leader Development Division (T&LDD). The TRADOC POC is the Training Operations Management Activity (TOMA), Deputy Chief of Staff for Training (DCST), TRADOC (ATOM-FA). Both utilize the Training Requirements Analysis System (TRAS) to determine requirements. Specific training requirements determination guidance is in AR 350-10, TRADOC Reg 350-70, and TRADOC Pam 350-70-8.

b. The purpose of the TRAS is to ensure that students, instructors, facilities, ammunition, equipment, and funds are all at the right place at the right time to implement directed training as required by current and future proponent Combined Arms Training Strategy (CATS) institutional strategies. The TRAS is a management system that provides for the documentation of training and resource requirements in time to include them into resource acquisition systems.

c. As a space and missile defense proponent, FDIC will:

(1) Manage the TRAS for the specialties and training programs for which SMDC is the proponent.

(2) Assign a single POC to serve as the TRAS coordinator.

(3) Prepare, approve, and submit TRAS documents to HQ TRADOC in accordance with TRADOC Reg 350-70.

(4) Coordinate TRAS documents with appropriate schools, training centers, MACOMs, and other training activities that support, codevelop, or conduct any part of training.

(5) Obtain training mission area (TMA), course length in weeks (CLIW), instructor contact hours (ICH), and optimum class size (OCS) validation of new or revised course administrative data (CAD) and programs of instruction (POIs) that change current resourcing levels.

(6) Review and provide comments and recommendations to other proponents during the coordination of TRAS documents.

(7) Ensure:

(a) The requirements for training resources, identified in TRAS documents, are entered into the appropriate resource acquisition systems in a timely manner.

(b) TRAS training is provided to personnel who participate in the system approach to training (SAT) process (e.g., analyze, design, develop, implement, and evaluate training).

d. The TRAS is a long- and short-range planning and management process for the timely development of peacetime and mobilization individual training. It integrates the training development process with the Planning, Programming, Budgeting, and Execution System (PPBES) by documenting training strategies, courses, and related resource requirements. The TRAS ties together related acquisition systems for students, instructors, equipment and devices, ammunitions, dollars, and facilities.

e. The TRAS process is supported by three documents: the individual training plan (ITP), the CAD, and the POI. The ITP for a requirement will contain a statement citing the applicable FOC. Figure 10-3 shows the TRAS document development.

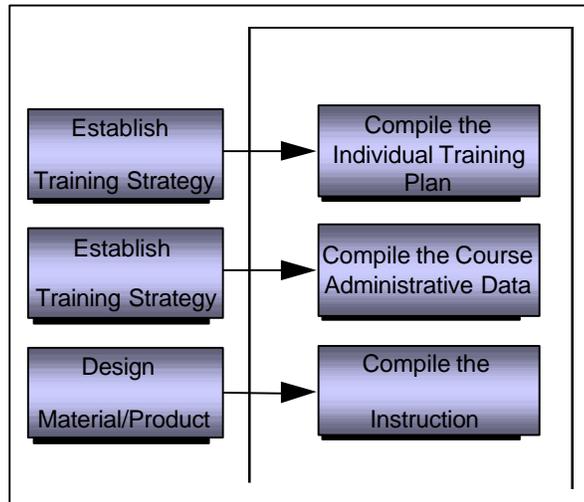


Figure 10-3. TRAS Document Development

(1) The ITP is the individual long-range training strategy for an occupational specialty or separate training program and prescribes the cradle-to-grave individual training requirements (resident and nonresident) for that specialty. It helps to ensure the SAT process is integrated with the sources of training needs, the PPBES, evolving training initiatives, and related resource acquisition systems. ITP is executed five years out.

(2) The CAD, prepared for each course within an ITP, provides critical planning information that enables the recruiting, quota management, and personnel systems to take actions needed to have students and instructors on station in sufficient time to meet Army requirements. It is used as the basis for solicitation of individual training requirements (student input) through the Total Army centralized individual training solicitation (TACITS) for new and revised course versions for use during the Structure Manning Decision Review (SMDR) and the development of the Army program for individual training (ARPRINT). CAD establishes or revises a course version file in the Army Training Requirements and Resources System (ATRRS) data base. CAD is executed 36 months out.

(3) POI is a formal course document that contains or updates previously approved CAD and describes the training content, academic hours, techniques and methods of instruction, and resources required to conduct training. POI is executed six months out.

f. Throughout the Total Army school system (TASS) transition period, TRAS will include the current library of existing Active Component/Reserve Component ITPs, CADs, and POIs; Reserve Component-configured software (RC3) POIs; and developing Total Army training system (TATS) CADs and POIs (Figure 10-4).

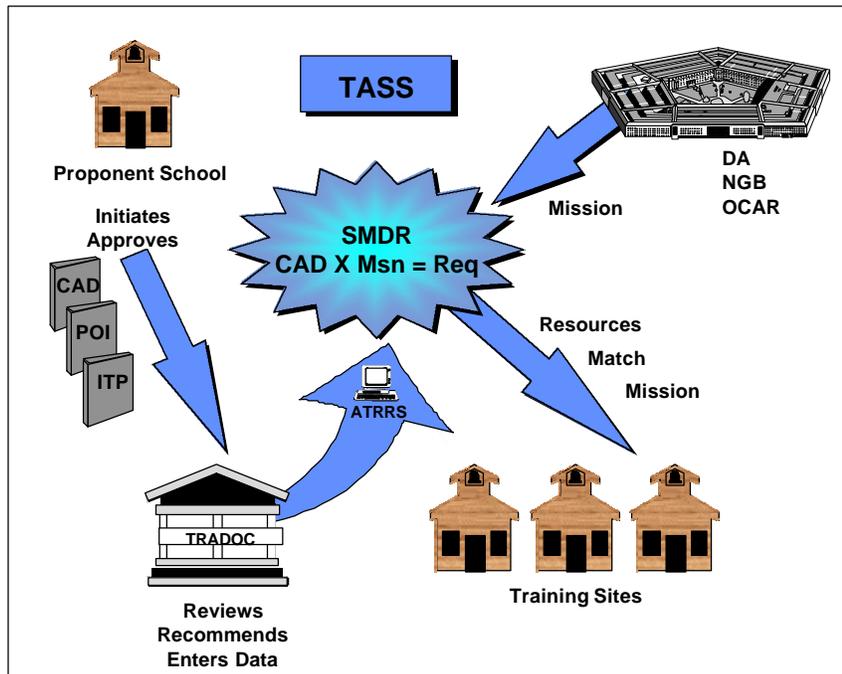


Figure 10-4. TASS/TRAS

g. Changes to training programs are generated by the requirements determination process to include:

- (1) DTLOMS.
- (2) Results of:
 - (a) Needs analysis.
 - (b) Need to eliminate performance deficiencies.
 - (c) Efforts to improve training efficiency and effectiveness.
 - (d) Training design process.

h. TRAS documents are requirements documents that identify the proponent’s plan and requirements for developing and conducting individual training. Their submission results in recognition of resource requirements, but not an agreement by HQ TRADOC to provide resources. Proponents must acquire resources using appropriate resource acquisition systems and within the parameters established during the TRADOC TRAS review. Only those elements recognized by TRADOC will be considered for resourcing. As SMDC is not a TRADOC school or center, the T&LDD will coordinate with HQ TRADOC, schools, and centers to initiate requests for needed resources once resource requirements are identified. Proper use of the TRAS will enable FDIC to convert training strategies from concepts to reality.

i. T&LDD will prepare TRAS documents for courses developed by TRADOC and conducted by service schools, training centers, Noncommissioned Officer Academy (NCOA), Reserve Component Training Institutions (RCTI), Reserve Officers Training Corps (ROTC) Cadet Command, troop schools, and other training activities. Additionally, TRAS documents

are prepared for Inter-Service Training Review Organization (ITRO) consolidated courses at TRADOC schools and other locations.

10-5. Leader Development Requirements Overview.

a. The SMDC POC for leader development is the FDIC, T&LDD. The TRADOC POC for leader development is the Leader Development Division, Individual Training Directorate, DCST, TRADOC (ATTG-IL). Specific guidance for leader development requirements is in DA Pam 350-58.

b. T&LDD will perform leadership training/training development task proponent functions for Functional Area (FA) 40 (Space Operations Officer) and common core training support packages (TSPs) for officer, warrant officer, and noncommissioned officer education systems. T&LDD will coordinate leader development requirements for space and missile defense with the Center for Army Leadership (CAL).

c. The leader development support system (LDSS) manages Total Army leader development (Figure 10-5). LDSS, administered by the Leader Development Office of CAL, is a systematic methodology to receive, assess, develop, coordinate, obtain CSA approval, and implement Army-wide leader development solutions.

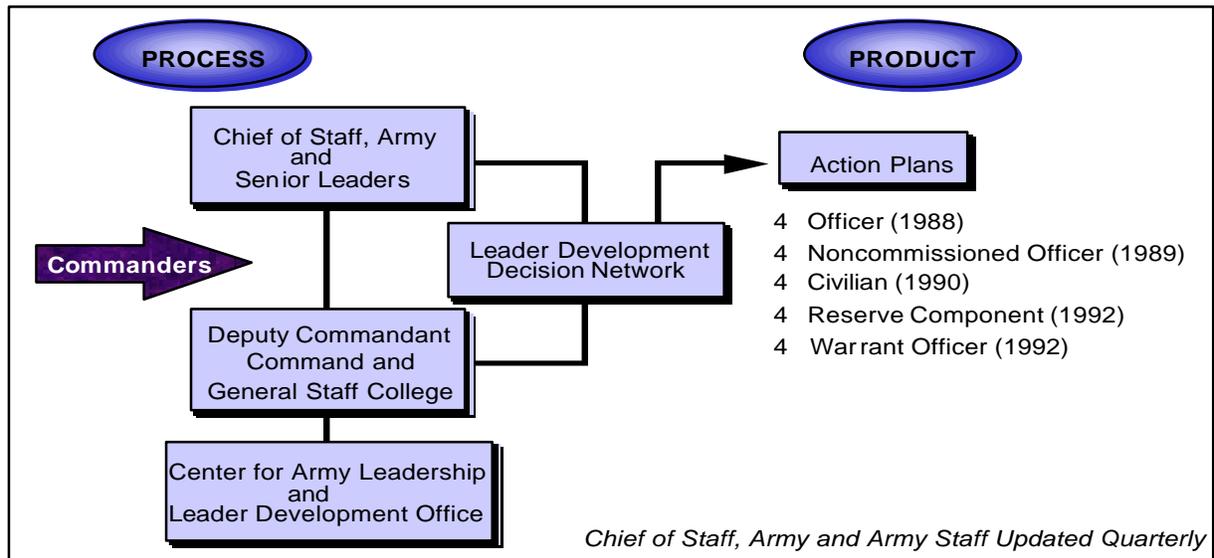


Figure 10-5. LDSS

d. The operative LDSS mechanism is the leader development decision network (LDDN) (Figure 10-6).

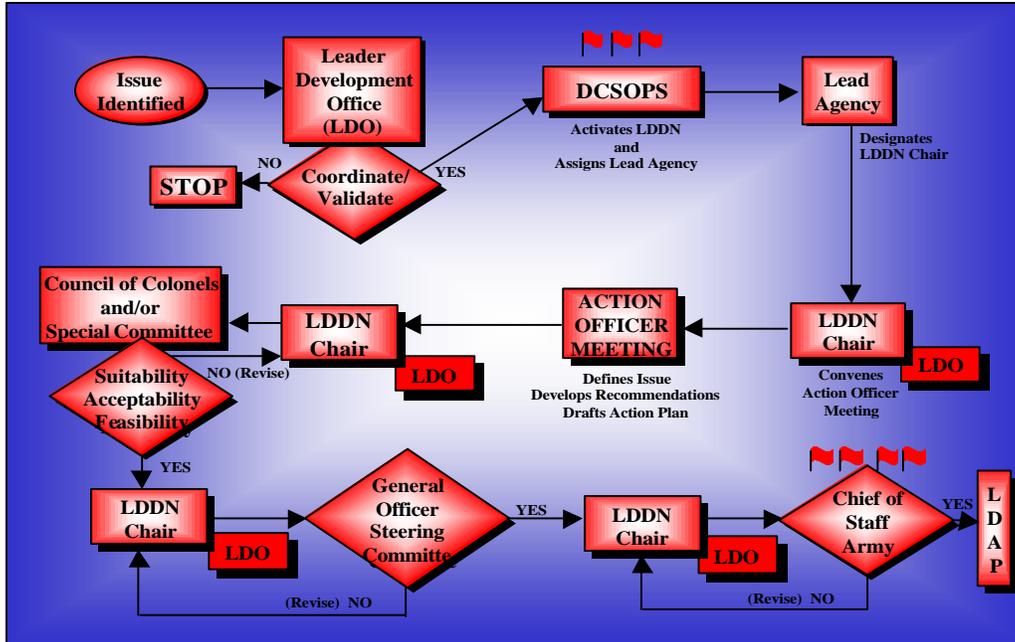


Figure 10-6. LDDN

(1) The LDDN consists of permanent members: HQDA Deputy Chief of Staff for Operations (DCSOPS); HQDA Deputy Chief of Staff for Personnel (DCSPER); Deputy Commandant, CGSC; and CG, TRADOC (or designee), augmented as necessary by functional experts. The LDDN systematically evaluates, from action officers to the CSA, leader development issues and solutions within prescribed criteria for “suitability, acceptability, feasibility, and affordability.”

