5000.2 FINAL Coordination Draft
April 2000

Department Of Defense
INSTRUCTION

SUBJECT: Operation of the Defense Acquisition System

REFERENCES

(a) DoD Directive 5000.1, "The Defense Acquisition System"
(b) CJCSI 3170.01A, "Requirements Generation System," August 10, 1999
(c) Additional references, see Appendix 2

A. PURPOSE

This Instruction accomplishes the following:

1. Establishes a simplified and flexible management framework for translating mission needs and technological opportunities, based on validated mission needs and requirements, into stable, affordable, and well-managed acquisition programs that include weapon systems and automated information systems;

2. Establishes a general approach for managing acquisition programs while acknowledging that every technology project and acquisition program is unique and that any particular project or program, particularly non-major programs, need not follow the entire process;

3. Consistent with statutory requirements, DoD Directive 5000.1 (reference (a)), and this Instruction, authorizes Milestone Decision Authorities (MDAs) to tailor procedures in order to achieve cost, schedule, and performance goals, consistent with legal requirements and DoD Directive 5000.1;

4. Implements DoD Directive 5000.1 (reference (a)), the guidelines of OMB Circular A-11, Part 3[i], and current laws; and

5. Authorizes, in accordance with DoD Directive 5025.1[ii] the publication of DoD 5000.2-R that establishes procedures to be followed for Major Defense Acquisition Programs (MDAPs), Major Automated Information Systems (MAISs), and those non-major systems specifically identified in the Regulation.

B. APPLICABILITY AND PRECEDENCE

This Instruction applies to:

1. The Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Unified Combatant Commands, the Defense Agencies, and DoD Field Activities (hereafter referred to collectively as "DoD Components").

5000.1 FINAL Coordination Draft
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Department of Defense
DIRECTIVE

Subject: The Defense Acquisition System

A. PURPOSE

This Directive states policies and principles for all Department of Defense (DoD) acquisition programs.

B. APPLICABILITY and SCOPE

This Directive describes management principles applicable to all DoD acquisition programs, and applies to all elements of the DoD - including the office of the Secretary of Defense, the Military Departments, the Joint Staff, the Unified Combatant Commands, the Defense Agencies, and DoD Field Activities (hereafter collectively referred to as DoD Components). This Directive, the DoD Instruction 5000.2, and the DoD Regulation 5000.2-R provide mandatory policies and procedures for the management of acquisition programs, except when statutory requirements override. If there is any conflicting guidance pertaining to contracting, the Federal Acquisition Regulation (FAR) and/or the Defense FAR Supplement shall take precedence.

The accompanying DoD Instruction 5000.2 describes a simple and flexible approach for managing all acquisition programs. DoD Regulation 5000.2-R describes operating procedures that are mandatory only for major defense acquisition programs and major automated information systems, and for other programs as defined specifically in the Regulation. The Chairman of the Joint Chiefs of Staff Instruction 3170.01A establishes policies and procedures for the DoD requirements generation system.

C. DEFINITIONS

1. 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 redelegation. The CAEs are responsible for all acquisition matters within their respective Component.

2. Acquisition Program. A directed, funded effort designed to provide a new, improved, or continuing materiel, weapon or automated information system capability, or service, in response to a validated operational need. Acquisition programs are divided into categories, which are established to facilitate decentralized decision-making, execution, and compliance with statutory requirements.

3. Automated Information System (AIS). A combination of computer hardware and software, data, or telecommunications, that performs functions such as collecting, processing, transmitting, and displaying information. This also covers an AIS environment which includes systems, applications, telecommunications, and other components of information technology. The AIS environment is a federation of elements that accomplishes a stated warfighter requirement. Excluded are computer resources, both hardware and software, that are physically part of, dedicated to, or essential in real time to the mission performance of weapon systems. Included are command, control, communication, intelligence, reconnaissance, surveillance, and space systems and information technology systems.

4. 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.

5. Requirements Authority. The individual within the Department, Components, and Agencies charged with overall requirements definition and validation. The Vice-Chairman of the Joint Chiefs of Staff is the requirements authority for all potential major defense acquisition programs and is responsible for all requirements policy and procedures, including Mission Need Statements, Capstone Requirements Documents, and Operational Requirements Documents. The Vice-Chairman chairs the Joint Requirements Oversight Council, which conducts requirements analyses, validates mission needs and key performance parameters, and develops recommended joint priorities for those needs.

6. Program Manager. 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.

7. 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.

D. OVERVIEW

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.

- **Acquisition**. The primary objective of Defense acquisition is to acquire quality products that satisfy warfighter needs with measurable improvements to mission accomplishment and operational support, in a timely manner, and at a fair and reasonable price. Successful acquisition programs are fundamentally dependent upon competent people, rational priorities, and clearly defined responsibilities.

- **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 warfighters have superior, supportable, and affordable technology to support their missions and give them revolutionary war-winning capabilities.

