PROGRAM MANAGEMENT

1. Introduction. This material has been assembled to give you an overview of the Army's concept of program management. The term, “program management,” is used as a generic expression encompassing several levels of centralized management, each having similar functions. Program managers, project managers, or product managers, depending on the complexity of the task, perform centralized program management. The term program manager[1] is used as a generic expression encompassing all levels of Army acquisition managers.

2. Objectives. At the conclusion of this lesson, you should be able to

a. Distinguish among program, project, and product managers.

b. Describe the major tasks performed by the project manager during the acquisition process.

c. Discuss the variables that a PM must influence during the acquisition process.

d. Compare the strengths and limitations of matrix versus traditional PM organizations.

e. Describe three reports a PM must typically submit.

f. Differentiate between the Working Level Integrated Product Team and Overarching Integrated Product Team.

3. What is a Project?

a. Webster defines a project as "a planned undertaking; a definitely formulated piece of research; a large usually government-supported undertaking; a task or problem engaged in normally by a group of students to supplement and apply classroom studies." A large project has also been defined as "some overall task that has a definable beginning and a definable end. It consists of a number of related and dependent activities, all of which utilize resources, and upon which there are imposed internal and external conditions."[2] Another definition of project is, ”a one-time activity with a well-defined set of desired end results. It can be divided into subtasks that must be accomplished in order to achieve the project goals. The project is complex enough that the subtasks require careful coordination and control in terms of timing, precedence, cost and performance. The project itself must often be coordinated with other projects being carried out by the same parent organization.”[3] From these definitions, a project may be a task not involving hardware. In fact, some Army projects have not been directly associated with hardware acquisition; e.g., the Saudi Arabian National Guard (SANG) Pro-

[1] The words, he, him, and his used in this publication encompass both genders unless otherwise specifically stated.
[2] Project Management, by Dr. R. L. Martino, MDI Publications, 1968.
[3] Project Management, A Managerial Approach, by Jack R. Meredith and Samuel J. Mantel, Jr. John Wiley & Sons, Inc., 1995.

gram. However, the majority of Army projects are directly associated with hardware or information systems acquisition. The term project is often used in lieu of program, product, system, item, equipment, etc., because the meanings are very close within the Training and Doctrine Command (TRADOC) community. The terms program and project are often interchangeable.

b. Other definitions of project-related terms are contained in Appendix A.

4. Duties and Responsibilities of a Program Manager. The PM or other materiel developer (MATDEV) will:

a. Serve as a materiel developer.

b. Plan and manage acquisition programs consistent with the policies and procedures issued by the Army Acquisition Executive (AAE) and appropriate regulations, policies, procedures, and standards. (Appendix C contains Army acquisition policies.)

c. Provide the planning guidance, direction, control, oversight, and support necessary to ensure systems are developed in accordance with the Army Enterprise Architecture, to include certification of compliance with the Army Enterprise Architecture to the milestone decision authority (MDA) prior to formal release of the draft and final solicitations; minimize life-cycle cost; and are fielded within cost, schedule, and performance baselines.

d. Develop and submit requirements for financial, manpower, matrix, and contractor support (CS) to the AAE, the respective program executive officer (PEO) or other materiel developer. Coordinate for required functional support from the appropriate materiel command(s).

e. Develop, coordinate, and commit to an acquisition program baseline and immediately report all imminent and actual breaches of approved baselines.

f. Ensure Acquisition Program Baseline APB and solicitations implement the Operational Requirements Document (ORD).

g. Prepare and submit timely and accurate periodic program performance reports, as required.

h. Implement Integrated Product Teams throughout the acquisition process.

i. For horizontal technology integration (HTI) programs, the HTI PM and its host platform PM must coordinate all planning, programming and budgeting efforts to ensure their programs remain executable.

j. Be responsible for configuration management.

k. Act as the risk decision authority for low risk safety hazards associated with Army systems. Be responsible for identifying all hazards, eliminating or mitigating when possible, and providing an assessment of hazards that are not eliminated.[4]

5. DoD Program Management Policies.[5]

a. Acquisition. The primary objective of Defense acquisition is to acquire quality products that satisfy user needs with measurable improvements to mission accomplishment and operational support, in a timely manner, and at a fair and reasonable price. DoD shall use performance and results-based management to ensure an efficient and effective acquisition system. Successful acquisition programs are fundamentally dependent upon competent people, rational priorities, validated requirements, performance measurement, and clearly defined responsibilities.

b. Technology. A robust Science and Technology program provides the essential foundation for a technologically superior military force. The Department's acquisition executives shall ensure that users have superior, supportable, and affordable technology to support their missions and give them revolutionary war-winning capabilities.

c. Operational Support. Effective operational support must provide for systems that are suitable, supportable, and survivable, and must utilize a total systems approach for the full range of system support considerations throughout the life cycle of the system.

d. Investment Strategy. The DoD acquisition system exists to secure and sustain the nation's investments in technologies, programs, and product support necessary to achieve the National Security Strategy and support the United States Armed Forces. The Department's investment strategy must be postured to support not only today's force, but also the next force, and future forces beyond that.

e. Use of Commercial Products, Services, and Technologies. In response to user requirements, priority consideration shall always be given to the most cost-effective solution over the system's life cycle. In general, decision-makers, users, and program managers shall first consider the procurement of commercially available products, services, and technologies, or the development of dual-use technologies, to satisfy user requirements, and shall work together to modify requirements, whenever feasible, to facilitate such procurements. Market research and analysis shall be conducted to determine the availability, suitability, operational supportability, interoperability, and ease of integration of existing commercial technologies and products and of non-developmental items prior to the commencement of a development effort.

f. Competition. PMs and contracting officers shall provide for full and open competition, unless one of the limited statutory exceptions apply (FAR 6.3). PMs and contracting officers shall use competitive procedures best suited to the circumstances of the acquisition program.

[4] AR 70-1
[5] DoDD 5000.1 and DoD 5000.2-R

The acquisition strategy for all acquisition programs shall describe plans to attain program goals via competition in all increments and life-cycle phases. Competitive prototyping, competitive alternative sources, and competition with other systems that may be able to accomplish the mission shall be used where practicable.

g. The PM shall consider component breakout. An open systems design facilitates component breakout. Existing systems not designed as open systems may restrict the use of component breakout. The acquisition strategy shall address component breakout plans and shall include rationale justifying the component breakout strategy (DFARS). Component breakout shall be considered on every program and shall be done when there are significant cost savings (inclusive of Government administrative costs), when the technical or schedule risk of furnishing government items to the prime contractor is manageable, and when there are no other overriding Governmental interests (e.g., industrial capability considerations or dependence on contractor logistics support). Components considered for breakout shall be listed, and a brief rationale (based on supporting analyses from a detailed component breakout review (which shall not be provided to the MDA unless specifically requested)) for those major components where a decision was made not to breakout shall be provided. A decision not to break out any components shall also require justification.

h. Best Practices. PMs shall avoid imposing government-unique requirements that significantly increase industry compliance costs. Examples of practices designed to accomplish this direction include: IPPD performance-based specifications, management goals, reporting and incentives; open systems approach that emphasizes commercially supported practices, products, specifications, and standards; replacement of government-unique management and manufacturing systems with common, facility-wide systems; realistic cost estimates and cost objectives, adequate competition among viable offerors; best value evaluation and award criteria; use of past performance in source selection, results of software capability evaluations; government-industry partnerships; and the use of pilot programs to explore innovative practices. The use of best practices shall be addressed at each milestone review.

i. Advance Procurement. In accordance with DoD 7000.14-R, procurement of end items shall be fully funded, i.e., the cost of the end items to be bought in any fiscal year shall be completely included in that year’s budget request. However, there are occasions when it is appropriate that some components, parts, material, or effort be procured in advance of the end item buy to preclude serious and costly fluctuation in program continuity. In these instances, the long lead-time material or effort may be procured with advance procurement funds but only in sufficient quantity to support the next fiscal year quantity end-item buy (except for economic order quantity (EOQ) procurement of material to support a multi-year procurement and only to buy those long-lead items necessary to maintain critical skills and proficiencies that would otherwise have to be reconstituted at significantly greater net cost to the Government. Because such use of advance procurement limits the MDA’s flexibility, this acquisition technique shall be used only when the cost benefits are significant and only with approval of the MDA.

j. Each PM shall develop and document an acquisition strategy that shall serve as the roadmap for program execution from program initiation through post-production support. A primary goal in developing an acquisition strategy shall be to minimize the time and cost of satisfying an identified, validated need, consistent with common sense and sound business practices. The acquisition strategy shall evolve through an iterative process and become increasingly more definitive in describing the relationship of the essential elements of a program. Essential elements in this context include, but are not limited to, open systems, sources, risk management, cost as an independent variable, contract approach, management approach, environmental considerations, modeling and simulation approach, warranty considerations, and source of support. The PM shall also address other major initiatives that are critical to the success of the program. The PM shall structure the acquisition strategy to promote sufficient program stability to encourage industry to invest, plan and bear risks. Program needs shall be met through reliance on a national technology and industrial base sustained primarily by commercial demand. Programs shall minimize the need for new defense-unique industrial capabilities. Foreign sources and international cooperative developments shall be used where advantageous and within limitations of the law.

k. Continuous Acquisition and Life-Cycle Support (CALS) --Acquisition Program Integrated Digital Environment (IDE). Beginning in FY97, all new contracts shall require on-line access to, or delivery of, their programmatic and technical data in digital form, unless analysis shows that life-cycle time or life-cycle costs would be increased by doing so. Preference shall be given to on-line access to contractor-developed data through contractor information services or existing information technology infrastructure rather than data delivery. The PM shall be responsible for establishing a data management system and appropriate IDE that meets the data requirements of the program throughout its total life cycle. MDAs shall assess the IDE developed to enhance the program and mitigate long-term costs at each milestone and program review.

l. Streamlining. The PM shall streamline all acquisitions so that the acquisitions contain only those requirements that are essential and cost-effective. Contract requirements shall be stated in terms of performance rather than design-specific procedures. Management data requirements shall be limited to those essential for effective control. Acquisition process requirements shall be tailored to meet the specific needs of individual programs. Relief or exemption shall be sought for those requirements that fail to add value, are not essential, or are not cost-effective. Early industry involvement in the acquisition effort, consistent with the Federal Advisory Committee Act (FACA), shall be encouraged to take advantage of industry expertise to improve the acquisition strategy.

m. International Considerations. The acquisition strategy shall discuss the potential for enhancing reciprocal defense trade and cooperation, including international cooperative research, development, production, logistic support, and the sale of military equipment, consistent with the maintenance of a strong national technology and industrial base, and mobilization capability. This discussion shall meet the requirements specified for the cooperative opportunities reported directed by 10 USC §2350a(g). If foreign competition is restricted for

industrial base reasons, USD (AT&L) prior approval is required. Prior to entering into a coop-

erative agreement, the program shall be reviewed by the MDA and be approved as an international program.