(2) Solutions satisfying these criteria emerge from the LDDN and are presented to the CSA for consideration. FOCs play a role in TRADOC’s evaluation and contribution to the overall LDDN evaluation process.

(3) Approved recommendations are added to the appropriate leader development action plans (LDAPs) and assigned to appropriate agencies for execution.

(4) The CSA receives progress reports quarterly during the CSA leader development update.

10-6. Organization Requirements Overview.

a. FDIC is responsible for determining organizational requirements. This function will be normally assigned to the Chief, Combat Developments Division. The TRADOC POC for organizational requirements is Force Design Directorate (FDD), DCSCD, HQ TRADOC (ATCD-F), Fort Leavenworth, KS.

b. FDIC will examine and determine organizational requirements through several TRADOC processes. These include the Unit Reference Sheet (URS) development, Force

Design Update (FDU), TOE development, and the Total Army Analysis (TAA) process. Completion of all four processes may not always be required before organizational changes are made to a force structure. To support new or major revisions to force designs, establishment of an ICT may be required

c. The URS process, derived from a warfighting concept that provides the basis for the proposed organization, is the first organizational document that leads to a new TOE. The URS contains sufficient detail about a unit's personnel and equipment to be used to support Army force design initiatives and related studies and analyses. FDIC assembles the URS package, coordinates with other SMDC elements, obtains approval from CG, SMDC, and secures approval from HQ TRADOC.

d. The FDU process, a semiannual process used to obtain CSA approval for new force designs, as well as changes to existing force designs, is the next step in determining organizational requirements. Figure 10-7 depicts the force design methodology. Organizational design or FDU issues result from changes in doctrine, the development of new or revised concepts of operation, acquisition of new equipment, or significant restructuring of a Military Occupational Speciality (MOS). FDIC will develop the FDU issue package and coordinate with SMDC elements and CG, SMDC. FDIC will brief the issues to the HQ TRADOC, DCSCD prior to release for staffing. Once staffing is completed, issues are briefed in sequence to CG, SMDC; DCG, TRADOC; DCSOPS Force Design (DAMO-FDF); ADCSOPS/DCSOPS; and Vice Chief of Staff, U.S. Army (VCSA)/CSA. The VCSA/CSA ultimately approves FDU issues for resourcing competition in the next TAA and/or implementation by TOE documentation.

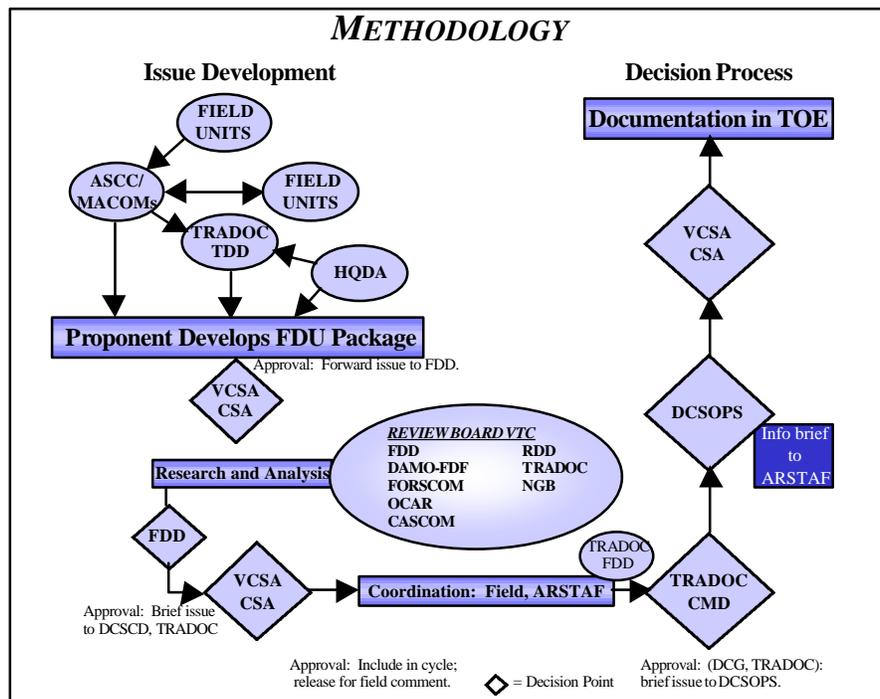


Figure 10-7. Force Design Update

e. The TOE development process prescribes the required structure, manpower, and equipment for a particular type unit. The FDIC provides initial input to the TOE developer and participates in the development and review process. The TOE developer is the U.S. Army Force Management Support Agency (USAFMSA). USAFMSA will develop a Basis of Issue Plan (BOIP) based on a consolidated document consisting of the Basis of Issue Plan Feeder Document (BOIPFD) and Qualitative and Quantitative Personnel Requirements Information (QQPRI). These documents, combined with FDIC input and issues sheets, provide the necessary information to develop an organization TOE.

f. The TAA process is the Army force structuring process. It consists of two phases: requirements and resourcing. The FDIC is responsible for developing the requirements and identifying the resources to support the TAA process. AR 71-11 provides the detail SMDC must follow in developing and conducting the TAA process.

10-7. Soldier Requirements Overview. FDIC is responsible for developing space and missile defense soldier requirements. Responsibility for this function is normally assigned to the Chief, Training and Leadership Division. The TRADOC POC for soldier requirements is the Leader Development Division, Individual Training Directorate, Deputy Chief of Staff Training (DCST), HQ TRADOC (ATTG-IL). SMDC soldier requirements include additions, deletions, or modifications to the Army’s Military Occupational Classification 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. The FDIC will submit soldier requirements per guidance in AR 611-1. Figure 10-8 represents the AR 6-11 model for processing MOCS actions.

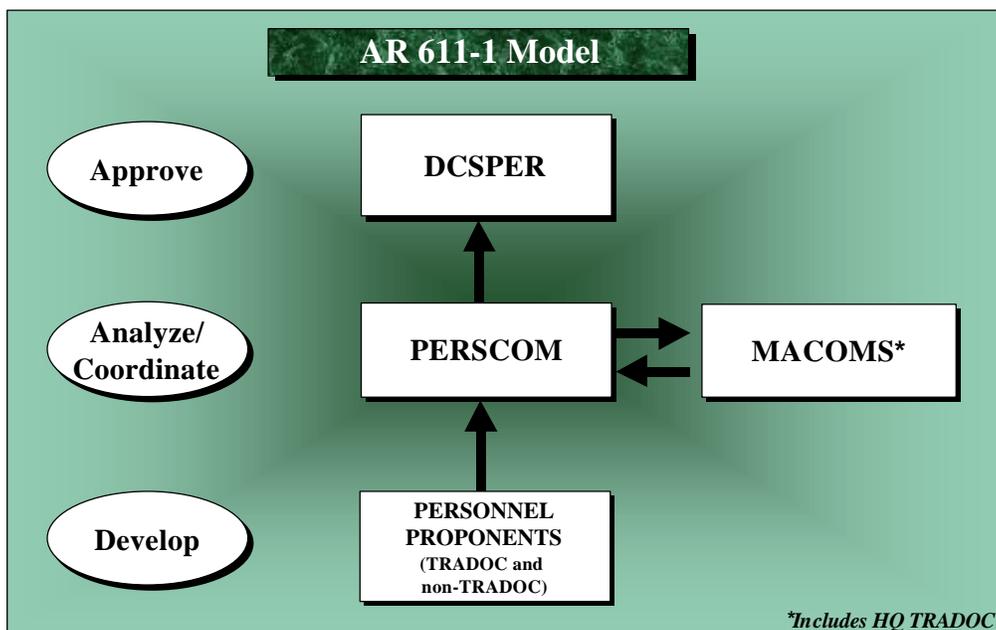


Figure 10-8. Military Occupational Classification Structure (MOCS)

10-8. Materiel Requirements Overview.

a. Chapter 11 provides further details on materiel requirements responsibilities. Only as a last resort will a materiel solution be considered. This is determined only when a thorough assessment of DTLOS answers cannot satisfy the identified need. FDIC will initiate action that will lead to a successful fielding of a materiel system. FDIC is responsible for developing MNSs and ORDs.

b. The materiel requirements process is a strict, regimented process that follows strict guidelines that evolve into an acquisition life cycle management model. The Chief, Combat Developments Division will manage the materiel requirements process within SMDC. FDIC will use a process that ensures development and fielding of an operationally effective and cost-efficient space and missile defense system. This will be accomplished through the use of operational and technological assessments, assessing alternatives, and concepts.

Chapter 11

Matériel Warfighting Requirements

11-1. Introduction.

- a. Reference: TRADOC Pam 71-9 (Chapter 11).
- b. Matériel warfighting requirements process.

(1) Matériel requirement documents (MRDs) serve to document any matériel warfighting requirement, as stated by the combat developer. FDIC will utilize MRDs to bridge the gap between a deficiency or need. They will be responsible for understanding the contractual instruments (technical language) used to develop and acquire systems. To support SMDC's role as proponent and combat developer for space and missile defense, it is imperative that all staff elements become familiar with the life cycle systems management of a matériel system.

(2) As stated earlier, MRDs are the key instrument to system development. The MNS and ORD are two MRDs that each perform a unique role. In general, the MNS is the initial MRD and identifies the Army's need for a matériel solution. The ORD is the definitive statement that describes the operational capability needed to satisfy a mission need. Once the MNS is developed, it is unchanged and supports the need of a matériel system throughout the matériel development process. On the other hand, the ORD may be changed to support the process. In essence, the ORD is updated to support milestone decisions.

(3) The market research tool is used by the matériel developer to identify what is currently available in the commercial marketplace or in use by other government agencies. SMDC is a unique organization with an inherent S&T directorate that can support some market research activities. FDIC will use this asset to develop matériel warfighting requirements.

11-2. SMDC MNS Development. Applicability to all ACAT levels is depicted in Figure 11-1.

a. To better understand the MNS development and process, some crucial steps must be adhered to.

(1) Ensure the MNS is not system specific. A MNS describes a matériel capability needed, not the solution. Potential matériel solutions that may meet the need are to be described in paragraph 4, "Potential Matériel Alternatives."

(2) Ensure the MNS does not describe a need that is already described in another MNS that has been approved or is being processed.

(3) Discuss and evaluate nonmatériel alternatives and state why they were considered unacceptable in satisfying all or part of the deficiency.

(4) Ensure potential materiel alternatives, listed in paragraph 4 of the MNS, are not evaluated. Cite only those alternatives to be considered during the Phase 0 analysis.

(5) Ensure operational characteristics are not placed in paragraph 5, “Constraints”, of the MNS.

(6) Ensure the MNS is no longer than five pages in length.