- **Operational Support**. An effective system of operational support must include designing systems to be reliable and supportable; planning for the full range of system support considerations, such as maintenance, supply, transportation, sustaining engineering, configuration and data management, manpower, training, environmental, health, safety, disposal and security factors; and maintaining a highly agile, reliable logistics system that delivers logistics support on demand to support warfighter needs for mobilization and sustainment.

E. POLICIES & PRINCIPLES

The following policies and principles govern the operation of the Defense Acquisition system, and are divided into four major categories: (1) Rapid & Effective Transition from Science and Technology to Products; (2) Rapid & Effective Transition from Acquisition to Deployment and Fielding; 3) Integrated and Effective Operational Support, and (4) Effective Management.

Rapid and Effective Transition From Science and Technology to Products

The fundamental role of the DoD Science and Technology (S&T) program is to enable a technologically superior military force. The S&T program shall address warfighter needs; maintain a broad-based program spanning all Defense-relevant sciences and technologies to anticipate future needs and those not being pursued by civil or commercial communities; preserve long-range research; and enable rapid transition from the S&T base to useful military products. S&T projects shall focus on increasing the effectiveness of a capability while decreasing cost, increasing operational life, and incrementally improving products through planned upgrades. S&T executives shall encourage the use of initiatives, such as advanced technology demonstrations, designed to accelerate the transition from the S&T base to useful military products. Basic and applied research are the foundation for tomorrow's warfighter. Thus it is imperative to maintain a strong technology base investment to develop options for the long term, beyond the threats, scenarios, and budgets that today's analysts can currently predict.

Time-Phased Requirements and Communications with Users. Time-phased requirements generation is an evolutionary approach to specifying operational requirements in an incremental manner over time, matched with projected threat assessments and available technology. Time-phased requirements are essential to evolutionary acquisition strategies and are strongly encouraged as a preferred approach to establishing and documenting operational needs. The Defense acquisition and requirements communities shall maintain continuous and effective communications with each other and with the operational user. The objective is to gain a sound understanding of the users' needs and to work with them to achieve a proper balance among cost, schedule, and performance considerations.

Use of Commercial Products 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 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, interoperability, and ease of integration, of existing commercial technologies and products, and non-developmental items prior to the commencement of a development effort.

Rapid and Effective Transition from Acquisition To Deployment and Fielding

Evolutionary Acquisition. To ensure that the Defense acquisition system provides useful military capability to the operational user as rapidly as possible, evolutionary acquisition strategies shall be the preferred approach to satisfying operational needs. Evolutionary acquisition strategies define, develop, and produce/deploy an initial, militarily useful capability ("Block I") based on proven technology, time-phased requirements, projected threat assessments, and demonstrated manufacturing capabilities, and plan for subsequent development and production/deployment of increments beyond the initial capability over time (Blocks II, III, and beyond). The scope, performance capabilities, and timing of subsequent increments shall be based on continuous communications between the requirements, acquisition, intelligence, and budget communities. In planning evolutionary acquisition strategies, Program Managers shall strike an appropriate balance among key factors, including the urgency of the operational requirement; the maturity of critical technologies; and the interoperability, supportability, and affordability of alternative acquisition solutions. To facilitate evolutionary acquisition, Program Managers shall use appropriate enabling tools, including a modular open systems approach to ensure access to the latest technologies and products, and facilitate affordable and supportable modernization of fielded assets.

Integrated Test and Evaluation. Test and evaluation is the principal tool with which progress in system development is measured. The complexity of modern weapon

systems demands that test and evaluation programs be integrated throughout the defense acquisition process. Test and evaluation shall be structured to support the defense acquisition process and the warfighter by providing essential information to decision-makers, assessing attainment of technical performance parameters, and determining whether systems are operationally effective, suitable, and survivable for intended use. Test and evaluation is conducted to facilitate learning, assess technical maturity, facilitate integration into fielded forces, and confirm performance. Test and evaluation shall be closely integrated with requirements definition, threat projections, systems design, and development, and shall support the warfighter through assessments of a system's contributions to mission capabilities. Test and evaluation planning shall begin early in the acquisition process. Each Military Department shall establish an independent operational test and evaluation agency, reporting directly to the Service Chief, to plan and conduct operational tests, report results, and provide evaluations of effectiveness and suitability.

Achieving Interoperability. Compatibility, interoperability, and integration – within and among United States forces and U.S. coalition partners - are key goals that must be satisfactorily addressed for all Defense systems so that DoD has the ability to conduct joint and combined operations successfully. The use of standardized data shall be considered to facilitate interoperability and information sharing. DoD must have a framework for assessing the interrelationships among and interactions between U.S., Allied, and coalition systems. To that end, milestone decision authorities, and the test and evaluation community, shall adopt a system-of-systems management approach to ensure that their reviews of individual systems include a thorough understanding of critical system interfaces related to the system under review and the flow of consistent and reliable data, information, and services between systems in the battlefield. The objective is an environment characterized by mutual understanding of key systems in a given mission area; shared decision making and close cooperation between the requirements and acquisition communities; and disciplined control over the development and introduction of highly interoperable systems.