n. Joint Program Management. Any acquisition system, subsystem, component, or technology program that involves a strategy that includes funding by more than one DoD Component during any phase of a system's life cycle shall be defined as a joint program. Joint programs shall be consolidated and collocated at the location of the lead Component's program office, to the maximum extent practicable. This includes systems where one DoD Component may be acting as acquisition agent for another DoD Component by mutual agreement or where statute, DoD Directive, or the USD (AT&L) or ASD (C3I) has designated a DoD organization to act as the lead (e.g., USSOCOM, BMDO, DARO). In the case of a designated organization given acquisition responsibilities, the CAE of that organization shall utilize the acquisition and test organizations and facilities of the Military Departments to the maximum extent practicable, rather than create new, unique organizations and facilities. The relationship between the designated organization and the Military Departments and Defense Agencies, and their respective responsibilities, shall be specified in a Memorandum of Agreement (MOA). The MOA shall address, at a minimum, the following topics: system requirements, funding, manpower, and the approval process for the ORD and other program documentation. Mission needs, operational requirements, and program strategies shall be structured to encourage and to provide an opportunity for multi-Component participation. The DoD Components shall periodically review their programs and requirements to determine the potential for cooperation. A lead organization shall be designated to coordinate all operational test and evaluation involving more than one DoD Component. A single report on operational effectiveness and suitability shall be produced.

o. Unless a waiver is granted for a particular program by the USD (AT&L) or the ASD (C3I), CAEs shall assign acquisition program responsibilities to a PEO for all ACAT I, ACAT IA, and sensitive classified programs, or for any other program determined by the CAE to require dedicated executive management. The CAE shall make this assignment no later than three months after program initiation; or within three months of total program cost reaching the appropriate dollar threshold for ACAT I and ACAT IA programs. CAEs may determine that a specific PM shall report directly, without being assigned to a PEO, whenever such direct reporting is appropriate. The CAE shall notify the USD (AT&L) or the ASD (C3I) of the decision to have a PM report directly to the CAE. Acquisition program responsibilities for programs not assigned to a PEO or a direct reporting PM shall be assigned to a commander of a systems, logistics, or materiel command. In order to transition from a PEO to a commander of a systems, logistics, or materiel command, a program shall, at a minimum, have passed Initial Operating Capability (IOC), have achieved full-rate production, and be logistically supportable as planned.

p. Technical Representatives at Contractor Facilities. PMs shall make maximum use of Defense Contract Management Agency (DCMA) personnel at contractor facilities. PMs and DCMA Contract Administration Offices shall jointly develop and approve program support plans for all ACAT I program contracts to ensure agreement on contract

oversight needs and perspectives. Assignment of PM technical representatives in a contractor's facility shall occur only as necessary, shall be based on the mutual agreement of the respective PM and the Commander, DCMA, and shall be reflected in a Memorandum of Agreement that specifies the duties to be performed by the technical representative. In these cases, technical representatives shall not perform contract administration duties as outlined in FAR 42.302.

q. Environmental, Safety, and Health Considerations. The acquisition strategy shall include a programmatic environmental, safety, and health (ESH) evaluation. The PM shall initiate the ESH evaluation at the earliest possible time in support of a program initiation decision (usually Milestone B) and shall maintain an updated evaluation throughout the life cycle of the program. The ESH evaluation describes the PM's strategy for meeting ESH requirements, establishes responsibilities, and identifies how progress will be tracked.

r. Modeling and Simulation (M&S) Approach. Modeling and simulation shall be applied, as appropriate, throughout the system life-cycle in support of acquisition activities such as requirements definition, program management, design and engineering, efficient test planning, and results prediction; and to supplement actual test and evaluation, manufacturing, and logistics support. In collaboration with Industry, PMs shall integrate the use of modeling and simulation within program planning activities; plan for life-cycle application, support, and reuse of models and simulations; and integrate modeling and simulation across the functional disciplines.

s. Source of Support. It is DoD policy to maintain adequate organic core depot maintenance capabilities to provide effective and timely response to surge demands, ensure competitive capabilities, and sustain institutional expertise. Support concepts for new and modified systems shall maximize the use of contractor provided, long-term, total life-cycle logistics support that combines depot-level maintenance for non-core-related workload along with wholesale and selected retail materiel management functions. Best value over the life cycle of the weapon system and use of existing contractor capabilities, particularly while the system is in production, shall be key determinants in the overall decision process. The PM shall provide for long-term access to data required for competitive sourcing of systems support throughout its life cycle.

t. Warranties. The PM shall examine the value of warranties on major systems and pursue such warranties when appropriate and cost-effective. When appropriate, the PM shall incorporate warranty requirements into major systems contracts in accordance with FAR 46.7. (NOTE: Section 847 of the FY98 Defense Authorization Act repealed the 10 USC 2403 requirement for weapon system warranties.)

u. Government Property in the Possession of Contractors (GPPC). All PMs who own or use GPPC shall have a process to ensure continued management emphasis on reducing GPPC and prevent any unnecessary additions of GPPC. PMs shall examine their management of active and idle GPPC and special tooling or special test equipment that the Government may require the contractor to deliver, to ensure that decisions about retention, disposition, and re-

quiring delivery are informed and timely. The PM shall assign responsibility within the program office and detail actions, reviews, and reports to be used to manage and dispose of the GPPC used on the program. This also includes government property that is not "owned" by the PM, but will be used on the program. These planned actions shall be addressed in the acquisition strategy. Government property may be furnished to contractors only under the criteria, restriction, and documentation requirements addressed in FAR 45.201.

v. Test and Evaluation. Test and evaluation programs shall be structured to integrate all developmental test and evaluation (DT&E), operational test and evaluation (OT&E), live-fire test and evaluation (LFT&E), and modeling and simulation activities conducted by different agencies as an efficient continuum. All such activities shall be part of a strategy to provide information regarding risk and risk mitigation, to provide empirical data to validate models and simulations, to permit an assessment of the attainment of technical performance specifications and system maturity, and to determine whether systems are operationally effective, suitable, and survivable for intended use.

(1) Test and evaluation objectives for each phase of an ACAT I or ACAT IA program shall be designed to allow assessment of system performance appropriate to each phase and milestone. For ACAT I and II programs for conventional weapons systems designed for use in combat, a beyond low-rate initial production decision shall be supported by completed independent initial operational test and
evaluation as required by 10 USC §2399 and by completed live fire test and evaluation as required by 10 USC §2366. Operational test and evaluation does not include an operational assessment based exclusively on computer modeling, simulation, or an analysis of system requirements, engineering proposals, design specification, or any other information contained in program documents (10 USC §2399).

(2) The Service or Agency shall provide weapon effectiveness data to Director, Test, Systems Engineering, and Evaluation for use in the Joint Munitions Effectiveness Manual for weapons in the acquisition process prior to their achieving IOC. These data shall be prepared using methodology coordinated with the Joint Technical Coordinating Group for Munitions Effectiveness.

6. Integrated Product Teams. Integrated Product and Process Development (IPPD) is a management process that integrates all activities from product concept through production and support, using a multifunctional team, to simultaneously optimize the product and its manufacturing and sustainment processes to meet cost, schedule, and performance objectives. Defense acquisition works best when all of the DoD Components work together cooperatively to share data and information of all types, and the workforce is empowered. Each DoD Component shall implement the concepts of Integrated Product and Process Development (IPPD) and Integrated Product Teams (IPTs) as extensively as possible. All appropriate functional disciplines and the DoD Components shall participate in IPTs to the maximum extent practical and useful. DoDI 5000.2.

a. Overarching Integrated Product Team (OIPT). The person in the Office of the Secretary of Defense who leads The Overarching Integrated Product Team and is responsible for providing an assessment of each assigned program. The OIPT Leader is not in the decision-making line of authority for programs. DoDI 5000.2 For ACAT IC, IAC, II, IIA, III, and IV programs, the milestone decision authority will establish an OIPT and designate a chairperson.

(1) Membership. The secretary or facilitator for ACAT I and II program OIPT will be the ASA (ALT) or DISC4 action officer (depending where Army Staff System Coordination resides). For ACAT III and IV programs, the milestone decision authority will identify the OIPT secretary or facilitator. OIPT membership will consist of empowered individuals appointed by: ASARC members (ACAT IC, or II programs); by Army Major Automation Information System Review Council (MAISRC) members (ACAT IAC and IIA programs); and the MDA (ACAT III and IV programs). Membership will be tailored to the needs and level of oversight required for the program.

(2) Responsibilities.

(a) Meet together and individually with the PM/PEO throughout the program progress to raise and resolve issues early, provide recommendations for tailoring and streamlining the program.

(b) Vertically link with the PM's working level IPT.

(c) Help the PM successfully achieve a milestone decision.

(d) Develop a memorandum documenting the issues and risks to be raised to the milestone decision authority with a recommendation as to whether an actual ASARC, Army Major Automation Information System Review Council (MAISRC), or In-Process Review (IPR) needs to be convened, or a "paper ASARC/ARMY MAISRC/IPR" can be held.

(e) Provide an independent assessment for the MDA in preparation for the MDR.

b. Working Level IPT (WIPT). For all ACAT programs, a WIPT will be established. The number and membership of the WIPT will be tailored based on the level of oversight and the program needs.

(1) A WIPT is comprised of DA or service or functional action officers and normally chaired by the PM or designee. A WIPT provides advice to the PM and helps prepare program strategies and plans. A WIPT will focus on a particular topic(s), such as test, cost and performance (CAIV), contracting, risk management (both programmatic and safety), etc.

(2) For complex programs with a large number of WIPTs, the PM may wish to establish an Integrating IPT (IIPT), to coordinate all WIPT efforts.

6. Matrix Support for Programs.

a. This policy applies to ACAT ID, IC, IA, II, IIA, and III programs.

b. The materiel developer (e.g. PEO, PM, Product Manager) are given the authority and the resources to manage program cost, schedule, and performance (e.g., supportability). Program success requires the joint commitment of HQDA, the PEO, and the materiel commands. The role of AMC and USASSDC (hereafter referred to, in this section, as materiel commands) is to provide the support requested by the PEO in such a way as to ensure program success.

c. The materiel developer has the ultimate accountability for mission accomplishment until transition to functional management. The materiel commands are accountable for the quality and completeness of the functional tasks and activities provided in support of the PEO.

d. The materiel developer decides on the source of matrix support, either by a materiel command or contractor, based on the best value for the Army, consistent with OMB Circular A-76. If the materiel command disagrees with the materiel de eloper's decision, then the command can elevate the issue through command channels to the AAE for resolution.

e. The materiel command, providing the matrix personnel, has primary responsibility for personnel matters. However, since the materiel developer is accountable for mission accomplishment for their assigned systems, the materiel de eloper must have the ability to influence the performance evaluations of the matrix support personnel.