Program Category	Primary Criteria (\$ = FY96 constant)
ACAT I	
ACAT ID	More than \$355M RDTE More than \$2.135B Proc
ACAT IC	More than \$355M RDTE More than \$2.135B Proc
ACAT IA	
ACAT IAM	Excess of \$30M single year Excess of \$120M total program Excess of \$360M total life-cycle costs
ACAT IAC	Excess of \$30M single year Excess of \$120M total program Excess of \$360M total life cycle costs
ACAT II	
ACAT II	More than \$140M RDTE More than \$645M Proc
ACAT IIA	\$10-30M single year \$30-120M total program \$159-360M total life cycle costs
ACAT III	
ACAT III	High visibility, special interest (includes AIS)
ACAT IV	
ACAT IV	All other acquisition programs (includes AIS)

Figure 11-1. Categories of Acquisition Programs

b. SMDC preparation of the MNS. FDIC will follow the general and specific guidelines below for preparing space and missile defense MNSs.

(1) Paragraph 1: Defense Planning Guidance Element.

(a) Identify major program planning objectives or DPG section.

(b) Reference joint intelligence guidance and DOD or military department long-range investment plans.

(c) State approved TRADOC FOC that MNS is supporting.

(2) Paragraph 2: Mission and Threat Analysis.

(a) Identify and describe the mission need or deficiency.

(b) Discuss the DIA-validated threat and threat environment.

(c) Discuss shortfalls of existing capabilities or systems in meeting these threats.

(d) Comment on timing of need relative to other mission areas.

(3) Paragraph 3: Nonmateriel Alternatives.

(a) Discuss the results of the analysis.

(b) Identify changes in U.S. or Allied doctrine, warfighting concepts, tactics, organization, and training.

(4) Paragraph 4: Potential Materiel Alternatives.

(a) Identify known systems or programs from market survey.

(b) Discuss the potential for interservice or Allied cooperation.

(c) Indicate potential areas of study for concept exploration.

(5) Paragraph 5: Constraints.

(a) Describe key boundary conditions related to infrastructure: logistics support; transportation; global geospatial information and services; support; constraints; environmental protection requirements; other interfaces; security.

(b) Address the operational environments.

(c) Define the level of desired mission capability in these environments.

(6) Paragraph 6: Joint Potential Designator (JPD). Indicate the JPD establish through the validation process; see paragraph 11-9.

11-3. SMDC ORD Development.

a. The ORD is required for all systems with the following exceptions.

(1) An approved requirement document was used to take the program through MS II prior to August 1991.

(2) Another service has an approved document for the same requirement.

(3) The item (except training aids, devices, simulations, and simulators (TADSS)) is exempt from type classification (see AR 70-1).

(4) The program is a modification or a Preplanned Product Improvement (P3I) whose requirements are completely bounded by the thresholds and objectives existing in an approved document.

(5) The requirement is nonwarfighting (except TADSS).

(6) Directed by HQDA.

b. FDIC will ensure ACAT I and IA ORDs fully conform to the format and content outlined in paragraphs c and d that follow. For all other ACATs, the parameters are also outlined in paragraphs c and d.

c. General guideline in preparing the ORD (see DOD 5000.2-R).

(1) FDIC and the MATDEV agree there is sufficient information to support a program initiation decision.

(2) FDIC will lead an ICT and prepare a draft ORD.

(3) FDIC will obtain CG, SMDC ORD approval prior to CG, TRADOC approval decision.

(4) TRADOC-approved ACAT I and IA ORDs prior to milestone (MS) I are forwarded through HQDA DCSOPS to the Joint Requirements Oversight Council (JROC).

(5) The JROC will officially classify the program ACAT ID, IC, etc.

(6) The draft ORD will undergo formal staffing.

(7) Minimum requirements will be stated as operationally justifiable thresholds.

(8) A requirement will not be stated unless it is operationally justifiable.

(9) FDIC/ICT will identify in the ORD those requirements that are Key Performance Parameters (KPPs).

(10) Rationale, in operational terms, will be given for each requirement.

d. Specific guidelines for preparing the ORD (see DOD 5000.2-R) are contained in TRADOC Pam 71-9, Appendix I.

11-4. Staffing and Approval. The staffing and approval process that FDIC must follow is based on the ACAT of the system. The ACAT of the system is based on the estimated total cost of the system.

11-5. Processing JROC Oversight Program MRDs (see Figure 11-2).

a. FDIC conducts all MRD staffing. As a minimum, the draft MRD must be sent to all addressees on the core staffing list (TRADOC, DCSCD Home Page). Other agencies may be included based on the mission and interfaces of the proposed system. When the MRD is developed, it will be staffed initially within SMDC and then to HQ TRADOC. If an unclassified MRD is approved for public release, HQ TRADOC will post it on their Home Page. The purpose is to solicit comments from DOD, industry, and academia so that they may influence requirements before they are approved. This aids in preventing costly revision later in the program.

b. FDIC will reconvene an ICT to finalize the draft MRD. The meeting will include the principal members and agencies with unresolved issues from the initial staffing. All attempts will be made to incorporate comments and resolve differences prior to reconvening the ICT. If the ICT cannot resolve all the issues, the system requirements can be reassessed, or CG, SMDC can forward the draft MRD to HQ TRADOC for approval with the issues detailed on the forwarding cover letter. CG, SMDC will personally review the draft. When approved, the MRD will be electronically forwarded to the DCSCD for TRADOC approval.

c. If CG, SMDC has not identified issues, the MRD will be forwarded to HQ TRADOC, DCSCD for staffing. If unresolved issues are identified, FDIC will convene a Council of Colonels (CoC). An FDIC representative will chair the CoC. Members from SMDC, TRADOC, and the ICT will be invited to attend the CoC (as applicable) to resolve issues. Final MRD approval authority is CG, TRADOC.

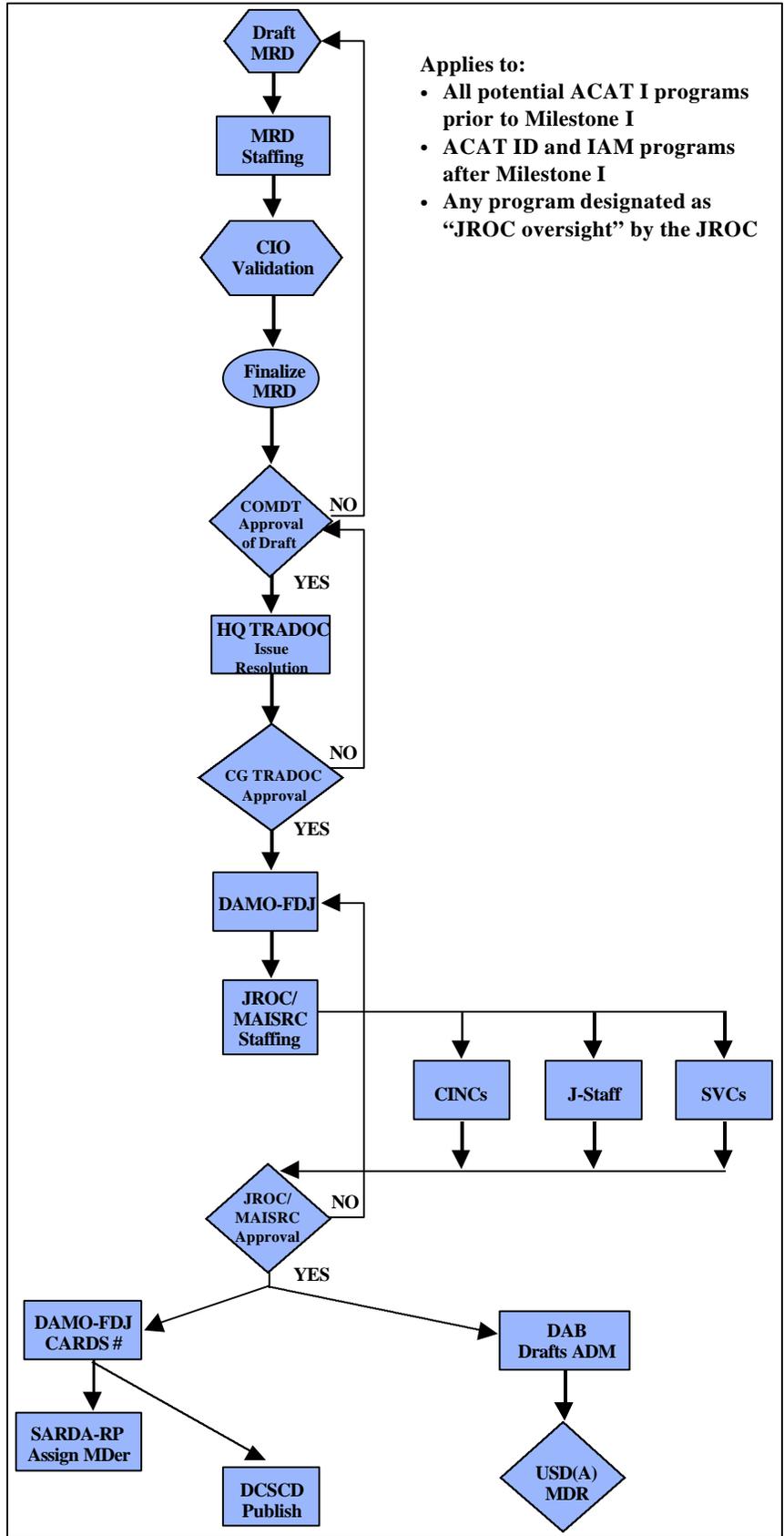


Figure 11-2. Staffing Process for JROC Oversight Programs

11-6. Processing non-JROC Oversight Program MRDs (see Figure 11-3).

a. With one exception, FDIC will staff these MRDs the same as ACAT I systems. The response from HQ TRADOC to SMDC must include a threat certification or recommended changes that, when made, will certify the threat portion of the MRD. ICTs and final draft MRDs are the same as ACAT I. In conducting coordination with HQ TRADOC, FDIC will obtain certification and designations that can only be obtained after the draft MRD has been approved by CG, SMDC. The HQ TRADOC, DCSCD action officer will effect coordination to obtain certification and designation.

b. Issue resolution is the same as ACAT I; approval is also the same, except the approved document will be published immediately and not sent to DA for validation or further action. FDIC will monitor the CARDS issues process and provide the necessary input in support of that process. The final approved MRD will be published the same as ACAT I.

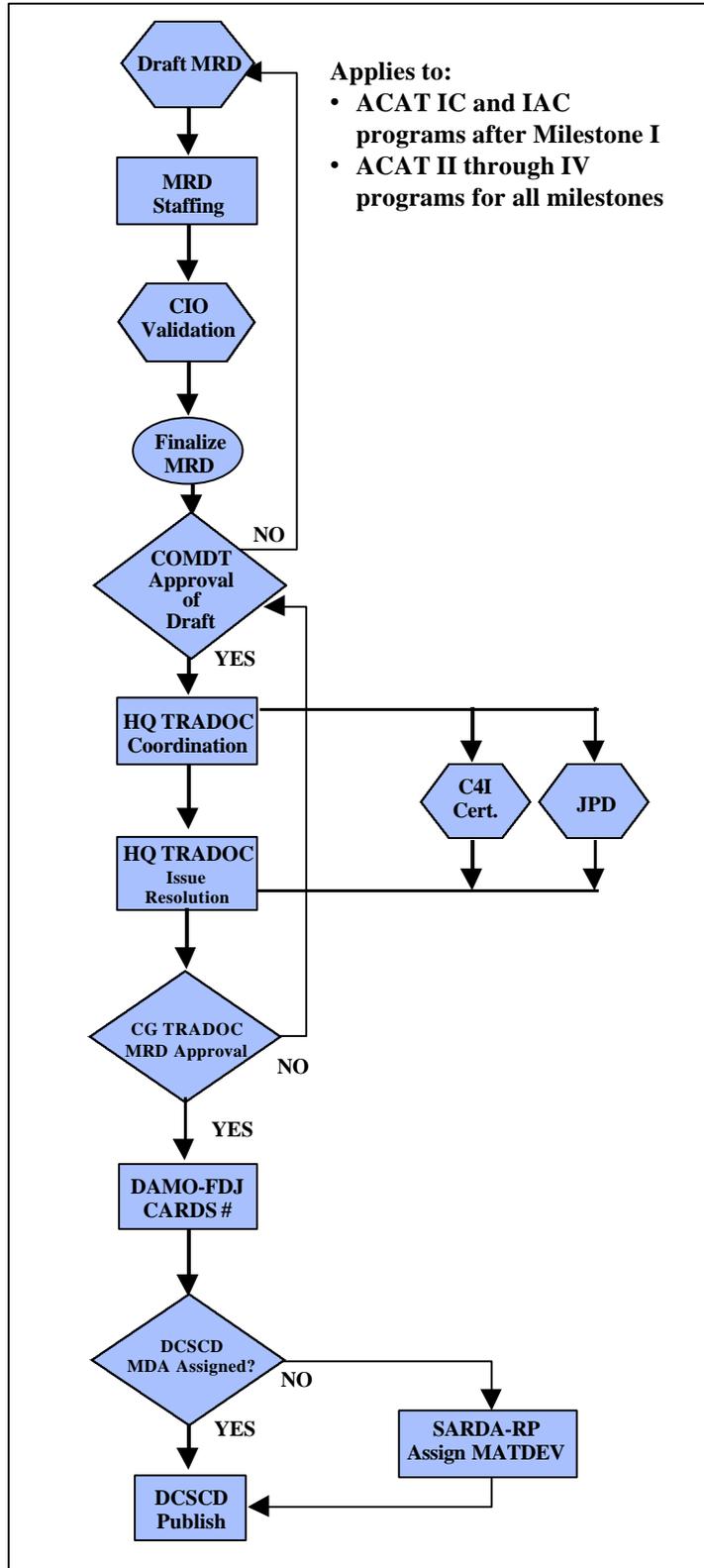


Figure 11-3. Staffing Process for non-JROC Oversight Programs

11-7. ORD Changes. Changes to approved ORDs are driven by lessons learned through analysis and/or testing, threat, technology, or mission needs and approved through CG, SMDC to CG, TRADOC. ORD changes should normally only be made to support a Milestone Decision Review (MDR) I. Changes to support an MDR II should truly be an exception.