Competition. Competition is critical for providing innovation, product quality, and affordability. All DoD Components shall acquire systems, subsystems, equipment, supplies and services in accordance with the statutory requirements for competition. Competition provides major incentives to industry and government organizations to reduce cost and increase quality. The Department must take all necessary actions to promote a competitive environment, including examination of alternative systems to meet stated mission needs; structuring Science and Technology investments and acquisition strategies to ensure the availability of competitive suppliers throughout a program's life and for future programs; ensuring that prime contractors foster effective competition for major and critical products and technologies; and ensuring qualified international sources are permitted to compete. Acquisition, technology, and logistics decisions shall be made with full consideration of their impacts on a competitive industrial base, including not only the prime contractor level but also the subcontractor level.

Departmental Commitment to Production. Milestone decision authorities shall not commit the Department to the production phase (including low rate initial production) of an acquisition program unless and until certain fundamental criteria have been considered and evaluated. These criteria include, but are not necessarily limited to, demonstrated technology maturity; well-defined and understood user requirements; assured interoperability, affordability, and supportability; and a strong plan for rapid acquisition using evolutionary approaches as the preferred strategy, open systems designs, and effective competition.

Integrated and Effective Operational Support

Total Systems Approach. Acquisition programs shall be managed to optimize total system performance and minimize total ownership costs by addressing both the equipment and the human part of the total system equation, particularly during systems engineering. Program managers shall give full consideration to all aspects of system support, including logistics planning; manpower, personnel, and training; and human, environmental and security factors.

Logistics Transformation. Logistics transformation is fundamental to acquisition reform. Decision-makers shall take all appropriate enabling actions to integrate acquisition and logistics to ensure a superior product support process. The Department shall strive for an integrated acquisition and logistics process characterized by constant focus on total cost of ownership; supportability as a key design and performance factor; and logistics emphasis in the systems engineering process.

Logistics transformation shall be accomplished through streamlined logistics infrastructure requirements; reduced logistics response cycle times; weapon system supply chains integrated with DoD and commercial logistics systems and focused on customer service and system readiness; use of competitive sourcing to select best-value providers selected from government, industry, or public-private partnerships; a support environment that maintains long-term competitive pressures; continuous improvement of weapon system reliability, maintainability, and supportability through technology refreshment and other means; and effective integration of weapon system-focused support to provide total mission logistics. Acquisition program managers shall focus on logistics considerations early in the design process to ensure that they deliver reliable systems that can be cost-effectively supported and provide users with the necessary support infrastructure to meet peacetime and wartime readiness requirements.

Effective Management

Tailoring. There is no one best way to accomplish the objectives of the Defense Acquisition system. Proposed programs, for example, may enter the acquisition process at various decision points, depending on concept and technological maturity. Decision-makers and Program Managers shall tailor acquisition strategies to fit the particular conditions of an individual program, consistent with common sense, sound business management practice, applicable laws and regulations, and the time-sensitive nature of

the user's requirement. Tailoring shall be applied to various aspects of the Acquisition system, including program documentation, acquisition phases, the timing and scope of decision reviews, and decision levels. Milestone decision authorities shall promote flexible, tailored approaches to oversight and review based on mutual trust and a program's dollar value, risk, and complexity.

Cost and Affordability. Fiscal constraint is a reality that all participants in the acquisition system must recognize. Cost must be viewed as an independent variable, and DoD Components shall plan programs based on realistic projections of funding likely to be available in future years. To the greatest extent possible, DoD Components shall identify the total costs of ownership, and at a minimum, the major drivers of total ownership costs. Consistent with the Chairman of the Joint Chiefs of Staff guidance on requirements generation, the user shall treat cost as a military requirement and state the amount the Department should be willing to invest to obtain, operate, and support the needed capability over its expected life cycle. Acquisition managers shall establish aggressive but realistic objectives for all programs and follow through by working with the user to trade off performance and schedule, beginning early in the program (when the majority of costs are determined).

To maximize program stability, DoD Components shall develop realistic program schedules, long-range investment plans, and affordability assessments, and shall strive to ensure stable program funding. The milestone decision authority shall determine the appropriate point at which to fully fund an acquisition program. This point shall be no later than entry into the systems demonstration and development phase, but may be earlier if warranted by the acquisition strategy and the timing of the decision relative to the programming and budgeting process. In general, full funding shall be required when there is a mature system concept and architecture (based on proven technologies). Full funding shall be based on the cost of the most likely system alternative. The acquisition community shall actively participate in the various phases of the Planning, Programming, and Budgeting System to ensure that acquisition management issues and full funding are properly addressed.