(1) For government civilian and military matrix support personnel collocated (full time) with the PEO and PM, the Materiel Command Commander and the PEO will agree on the rating chain using the following guidelines: (a) Both the PEO/PM and the Materiel Command will be in the rating chain either as rater or senior rater. (b) The person who assigns and monitors work on a day-to-day basis should be the rater. (c) Collocated matrix support assignments should be reviewed for continuance every two years.

(2) When matrix support is provided to a PEO or PM on a less than full time basis (for example, functional manager services to multiple PEOs or PMs, or matrix support not collocated), then letter input to the performance evaluation will be used.

f. Matrix support planning. The relationship between the MATDEV and materiel command providing matrix support will be documented and will contain the functional tasks, to include the associated funding schedule, required by the MATDEV and the manner in which the materiel command will accomplish those tasks. If the resource requirements change, the funding should change appropriately. Updates, as necessary, will be made as support changes. No changes will be made unilaterally.

g. Resolution of functional conflicts. Issues are normally resolved at the MATDEV and local materiel command level for the mutual benefit of all involved. In those rare instances in which the programmatic or functional aspects affect the Army beyond the purview of the MATDEV and materiel command, the conflict will be elevated through channels to the AAE for resolution.

h. Management control and oversight. A PEO or PM reporting directly to the AAE, and USAMC Deputy for Systems Acquisition will limit the amount of management control and oversight personnel (government plus contractor). This is not a program restriction, but rather is to be implemented at the oversight level (PEO, PM directly reporting to the AAE, USAMC Deputy for Systems Acquisition). These personnel include those that are in direct support of the program for the purpose of overall daily management and reporting (e.g. personnel developing programmatic paperwork -- TEMP, budget reports). These personnel do not include those executing the program from the prime contractor or Government personnel who are developing systems in lieu of the traditional functions performed by the prime contractor (e.g. any personnel involved in delivering a product). These guidelines will be set annually by the PEO and PM reporting directly to the AAE, and USAMC Deputy for Systems Acquisition.

(1) HQDA will provide guidance to the materiel developer.

(2) This limit only applies to funds received from the Department of the Army, and does not include funds received from FMS, direct sales, or from other services or government agencies.

7. Establishing and Terminating the PM Office. A PM shall be designated for each acquisition program. This designation shall be made no later than program initiation. It is essential that the PM have an understanding of user needs and constraints, familiarity with development principles, and requisite management skills and experience. If the acquisition is for services, the PM shall be familiar with DoD guidance on acquisition of services. A PM and a deputy PM of an ACAT I or II program shall be assigned to the position at least until completion of the major milestone that occurs closest in time to the date on which the person has served in the position for four years in accordance with the Defense Acquisition Workforce Improvement Act (DAWIA). Upon designation, the program manager shall be given budget guidance and a written charter of his or her authority, responsibility, and accountability for accomplishing approved program objectives. DoDI 5000.2

a. Establishment. The AAE has discretionary authority to designate a program for intensive centralized management at any point in the program's acquisition life cycle and may redesignate a program to a higher acquisition category level if more dedicated oversight is required. The title program, project, or product manager (PM) is only permitted to identify an individual selected by a PM Selection Board and assigned to an AAE designated PM duty position.

b. Transition. The AAE may review a centrally managed program for transition to functional management by the commander of a materiel command responsible for sustainment support when any of the following conditions exist:

(1) Six months after Initial Operational Capability (IOC) is achieved and every six months thereafter until the decision is made to transition.

(2) System reaches acceptable level of mature design, logistically supportable, and stable production.

(3) PM position is submitted to PM Selection Board to fill anticipated vacancy.

c. The AAE reviews and approves the transfer of management responsibility for an acquisition program from centralized management by a PM to functional management by the commander of a materiel command responsible for sustainment support after the transition plan is developed and approved by the gaining functional manager and the Milestone Decision Authority.

d. Terminating a PMO and program.

(1) Terminating a PMO. This occurs after management responsibility for all programs assigned to the PM have transitioned to functional management or when directed by the AAE. When a PM is responsible for more than one program, the successful transition of one program will not necessarily result in PMO termination if the remaining program(s) warrant(s) continued centralized management. AAE approval of PMO termination is mandatory for both PEO and
non-PEO managed programs.

(2) The AAE may review a PMO for termination when any of the following conditions exist: (a) Program is mature design and stable production; (b) PM position is submitted to the PM Selection Board to fill anticipated vacancy.

(3) A PMO may be terminated or disestablished when any of the following conditions exist: (a) Program objectives are achieved and the provisions of the transition plan are met. (b) Program objectives cannot be achieved. (c) Program objective no longer meets the threat. (d) Technology no longer meets the operational requirement or is no longer economically supportable. (e) Funding support for the program is withdrawn.

(4) Terminating ACAT I, II, III, and IV Programs. Program termination is accomplished by the appropriate HQ DA staff element having program oversight or the DISC(4). The AAE provides final direction on the program termination after the transition plan is developed and approved.

8. Organizing the PM Office.

a. The Department shall use a streamlined management structure in the acquisition system characterized by short, clearly defined lines of responsibility, authority, and accountability. In general, the chain of command shall include the:

Acquisition Chain of Command
➢ Program Manager ➢ Program Executive Officer ➢ Army Acquisition Executive, reporting through the Secretary of the Army ➢ Under Secretary of Defense for Acquisition, Technology, and Logistics (USD (AT&L)) or Assistant Secretary of Defense for Command, Control, Communications, and Intelligence

In all cases, no more than two levels of review shall exist between a program manager and the Milestone Decision Authority. DoD shall maintain a fully proficient acquisition, technology, and logistics workforce that is flexible and highly skilled across a range of management, technical, and business disciplines. To ensure this, the USD (AT&L) shall establish education, training, and experience standards for each acquisition position based on the level of complexity of duties carried out in that position. In addition, the USD (AT&L) shall encourage the use of cross-training programs to ensure that all disciplines and communities within USD (AT&L) have a full understanding of the overall system. Defense acquisition works best when all of the DoD Components work together as a team focused on the customer. DoDD 5000.1

b. There are two basic PM organizational structures.

(1) Traditional PMO structure. In this model, the project management office is self-contained. In this model, the program manager is the chief executive officer (CEO) and has a staff supporting the mission. Each staff member falls within the PMO organizational structure. A chart showing the traditional PMO is on the last page.

(2) Matrix organization. The project manager not having his own staff but relying upon support from other organizations characterizes the second type project management organization. A chart showing the matrix PMO is on the last page.

c. In a typical Army project management office, you will find a mixture of these types. Due to manpower and budget limitations, Army program managers cannot afford to organize along the traditional PMO structure. Larger projects tend to have larger dedicated staffing levels while smaller projects must rely more heavily upon matrix support. Here are the advantages of each type.

Advantages	
Traditional	**Matrix**
PM has full line authority	The project is the point of emphasis
All members directly responsible to the PM	Reasonable access to a large reservoir of experts
Shortened lines of communication	Rapid and flexible response to clients
Maintains a permanent cadre of experts	Less anxiety when the project is completed
Strong and separate identity	Better usage of corporate resources
Quick decision-making	Maintains consistency with corporate policies
Unity of command	
Structurally simple and flexible	
Organization tends to support a holistic approach	

9. Measures of Success. What constitutes a successful program? Although definitions may vary, it is hard to imagine an unsuccessful program generating a fielded system. Yet we have examples of systems that ought not to have been fielded. The most glaring example is DIVAD (Sgt. York) air defense gun system. In spite of this system failing numerous operational tests, DIVAD was pushed into low rate production. I can also recall the GAMMA GOAT, M-880 pick-up truck, early version of the M-16, and the GRR-8 and 9 radios as poorly designed but fielded systems. We also have systems that were not fielded but perhaps should have been. The XR-311 “dune buggy” and the M-8 armored gun system come to mind. And what about the ROLAND air defense system? The United States agreed to acquire this system from our European allies but the only Army organization that received the item was a National Guard unit!

a. Interestingly, a program manager can do everything “by the book.” yet not get his system fielded. Either Congress or someone in the Pentagon may change their mind and opt not to field the system. In this case, was the program manager successful? Obviously, if you are the Army program manager and your career is riding on a performance appraisal, you believe that you have been successful. Using that same scenario represents failure from the perspective of the company’s program manager who lost the Government contract to produce the system.

b. There are three variables in any program. They are: cost, schedule and performance.

(1) Cost represents how much money is being spent on the program. In the Army, we subdivide costs into three categories. They are (a) research and development, (b) production and (c) operations and support.

(2) Performance represents the capability of the system. This variable includes concepts of threshold and objective.

(a) Key Performance Parameters (KPPs). Those capabilities or characteristics considered most essential for successful mission accomplishment. Failure to meet an Operational Requirements Document (ORD) KPP threshold can be cause for the concept or system selection to be reevaluated or the program to be reassessed or terminated. Failure to meet a CRD KPP threshold can be cause for the family-of-systems or system-of-systems concept to be reassessed or the contributions of the individual systems to be reassessed. The Joint Requirements Oversight Council (JROC) validates the KPPs. KPPs are included in the Acquisition Program Baseline (APB). CJCSI 3170.01A

(b) Objective is an operationally significant increment above the threshold. An objective value may be the same as the threshold when an operationally significant increment above the threshold is not significant or useful. CJCSI 3170.01A.

As you will note in these two definitions, threshold represents a minimum acceptable value while objective represents the best capability possible.

(c) Schedule refers to the amount of time it takes to get the system through the acquisition process and into the field. As noted in the DoD life cycle model, a program is not a program until it reaches Milestone B. Why make this distinction?

Program managers achieve success by trading off a portion of one variable to achieve a portion of another. E.g., if the program manager wants an improvement in vehicle payload, the contractor may be allowed more time or given more money to achieve this capability. Obviously, there are limits on the program manager’s ability to conduct tradeoffs. The Operational Requirements Document (ORD) and Acquisition Program Baseline (APB) serve as guides. The customer’s (user’s) representative (e.g., TRADOC) and others are canvassed for support, especially when a threshold value is involved.

10. Individual Titles and Selection. "Program Manager", Project Manager", "Product Manager", and "PM" are used to identify only those individuals whose position is designated and approved by the Army Acquisition Executive (AAE). As a rule, higher-ranking officers or equivalently ranked civilians manage more complex, expensive, or urgently needed systems. The titles assigned to centralized managers will denote the relative importance of their program or project.

a. Guidance.

(1) A PM is a HQDA board-selected manager for an acquisition program. A PM may be subordinate to the AAE, a PEO, or a Materiel Command Commander.

(2) Centralized management by a PM is mandatory when a program is designated as ACAT I, II, or III. Program or project managers are assigned to (ACAT I & II) major programs.

(a) ACAT I programs are managed by a PM who reports to the AAE either directly, or through a PEO.