11-8. Product Improvement.

a. As the space and missile defense proponent, SMDC will consider the most cost-effective solution over the system's life cycle. There are two types of product improvements. The first type is called P3I and is planned for before the system reaches production. The second type is usually called a modification and is identified for systems that are being or have been produced.

b. P3I.

(1) Used when market research or testing indicates current technology will not meet the requirement.

(2) Allows fielding a cost-effective, near-term solution with current technology.

(3) Plans to add or upgrade capabilities as technologies mature.

(4) Each P3I requirement represents an essential capability and an intent to eventually modify the system.

(5) When possible, P3Is should be grouped to achieve economy.

(6) Explained in detail in paragraph 4 of the ORD.

c. Modifications.

(1) Can originate from any of several sources, e.g., U.S. government, industry, or allied country.

(2) Can be a technical upgrade for any of the following reasons.

(a) Interface

(b) Compatibility

(c) Correction of a deficiency

(d) Operational or logistic support

(e) Production stoppage

- (f) Cost reduction
- (g) Safety
- (h) Value engineering

(3) MATDEV usually approves modifications affecting contractual factors.

(4) CBTDEV and MATDEV will jointly evaluate form, fit, function, and/or logistic supportability modifications.

d. FDIC will identify P3Is and propose, document, prioritize, and approve modifications throughout the life cycle of a system.

11-9. Joint Potential Designators (JPDs).

a. Prior to approval/final validation, every MRD must contain an indication of the interest of all other services in the program. During the development of each MRD, it will be sent to all other services for review. Each service will respond with a recommended JPD. The JPD will be documented in paragraph 6 of the MNS and paragraph 5 of the ORD.

b. Other services will staff their draft MRDs through DA DCSOPS to HQ TRADOC (ACTD-RP) for review and recommendation of a JPD. When applicable, these MRDs will be sent to FDIC for action and response back to the other services through HQ TRADOC, DCSCD.

11-10. Joint Requirements.

a. As the FDIC conducts the ICT to build the requirement document, CINCs and other participating services will be given the opportunity to tailor the basic requirement in the MRD to suit their individual needs. It may be necessary for the FDIC to reconvene an ICT if the program is designated joint. This will ensure other services' requirements are incorporated. The final product will then become a joint requirement.

b. When another service is designated as the lead, the FDIC will participate with the lead service in building the MRD under the procedures and guidelines of the lead service. As the space and missile defense proponent, SMDC must still acquire CG, TRADOC approval of the MRD and will use the procedures in this guide to the extent that they fit within the timelines established by the lead service.

c. FDIC may find that the MRD of other services, with minor modifications, adequately fulfills the requirement. Such a system may be adopted as an Army system or requirement. To adopt the other service's MRD, the FDIC staffs the other service's requirements within SMDC, then forwards to HQ TRADOC for approval.

11-11. Operational Needs Statement (ONS). The ONS may be submitted only by an operational field commander to document a contemporary operational issue that jeopardizes soldiers' lives or mission accomplishment within that unit or its area of operation. In this case, ARSPACE is the operational field commander. AR 71-9 provides content and processing guidance for ONSs. The originating organization forwards the ONS, under CG, SMDC signature, to HQDA (DAMO-FDJ) for approval processing. If DCSOPS validates and approves the commander's need, it may be resourced and sent to the MATDEV for immediate procurement. If DCSOPS does not resource, the ONS will be forwarded to HQ TRADOC. TRADOC will assess the requirement in the ONS for Armywide applicability. If TRADOC decides to pursue the requirement stated in the ONS, a standard requirement document (MNS/ORD) will be generated to initiate a new Armywide program.

Chapter 12

Models and Simulations (M&S) Requirements Integration and Approval Process

12-1. Introduction.

a. Reference: TRADOC Pam 71-9 (Chapter 12 and Appendix M) and AR 5-11.

b. Purpose. The responsibility of TRADOC to approve all requirements extends to all M&S requirements across the live, virtual, and constructive simulation environments. The requirements integration and approval (RIA) process is designed to address all M&S requirements that do not fit neatly into processes defined in previous chapters. However, the process does recognize that some M&S fit the standard materiel acquisition process, and therefore, imposes only minimal changes upon those processes. DCG, TRADOC chairs the TRADOC Requirements Integration Council (RIC) and is the approval authority for all M&S requirements. The RIC normally meets annually.

c. RIA process objectives. Objectives of the RIA process:

(1) Ensure M&S are initiated and conducted in accordance with (IAW) the Army vision for M&S.

(2) Support Army management of all M&S.

(3) Maximize leveraging among M&S efforts with a view to reducing overall development, procurement, and post deployment costs.

(4) Ensure all M&S requirements have been integrated across the three simulation domains (ACR, RDA, and TEMO).

12-2. M&S RIA Responsibilities within SMDC.

a. SMDBL. The SMDBL will be responsible for management of the SMDC RIA identification effort. As such, SMDBL will ensure that M&S requirements identified within the command are not redundant, can be integrated across all three domains, and significantly enhance the ability of the space and missile defense communities' ability to define requirements. The SMDBL will lead the ICT formed to define and refine M&S requirements and participate in any follow-on IPTs. SMDBL will be responsible for identification and documentation of M&S requirements which will enhance the command's capability to address unique space and missile defense issues.

b. FDIC. Participates in the SMDC M&S ICT/IPT.

c. MDSTC. Participates in M&S ICTs.

- d. ASPO. Participates in M&S ICTs.
- e. Army Space Command (ARSPACE). Participates in M&S ICTs.

12-3. SMDC M&S RIA Process.

a. The SMDC M&S RIA process will focus on identification of M&S requirements needed to support critical events such as AWEs, ATDs, study plans, training exercises, simulation support plans, mission funded development, ACT II, technology base development, and other key requirements events.

b. Evaluation and identification of new M&S requirements needed to enhance space and missile defense analytical efforts will be a continuous SMDC effort. However, due to the complexity and resourcing of M&S capabilities, new requirements will be thoroughly coordinated throughout the analytical community. The Army Model and Simulation Office (AMSO) is the Army's central management office for M&S initiatives. New requirements will first be coordinated with AMSO to determine if there is an existing capability in government or industry.

c. In those instances where no M&S capability exists, the SMDBL will form an ICT to document M&S MNS/ORD. In addition to developing the MNS/ORD, the ICT will ensure that all cross-domain issues are resolved prior to submitting the document to CG, SMDC for approval. Since no specific MNS/ORD format exists, the ICT will ensure that HQ TRADOC, Deputy Chief of Staff for Simulations and Analysis (DCSSA) and AMSO are members of the ICT.

d. Once the M&S MNS/ORD has been approved, SMDBL will submit the requirements document to HQ TRADOC, DCSSA for approval by DCG, TRADOC.

Chapter 13

Special Considerations

13-1. Threat Support to Requirements Process.

a. Threat assessment is a key element in the SMDC space and missile defense requirements determination process. Early definition of threat capabilities with periodic updates supports warfighting concept development, requirements documentation, and revisions. Analysis and experimentation supporting requirements determination often require a threat portrayal sufficient for credible simulation. A holistic threat assessment is needed.

b. SMDC, DCSINT is responsible for the conduct and coordination of threat analyses required to support the SMDC requirements determination process. DCSINT will ensure that all threats used to support SMDC analyses and experimentation are coordinated and approved by TRADOC, DCSINT. Additionally, SMDC, DCSINT will participate in all ICTs formed to support DTLOMS requirements determination. The DCSINT representative will provide threat support to aid in the selection of the most appropriate solution, whether it is changes in doctrine, tactics, or training, or leads to the development of a materiel system. SMDC, DCSINT will also prepare the threat statement required in paragraph 2 of space and missile defense MNSs and ORDs. Additionally, DCSINT will be responsible for the development and update of the STA and the STAR for space and missile defense MRDs. Coordinates space threat with ARSPACE.

c. All SMDC elements will ensure that the threat is considered in every SMDC-sponsored experiment or analysis, whether CEP, limited objective experiment (LOE), AWE, AoA, or study.

13-2. Information Technology (IT) Considerations.

a. IT is any equipment or interconnected system or subsystems of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information in support of installation/garrisons or tactical operations. IT includes but is not limited to computers, ancillary equipment, software, and communications equipment.

b. FDIC is responsible for identification and development of IT requirements documentation. IT MNSs and ORDs will be developed in accordance with procedures established in TRADOC Pam 71-9, Chapter 11. Additionally, FDIC will ensure that all IT requirements are determined, validated, approved, and implemented with full considerations for interoperability, commonality, and adherence to standards as approved in the Army's technical architecture.

13-3. ORD to RFP Crosswalk.

a. The purpose of the ORD to RFP crosswalk is to ensure that the RFP accurately reflects the ORD requirements for the next acquisition phase and to certify this to the decision review (Army Systems Acquisition Review Council (ASARC)/in-process review (IPR)) considering entry into the next phase. When the crosswalk indicates that the RFP does not accurately reflect the approved ORD, the MATDEV is expected to modify the RFP to reflect the ORD.

b. FDIC (Combat Developments Division) will be responsible for conduct of the ORD to RFP crosswalk for space and missile defense systems within the SMDC proponenty. FDIC will ensure that other appropriate players such as TRADOC, DCSCD and OPTEC also participate. The results of the crosswalk will be presented to CG, SMDC for approval. FDIC and the MATDEV will also forward a memorandum reflecting the results of the crosswalk to the decision review.

13-4. Horizontal Requirements Integration (HRI).

a. HRI is the holistic process of developing future, “total force-oriented” requirements based upon approved warfighting concepts and related FOCs. Multidisciplinary ICTs will provide an efficient means to achieve more horizontal integration early in the requirements determination process, thus promoting more efficient and affordable modernization solutions.

b. FDIC (Combat Developments Division) will be responsible to ensure that HRI is incorporated into the Milestone Decision Authority (MDA) requirements determination process. FDIC will routinely review all new initiatives to ensure that HRI is considered. SMDC will incorporate HRI into its requirements determination process in the following ways:

(1) ICTs will be formed to identify a system solution that addresses several different future capabilities; i.e., contributes to combat capabilities for multiple uses or warfighting functions.

(2) Incorporate the use or application of an HTI subsystem or common group of components/common software/electronic architecture that will be integrated into a wide variety of systems across the force. In either case, the HRI solution would be considered by the ICT along with other competing options/alternatives.

(3) HRI will be an integral part of the SMDC S&T review process. The focus in warfighting concept and FOC development promotes future, horizontally designed S&T initiatives (STOs, TDs, ATDs, ACT II, ACTDs). These S&T efforts should provide a broad range of technology/system options instead of a group of single systems/solutions for each future capability.

(4) HRI application will be expanded to areas beyond materiel solutions to other DTLOMS when appropriate.