Simulation-Based Acquisition. The Department must strive for an acquisition process in which DoD and industry are enabled by robust, collaborative use of simulation technologies that are integrated across acquisition phases and programs. Program Managers shall make effective use of modeling and simulation to reduce the time, resources, and risk associated with the entire acquisition process; increase the quality, military worth and supportability of fielded systems; and reduce total ownership costs throughout the system life cycle.

Innovation, Continuous Improvement, and Lessons Learned. The Department shall continuously focus on developing and implementing major initiatives necessary to streamline and improve the Defense Acquisition system. Through a commitment to reengineering, the Department shall increase its ability to fund warfighting requirements and continued research and development. Decision-makers at all levels shall encourage the continuous examination and adoption of innovative

practices – including best commercial practices and electronic business solutions - that reduce cycle time and cost, and encourage teamwork, and shall provide meaningful incentives for innovation, such as reinvestment of cost savings and career recognition and advancement. In addition, decision-makers at all levels shall encourage and facilitate the documentation and institutionalization of lessons learned – both good and bad - from past experience. Proper incentives must be in place to encourage a culture friendly to the documentation of valuable lessons learned and the sharing of knowledge. The objective is a learning culture that embraces change and continuously adapts to new challenges.

Streamlined Organizations and a Professional Workforce. 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 Program Manager, Program Executive Officer, the Component Acquisition Executive, reporting through the Head of the Component, and the Under Secretary of Defense for Acquisition, Technology, and Logistics or the 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 Acquisition have a full understanding of the overall system. Defense acquisition works best when all of the Department's Components work together as a team focused on the customer.

F. RESPONSIBILITIES

The Under Secretary of Defense (Acquisition, Technology, and Logistics), the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), and the Director of Operational Test and Evaluation are key officials of the Defense Acquisition system. They shall issue Instructions and Regulations to implement the policies and principles contained in this Directive.

2. All defense technology projects and acquisition programs. Some requirements, where stated, apply only to MDAPs and MAISs. In some cases, an automated information system (AIS), as defined below, also meets the definition of a MDAP. The Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD(AT&L)) and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) (ASD(C3I)) shall decide who will be the MDA for such AIS programs. Regardless of who is the MDA, the statutory requirements that apply to MDAPs shall apply to such AIS programs.

3. In general, highly sensitive classified, cryptologic, and intelligence projects and programs shall follow the guidance in this Instruction and DoD 5000.2-R for technology projects and acquisition programs of equivalent acquisition category. The MDA shall approve proposed tailoring of the systems acquisition process for these projects and programs.

C. DEFINITIONS

1. Acquisition Phase. A time segment in the life of an acquisition program in which all the tasks and activities needed to bring the program to the next major decision point takes place. Based on validated and approved needs, acquisition phases ensure a logical progression of effort designed to mature technologies; demonstrate operational system effectiveness, survivability, and suitability; evolve efficient manufacturing capabilities; ensure affordability; ensure supportability; and provide the needed capability to the warfighter in the shortest practical time.

2. 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 or Defense. The Component Acquisition Executive (CAE) for each of the Components are the Secretary of the Military Departments or the Head of Agencies with power of redelgation. The CAEs are responsible for all acquisition matters within their respective Component.

3. Acquisition Program. A directed, fully funded effort designed to provide a new, improved, or continuing materiel, weapon, or automated information system or service capability in response to a validated operational or business need. Acquisition programs are divided into different categories that are established to facilitate decentralized decision-making, execution, and compliance with statutory requirements.

4. Automated Information System (AIS). A directed, funded combination of computer hardware and software, data, information, or telecommunications, that performs functions such as collecting, processing, storing, retrieving, transmitting, and displaying information. This also covers an AIS environment which includes systems, applications, telecommunications, and other components of information technology. The AIS environment is in a federation of elements that accomplishes a stated warfighter requirement. Excluded are computer resources, both hardware and software, that are physically part of, dedicated to, or essential in real time to the mission performance of weapon systems. Included are information technology systems that are not national security systems.

5. Information Technology (IT) System. 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. IT systems include computers, ancillary equipment, software, firmware, and similar procedures, services (including support services), and related resources (Clinger-Cohen Act (CCA))[iii].

6. Major Automated Information System (MAIS). An AIS that is (1) designated by ASD(C3I) as a MAIS, or (2) estimated to require program costs in any single year in excess of $31.5 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. MAISs do not include highly sensitive classified programs (as determined by the Secretary of Defense). For the purpose of determining whether an AIS is a MAIS, the following shall be aggregated and considered a single AIS: (1) the separate AISs that constitute a multi-element program; (2) the separate AISs that make up an evolutionary or incrementally developed program; or (3) the separate AISs that make up a multi-DoD omponent AIS program.

7. Major Decision Point. There are three types of major decision points: milestones, decision reviews, and interim progress reviews.

   - A milestone is a decision point that separates the phases of an acquisition program and requires a fixed set of information. The decisionmaker is the milestone decision authority (MDA) for the program. The result of a milestone is a decision to proceed into the next acquisition phase (and a new contract).