(b) ACAT II programs are managed by a PM who reports to the AAE directly, through a PEO or through a Materiel Command Commander as designated by the AAE.

(c) ACAT III programs are managed by a PM who reports to a PEO or a Materiel Command Commander as designated by the AAE.

(d) ACAT IV programs are managed by a systems manager rather than by a PM.

(3) The AAE designates the appropriate level of centralized manager (i.e., program manager, project manager or product manager).

(4) PM managed programs are categorized as either PEO managed or Non-PEO managed.

(a) A PEO managed program resides within the PEO structure and is managed by a PM subordinate to a PEO or by a PM who reports directly to the AAE.

(b) A Non-PEO managed program resides within the Non-PEO structure and is managed by a PM subordinate to a MACOM or Major Subordinate Command Commander.

(5) An acquisition program must have an approved Mission Needs Statement, and a favorable Milestone B decision prior to consideration for centralized management by a PM.

(6) Once a system is designated for centralized management, a PM is assigned.

b. Program Executive Officer (PEO). A PEO is either a general officer or an equivalently ranked Senior Executive Service (SES) civilian. A PEO is responsible for developing, producing, and supporting a materiel system or groups of systems, which will impact upon the fundamental national interest or will redirect national policy for an extended future period. An example of an Army PEO is PEO, Command, Control and Communications Systems (PEO C^3I). A PEO reports to the AAE and normally has a number of PMs reporting to him. Circumstances warranting the appointment of a PEO are:

(1) Development and deployment of the system would have a major impact upon national interest and upon other services, government agencies, or allied countries for an extended future period.

(2) Components of the system are expected to require exceptional and prolonged study and experimentation.

(3) Groups of existing projects interrelate in such a way that centralized management at the Department of the Army (DA) level is needed.

c. Program Manager. A program manager (General Officer or Senior Executive Service (SEES) civilian) are appointed when one or more of the following conditions exist:

(1) The program is expected to exceed (in FY 96 dollars) either $355 million in research and development or $2.135 billion in production or procurement.

(2) The program requires centralized direction and coordination of two or more related developmental readiness efforts, projects, or products; and involves substantial resources.

(3) The system's operating and support costs will represent a large segment of the system's life cycle costs.

(4) The Secretary of Defense or the Secretary of the Army want a Program Manager appointed.

(5) The program will significantly influence elements of national interest and/or have a significant impact on the U.S. military posture.

(6) The program involves unusual organizational complexity or technological risk.

d. Project Manager. Typically a program is designated for management by a Project Manager (Colonel or GS-15 civilian) when the program requires consideration of a broad array of factors such as mission criticality; urgency of need; Congressional, DoD, or Army interest; organizational or technical complexity; and the system's total life cycle costs.

e. Product Manager. A materiel developers or PEO may appoint a product manager (Lieutenant Colonel or GS-14 civilian) to serve as the focal point for those programs failing to meet the criteria for major program designation. Product managers are selected from lieutenant colonels having an additional skill identifier of "4Z" Materiel Acquisition Manager. In addition, product managers may also be appointed to head selected projects that no longer require program or project managers. TRADOC refers to product managers as PMs.

f. Project Officers. Some programs do not meet the criteria established for appointing a project or product manager. However, some of these non-major programs require more intensive management than that afforded by the major subordinate command (MSC) functional management. Because of this, the U.S. Army Materiel Command (AMC) has established the position of project officer. The commanders of the MSC appoint most project officers but the Commander of AMC or a PEO appoints others whenever the job entails significant coordination among several organizations. Project officers are selected from both military and civilian sources, but members of the acquisition corps are given priority when a military incumbency is desired. The specific criteria used to determine the need for a project officer are:

(1) The program requires extensive coordination within AMC or other organizations.

(2) The program presents unusual difficulties that need expeditious action to meet a high priority requirement.

Program Managers
Experience. Four years of acquisition experience, of which at least 2 years must have been in a program office or similar organization (defined as dedicated matrix support to a PM or PEO; DCMC PI).
Education. Systems acquisition management education as demonstrated by: (1) At least 24 semester credit hours from among the following disciplines: accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, organization and management; or, (2) At least 24 semester credit hours in the individual's career field and 12 semester credit hours in the disciplines listed above. **Desired**. Master's degree in engineering, systems acquisition management, business ad ministration, or a related field.
Training. Advanced (Level III) DAU Course in program management. DoD 5000.52-M
All critical acquisition positions (LTC and GS-14 and above positions) must be filled by members of the AAC. Minimum accession requirements are determined by DoD 5000.52-M, and include training, education, experience, and acquisition certification. Mobility is a condition of civilian membership in the AAC. The Director, Acquisition Career Management (DACM) approves all AAC accessions. AR 70-1
Deputy PM – Same qualifications as a program manager

g. Selection procedures.

(1) Annual Headquarters, Department of the Army (HQDA), central selection boards for both Project and Product Managers will be convened at the direction of the Secretary of the Army under the authority of the Deputy Chief of Staff for Personnel (DCSPER) Professional Development SOP (effective 15 January 1983) to select those officers/civilians best qualified to serve in PM positions.

(2) The PM selection boards will be comprised of senior officers who have extensive acquisition experience. The Project Manager board will be comprised of General Officers; the chairman of the board is a Major General. The Product Manager board consists of individuals at the grade of Brigadier General and Colonel.

(3) Each board will select a primary and a minimum of three alternates for each projected PM requirement. The boards will also select the best-qualified alternates to be considered for any subsequent unanticipated PM vacancy that may occur.

(4) CDR, PERSCOM will announce the dates of the PM boards by worldwide message concurrently with notification of the colonel and lieutenant colonel level command selection boards. The message will contain specific eligibility criteria for officers to be considered for selection. As a minimum, be members of the Army Acquisition Corps (AAC) and be certified IAW DA PAM 600-3 to be eligible for PM selection.

(5) The Army Executive Agent for Program Management will coordinate with PE0s and materiel developers and provide criteria sheets to CDR, PERSCOM for all PM positions requiring a replacement or newly established position under the provisions of chapter 4 of DA PAM 600-3.

(6) Project and Product Managers (Civilian). Selection boards similar to the military (IAW the Defense Acquisition Workforce Improvement Act (DAWIA)) will soon fill civilian PM positions for major programs. For non-major programs (ACAT III & IV), civilian PM positions are filled IAW civilian personnel regulations (CPR).

h. Tenure.

(1) The tenure of assignments must be of sufficient length to ensure not only effective management and operation of the program but also continuity of management as the program progresses through the life cycle phases. Section 1243 (c) of PL 98-525 requires an individual assigned as a PM of a major defense acquisition program (MDAP) to have tour of duty of not less than 4 years or until completion of a "major program milestone" (as defined in DoDD 5000.1). The Secretary of the Army may only waive this tenure requirement. PMs of all other programs will normally serve a tour of duty of 3 years.

(2) Unilateral reassignments of individuals assigned to be or serving as a PM cannot be made without the endorsement of CDR PERSCOM and the approval of the AAE. A request to reassign a designated PM will be made in writing and will justify the need for reassignment less than the prescribed tour length. Documentation will be forwarded through the Army Executive Agent for Program Management and CDR, PERSCOM to the AAE. The AAE will evaluate the request and make a determination as to how the designated PM can best serve the Army's needs.

12. PM Charter. The PM's charter is a formal document prepared by the PEO office, staffed through DA and signed by the Secretary of the Army or PEO. All PMs have their charters prepared in this manner. An exception is a joint (Army and Navy, Army and USMC, or Army and USAF) program where DOD approves the charter.

a. The charter contains the following information:

(1) Name of the project manager, his mission, reporting channels, and any special reporting requirements.

(2) Supporting activities.

(3) The authority of the project manager.

(4) The program elements for which the project manager is responsible.

(5) Special instructions.

(6) The location of the project management office and the organization that will provide administrative support.

(7) Criteria for termination when the program objectives: (a) Cannot be achieved or, (b) Have been achieved.

b. The PM is required to review his charter on an annual basis and have it validated by his direct supervisor. The Secretary of the Army or PEO/AAE must approve significant changes.

13. Program Reviews and Reports. Periodic reports provide the milestone decision authorities with adequate information to oversee the acquisition process and make decisions. Periodic reports are limited to only those required by the MDA or by statute.[6]

a. Program Managers (PMs) will maintain a current estimate of the program actually being executed and report the current estimate of each APB parameter periodically, as requested, to the MDA. The current estimate is the Component or PM's most recent estimate of the program's parameters, and usually reflects the current President's Budget as adjusted by fact-of-life changes (i.e., fact-of-life meaning having already happened or unavoidable). For Acquisition Category (ACAT) I and ACAT IA programs, current estimates of the APB parameters are reported quarterly in the Defense Acquisition Executive Summary.

[6] DoD 5000.2-R

b. A program deviation occurs when the PM has reason to believe that the current estimate of a performance, schedule, or cost parameter is not within the threshold value for that parameter. When a deviation occurs, the PM immediately notifies the MDA that a program deviation has occurred. Within 30 days of the occurrence of the program deviation, the PM notifies the MDA of the reason for the program deviation and the actions that need to be taken to bring the program back within the baseline parameters (if this information was not included with the original notification). Within 90 days of the occurrence of the program deviation, one of the following must occur: (1) the program is back within APB parameters; (2) a new APB (changing only those parameters that breached) has been approved; (3) an OIPT-level program review has been conducted to review the PM's proposed baseline revisions and made recommendations to the DAE; or (4) the PM has provided a date when one of the above three actions will occur.

c. The purpose of the Defense Acquisition Executive Summary (DAES) report is to highlight both potential and actual program problems to the USD (AT&L) before they become significant. The PM shall propose for USD (AT&L) consideration tailoring the content of the DAES Report for each program. At a minimum, the DAES is the vehicle for reporting program assessments, unit cost (10 USC §2433), current estimates (see 6.2.1) of the APB parameters (10 USC §2435), status reporting of exit criteria, and vulnerability assessments (e.g. APB deviation) Federal Manager's Financial Integrity Act (FMFIA).

d. The Selected Acquisition Report (SAR) is prepared and submitted to Congress for all ACAT I programs, in accordance with 10 USC §2432. The SAR is prepared using the Consolidated Acquisition Reporting System (CARS) software. The SAR provides the status of total program cost, schedule, and performance, as well as program unit cost and unit cost breach information; and, in the case of joint programs, the SAR includes such information for all joint participants. Each SAR also includes a full life cycle cost analysis for the reporting program and its antecedent program.