(5) HRI principles can also be implemented by ICTs for system modification to a current Army system through the integration of an existing system or subsystem, from other areas of the force, or from other service systems. As the FDIC ICT assesses options for a future capability, modification to an existing system should be a major opportunity for consideration.

(6) SMDC will actively seek solutions from other services, industry, or Allied nations for application to U.S. space and missile defense systems.

13-5. Horizontal Technology Integration (HTI).

a. HTI is the common application of enabling technologies across multiple systems to increase total force effectiveness. It provides a new and more efficient means to integrate selected high value technologies into the force to gain modernization efficiency and advanced warfighting capability. Common systems, component software, and development programs reduce acquisition operations and support (O&S) costs. HTI strives to keep the Army's modernization program affordable by maximizing the return on investment for the Army's research, development, and acquisition resources.

b. As the SMDC agent responsible for HTI, FDIC (Combat Developments Division) will ensure that HTI opportunities are considered during the development of new and revised space and missile defense materiel requirements. Requirements that are common or compatible across a group or class of systems foster applications of HRI initiatives.

c. MDSTC will identify technologies with potential for multiple system applications or roles. Space and missile defense acquisition and modernization strategies and plans will reflect this emphasis and routinely apply HTI principles from the initiation of the program through fielding and follow-on modifications. FDIC will review all space and missile defense initiatives for application of HTI. SMDBL will be called upon to experiment with HTI initiatives.

13-6. Warfighting Rapid Acquisition Program (WRAP).

a. The WRAP process is a bridge linking experimentation and systems acquisition. WRAP provides a mechanism to accelerate the acquisition of selected operational warfighting enhancements born of successful warfighting experiments. WRAP applies to AWE, ATD, ACTD, or similar demonstrations, experiments, and evaluations. Approved WRAP candidates will receive two-year funding for operational prototypes. The funding will be provided so initial capability may be fielded to meet an established urgency. Subsequent resourcing will be based on the DA DCSOPS prioritization of TRADOC-approved warfighting requirements.

b. A WRAP candidate should meet the following criteria:

(1) The system/system enhancement is developed in the experimental process in accordance with TRADOC Pam 71-9.

(2) The system/system enhancement shows compelling experimental success and is urgently needed.

(3) The system/system enhancement aligns itself with an Army priority, SMDC priority, or has been identified as a space or missile defense enabler.

(4) The technology being used has matured to the point where it can be initially fielded in minimum quantities with minimal development efforts.

(5) The system/system enhancement will be able to have a contractual vehicle awarded in the FY it is nominated for so that the dollars obtained may be obligated against the contract.

(6) The system/system enhancement can meet all of the documentation requirements as detailed in the ASA(RDA) policy on WRAP.

c. The Army WRAP process is shown in Figure 13-1.

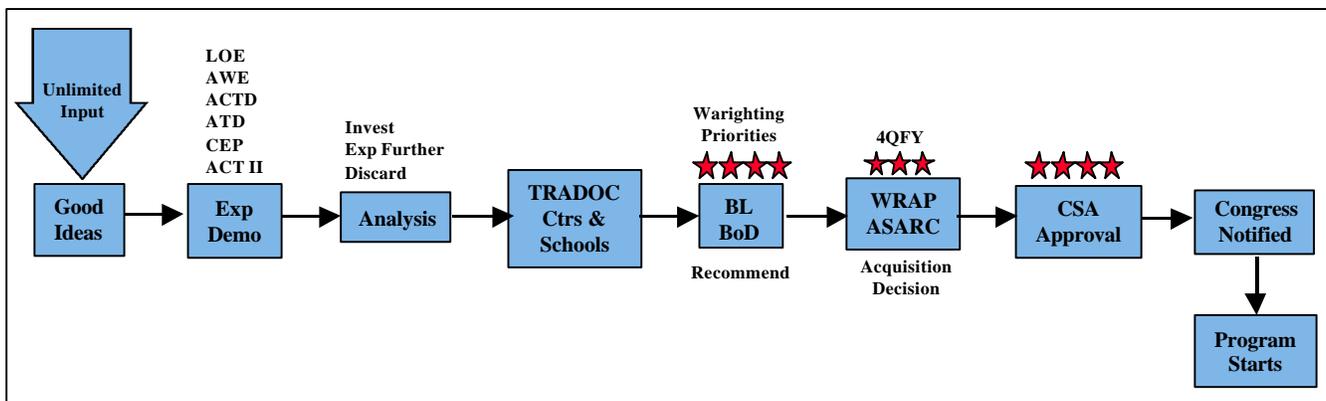


Figure 13-1. WRAP Process

d. The procedure for processing a system as an SMDC WRAP candidate will be conducted in four phases.

(1) Phase I is the system's evaluation in the experimental process. This phase is where the system's technology is developed, it is tested, and compelling successes are identified prior to becoming a WRAP candidate. Procedures outlined in TRADOC Pam 71-9, Chapter 8 and Chapter 8 of this handbook should be closely followed to ensure that sufficient information is generated to document the system's experimentation plan and evaluation results. Without this information, the potential WRAP candidate will have a very limited chance of success. Phase I is an ongoing process and milestones for this phase will be in accordance with the experimentation plan. In order to continue Phase II of the WRAP process, the system must have completed enough experimentation in order to have obtained results to document compelling success. This determination is the responsibility of SMDBL and FDIC.

(2) Phase II is the identification of a system as a WRAP candidate. Once FDIC and SMDBL agree that an experiment shows a technology to be a compelling success that satisfies an urgent need, SMDBL will initiate action to get the experiment results and WRAP recommendation to the Battle Lab BoD for approval as a CG, TRADOC WRAP candidate for consideration at the WRAP ASARC. TRADOC will normally notify proponents no later than 30 days prior to the Battle Lab BoD meeting if their system has been either approved or disapproved to be presented as a WRAP candidate to the BoD.

(3) Phase III is the preparation for and nomination of the system as a WRAP candidate to the Battle Lab BoD. Presentation to the BoD will be in the form of an information briefing about the WRAP candidate. This presentation is the joint responsibility of SMDBL and FDIC. The briefing should include but is not limited to an overview of the experiment, system technical capabilities, evaluation results, return on investment/warfighter benefits, cost estimate, acquisition strategy, and recommendation concerning the initial fielding. BoD members will vote on candidates and establish an order of merit list. Candidate systems will be recommended to DCG, TRADOC based on positioning, average vote received, relative cost, and the opinion of the board. WRAP candidates must be approved by DCG, TRADOC to continue to Phase IV, the ASARC presentation.

(4) Phase IV of the process is the preparation for and presentation to the WRAP ASARC. This will be a formal decision briefing to present information about the WRAP candidate and to request approval and funding as a WRAP program. (Format guidance for the briefing slides and supporting documentation will be published by TRADOC.) The briefing should include but is not limited to an overview of the system, linkage to priorities, urgency, technical capabilities, operational concept, experiment results, return on investment, cost/budget estimate, acquisition strategy, and recommendation for initial fielding. SMDBL will prepare the WRAP ASARC briefing and supporting documentation. Prebriefs also are an SMDBL responsibility and will provide the same information as is to be presented to the ASARC. Briefers should be prepared to provide further details on the candidate. SMDBL will also prepare an updated LOEP and operational requirements statement (ORS) for rapid acquisition 45 days prior to the ASARC. The LOEP must be supplemented with an urgency of need statement, experimentation results documenting the compelling success, an acquisition strategy, and a budget estimate for the proposed program. The ORS for rapid acquisition must contain:

1. DPG. Annotate supporting paragraphs from latest DPG.
2. Threat. Address all threats to system, expected mission accomplishments, and why requirement is important and urgent.
3. System requirements. In operational terms, address what the system is expected to do: KPP, other requirements, and objective/future requirements (potential growth or new technology).
4. Constraints. Specify any parameters that could limit system capabilities, including logistic, safety, and training constraints.

e. WRAP ASARCs are normally conducted in the March-April and September-October timeframes to accommodate PPBES actions. Funding is approved within the long-range RDA prioritization and planning process. Approved programs will be assigned management responsibilities and a milestone entry point into the life cycle model and a funding strategy will be established. (Candidates approved for rapid acquisition are not guaranteed immediate funding even if submitted in time to place funding in budget and programming documents.) Approved WRAP programs can be funded as prototypes for two years. Subsequent funding must compete in the Program Objective Memorandum (POM).

13-7. TRADOC Warfighting Lens Analysis (WFLA).

a. WFLA is the process that TRADOC uses to provide input to the Army's RDA plan and the Army POM considerations. It is derived from a warfighter's assessment of future battlefield requirements. WFLA compares the future required capabilities of the total force against the fiscally-constrained budgeted force in order to determine modernization needs. The needs are prioritized according to their objective measure of relative value to mission accomplishment. Recommendations are then developed to address those shortfalls.

b. WFLA is provided to HQDA (in December of an odd calendar year) as a key input for the current POM. It may also be provided annually to support the mini-POM. WFLA is a living, evolving process and is initiated/updated each cycle through TRADOC implementation guidance developed to meet DA current year guidance.

c. FDIC (Combat Developments Division) is responsible for development of space and missile defense WFLA input and providing representation at TRADOC reviews. TRADOC will normally issue implementation instructions in July or August.

d. Upon receipt of the TRADOC MOI, FDIC will prepare a near-, mid-, and far-term assessment of space and missile defense programs. The assessment will consider the threat scenarios provided by TRADOC, funding of the programs being assessed, and the impact on the warfighting CINC, as well as other mission areas. FDIC will also coordinate with other proponents in assessing the pillars of TMD elements. Completed assessments will be provided to HQ TRADOC, DCSCD (ATCD-ECI). FDIC will provide senior attendees to participate in the CBTDEV and General Officers' Steering Group (GOSG) WFLA reviews held in November and December. FDIC will defend its assessment at these reviews and support the integration and prioritization process at TRADOC. FDIC is responsible for surfacing command issues during these forums.

13-8. Space Planning and Requirements System (SPRS).

a. Introduction. The SPRS (Figure 13-2) is the overarching process that ensures USSPACECOM is moving in the proper direction to achieve the USSPACECOM Vision 2020, Joint Vision 2010, and space requirements of the other CINCs. The primary vehicle to achieve these objectives is the USSPACECOM Long Range Plan (LRP). The LRP provides the "vector" to take the Command from today to 2020, defining needed capabilities, concepts of operations (CONOPS) and organizations to achieve the Vision. Implementation of the LRP requires participation of the USSPACECOM Directorates, Components (ARSPACE), the Warfighting CINCs, Industry and the various DoD/National agencies concerned with space. Through the SPRS, USSPACECOM receives inputs to conduct a thorough assessment of space mission capabilities, CONOPS and organizations. This assessment provides recommendations on achieving warfighting requirements and overcoming operational deficiencies; and provides recommendations on achieving the Vision through the LRP, identifying systems, technologies, decision points, shortfalls and requirements documents necessary to achieve the Vision and LRP. This process includes a detailed assessment through the FYDP and a broader assessment out through 2020. The primary products of the SPRS are the LRP Action Plan, semi-annual updates to the CINC, updates to the USSPACECOM Vision and LRP, updates to the Operational Concept Six-Year Roadmaps, the Integrated Priority List (IPL) and requirements documents (MNS, CRDs and ORDs).