   - A decision review is a decision point that separates work efforts within an acquisition phase and requires only the information that the decisionmaker needs to make the decision at hand. The decision is usually delegated, as determined by the MDA, and may be made using any process determined to be useful by the decisionmaker. The result of a decision review is a decision to proceed with work within an acquisition phase (and continue or begin a new contract).

   - An interim progress review is a decision point that separates work efforts within an acquisition phase and requires only the information necessary to assure the decisionmaker that the program is progress according to the requirements in this Instruction and the acquisition strategy. The decision is usually delegated, as determined by the MDA, and may be made using any process determined to be useful by the decisionmaker. The result of an interim progress review is continuation of the work effort in the phase (using the same contract).

8. Major Defense Acquisition Program (MDAP). An acquisition program that is not a highly sensitive classified program (as determined by the Secretary of Defense) and that is: (1) designated by the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD(AT&L)) as an MDAP, or (2) 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 (10 U.S.C. §2430)[iv]. The estimate shall consider all blocks that will make up an evolutionary acquisition program (to the extent that subsequent blocks can be defined).

9. 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. §2302(5))[v]. The estimate shall consider all blocks that will make up an evolutionary acquisition program (to the extent subsequent blocks can be defined).

10. Milestone Decision Authority (MDA). The individual designated in accordance with criteria established by the USD(AT&L) or by the ASD(C3I) for AIS acquisition programs to approve entry of an acquisition program into the next phase of the acquisition process.

11. National Security System (NSS). Any telecommunications or information system operated by the United States Government, the function, operation, or use of which involves intelligence activities, cryptologic activities related to national security, command and control of military forces, equipment that is an integral part of a weapon or weapon system or that is critical to the direct fulfillment of military or intelligence missions. A system that is to be used for routine administrative and business applications (including payroll, finance, logistics, health, and personnel management applications) that is also critical to the direct fulfillment of military or intelligence missions is not a national security system.

12. Program Executive Officer (PEO). The individual designated in accordance with criteria established by the appropriate Component Acquisition Executive to manage a group of acquisition projects and/or programs and appropriately certified under the provisions of the Defense Acquisition Workforce Improvement Act (DAWIA).[vi] The PEO is dedicated to executive management of these projects and programs and has no other command responsibilities.

13. 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 Workforce Improvement Act (DAWIA).[vii]

14. Requirements Authority. The individual within DoD Components charged with overall requirements definition and validation. The Vice Chairman of the Joint Chiefs of Staff (VCJCS) is the requirements authority for all potential MDAPs and designated defense special interest acquisition programs. As such, the VCJCS is responsible for all requirements matters, including Mission Need Statements, Capstone Requirements Documents, and Operational Requirements Documents. The DoD Components designate a requirement validation authority for all other potential acquisition programs.

15. Technology Project. A directed, incrementally funded effort designed to provide new capability in response to technological opportunities or a validated operational or business (e.g., accounting, inventory cataloging, etc.) need. Technology projects are

"pre-systems acquisition," do not have an acquisition category, and precede program initiation.

16. 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, 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. Product support mainly concerns the portion of TOC that occurs after the weapon system is fielded (the sustainment and disposal phase of a system's life cycle).

17. Weapon System. An item or set of items that can be used directly by warfighters to carry out combat or combat support missions.

D. IMPLEMENTATION

1. MDAs shall establish mandatory procedures for assigned programs. These procedures shall not exceed the requirements for MDAPs and MAIS acquisition programs established in this Instruction or in DoD 5000.2-R. DoD Component officials shall keep the issuance of any directives, instructions, policy memorandums, or regulations necessary to implement the mandatory procedures contained in this Instruction and DoD 5000.2-R to a minimum. DoD Component officials shall provide copies of all such documents to the USD(AT&L) prior to publication. Waivers or requests for exceptions to the provisions of this Instruction shall be submitted to the USD(AT&L), ASD(C3I), or Director of Operational Test and Evaluation (DOT&E), as appropriate via the CAE. Statutory requirements cannot be waived unless the statute specifically provides for waiver of the stated requirements.

2. DoD Components (including OSD staff offices) shall coordinate proposed policy memorandums and changes to individual sections of this Instruction or DoD 5000.2-R with the Executive Secretary of the Defense Acquisition Policy Steering Group (DAPSG) (see the DAPSG Charter[viii]) prior to Department-wide staffing of the change. The purpose of this policy is to maintain administrative control of this Instruction and is not intended to imply any approval authority on the part of the Executive Secretary.

3. The DAPSG shall submit proposed changes to the USD(AT&L), ASD(C3I), and DOT&E, who jointly have the authority to change this Instruction. All three officials shall jointly sign future changes. Proposed changes shall be considered annually by the Defense Acquisition Policy Working Group (DAPWG).