Appendix A

Definitions

Term	Meaning
Acquisition Executive	The individual within the Department and Components charged with overall acquisition management responsibilities within his or her respective organization. The Under Secretary of Defense for Acquisition, Technology, and Logistics is the Defense Acquisition Executive responsible for all acquisition matters within the Department of Defense. The Component Acquisition Executives (CAE) for each of the Components are the Secretary of the Military Departments or Heads of Agencies with power of delegation. The CAEs are responsible for all acquisition matters within their respective Component. DoDD 5000.1
Acquisition Program	A directed, funded effort designed to provide a new, improved, or continuing materiel, weapon or information system capability, or service, in response to a validated operational or business need. Acquisition programs are divided into categories, which are established to facilitate decentralized decision-making, execution, and compliance with statutory requirements. DoDD 5000.1
Acquisition Strategy	The acquisition strategy shall be based, in part, on an analysis of product and technology areas critical to meeting the program's needs. The acquisition strategy shall identify the potential industry sources available to supply these critical products and technologies. The acquisition strategy shall highlight areas of potential vertical integration, that is, areas where potential prime contractors are also potential suppliers for critical products and technologies. Vertical integration may be detrimental to the DoD's interests if a firm employs internal capabilities without consideration of, or in spite of the superiority of, the capabilities of outside sources. The acquisition strategy shall describe the approaches the PM will use (e.g., requiring an open systems architecture, investing in alternate technology or product solutions, breaking out a subsystem or component, etc.) to establish or maintain access to competitive suppliers for critical areas at the system, subsystem, and component levels. DoD 5000.2-R
Acquisition Strategy	The acquisition strategy shall include the critical events that shall govern the management of the program. The event-driven acquisition strategy shall explicitly link program decisions to demonstrated accomplishments in development, testing, initial production, and life-cycle support. The events set forth in contracts shall support the appropriate exit criteria for the phase, or intermediate development events, established for the acquisition

	strategy. The program acquisition strategy shall analyze the industrial capability to design, develop, produce, support and, if appropriate, restart the program All acquisition programs shall foster competition at subcontractor levels, as well as at the prime level, particularly in critical product and technology areas. To accomplish this, the PM shall focus on critical product and technology competition when: a) formulating the acquisition strategy; b) exchanging information with industry; and c) managing the program system engineering and life cycle. The acquisition strategy shall be based, in part, on an analysis of product and technology areas critical to meeting the program's needs. The acquisition strategy shall identify the potential industry sources available to supply these critical products and technologies. The acquisition strategy shall highlight areas of potential vertical integration, that is, areas where potential prime contractors are also potential suppliers for critical products and technologies. Vertical integration may be detrimental to DoD interests if a firm employs internal capabilities without consideration of, or in spite of the superiority of, the capabilities of outside sources. The acquisition strategy shall describe the approaches the PM will use (e.g., requiring an open systems architecture, investing in alternate technology or product solutions, breaking out a subsystem or component, etc.) to establish or maintain access to competitive suppliers for critical areas at the system, subsystem, and component levels. The PM shall consider the use of leasing in the acquisition of commercial vehicles and equipment whenever the PM determines that leasing of such vehicles is practicable and efficient. The PM shall not enter into any lease with a term of 18 months or more, or extend or renew any lease for a term of 18 months or more, for any vessel, aircraft, or vehicle, unless the PM has considered all costs of such a lease (including estimated termination liability) and has determined in writing that the lease is in the best interest of the Government. The acquisition strategy shall be tailored to meet the specific needs of individual programs, including consideration of incremental (block) development and fielding strategies. The benefits and risks associated with reducing lead-time through concur-

	rency shall be specifically addressed in tailoring the acquisition strategy. In tailoring an acquisition strategy, the PM shall address the management requirements imposed on the contractor(s) (CCA). The PM shall initially develop the acquisition strategy at program initiation (usually Milestone B), and shall keep the strategy current by updating it whenever there is a change to the approved acquisition strategy or as the system approach and program elements are better defined. The PM shall develop the acquisition strategy in coordination with the Working-level Integrated Product Team. The PEO and CAE, as appropriate, shall concur in the acquisition strategy. The MDA shall approve the acquisition strategy prior to release of the formal solicitation. This approval shall usually precede the milestone review, except at program initiation when the strategy shall usually be approved as part of the initial milestone decision review. DoD 5000.2-R
Army Enterprise Architecture (AEA**)**	An integrated plan of action for accomplishing Army-wide information technology and investment strategies to accomplish the Joint Vision and the Army Vision 2010. It documents the total AEA and specifies the information systems programs and resource requirements necessary to support stated sessions and objectives. AR 5-11 The Vision A seamless information architecture from the sustaining base to the foxhole. A single, unified vision for the C4I community that addresses: • Information needs • Requirements to organize, train, and equip • Requirements as a component of a joint and combined force • Requirements to sustain the force. The Army Enterprise Strategy is the single, unified vision for the ARMY C4I community and is presented in "The Army Enterprise Vision" document. The Army Enterprise Architecture (AEA) is described by three related architectures: • Operational Architecture (OA) - is the total aggregation of missions, functions, tasks, information requirements, and business rules. • Technical Architecture (TA) - is the "building code"

	upon which systems are based. • Systems Architecture (SA) - is the physical implementation of the OA based on the TA, and also the layout and relationship of systems and communications. Army Enterprise Architecture (AEA): The Army Enterprise Architecture fulfills the 1996 Clinger-Cohen Act requirement to develop an enterprise-wide information technology (IT) architecture. The AEA is an Army-wide IT architecture that describes the relationships among key Army institutional processes and IT to ensure the alignment of information systems acquisition and related processes with validated warfighting operational and support requirements. It also ensures adequate Army, joint, and combined interoperability; redundancy and security of information systems; and the application and maintenance of a set of standards (including technical standards) by which the Army evaluates and acquires new systems. The AEA is both a tool and a set of products. The AEA is a tool to describe the Army's IT requirements and capabilities. As a tool the AEA directs the development, management, and use of architecture and supporting architecture products through such means as the AEA Guidance Document (AEAGD). In addition, the AEA includes a recapitulation of applicable architecture policy and a set of architecture development and management tools. As a set of products, the AEA is the validated description of the Army's IT requirements, existing capabilities, projected needs, and prescribed IT standards based on a consistent methodology. It is important to note that the AEA is not an entity unto itself. It derives from the Army Enterprise Strategy and the Army Enterprise Implementation Plan, which were signed out at the highest levels in the Army in 1993 and 1994. These efforts gained additional impetus from Joint Vision 2010 and Army Vision 2010 and from the Clinger-Cohen Act of 1996. The AEA continues to evolve in concert with *The Army Plan, Army Strategic Planning Guidance,* and the Army Digitization Office's *Army Digitization Master Plan*. The Army Enterprise Strategy Control Structure exercises control over the AEA. • AEA Master Plan that includes the Strategic Plan and a Program Plan • Army Enterprise Architecture Guidance Document (AEAGD)- Supplements DOD's C4ISR Architecture Framework and provides guidance on AEA Architecture

	Products.
Commercial item	A commercial item is defined as any item, other than real property, that is of a type customarily used for nongovernmental purposes and that: (1) has been sold, leased, or licensed to the general public; or, (2) has been offered for sale, lease, or license to the general public; or any item that evolved through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation. Also included in the definition are services in support of a commercial item, or a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed under standard commercial terms and conditions; this does not include services that are sold based on hourly rates without an established catalog or market price for a specific service performed. FAR 2.101 The PM shall define requirements (including hardware, software, standards, data, and automatic test systems) in terms that enable and encourage offerors to supply commercial and non-developmental items and provide offerors of commercial and non-developmental items an opportunity to compete in any procurement to fill such requirements. The PM shall require prime contractors and subcontractors at all levels to incorporate commercial and non-developmental items as components of items supplied and shall modify requirements to the maximum extent practicable, to ensure that the requirements can be met by commercial and non-developmental items DoD 5000.2-R
Cost as an Independent Variable (CAIV)	CAIV is a process that helps arrive at cost objectives (including life-cycle costs) and helps the requirements community set performance objectives. The CAIV process shall be used to develop an acquisition strategy for acquiring and operating affordable DoD systems by setting aggressive, achievable cost objectives and managing achievement of these objectives. Cost objectives shall also be set to balance mission needs with projected out-year resources, taking into account anticipated process improvements in both DoD and defense industries (GPRA and CCA)
Cost/Performance Trade-offs	The best time to reduce life-cycle costs is early in the acquisition process. Cost reductions shall be accomplished through cost and performance tradeoff analyses, which shall be conducted before an acquisition approach is finalized. To facilitate that process, the Overarching IPT (OIPT) for ACAT I or ACAT IA programs establishes a Cost/Performance IPT (CPIPT), as required. The user community shall have representation on the CPIPT. Industry

	representation, consistent with statute and at the appropriate time, shall also be considered. Normally, the PM or the PM's representative leads the CPIPT. Prior to each milestone decision, the PM shall report the CPIPT findings to the OIPT leader. Upon approval of a MNS, a CAIV strategy shall be formulated as part of the acquisition strategy to set cost objectives. By program initiation (usually Milestone B), each ACAT I and ACAT IA PM shall have established life-cycle cost objectives for the program through consideration of projected out-year resources, recent unit costs, parametric estimates, mission effectiveness analysis and trades, accident attrition trade studies, technology trends, and other relevant considerations such as commercial versus DoD specifications and the open systems strategy and design. A complete set of life cycle cost objectives shall include RDT&E, production, MILCON, operating and support, and disposal costs. At each subsequent milestone review, cost objectives and progress towards achieving them shall be reassessed. Maximizing the PM's and contractors' flexibility to make cost/performance tradeoffs without unnecessary higher-level permission is essential to achieving cost objectives. Therefore, the number of threshold items in requirements documents and acquisition program baselines shall be strictly limited, the threshold values shall represent true minimums, and requirements shall be stated in terms of capabilities, rather than technical solutions and specifications. RFPs shall include a strict minimum number of critical performance criteria that allow industry maximum flexibility to meet overall program objectives. Cost objectives shall be used as a management tool. The source selection criteria communicated to industry shall reflect the importance of developing a system that can achieve stated production and life cycle cost objectives. DoD 5000.2-R
Decision Reviews	At each milestone and other points in the process where desired by the MDA, the Milestone Decision Authority shall review each technology project or acquisition program. The MDA shall review the Program Manager's program, as informed by the IPT process, and the independent assessments required by law or the MDA's judgment. DoDI 5000.2
Defense Acquisition System	The Defense Acquisition system is a continuum composed of three activities with multiple paths into and out of each activity. (1) Technologies are researched, developed, or procured in pre-system acquisition (science and technology and concept development and demonstration). (2) Systems are developed, demonstrated, produced or procured, and deployed in systems acquisi-