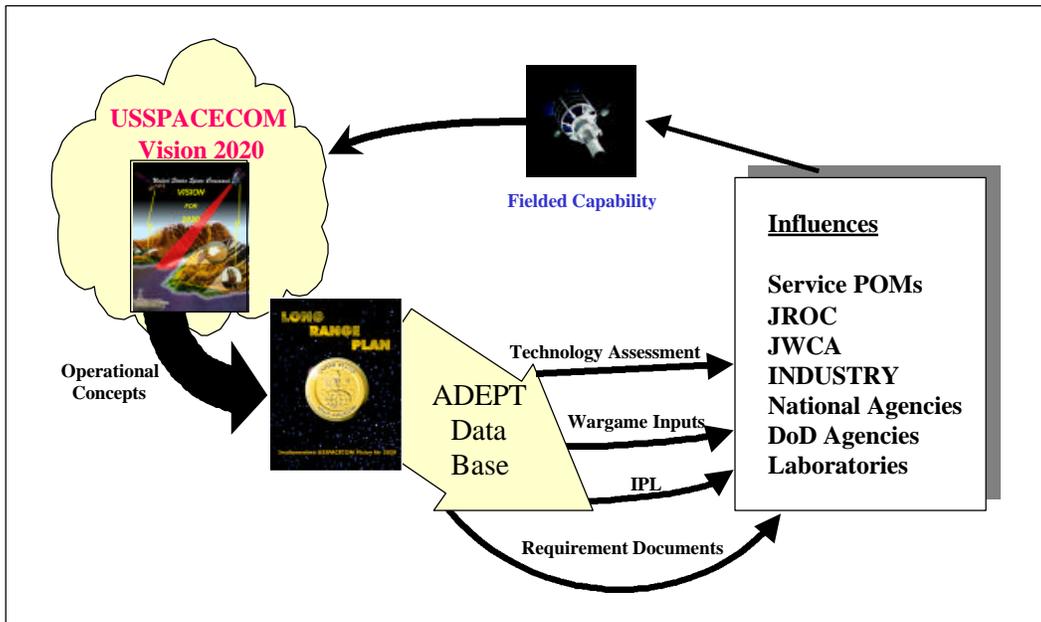


Figure 13-2. Space Planning and Requirements System

b. USSPACECOM Vision for 2020. USSPACECOM's vision for 2020 identifies future trends and their implications for USSPACECOM. Based on these trends, four operational concepts are defined to achieve the future. These operational concepts are: Control of Space, Global Engagement, Full Force Integration, and Global Partnerships. Specified

objectives are associated with each of these concepts. Achievement of specified objectives support achievement of the operational concepts and, ultimately, the Vision for 2020.

c. USSPACECOM Long Range Plan. The LRP is the roadmap to achieve the Vision for 2020. It defines the capabilities, CONOPS, and organizations necessary to achieve the Vision.

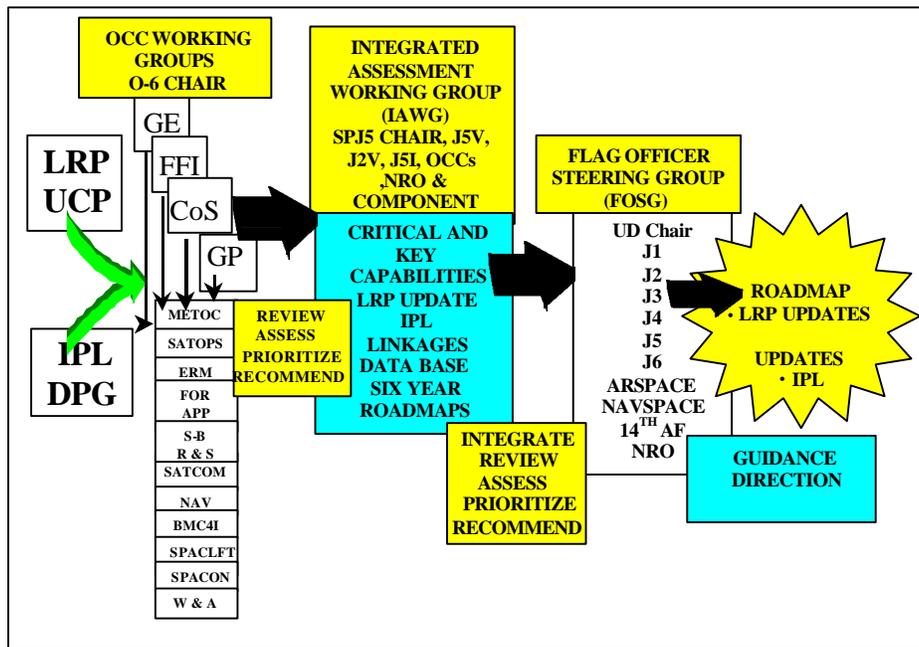
d. USSPACECOM LRP Action Plan. Defines near term (FYDP) actions required to implement the LRP. The Action Plan is drafted by the Operational Concept Champions (OCCs) and approved by the CINC at the semi-annual LRP reviews. The Action Plan is directive on the USSPACECOM staff and ARSPACE.

e. OCC Six-year Roadmaps. These roadmaps cover the FYDP period and provide information on systems, technologies, CONOPs, organizations, and partnerships.

f. Integrated Priority List. The IPL prioritizes USCINCSpace's most immediate concern in preparation for development of the DoD budget.

g. Requirements Documents. These include Mission Needs Statements, Capstone Requirements Documents, and Operational Requirements Documents identified through the SPRS process.

h. SPRS Process. The heart of the SPRS process is the USSPACECOM Vision and the LRP. The SPRS process is a continuous assessment of how command actions, plans and requirements stack up against the Vision, the LRP, and the IPL. Appropriate Directors and their OCCs will sponsor each of the operational concepts defined in the Vision and LRP and implement the taskings. Directors will also appoint mission area (MA) points of contact to support the OCCs in their assessment process. ARSPACE will support MA and OCC requirements and support taskings defined in the LRP Action Plan. ARSPACE will be the Army data provider for development of Operational Concept Six-Year Roadmaps and system and technology inputs. Figure 13-3 illustrates the overall SPRS process.



To support the semi-annual CINC reviews, OCCs, MA POCs, Directors, and ARSPACE will implement the actions identified in the semi-annual LRP Action Plan produced the OCCs and identify proposed changes/updates to the LRP. This will include identification of shortfalls against identified requirements (from the LRP or other Unified CINCs). These shortfalls are spring/summer cycle, they will update the CINCs IPL for CINC approval and submission to OSD. The formal review process for the LRP Action Plan and IPL utilizes the Integrated prior to briefing the CINC. ARSPACE is a member of the IAWG. Figure 13-4 is a notional SPRS timeline.

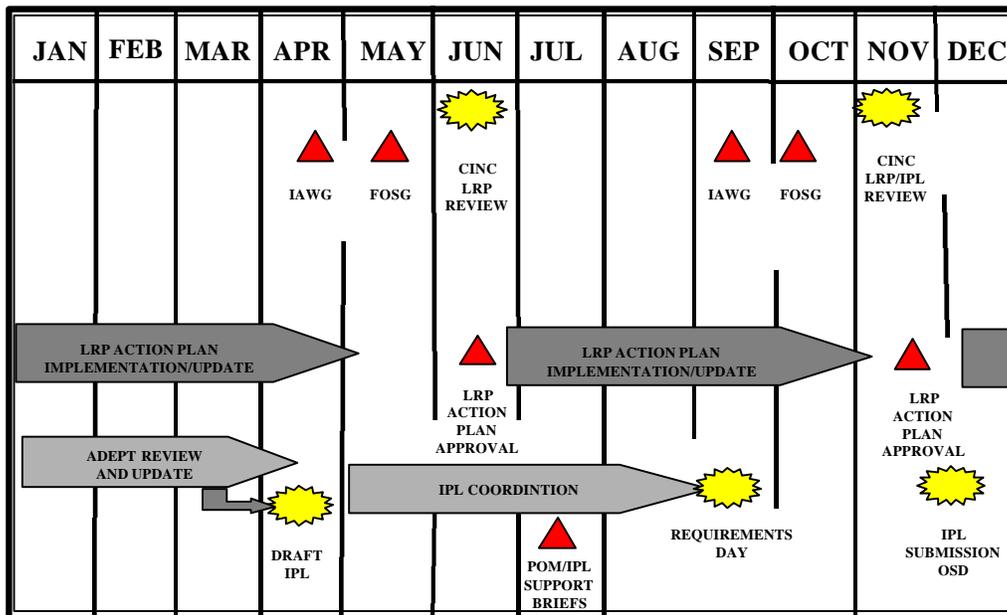


Figure 13-4. SPRS Notional Timeline

i. **SPRS Organization.** SPRS products are developed by the USSPACECOM SP/J5I and four OCC Working Groups supported by ten MA POCs. ARSPACE provides SME to the OCC Working Groups. Each OCC Work Group is chaired by a USSPACECOM O-6. The OCC Work Groups are composed of a matrixed cross-representation of Directorate, Component, and other agency personnel. The OCC Working Groups perform their assessments and submit their findings to the IAWG. The IAWG reviews the status of the LRP Action Plan and produces a draft IPL in the Spring review cycle.

j. **Army Responsibilities.**

(1) ARSPACE provides Army input into the SPRS process. In this role, ARSPACE maintains contact with other joint space and missile defense users to determine needs and participate in the demonstration of capabilities. ARSPACE will provide SME support to each of the OCC working groups. ARSPACE, will represent the Army in the development of critical USSPACECOM requirements documentation.

(2) FDIC (Combat Developments Division) will support ARSPACE during the OCC end-to-end assessment of functional areas and the development of the LRP/Long Range Action Plan OCC six-year roadmaps phase of the process. OCC working group products will be reviewed by FDIC functional domain divisions for Army implications and potential integration with Army assessments.

(3) SMDBL will also review OCC LRP/Long Range Action Plan, working group assessments, roadmaps, shortfalls, and recommendations, as required, to determine consistency with analysis and experimentation conducted by SMDBL and other TRADOC battle labs.

13-9. Army Space Program Office (ASPO).

a. The Army Space Program Office (ASPO) is responsible for the TENCAP program that is based on exploiting current and future technologies of national and airborne capabilities into the Army’s tactical decision-making process as rapidly as possible. ASPO leverages the national technology designed to support strategic requirements, and provides the linkage of these strategic capabilities to the tactical commander. By CSA direction, ASPO serves as the focal point for technical, fiscal, and operational interactions with the National Reconnaissance Office.

b. Operating under a waiver to the standard acquisition model from the CSA allows ASPO to conduct streamlined acquisition to keep pace with technology development and architecture changes. The TENCAP program embraces all phases of system acquisition, materiel development, and sustainment. ASPO acquisition procedures are documented in the “TENCAP Systems’ Management Model” which provides a tailored end-to-end process based on the DOD 5000 acquisition series and applicable HQDA, TRADOC and AMC regulations and pamphlets.

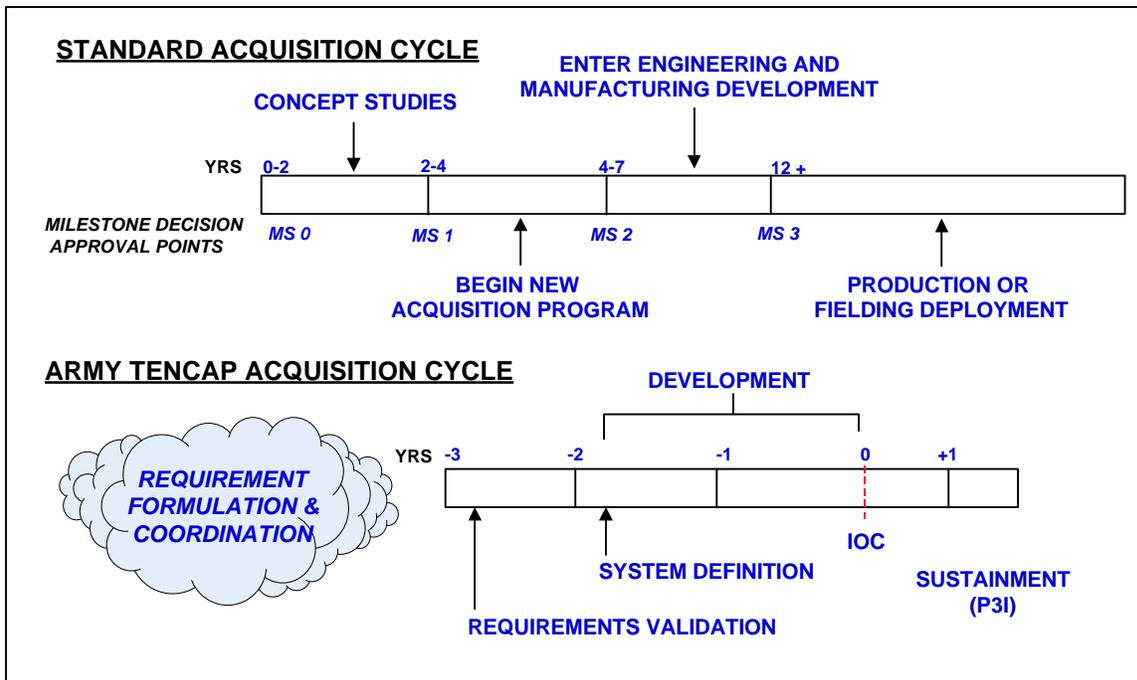


Figure 13-5. Acquisition Development Timelines

c. FOCs. In coordination with the U.S. Army Intelligence Center, ASPO will assist in the development of FOCs that support TRADOC warfighting concepts. These capabilities, in addition to information from other sources, will serve as the focal point for future studies, as well as participation in exercises and demonstrations.