4. DoD Directive 5000.1 (reference (a)), this Instruction, and DoD 5000.2-R are located in the Reference Library of the Defense Acquisition Deskbook. Mandatory and discretionary acquisition information, practical advice, and lessons learned are also located in the Deskbook.

5. Programs planned in accordance with the 1996 version of DoDD 5000.1 and DoD 5000.2-R are expected to be executed in accordance with approved program documentation. That documentation shall not be updated solely to satisfy the requirements of this Instruction. Programs already approved to enter Engineering

and Manufacturing Development shall continue to follow the sequence of milestones established in their program documentation. The new policies in this Instruction, including the new decision points and phases, shall be applied to efforts that have not yet been approved as acquisition programs (usually pre-Milestone I) unless otherwise directed by the MDA. The new policies in this Instruction, including the new decision points and phases, shall be applied to programs that have begun but that are not yet in Engineering and Manufacturing Development at the discretion of the MDA. For purposes of complying with applicable laws, Milestone B will serve as Milestone II.

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SECTION 1

Characteristics of the Defense Acquisition System

Successful Department of Defense acquisition is dependent on smooth integration of the three principal decision systems in the Department and on attention to critical key capability enablers.

1.1 Integrated Management Framework

The policies in this Instruction are intended to forge a close and effective interface among the Department's principal decision support systems: 1) the Requirements Generation System, 2) the Defense Acquisition System, and 3) the Planning, Programming, and Budgeting System.

1.1.1 Requirements Generation System

The Requirements Generation System (see CJCSI 3170.01A, (reference (b)) produces information for decision-makers on the projected mission needs of the warfighter. The user defines mission needs in broad operational terms and then evolves the needs to specific operational requirements (see paragraph 2.1.1). The Joint Requirements Oversight Council (JROC), or other appropriate requirements authority, validates and approves the mission need, confirms the fact that a non-materiel solution alone cannot satisfy the identified need, and identifies that a potential new concept or system materiel solution should be considered.

1.1.2 Defense Acquisition System

The Defense Acquisition System establishes a management process to translate user needs (broadly stated mission needs responding to a postulated threat and developed in the Requirements Generation System or business needs responding to new ways of doing business and developed by the appropriate staff office) and technological opportunities (developed or identified in the Science and Technology program based on user needs) into reliable and sustainable systems that provide capability to the user.

The Defense Acquisition System is a continuum composed of three activities with multiple paths into and out of each activity. Technologies are researched, developed, or procured in pre-system acquisition (science and technology and concept development and demonstration). Systems are developed, demonstrated, and produced or procured in systems acquisition. The outcome of systems acquisition is a system that is well-defined and carefully structured to represent 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 performance-based services, and smart competition; that is affordable; and that is supportable. Once deployed, the system is supported throughout its operational life and eventual disposal in sustainment and disposal.

1.1.3 Planning, Programming, and Budgeting System

The Planning, Programming, and Budgeting System (PPBS) (see DoD 7000.14-R, Volume 2A and 2B[ix]) provides for a cyclic process that provides the operational commanders-in-chief the best mix of forces, equipment, and support attainable within fiscal constraints.

Technology projects proposed to enter science and technology, technology projects already in science and technology, acquisition programs proposed to enter systems acquisition, and acquisition programs already in systems acquisition shall annually all be reviewed as part of a portfolio (see paragraph 4.5) to determine which projects and programs may proceed within the funding available through the Future Years Defense Program (FYDP). This determination will be based on maturity of technology, projected utility, projected cost, and time to deploy. The result of the portfolio review shall be the recommendation of USD(AT&L) to the Secretary of Defense for the next FYDP.

1.2 Key Capability Enablers

As DoD moves further into the 21st Century, information superiority and interoperability are key attributes of systems.

1.2.1 Information Superiority

Achieving information superiority requires a robust, interoperable, secure and reliable Command, Control, Communication, Computer, and Intelligence (C4I) support infrastructure. This includes the data, information, processes, organizational interactions, skills, and analytical expertise, as well as systems, networks, and information exchange capabilities. For the DoD Components to provide these capabilities in a cost effective manner, DoD Components must identify and evaluate C4I infrastructure and support requirements from the beginning of each program's life-cycle.

All programs shall be managed and engineered using best processes and practices to reduce security risks; be designed to be mutually compatible with other electric or electronic equipment and the operational electromagnetic environment; identify critical elements that require protection to prevent unauthorized disclosure or inadvertent transfer of leading-edge technologies and sensitive data or systems; be certified for spectrum supportability; and comply with the provisions of the CCA[x]. Requirements for data structure and quality of information that support DoD Information Superiority objectives are defined in DoD Directive 8000.1[xi] and DoDD 8320.1[xii].

1.2.2 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. In technology projects and acquisition programs, interoperability begins with a description of desired outcomes. An interoperability key performance parameter is mandatory and shall be developed in accordance with CJCSI 3170.01A (reference (b)) and CJCSI 6212.01[xiii] for all Mission Need Statements, Capstone Requirements Documents, and Operational Requirements Documents. For the acquisition community, the interoperability requirements established in the

requirements process shall be allocated from the requirements documents to the individual systems through the system engineering process.