	tion. The outcome of systems acquisition is a system that represents a judicious balance of cost, schedule, and performance in response to the user's expressed need; that is interoperable with other systems (U.S., Coalition, and Allied systems, as specified in the operational requirements document); that uses proven technology, open systems design, available manufacturing capabilities or services, and smart competition; that is affordable; and that is supportable. (3) Once deployed, the system is supported throughout its operational life and eventual disposal in post-systems acquisition using prudent combinations of organic and contractor service providers, in accordance with statutes. DoDI 5000.2
Dual use technologies	Dual use technologies are defined as technologies with both a military and a civil application. DoD 5000.2-R The PM shall develop an acquisition strategy that encourages offerors to employ dual use technologies or commercial plants and supplies for defense-unique items, to the maximum extent practicable. DoD 5000.2-R
Evolutionary acquisition strategies	Evolutionary acquisition strategies are the preferred approach to satisfying operational needs. Evolutionary acquisition strategies define, develop, test, and produce/deploy an initial, militarily useful capability ("Block 1") and plan for subsequent definition, development, test and production/deployment of increments beyond the initial capability over time (Blocks 2, 3, and beyond). The scope, performance capabilities, and timing of subsequent increments shall be based on continuous communications among the requirements, acquisition, intelligence, logistics, and budget communities. DoDI 5000.2
Information Technology (IT)	Any equipment, or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The term "IT" includes computers, ancillary equipment, software, firmware, and similar procedures, services (including support services), and related resources. The term "IT" also includes National Security Systems. It does not include any equipment that is acquired by a Federal contractor incidental to a Federal contract. DoDD 5000.1
Interim Progress Review	The purpose of an interim progress review is to confirm that the program is progressing within the phase as planned or to adjust the plan to better accommodate progress made to date, changed circumstances, or both. If the adjustment involves changing the acquisition strategy, the change must be approved by the MDA. There is no required information necessary for this review other

	than the information specifically requested by the decision-maker. DoDI 5000.2
Interoperability	Interoperability is the ability of systems, units, or forces to provide data, information, materiel, and services to and accept the same from other systems, units, or forces, and to use the data, information, materiel, and services so exchanged to enable them to operate effectively together. Interoperability within and among United States forces and U.S. coalition partners is a key goal that must be satisfactorily addressed for all Defense systems so that the Department of Defense has the ability to conduct joint and combined operations successfully. The use of standardized data shall be considered to facilitate interoperability and information sharing. The Department of Defense must have a framework for assessing the interrelationships among and interactions between U.S., Allied, and coalition systems. Mission area focused, integrated architectures shall be used to characterize these interrelationships. This end-to-end approach focuses on mission outcomes and provides further understanding of the full range of interoperability issues attendant to decisions regarding a single program or system. DoDD 5000.1
Life-cycle cost estimate	For all ACAT I and IA programs, a life-cycle cost estimate shall be prepared by the program office in support of program initiation (usually Milestone B) and all subsequent milestone reviews. For ACAT I programs, a manpower estimate shall be prepared by the Component's manpower authority in support of Milestone B. For ACAT I programs, the MDA may not approve entry into engineering and manufacturing development or production and deployment unless an independent estimate of the full life-cycle cost of the program and a manpower estimate for the program have been completed and considered by the MDA (10 USC §2434). DoD 5000.2-R
Major System	A combination of elements that shall function together to produce the capabilities required to fulfill a mission need, including hardware, equipment, software, or any combination thereof, but excluding construction or other improvements to real property. A system shall be considered a major system if it is estimated by the DoD Component Head to require an eventual total expenditure for RDT&E of more than $140 million in FY 2000 constant dollars, or for procurement of more than $660 million in FY 2000 constant dollars, or if designated as major by the DoD Component Head (10 U.S.C. §2302d). The estimate shall consider all blocks that will make up an evolutionary acquisition program (to the extent subsequent blocks

	can be defined). The dollar requirements are established in statute in FY 1990 dollars. DoDI 5000.2
Manpower Estimate	A Manpower Estimate shall report the total number of personnel needed to operate, maintain, support, and provide training for the program upon full operational deployment. It shall report the number of military (officer, warrant officer, and enlisted), DoD civilian, and contract manpower requirements for each fiscal year of the program beginning with initial fielding and ending with full operational deployment. A separate estimate shall be provided for each Component (for joint programs) and separately for the Active, Reserve, and National Guard forces. DoD 5000.2-R
Milestone C	The purpose of this milestone is to authorize entry into low-rate initial production (for MDAPs and major systems), into production or procurement (for non-major systems that do not require low-rate production) or into limited deployment for MAIS or software-intensive systems with no production components. DoDI 5000.2
Milestone Decision Authority	The individual designated in accordance with criteria established by the Under Secretary of Defense for Acquisition, Technology, and Logistics, or by the Assistant Secretary of Defense for Command, Control, Communications and Intelligence for AIS programs, to approve entry of an acquisition program into the next phase of the acquisition process. DoDD 5000.1
Modeling & Simulation (M&S).	Support of the Army Acquisition Process. The Army is moving today to build a force capable and prepared to meet the impending challenges of the next century. To meet this challenge, we have implemented Acquisition Reform as the process to efficiently modernize our force. An integral part of this new process is M&S. When effectively included in our acquisition strategy, we identify issues early and achieve benefits such as reduced cost, risk, and time to make informed milestone decisions. It can support acquisition from concept to fielding through such innovations as: virtual prototyping; engineering design simulation; testing and evaluation; virtual factory development; system and force effectiveness, and training simulation. The Simulation Support Plan (SSP, required for all ACAT I, ACAT II and non-major system programs, is the vehicle to effectively manage and integrate the use of M&S in our acquisition process. It addresses all types of M&S including live, virtual, and constructive simulation applications. It establishes an integrated plan to create the most efficient and effective acquisition strategy for our weapon systems. It is most beneficial when this plan is implemented early and over the entire life cycle of our program. For programs in every acquisition category, the Program Execu-

	tive Officer or U.S. Army Materiel Command (AMC) Major Subordinate Command and Program Manager (PM) are responsible for the effective use of M&S. A myriad of resources exists to assist the PMs in the execution of this responsibility. Critical among these resources are support activities having significant expertise in M&S. The U.S. Army Simulation, Training and Instrumentation Command, the U.S. Army Materiel Systems Analysis Activity, the U.S. Army Operational Test & Evaluation Command, the U.S. Army Test & Evaluation Command, Army Research Laboratory, U.S. Army Training and Doctrine Command (TRADOC) and its M&S centers (Battle Labs, TRADOC Analysis Center and National Simulation Center), and the U.S. Army Research, Development & Engineering Centers provide an extensive, readily available source of M&S expertise. While TRADOC has overall responsibility of M&S requirements and functions as the user representative to the acquisition community for embedded training and training simulation, AMC and the Office of the Assistant Secretary of the Army for Research, Development and Acquisition have significant M&S responsibilities. Therefore, it is important that coordination among these agencies and their support activities concerning M&S is effectively managed. To optimize our M&S efforts during the acquisition and development of our systems, we expect all PMs to take advantage of our existing resources by including the appropriate M&S support agencies in the Working Integrated Process Teams (WIPT). We further expect the active participation of the appropriate M&S support agencies at the WIPT to ensure the SSP identifies the optimal suite of M&S efforts to eliminate duplication and optimize reuse. This directive must be applied judiciously. The intent is not to create a burdensome responsibility on the PMs, but to be a part of acquisition streamlining. It is understood that some programs may be too for along in the acquisition cycle to benefit fully from this policy and will be addressed as such in the Acquisition Strategy Report. For all programs where we can capitalize on M&S efforts, the M&S support plan will be coordinated with the appropriate support agencies and included in the Program's Acquisition Strategy Report and presented at the Overarching Integrated Process Team. Army Modeling and Simulation Policy, 9/20/96
Modified commercial item	A modified commercial item is any item with modifications of a type customarily available in the commercial marketplace or minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government re-

	quirements. Such modifications are considered minor if the change does not significantly alter the nongovernmental function or essential physical characteristics of an item or component, change the purpose of the process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor. DoD 5000.2-R
National Security System (NSS)	Any telecommunications or information system operated by the U.S. Government, the function, operation, or use of which: • Involves intelligence activities; • Involves cryptologic activities related to national security; • Involves command and control of military forces; • Involves equipment that is an integral part of a weapon or weapons system. DoDD 5000.1
Non-developmental item	A non-developmental item is: (1) any previously developed item of supply used exclusively for governmental purposes by a Federal Agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement; (2) any item described in (1) that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or (3) any item of supply being produced that does not meet the requirements described in (1) or (2) solely because the item is not yet in use. FAR 2.101
Open System	Open system-based commercial items are defined as commercial items that use open standards as their primary interface standards. An open systems strategy focuses on fielding superior warfighting capability more quickly and more affordably by using multiple suppliers and commercially supported practices, products, specifications, and standards, which are selected based on performance, cost, industry acceptance, long term availability and supportability, and upgrade potential. Open system-based non-developmental items are defined as non-developmental items that use open standards as their primary interface standards DoD 5000.2-R
Performance-Based Acquisition	In order to maximize competition, innovation, and interoperability, and to enable greater flexibility in capitalizing on commercial technologies to reduce costs, performance-based strategies for the acquisition of products and services shall be considered and used whenever practical. For products, this includes all new procurements and major modifications and upgrades, as well as

	the reprocurement of systems, subsystems, and spares that are procured beyond the initial production contract award. When using performance-based strategies, contractual requirements shall be stated in performance terms, limiting the use of military specifications and standards to government-unique requirements only. Configuration management decisions shall be based on factors that best support implementation of performance-based strategies throughout the product life cycle. DoDD 5000.1
Program Executive Officer (PEO)	A military or civilian official who has primary responsibility for directing several major defense acquisition programs and for assigned major system and non-major system acquisition programs. A PEO has no other command or staff responsibilities within the Component, and only reports to and receives guidance and direction from the DoD Component Acquisition Executive. DoDD 5000.1
Program Manager (PM)	The individual designated in accordance with criteria established by the appropriate Component Acquisition Executive to manage an acquisition program, and appropriately certified under the provisions of the Defense Acquisition Workforce Improvement Act (10 U.S.C. §1701 et. seq.). A PM has no other command or staff responsibilities within the Component. DoDD 5000.1
Program Plans	Program plans belong to the PM and are to be used by the PM to manage program execution throughout the life cycle of the program. Program plans are a description of the detailed activities necessary to carry out the strategies addressed above. The PM, in coordination with the PEO, determines the type and number of program plans. Program plans, excluding the TEMP, are not required in support of milestone decisions and shall not be used as milestone documentation or as periodic reports. DoD 5000.2-R
Requirements Authority	The individual within the DoD Components charged with overall requirements definition and validation. The Vice-Chairman of the Joint Chiefs of Staff, in the role as Chairman of the JROC, is the requirements authority for all potential major defense acquisition programs and is responsible for all requirements policy and procedures, including MNSs, CRDs, and ORDs. DoDI 5000.2
Risk management	The PM shall establish a risk management program for each acquisition program to identify and control performance, cost, and schedule risks. The risk management program shall identify and track risk drivers, define risk abatement plans, and provide for continuous risk assessment throughout each acquisition phase to determine how risks have changed. Risk reduction measures shall be included in cost-performance trade-offs, where applicable. The risk management program shall plan for back-ups in risk areas and identify design requirements where performance