d. Experimentation, analysis, exercises, and demonstrations. ASPO will participate, where appropriate, in experiments, demonstrations, exercises, and wargames to evaluate

concepts or technologies and determine requirements. Further, ASPO will conduct studies and analyses to support requirements determination and evaluate future concepts of operation and technology viability to support DTLOMS efforts.

e. Requirements determination and validation. The TENCAP operational requirements determination is developed by the U.S. Army Intelligence Center, in close coordination with TENCAP command representatives, user units, other combat developers and ASPO. While there is a constant open dialogue among this group to solicit input, ASPO sponsors twice-yearly user conferences where system users, key management players, and project officers gather to identify requirements, share information and ideas, or resolve problems. This forum offers system users, developers, project officers, and key management personnel an opportunity to exchange not only information on current system requirements, but to obtain information on upcoming software releases, evolving technology, and future national and theater systems. In concert with HQDA DCSOPS (DAMO-FD) and SARD, a TENCAP GOSG (JGOSG) composed of general officers at HQDA, oversees the decision process to validate the requirements, architecture, and approve the acquisition plan.

f. System development, fielding, and sustainment. ASPO oversees the system throughout its life cycle by securing a high degree of visibility for each system. Sustainment includes a continual P3I upgrade program, supported by semi-annual user conferences and monitored by a formal Migration Board and Configuration Control Board(s) to keep pace with changing interfaces and technology. This visibility enables the organization to plan for the entire life cycle—from concept to design, test and evaluation, training, fielding, and then into the sustainment phase. The organization initiates development and establishes a baseline requirement and design up front for P3I. This ensures sustainability and maintainability of each system. ASPO develops and fields systems using an 80% solution during development, and subsequently relies on close contact with TRADOC and the system user to refine system and future operational capabilities. ASPO differs from traditional acquisition programs because it provides cradle-to-grave logistic support. Logistic enhancement stressed early in the design phase are trade-offs to enhance transportability, maintainability, and supportability while reducing costs.

13-10. Space and Missile Defense Integrated Idea Team (S/MD IIT).

a. The S/MD IIT serves as the command's long-range "engine of change." Its fuel resource is information derived from the AAN wargames and other Army, service, DOD, governmental, and commercial 2020-timeframe activities. The S/MD IIT seeks to develop breakthrough or leap-ahead space and missile defense concepts, policy, and technology issues.

b. The primary objective of the S/MD IIT is to analyze information in the context of three functional areas. These functional areas are technology, concepts, and policy. The potential outputs of the S/MD IIT are broken down into three functional areas to include:

(1) Technology: Influence Army and DOD space and missile defense long-range R&D funding (6.1 and 6.2 research efforts).

(2) Concepts: Define space and missile defense FOCs and warfighting operational concepts.

(3) Policy: Develop policy positions and initiatives that the Army must pursue to ensure or enable future technologies and concepts.

c. While there are discrete events, such as formal meeting and written outputs, that are used to document S/MD IIT findings related to concepts, policy, or technology efforts, the S/MD IIT process operates on a year-round basis. SMDC maximizes information-age technologies to conduct “virtual” meetings of the S/MD IIT members. The S/MD IIT process allows SMDC to focus on issues that are relevant to not only long-range planning but also current DA, DOD, and commercial activities.

d. The FDIC (Concepts and Doctrine Division) will be responsible for the planning, conduct, and reporting of S/MD IIT activities. The S/MD IIT will consist of a Senior Advisory Group (SAG), Core Group, Red Team, and the Technology, Concepts, and Policy Panels. The functions of each are described below:

(1) The SAG consists of senior SMDC and TRADOC personnel that guide the overall process and serves three important roles:

(a) An approval body for the Core Group’s efforts to develop focused issues prior to the issues being briefed to the CG, SMDC.

(b) An advisory body during IIT formal meetings and panel activities.

(c) A senior sounding body for IIT panel proposals for completeness, technical maturity, operational relevance, etc.

(2) The Core Group’s primary responsibility is to analyze individual issues and impressions, and form focused issues that the S/MD IIT may take under consideration. The Core Group considers space and missile defense-related insights and impressions from AAN and other 2020-timeframe activities in light of ongoing Army, DOD, civil, and commercial activities. The Core Group then forms a few focused issues that capture the essence of the entire group of insights and impressions. These issues are then taken under consideration by the S/MD IIT.

(3) The Red Team’s function is to play the role of potential adversaries by looking for asymmetric counters to concepts and technologies.

e. The IIT consists of three panels (Concepts, Technology, and Policy) that meet two or three times a year in a seminar environment. The panels review each of the approved focused issues and develop approaches to advance Army, DOD, other service, or other agency policies, concepts, or technology programs to satisfy Army requirements generated by the issue.

13-11. Integrated Product Teams (IPTs).

a. IPTs are an integral part of the defense acquisition oversight and review process. IPTs are composed of representatives from all appropriate disciplines that work together to build successful programs and enable decision-makers to make the right decisions at the right time. Members are empowered and authorized, to the maximum extent possible, to make commitments for the organization or the functional area they represent.

b. The Program Executive Officer (PEO) or Program Manager (PM) is responsible to form and lead an integrating IPT to support the development of strategies for acquisition and contracts, cost estimates, evaluation of alternatives, logistic management, cost-performance trade-offs, etc. The following roles and responsibilities apply to all IPTs:

- (1) Assist the PEO/PM in developing strategies and in program planning.
- (2) Establish IPT plan of action and milestones.
- (3) Propose tailored document and milestone requirements.
- (4) Review and provide early input to documents.
- (5) Coordinate working group activities with overarching team members.
- (6) Resolve or elevate issues in a timely manner.

(7) Assume responsibility to obtain principal's concurrence on issues as well as with applicable documents or portions of documents.

c. The FDIC ICT membership will normally transfer to the IPT for those requirements satisfied by a materiel solution. FDIC will ensure that membership on the IPT is broad enough to support all working groups established by the PEO/PM. FDIC is responsible for monitoring the status of all work groups and keeping CG, SMDC informed of any issues requiring his attention.

13-12. Resource Management Considerations.

a. SMDC does not separately manage resources associated with requirements determination activities. MSE within SMDC are expected to program and budget for their responsibilities as described in this handbook. Existing processes administered by the Deputy Chief of Staff for Resource Management (DCSRM) can be used to request additional resources, if required.

b. SMDC does not program or budget to support the missions of other commands involved in the requirements determination processes described in this handbook. For example,

external commands invited to participate in an SMDC-hosted ICT or IPT would normally be expected to fund their participation. Requests from other commands or agencies for resources will be handled through existing resources management mechanisms.

c. In some cases, outside agencies may request that SMDC activities support the other agency's role in the requirements determination process. Once again, such requests for reimbursable support will be handled through the existing DCSRMs mechanisms.

13-13. Impact of Requirements Determination on Army Planning, Programming, and Budgeting System (PPBS).

a. Properly developed, documented, and approved Army requirements provide the basic framework within which the Army PPBS decisions are made.

b. DCSRMs has the responsibility to represent a consistent SMDC position throughout the PPBS process. DCSRMs must be aware of all input provided by SMDC activities that is intended to influence Army resource allocation decisions. Under the TRADOC MOA, DCSRMs has a new, similar responsibility to ensure that SMDC resource management input to TRADOC is correctly formulated and consistent with previously stated SMDC priorities.

c. Any requirements determination documentation sent to TRADOC to request resources, to be input into TRADOC resource prioritization processes, or intended for release to the Army staff must be staffed with DCSRMs prior to approval. This includes but is not limited to input to USCINCSpace and other IPLs, LRP, STO candidates, WRAP candidates, and S&T investments.

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

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CJCSI 6212.01A

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

DA Pam 70-3

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DA Pam 350-58

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DODD 5000.1

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Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs

TRADOC Pam 11-8

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TRADOC Pam 71-9

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TRADOC Pam 350-70-8

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TRADOC Pam 525-66

Future Operational Capability

TRADOC Reg 5-3

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TRADOC Reg 5-11
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AR 11-40
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FM 100-11
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FM 100-14
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TRADOC Pam 25-34
Desk Guide to Doctrine Writing

TRADOC Pam 25-35
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TRADOC Reg 25-30
Preparation, Production, and Processing of Armywide Doctrinal and Training Literature
(ADTL)

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DA Form 1045
Army Ideas for Excellence Program (AIEP) Proposal
DA Form 2028
Recommended Changes to Publications and Blank Forms

HQ TRADOC Form 30
Transmittal, Action, and Control

Glossary

6.2	Exploratory Development
6.3	Advanced Development
6.4	Demonstration and Validation
6.5	Engineering and Manufacturing Development
AAE	Army Acquisition Executive
AAN	Army After Next
AAR	After Action Report
AC	Active Component
ACAT	Acquisition Category
ACAT I	Acquisition Category I (DOD 5000.2-R/AR 70-1)
ACAT IA	Acquisition Category I Automation (DOD 5000.2-R/AR 70-1)
ACAT IAC	Acquisition Category I Automation Component (DOD 5000.2-R/AR 70-1)
ACAT IAD	Acquisition Category I Automation Defense (DOD 5000.2-R/AR 70-1)
ACAT IC	Acquisition Category I Component (DOD 5000.2-R/AR 70-1)
ACAT ID	Acquisition Category I Defense (DOD 5000.2-R/AR 70-1)
ACAT II	Acquisition Category II (DOD 5000.2-R/AR 70-1)
ACAT IIA	Acquisition Category II Automation (AR 70-1)
ACAT III	Acquisition Category III (DOD 5000.2-R/AR 70-1)
ACAT IIIA	Acquisition Category III Automation (DOD 5000.2-R/AR 70-1)
ACAT IV	Acquisition Category IV (AR 70-1)
ACCB	Army Configuration Control Board
ACM	Advanced Concept Manager
ACP	Army Cost Position
ACR	Advanced Concepts and Requirements
ACR	Ammunition Consumption Rate
ACSIM	Assistant Chief of Staff for Installation Management and Environment
ACT II	Advanced Concepts and Technology II
ACTD	Advanced Concepts Technology Demonstration
ADA	Air Defense Artillery
ADCSOPS (FD)	Assistant Deputy Chief of Staff for Operations and Plans, Force Development
ADEPT	Automated Data Base Expert Planning Tool
ADM	Acquisition Decision Memorandum
AECP	Army Experimentation Campaign Plan
AIS	Automated Information System
AMC	Army Materiel Command
AMEDD	Army Medical Department
AMSAA	Army Materiel Systems Analysis Activity
AMSEC	Army Model and Simulation Executive Council
AMSO	Army Model and Simulation Office
AO	Action Officer

AoA	Analysis of Alternatives
APB	Acquisition Program Baseline
APD	Army Program Directive
AR	Army Regulation
ARL	Army Research Laboratory
ARPRINT	Army Program for Individual Training
ARSPACE	Army Space Command
ARSTAF	Army Staff
ASA(RDA)	Assistant Secretary of the Army for Research, Development, and Acquisition
ASARC	Army Systems Acquisition Review Council
ASEDP	Army Space Exploitation Demonstration Program
ASPO	Army Space Program Office
ARSST	Army Space Support Team
ASTAG	Army Science and Technology Advisory Group
ASTMIS	Army Science and Technology Management Information System
ASTMP	Army Science and Technology Master Plan
ASTWG	Army Science and Technology Working Group
ATD	Advanced Technology Demonstration
ATRRS	Army Training Requirements and Resources System
AURS	Automated Unit Reference Sheets
AUTS	Automatic Update Transaction System
AWE	Advanced Warfighting Experiment
BAA	Broad Agency Announcement
BASOPS	Base Operations
BL	Battle Lab
BLITCD	Battle Laboratory Integration, Technology, and Concepts Directorate
BLPO	Battlefield Laboratory Project Officer
BLWE	Battle Lab Warfighting Experiment
BMC4I	Battle Management/Command, Control, Communications, Computers, and Intelligence
BMDO	Ballistic Missile Defense Organization
BoD	Board of Directors
BOIP	Basis of Issue Plan
BOIPFD	Basis of Issue Plan Feeder Document
BPR	Business Process Reengineering
C&I	Concepts and Initiatives
C4I	Command, Control, Communications, Computers, and Intelligence
C4ISMP	C4 Integration Space Master Plan
C4RDP	Command, Control, Communications, and Computers Requirements Definition Program
CAC	Combined Arms Center
CAD	Course Administrative Data
CAL	Center for Army Leadership
CALL	Center for Army Lessons Learned