Each PM shall address the interoperability requirements in the Command, Control, Communication, Computer, and Intelligence Support Plan (C4ISP) (see DoD 5000l2-R, Appendix 5) and in integration plans for non-C4 interoperability requirements. The results of this planning shall be discussed in the system acquisition strategy.

The MDA shall make decisions on individual programs in the context of system- or family-of-systems. Those decisions shall be informed by the information provided by the PM in the acquisition strategy.

The DOT&E shall consider interoperability in any early operational assessments and shall test and evaluate interoperability in the context of initial operational test and evaluation and live fire test and evaluation.

SECTION 2

The Defense Acquisition Management Framework

All projects and programs, including highly sensitive classified, cryptologic, and intelligence projects and programs, shall accomplish activities described in this Instruction and DoD 5000.2-R. How these activities are conducted shall be determined on a project-by-project or program-by-program basis through Integrated Product Teams (IPTs) and Integrated Product and Process Development (IPPD). How these activities are conducted shall be tailored to minimize the time it takes to satisfy an identified need consistent with common sense and sound business practice.

Procurement of services in place of systems, either developed or purchased, shall be considered as a way of meeting the operational requirements at a reasonable cost to DoD.

Throughout the life of a technology project or acquisition program, competition (at both the prime and sub-contractor levels) shall be maintained to the maximum extent practical and cost effective by means of either head-to-head competition, competition of alternative ways to meet the mission need, or changing requirements (through the process of cost and performance trades) to allow increased competition. This competition shall be identified in the acquisition strategy. If competition is not available, incentives shall be devised to allow the benefits of competition (increased innovation and decreased costs).

At each Milestone and Review decision point, the decision-maker has the option to continue the project or program in its current phase, terminate the effort, or proceed into the next phase.

A graphic representation of the Defense acquisition management framework is shown in Figure 1. The remainder of this section will discuss each aspect of the framework.

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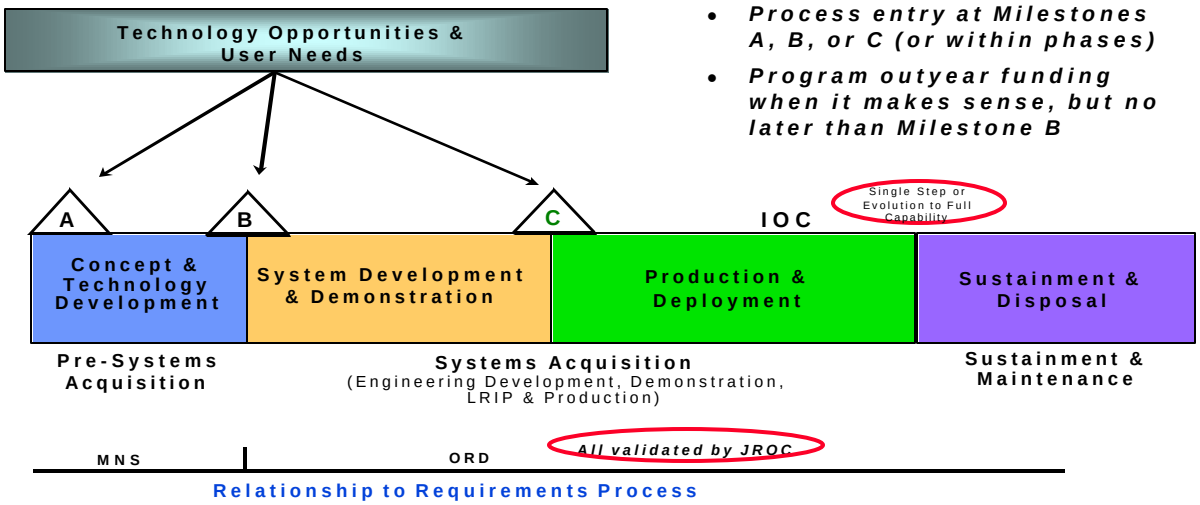

Figure 1

2.1 Pre-System Acquisition

Pre-system acquisition is composed of on-going in development of user needs, science and technology, and concept development work specific to the development of a material solution to an identified need.

2.1.1 User Need Activities

The Mission Need Statement (MNS) shall identify and describe the projected mission needs of the warfighter. The user, with the support of operational test and evaluation personnel, develops the needs expressed in the MNS into requirements in the form of Capstone Requirements Documents (CRDs) (if applicable) and Operational Requirements Documents (ORDs). CRDs contain capabilities-based requirements that facilitate the development of individual ORDs by providing a common framework and operational concept to guide their development. It is an oversight tool for overarching requirements for a system-or family-of-systems (see CJCSI 3170.01A (reference (b))). Validated ORDs translate the MNS and (if applicable, CRDs) into broad, flexible, and time-phased operational goals that are further detailed and refined into specific requirements contained in the final ORD at System Demonstration. All MNSs, CRDs, and ORDs shall be validated by the appropriate requirements authority.