	increase is small relative to cost, schedule, and performance risk. The acquisition strategy shall include identification of the risk areas of the program and a discussion of how the PM intends to manage those risks. DoD 5000.2-R
Test and Evaluation Master Plan (TEMP)	The Test and Evaluation Master Plan (TEMP) shall focus on the overall structure, major elements, and objectives of the test and evaluation program that is consistent with the acquisition strategy. It shall include sufficient detail to ensure the timely availability of both existing and planned test resources required to support the test and evaluation program. Provide a road map for integrated simulation, test, and evaluation plans, schedules, and resource requirements necessary to accomplish the test and evaluation program. DoD 5000.2-R
Total Ownership Cost (TOC)	The sum of financial resources to organize, equip, sustain, and operate military forces to meet national goals, policies, and standards of readiness, environmental compliance, safety, and quality of life concerns. The TOC for Defense systems consists of the costs to research, develop, acquire, own, operate, and dispose of weapon and support systems. It includes direct costs and indirect costs attributable to the systems and infrastructure costs not directly attributable to the system. Product support mainly concerns the portion of TOC that occurs after the system is deployed (the sustainment and disposal phase of a system's life cycle). For purposes of costing, the PM shall use life-cycle costs as defined in DoD 5000.4-M. DoDI 5000.2
Weapon System	The term "weapon system" means items that can be used directly by the armed forces to carry out combat missions and that cost more than $100,000 or for which the eventual total procurement cost is more than $10,000,000. Such term does not include commercial items sold in substantial quantities to the general public. 10 USC, Section 2403 An item or set of items that can be used directly by warfighters to carry out combat or combat support missions to include tactical communication systems. DoDI 5000.2

Appendix B

Acquisition Categories (ACAT)	
ACAT	Description
ACAT I	Major Defense Acquisition Program (MDAP). ACAT I programs are those programs that are a major defense acquisition program (MDAP) or that are designated ACAT I by the MDA as a special interest program. An acquisition program that is not a highly sensitive classified program (as determined by the Secretary of Defense) and that is designated by the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)) as an MDAP, or estimated by the USD (AT&L) to require an eventual total expenditure for research, development, test and evaluation of more than $365 million in fiscal year (FY) 2000 constant dollars or, for procurement, of more than $2.190 billion in FY 2000 constant dollars. In some cases, an ACAT IA program, as defined below, also meets the definition of a MDAP. The USD (AT&L) and the ASD (C3I) / DoD Chief Information Officer shall decide who will be the MDA for such AIS programs. Regardless of who is the MDA, the statutory requirements that apply to MDAP shall apply to such AIS programs. ACAT I programs have two sub-categories: ACAT ID, for which the MDA is USD (AT&L) (the “D” refers to the Defense Acquisition Board (DAB), which advises the USD (AT&L) at major decision points) or ACAT IC, for which the MDA is the DoD Component Head or, if delegated, the DoD Component Acquisition Executive (CAE) (the “C” refers to Component). The CAE for Army programs is the Assistant Secretary of the Army (Acquisition, Logistics and Technology). Initially, all programs are treated as ACAT ID until formally designated ACAT IC by the USD (AT&L). At any time, the USD (AT&L) may delegate Milestone Decision Authority of an ACAT I program to the Head of the DoD Component (Secretary of the Army) who may then delegate to the CAE. DoDI 5000.2 Army System Acquisition Review council (ASARC). The ASARC is the Army's senior-level review for ACAT I and II programs. The ASARC will be convened at formal milestones to determine a program or system's readiness to enter the next phase in the materiel acquisition cycle, and make recommendations to the AAE on those programs for which the AAE is the MDA. An ASARC may also be convened at any time to review the status of a program. ACAT ID Programs are subsequently reviewed by the DAB. The ASARC is co-chaired by the AAE and VCSA.

	AR 70-1
ACAT IA	ACAT IA programs are those programs that are major automated information system (MAIS) or that are designated as ACAT IA by the MDA as a result special interest. An automation information system (AIS) that is designated by ASD (C3I) as a MAIS, or estimated to require program costs in any single year in excess of $32 million in fiscal year FY 2000 constant dollars, total program costs in excess of $126 million in FY 2000 constant dollars, or total life-cycle costs in excess of $378 million in FY 2000 constant dollars. ACAT IA programs have two sub-categories: ACAT IAM for which the MDA is the Chief Information Officer (CIO) of the Department of Defense (DoD), the ASD (C3I) (the "M" (in ACAT IAM) refers to Major Automated Information System (MAIS)) or ACAT IAC, for which the DoD CIO has delegated milestone decision authority to the CAE or Component CIO (the "C" (in ACAT IAC) refers to Component). The ASD (C3I) designates programs as ACAT IAM or ACAT IAC. DoDI 5000.2 Army major automation information systems review council (MAISRC). The Army MAISRC is the body supporting the AAE and DISC4 (CIO) in their acquisition oversight role of ACAT IAC and IIA programs. The purpose of this oversight is to assist managers in resolving major issues supporting information requirements. AR 70-1
ACAT II	ACAT II programs are those programs that do not meet the criteria for an ACAT I program, but that are Major Systems or that are designated as ACAT II by the MDA as a result of special interest. Because of the dollar values of a MAIS, no AIS program is ACAT II. The MDA is the CAE. DoDI 5000.2
ACAT III	ACAT III programs are defined as those acquisition programs that do not meet the criteria for an ACAT I, an ACAT IA, or an ACAT II. The MDA is designated by the CAE and shall be at the lowest appropriate level. This category includes less-than-major AIS. DoDI 5000.2 The IPR is the review forum for all ACAT III, and IV Programs. General policies for reviews for IPR programs are the same as for ACAT I and II programs. Reviews will be conducted at milestones and at other times deemed necessary by the MDA. The MDA or designee will chair the IPR. Agency and command members will provide a representative with authority to represent, act and commit to action on behalf of the organization. AR 70-1

Categories of Acquisition Programs and Milestone Decision Authorities

Program Category	Program Management	Primary Criteria ($ = FY96 constant)	Milestone Review Forum	Milestone Decision Authority
ACAT I				
ACAT ID	PEO/PM	More than $355M RDTE More than $2.135B Proc	DAB	USD (A&T)
ACAT IC	PEO/PM	More than $355M RDTE More than $2.135B Proc	ASARC	AAE
ACAT IA				
ACAT IAM	PEO/PM	Excess of $30M single year Excess of $120M total program Excess of $360M total life-cycle costs	DoD MAISRC	ASD (C3I)
ACAT IAC	PEO/PM	Excess of $30M single year Excess of $120M total program Excess of $360M total life-cycle costs	Army MAISRC	Army CIO
ACAT II				
ACAT II	PEO/MAT CMD CDR/PM[1]	More than $140M RDTE More than $645M Proc	ASARC	AAE
ACAT IIA	PEO/MAT CMD CDR/PM	$10-30M single year $30-120M total program $159-360 total life-cycle costs	Army MAISRC	Army CIO
ACAT III				
ACAT III	PM	High visibility, special interest (includes AIS)	IPR	PEO/MAT CMD CDR
ACAT IV				
ACAT IV [3]	Systems Manager, or equivalent	All other acquisition programs (includes AIS)	IPR	MAT CMD CDR [2]

Notes:

[1] MAT CMD CDR is PEO-equivalent level commander of a materiel developing command. Milestone decision authority may be further delegated at the materiel command commander's discretion no lower than a GO/SES level. Delegation will be forwarded through channels to the ASARC Secretary (SARD-ZBA).

[2] Milestone decision authority may be further delegated at the materiel command commander's discretion. Delegation will be forwarded through channels to the ASARC Secretary (SARD-ZBA). AR 70-1

[3] The Army assigns programs to ACAT IV level. DoD does not make this distinction.

Appendix C

Acquisition Policies[7]
• Army Force XXI. Buy better products faster, at reasonable prices with affordable ownership costs. Leaders must create visions, empower people, measure progress and remove barriers to achieve systematic, continuous improvements to support Army Force XXI. Integrated Product Teams (IPT) and Integrated Concept Teams (ICT) are an integral part of the defense acquisition process and will be used throughout the acquisition process.
• Horizontal Technology Integration (HTI). Upgrade fielded equipment to insert modern technology and focus long-term solutions on leap-ahead technologies. Promote HTI programs as the first choice for modifications/upgrades as an acquisition solution to a materiel requirement. Combine, to the maximum extent practical, similar and/or overlapping acquisition efforts into a single HTI program. Use HTI programs to achieve Army modernization goals as efficiently as possible.
• Warfighting Rapid Acquisition Program (WRAP). All HQDA staff, staff agencies, MACOMs, and MATDEVs will participate and support WRAP, as appropriate. WRAP is directed at accelerating procurement of systems identified through TRADOC warfighting experiments (AWEs), concept evaluation programs (CEPs), advanced technology demonstrations (ATDs), advanced concept technology demonstrations (ACTDs), and similar experiments where a TRADOC ICT supported by a TRADOC battle lab are directly involved. The review forum used is the WRAP ASARC. (AR 71-9).
• Joint Technical Architecture -- Army (JTA-Army). Develop and procure systems that are fully Joint Technical Architecture -- Army (JTA-Army) compliant.
• Army Enterprise Strategy. Ensure each Research, Development, and Acquisition (RDA) Information Technology (IT) initiative fully meets the requirements of the Information Technology Management Reform Act of 1996 by applying the tenets of the Army Enterprise Strategy.
• Information Technology (IT). Sustaining base IT resources above thresholds, or those identified as special interest by CIO/DISC4, will be approved by HQDA.
• Software. Develop guidelines that address standard software engineering principles that as a minimum, address software reuse, portability, and management controls.
• Milestone Decision Authority (MDA). In order to ensure clear lines of responsibility and reporting, for all Army acquisition programs, (to include CIE programs) there will be only one designated MDA. This designation will be by name and not by duty position.
• Program Managers. Program Managers will manage assigned programs in a manner consistent with the policies and principles articulated in governing regulations and the PM Bill of Rights and Responsibilities.