CARDS	Catalog for Approved Requirements Documents
CASCOM	Combined Arms Support Command
CATS	Combined Arms Training Strategy
CBD	Commerce Business Daily
CBRS	Concept Based Requirements System
CBTDEV	Combat Developer
CCB	Configuration Control Board
CD	Combat Development
CECOM	Communications and Electronics Command
CEP	Concept Experimentation Program
CG	Commanding General
CGSC	Command and General Staff College
CINC	Commander in Chief
CINCSPACE	Commander in Chief, Space Command
CIO	Chief Information Officer
CJCS	Chairman, Joint Chiefs of Staff
CLIW	Class Length in Weeks
CMDT	Commandant
CoC	Council of Colonels
CofS	Chief of Staff
COI	Contemporary Operational Issue
COIC	Critical Operational Issues and Criteria
CONOPS	Concepts of Operation
COR	Contracting Officer's Representative
CRD	Capstone Requirements Document
CS	Combat Support
CSA	Chief of Staff, U.S. Army
CSS	Combat Service Support
CTC	Combat Training Center
DA	Department of the Army
DAB	Defense Acquisition Board
DARPA	Defense Advanced Research Projects Agency
DAS(R&T)	Deputy Assistant Secretary of the Army for Research and Technology
DCE	Data Collection Effort
DCG	Deputy Commanding General
DCS	Deputy Chief of Staff
DCSCD	Deputy Chief of Staff for Combat Developments
DCSDOC	Deputy Chief of Staff for Doctrine
DCSINT	Deputy Chief of Staff for Intelligence
DCSLOG	Deputy Chief of Staff for Logistics
DCSOPS	Deputy Chief of Staff for Operations and Plans
DCSPER	Deputy Chief of Staff for Personnel
DCSRM	Deputy Chief of Staff for Resource Management
DCSSA	Deputy Chief of Staff for Simulations and Analysis
DCST	Deputy Chief of Staff for Training

DDDP	Doctrine Development Design Process
DEPCINCSpace	Deputy Commander in Chief, Space Command
DIA	Defense Intelligence Agency
DISC4	Director of Information Systems for Command, Control, Communications, and Computers
DLMP	Doctrine Literature Master Plan
DLP	Doctrine Literature Program
DM	Demonstration Manager
DOCDEV	Doctrine Developer
DOD	Department of Defense
DODD	Department of Defense Directive
DPG	Defense Planning Guidance
DRAG	Doctrine Review and Approval Group
DSCSOC	Defense Satellite Communications System Operations Center
DT	Developmental Tester
DT	Down Time
DTLOMS	Doctrine, Training, Leader Development, Organization, Materiel, and Soldier
DUSA(OR)	Deputy Under Secretary of the Army for Operations Research
DUSD(AT)	Deputy Under Secretary of Defense for Advanced Technology
ECCM	Electronic Counter-Countermeasures
EEA	Essential Elements of Analysis
EMD	Engineering and Manufacturing Development
EPP	Extended Planning Period
EWD	Early Warning Device
EWG	Experiment Work Group
EXFOR	Experimental Force
FA	Field Artillery
FA	Functional Area
FAR	Federal Acquisition Regulation
FDD	Force Design Directorate
FDIC	Force Development and Integration Center
FDU	Force Design Update
FFR	Force Feasibility Review
FM	Field Manual
FOC	Future Operational Capability
FORSCOM	Forces Command
FOSG	Flag Officer Steering Group
FY	Fiscal Year
FYDP	Future Years Defense Program
GOSG	General Officers' Steering Group
HELSTF	High Energy Laser Systems Test Facility
HQDA	Headquarters, Department of the Army
HRI	Horizontal Requirements Integration
HRS	High Resolution Scenario

HSI	Human Systems Integration
HTI	Horizontal Technology Integration
IAW	In Accordance With
IAWG	Integrated Assessment Working Group
ICH	Instructor Contact Hours
ICT	Integrated Concept Team
IIT	Integrated Idea Team
IPL	Integrated Priority List
IPR	In Process Review
IPT	Integrated Product Team
ISYSCON	Integrated System Control System
IT	Information Technology
ITP	Individual Training Plan
JCS	Joint Chiefs of Staff
JDWP	Joint Doctrine Working Party
JLENS	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System
JPD	Joint Potential Designator
JPD	Joint Program Directive
JROC	Joint Requirements Oversight Council
JT&E	Joint Test and Evaluation
JTA-A	Joint Technical Architecture-Army
JTAGS	Joint Tactical Ground Station
JWCA	Joint Warfighting Capability Assessment
KO	Contracting Officer
KPP	Key Performance Parameter
LDAP	Leader Development Action Plan
LDDN	Leader Development Decision Network
LDO	Leader Development Office
LDRDEV	Leader Developer
LDSS	Leader Development Support System
LOE	Limited Objective Experiment
LOEP	Limited Objective Experiment Plan
LRP	Long-Range Plan
LRS	Low Resolution Scenario
M&S	Model and Simulation
MACOM	Major Army Command
MAISRC	Major Automated Information Systems Review Council
MANPRINT	Manpower and Personnel Integration
MATDEV	Materiel Developer
MAWG	Mission Assessment Working Group
MDA	Milestone Decision Authority
MDEP	Management Decision Package
MDR	Milestone Decision Review
MDSTC	Missile Defense and Space Technology Center

MFP	Materiel Fielding Plan
MILDEP	Military Deputy
MNS	Mission Needs Statement
MOA	Memorandum of Agreement
MOC	Management of Change
MOCS	Military Occupational Classification and Structure
MODPLAN	Modernization Plan
MOE	Measure of Effectiveness
MOI	Memorandum of Instruction
MOP	Measure of Performance
MOS	Military Occupational Specialty
MP	Mission Profile
MRD	Materiel Requirements Document
MRP	Mission Requirements Planning
MS	Milestone
MSC	Major Subordinate Command
MSE	Major Staff Element
NBC	Nuclear, Biological, and Chemical
NCOA	Noncommissioned Officer Academy
NGB	National Guard Bureau
NGIC	National Ground Intelligence Center
NMD	National Missile Defense
NMS	National Military Strategy
NORAD	North American Aerospace Defense Command
NRO	National Reconnaissance Organization
NSSA	National Security Space Architect
NSSMP	National Security Space Master Plan
NSTD	Nonsystem Training Device
O&S	Operations and Support
OA	Operational Architecture
OCAR	Office of the Chief of Army Reserve
OCI	Operational Concept Integration
OCS	Optimum Class Size
ODCSCD	Office of the Deputy Chief of Staff for Combat Development
ODCSOPS	Office of the Deputy Chief of Staff for Operations and Plans
OJCS	Office of the Joint Chief of Staff
OM	Operational Manager
OML	Order of Merit List
OMS	Operational Mode Summary
ONS	Operational Needs Statement
OOC	Out of Cycle
OPFOR	Opposing Force
OPTEC	Operational Test and Evaluation Command
ORD	Operational Requirements Document
ORGDEV	Organization Developer

ORS	Operational Requirements Statement
OSCR	Operations and Support Cost Reduction
OSD	Office of the Secretary of Defense
OT	Operating Time
OT	Operational Tester
P3I	Preplanned Product Improvement
PA&E	Program Analysis and Evaluation
Pam	Pamphlet
PD	Program Directive
PDSS	Post-Deployment Software Support
PEG	Program Evaluation Group
PEO	Program Executive Office
PERSCOM	Personnel Command
PM	Program/Project/Product Manager
POC	Point of Contact
POI	Program of Instruction
POM	Program Objective Memorandum
PP	Project Proposal
PPBES	Planning, Programming, Budgeting, and Execution System
PPBS	Planning, Programming, and Budgeting System
PR	Production Requirement
PRA	Primary Review Authority
QQPRI	Qualitative and Quantitative Personnel Requirements Information
R&D	Research and Development
RC	Reserve Component
RC3	Reserve Component Configured Software
RCTI	Reserve Component Training Institution
RDA	Research, Development, and Acquisition
RDD	Requirements Definition Document
RDEC	Research, Development, and Engineering Center
RDTE	Research, Development, Test, and Evaluation
Reg	Regulation
RFP	Request for Proposal
RIA	Requirements Integration and Approval
RIC	Requirements Integration Council
RID	Requirements Integration Directorate
RIM	Requirements Integration Manager
RISTA	Reconnaissance, Intelligence, Surveillance, and Target Acquisition
RIWG	Requirements Integration Working Group
ROTC	Reserve Officer Training Corps
RRC	Requirements Review Council
RS	Resume Sheet
RSSC	Regional Space Support Center
S&T	Science and Technology
S/MD	Space and Missile Defense

SA	Secretary of the Army
SA	System Architecture
SAG	Senior Advisory Group
SAMAS	Structure and Manpower Allocation System
SARDA	Secretary of the Army for Research, Development, and Acquisition
SAT	System Approach to Training
SIO	Senior Intelligence Officer
SMDAC	Space and Missile Defense Acquisition Center
SMDBL	Space and Missile Defense Battle Lab
SMDC	Space and Missile Defense Command
SMDR	Structure Manning Decision Review
SME	Subject Matter Expert
SOP	Standard Operating Procedure
SOW	Statement of Work
SPRS	Space Planning and Requirements System
SSDC	Space and Strategic Defense Command
SSG	Senior Steering Group
STA	System Threat Assessment
STAR	System Threat Assessment Report
STD	Space Technology Directorate
STO	Science and Technology Objective
STRAP	System Training Plan
SVC	Service
T&E	Test and Evaluation
T&LDD	Training and Leader Development Division
TAA	Total Army Analysis
TAADS	The Army Authorization Documents System
TACITS	Total Army Centralized Individual Training Solicitation
TADSS	Training Aids, Devices, Simulations, and Simulators
TAP	The Army Plan
TASS	Total Army School System
TATS	Total Army Training System
TBD	To Be Determined
TD	Technology Demonstration
TD	Training Development
TDA	Table of Distribution and Allowances
TEA	Training Effectiveness Analysis
TEB	Technical Evaluation Board
TECO	Test and Evaluation Coordination Officer
TECOM	Test and Evaluation Command
TEMO	Training, Exercise, and Military Operations
TEMP	Test and Evaluation Master Plan
TENCAP	Tactical Exploitation of National Capabilities Program
TMA	Training Mission Area
TMD	Theater Missile Defense

TNGDEV	Training Developer
TOE	Table of Organization and Equipment
TOMA	Training Operations Management Activity
TPIO	TRADOC Program Integration Officer
TPO	TRADOC Project Officer
TRA	Technical Review Authority
TRAC	TRADOC Analysis Center
TRADOC	Training and Doctrine Command
TRAS	Training Requirements Analysis System
TSARC	Test Schedule and Review Committee
TSM	TRADOC System Manager
TSO	Threat Support Office
TSP	TRADOC Study Program
TTP	Tactics, Techniques, and Procedures
UAV	Unmanned Aerial Vehicle
UCP	UIR Change Proposal
UCP	Unified Command Plan
UFD	User Functional Description
UPD	Unified Policy Directive
URS	Unit Reference Sheet
USAADASCH	U.S. Army Air Defense Artillery School
USAFMSA	U.S. Army Force Management Support Agency
USAKA	U.S. Army Kwajalein Atoll
USD(A&T)	Under Secretary of Defense for Acquisition and Technology
USSPACECOM	United States Space Command
VCSA	Vice Chief of Staff of the Army
VG	Viewgraph
VTC	Video Teleconferencing
WFLA	Warfighting Lens Analysis
WRAP	Warfighter Rapid Acquisition Program
WTEM	Weather, Terrain, and Environmental Monitoring