[7] AR 70-1

• Authority of Program Executive Officers (PEO), Program, Project/Product Managers (PM) and Milestone Decision Authorities (MDA). Outside this programmatic chain are organizations that provide support and advice to acquisition decision makers. If the PEOs/PM's analysis indicates that functional requirements, in support of meeting materiel requirements, do not add value to the Army, the PEOs/PMs will require that the functional proponent justify the requirement. The burden of proof for justifying the functional requirement lies with the functional proponent. In cases where the functional requirement is not a statutory requirement and it does not result in a clear benefit to the Army, the MDA may exempt the program from the functional requirement.
• Acquisition Strategy (AS). The Materiel Developer (MATDEV) develops a program AS. AS is coordinated thoroughly with agencies that support the MATDEV and agencies that will use and support the system when it is fielded. The coordinated program AS is approved by the MDA. The MATDEVs coordinate acquisition strategies with the CBTDEV, training developer, independent testers and evaluators, logisticians, human system integrators, and matrix support organizations. Other system-specific considerations may make further coordination advisable. These include, but are not limited to: training aids, devices, simulations, and simulators; night-vision and electro-optics devices; smart sensors or weapons system signatures; standard auxiliary power units; batteries; environmental control units; and shelters.
• Streamlining and Tailoring. All MATDEVs and MDAs will take action to streamline and tailor their programs, to include program documentation, within statutory and programmatic requirements. MDAs are authorized to waive any non-statutory requirements and take action to submit waivers for those statutory requirements when warranted.
• Re-procurement. Re-procurement of an item is authorized when there is a continuing need based on an updated performance specification or purchase description from the last procurement. Re-procurement should not require any research, development, test, and evaluation (RDTE) funds other than 6.5 RDTE funding for market surveys and associated testing. The CBTDEV or training developer will provide a statement that a continuing need exists for the item and the MDA will determine if the item is eligible for re-procurement.
• Safety, Health and Environmental Risk Management. Safety, health and environmental risk management is the mechanism the Army uses to build effective systems that are as safe and healthy as possible given programmatic cost and schedule. Safety, health and environmental risk management (identify hazards, assess risk, make risk decision, implement, and supervise) shall be integrated into the acquisition process to allow for timely and informed risk decisions and provide a means to inform users of residual hazards, ultimately protecting the force. System Safety Risk Assessments (SSRA) will be used to make decisions and document coordination and acceptance of risk. Decisions to accept risks associated with hazards will be made at a management level commensurate with the risk (see Table 1-1). The assessment and acceptance will be available at MDRs. Identified hazards and status of corrective actions will be recorded and maintained until system disposal.

• Pollution Prevention. Pollution prevention is the Army's preferred approach to maintaining compliance with environmental laws and regulations. When both preventive and control approaches are available to deal with an environmentally degrading activity, preventive measures are preferred. Use of Hazardous Materials (HAZMAT) will be minimized and all alternative options will be considered before using any HAZMAT. Pollution will be eliminated or reduced at the source. Wastes and by products that cannot be eliminated will be recycled. Pollutants that cannot be recycled will be treated to minimize environmental hazards. Disposal or other release to the environment will be employed only as a last resort and will be conducted in an environmentally safe manner. All Army acquisition organizations will incorporate pollution prevention throughout the acquisition process.
• Army Acquisition Workforce and Army Acquisition Corps. Army Acquisition leadership will provide management practices and processes that ensure education, training, and experiences for the Army's acquisition workforce and which will develop and maintain a professional corps of acquisition leaders willing to serve where needed and committed to developing, integrating, acquiring, and fielding systems.
• Acquisition Career Management. PEOs and MACOMs designate a senior acquisition professional occupying a critical acquisition position within their organizations as the Acquisition Career Management Advocate (ACMA).
• Capstone Requirements Document. User requirements may also be documented in a Capstone Requirements Document (CRD). The CRD provides the means to document common systems requirements, such as overarching interoperability requirements or standards that apply to a family of systems. A CRD will not be used to establish a materiel acquisition program or funding line, nor will it require the traditional program documents since these documents are included in the subordinate systems' ORDs. Upon approval, all program ORDs covered by the CRD will be made compliant with all requirements stated in the CRD (see AR 71-9).
• Insensitive Munitions. Munitions survivability is crucial to the success of combat systems. The reactive nature of munitions and combat systems makes them susceptible to degradation and destruction when exposed to stimuli such as fragments and fires. Design features shall be developed and introduced via a total systems engineering approach, which ensures that all combat system requirements are met while enhancing survivability to unplanned stimuli.

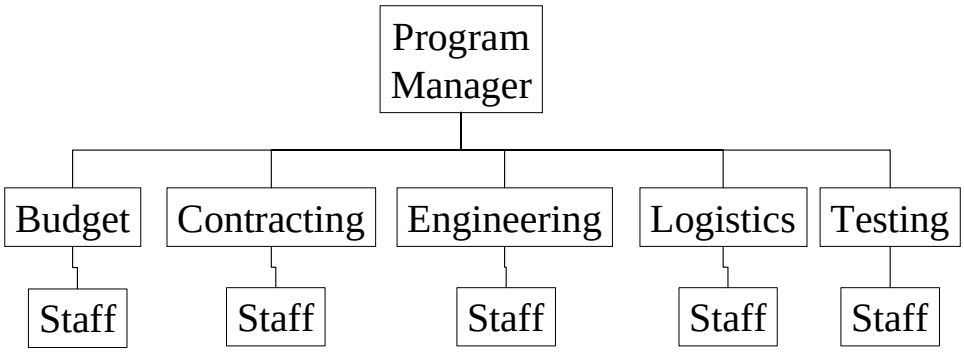
Appendix D

The PM's Bill of Rights and Responsibilities
Program Managers have the Right to: • A single, clear line of authority from the Defense Acquisition Executive. • Authority commensurate with their responsibilities. • Timely decisions by senior leadership. • Be candid and forthcoming without fear of personal consequences. • Speak for their program and have their judgments respected. • The best available training and experience for the job. • Adequate financial and personnel resources.
Program Managers have the Responsibility to: • Accept program direction from acquisition executives and implement it expeditiously and conscientiously. • Manage their programs to the best of their abilities within approved resources. • Be customer focused and provide the user with the best, most cost-effective system or capability. • Innovate, strive for optimal solutions, seek better ways to manage, and provide lessons learned to those who follow. • Be candid about program status, including risks and problems as well as potential solutions and likely outcomes. • Prepare thorough estimates of financial and personnel resources that will be required to manage the program. • Identify weaknesses in the acquisition process and propose solutions. AR 70-1

Effective Characteristics of IPT Participants
Effective Leaders have the ability to:
• Allocate and manage resources • Organize work structures • Organize team structures • Apply effective time management • Focus group on key issues and maintain the end-game perspective • Accept and manage risk • Make tough, courageous decisions • Keep discussions to the main points • Formulate a vision, motivate employees, provide incentives, inspire • Communicate with senior executives, team members and other stakeholders • Articulate complex issues into simpler models • Understand the acquisition process • Negotiate to win-win outcomes
Effective Team Members have the ability to:
• Work in a team environment • Motivate other team members • Articulate their issues (thoughts) clearly and completely • Understand the user environment and operational culture • Apply the acquisition process • Respond effectively to assignments and milestones • Understand the limits of empowerment • Apply the IPT Rules of the Road • Contribute functional area expertise • Understand the impacts of trade-offs among alternatives • Communicate with functional sponsors, team leaders and teammates
Effective Executive Sponsors have the ability to:
• Develop a strategic vision of the need for an IPT • Communicate mission to team leaders and other sponsors • Set priorities for the team • Provide required resources • Clarify issues and resolve conflicts among team leaders • Carry IPT issues to other stakeholders for resolution

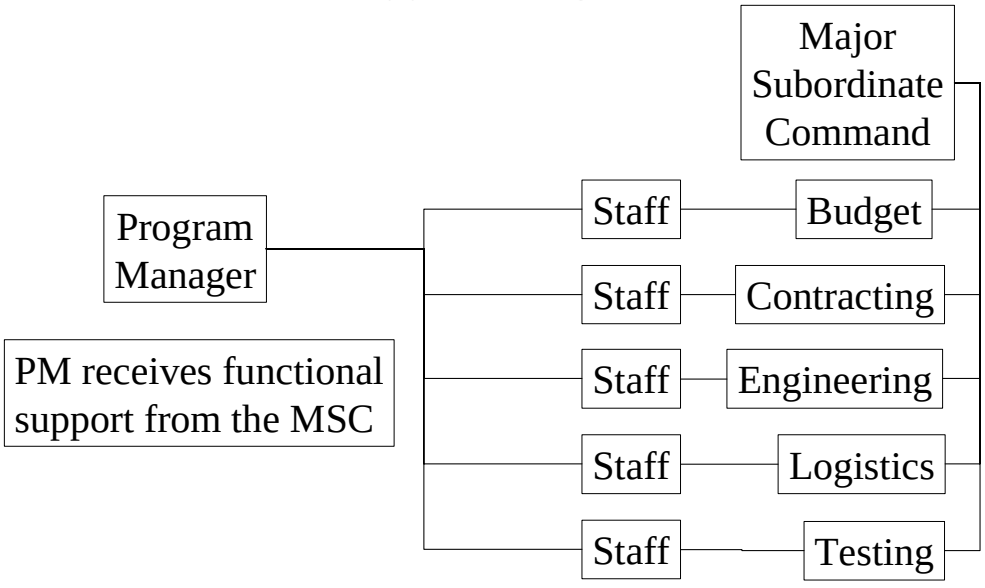
<table>
<tr><th colspan="2">DoD IPT Skill and Knowledge Requirements</th></tr>
<tr><td>Technical Knowledge</td><td>Acquisition Process</td></tr>
<tr><td rowspan="2">Functional area expertise
Analysis of cost and risk trade-offs
Analytical and technical skills
Knowledge of the applicable statutes (10 USC, Ch. 144 and 139 & 2366, e.g.)
Knowledge of the acquisition process (DoD 5000 series, etc.)
Organizational budget process
Program management software
Resource management
Human resource rules for military and civilians
Personnel and financial organizational knowledge</td><td>Knowledge of the applicable statutes (10 USC, Ch. 144 and 139 & 2366, e.g.)
Knowledge of the acquisition rules, DoD 5000 series, etc.
Knowledge of the organization mission and purpose
Big picture vision</td></tr>
<tr><td>Communications</td></tr>
<tr><td></td><td>Common goal setting
Effective writing techniques
Effective briefing skills</td></tr>
<tr><td>Teaming</td><td>Management and Meeting</td></tr>
<tr><td>Team building skills
IPT rules of the road
IPPD guide knowledge
Group dynamics
Facilitation skills
Team decision making</td><td>Leadership
Supervisory skills
Ethics
Meeting and management skills
Plan of action and milestones (POA&M) skills
Dedication, commitment and judgment</td></tr>
<tr><td>Conflict Resolution</td><td>Planning and Thinking Skills</td></tr>
<tr><td>Coaching/mentoring
Consensus building
Issue resolution/problem solving skills
Conflict resolution
Organization skills
Interpersonal skills
Negotiating skills</td><td>Ability to organize complex issues in clear concise manner
Time management skills
Planning skills
In-depth knowledge of team chartering process
Strategic planning skills
Meeting management skills</td></tr>
<tr><td colspan="2">Rules of the Road, A Guide for Leading Successful Integrated Product Teams, Revision 1, October 1999</td></tr>
</table>

Traditional PMO



•Program manager has highest degree of control over the work force.
•Best organization for strong team identity.

Matrix PMO



PM receives functional support from the MSC