In the process of refining requirements, the user shall adhere to the following key concepts (in accordance with CJCSI 3170.01A (reference (b)):

1. Keep all reasonable options open and facilitate cost, schedule, and performance trades throughout the acquisition process;

2. Avoid early commitments to system-specific solutions, including those that inhibit future insertion of new technology and commercial or non-developmental items;
3. Define requirements in broad operational capability terms;
4. Develop time-phased requirements with associated objectives and thresholds (as appropriate);
5. Evaluate how the desired performance requirements could reasonably be modified to facilitate the potential use of commercial or non-developmental items and components;
6. Address cost in the ORD;
7. Consider supportability data sharing, and interoperability needs of the system or system/family-of-systems in the operational environment; and
8. Mandate interoperability as a key performance parameter (KPP) for all ORDs and CRDs (see CJCSI 6212.01B[xiv]) to be included in the Acquisition Program Baseline (APB) (see DoD 5000.2-R, section 1.2).

Most IT systems, including NSS, regardless of acquisition category, developed for use by U.S. forces are for joint use. The intent is to develop, acquire, and deploy IT and NSS systems that meet essential operational needs of U.S. forces. Interoperability and integration of IT and NSS requirements shall be determined during the requirements validation process by the DoD Components and Joint Staff (through review of all MNSs and ORDs) and shall be updated as necessary throughout the acquisition period, deployment, and operational life of a system.

The Chairman of the Joint Chiefs of Staff (CJCS) shall establish procedures for the development, coordination, review, and validation of compatibility, interoperability, integration, and supportability requirements for IT and NSS systems, regardless of acquisition category. The CJCS shall approve, document, and exercise doctrinal concepts and associated operational procedures to achieve compatibility, interoperability, integration, and supportability of IT and NSS systems employed by U.S. forces and with coalition and allied forces. The Chairman of the Joint Chiefs of Staff has established procedures for ensuring compliance with certification of joint interoperability of IT systems throughout their system's life-cycle and ensure that the Directors of the Defense Agencies are included in the review process (see CJCSI 6212.01B[xv]).

The user or user's representative shall work with the Program Manager or other system developer (e.g., the Demonstration Manager for Advanced Concept and Technology Development projects) to establish and refine cost as an independent variable (CAIV)-based cost and performance objectives and critical schedule dates. The CAIV-based parameters and critical schedule dates shall also be included in the APB.

2.1.2 Technological Opportunity Activities

Technological opportunities within DoD laboratories and research centers, from academia, or from commercial sources are identified within the Defense Science and Technology (S&T) Program. The DoD S&T Program mission is to provide the warfighters of today and tomorrow with superior and affordable technology to support their missions, and to enable them to have revolutionary war-winning capabilities. The S&T Program is uniquely positioned to reduce the risks of promising technologies before they are assumed in the acquisition process. The Deputy Under Secretary of Defense (Science & Technology) (DUSD(S&T)) is responsible for the overall direction,

coordination, quality, and content of the DoD S&T Program (including software capability).

2.1.2.1 S&T Program Content

The S&T program consists of the following:

1. Basic Research -- scientific study and experimentation directed toward increasing knowledge and understanding in the science fields and discovering phenomena that can be exploited for military purposes;
2. Applied Research -- translates promising research into solutions for broadly defined military problems with effort that may vary from applied research to sophisticated breadboard subsystems that establish the initial feasibility and practicality of proposed solutions or technologies; and
3. Advanced Technology -- demonstrates the performance payoff, increased logistics capabilities, or cost reduction potential of militarily relevant technology.

2.1.2.2 S&T Program Objectives

The DUSD(S&T), together with the DoD Component S&T Executives, and based on user priorities established by the appropriate requirements authority, shall:

1. Evaluate battlefield deficiencies against ongoing S&T efforts;
2. Establish S&T projects when on-going S&T efforts are not available to address deficiencies;
3. Support the increased use of commercial technologies through the initiation of dual use technology development projects to address deficiencies for both hardware and software;
4. For those technologies with the most promise for application to weapon systems or AISs, be responsible for maturing technology to a readiness level that puts the receiving MDA at low risk for systems integration, the point acceptable to the cognizant MDA, or until the MDA is no longer considering that technology;
5. Advise the requirements and acquisition communities of new technology developments and options that will contribute to meeting future warfighting objectives and ensure that technical advice is available to PMs throughout the system development process; and
6. Conduct independent technology assessments and assist in determining the maturity of critical system technologies for transition to the acquisition management process, during Risk Reduction and Demonstration and at Milestone C.

2.1.2.3 S&T Program Transition

To ensure the transition of innovative concepts and superior technology to the warfighter and acquisition customer, the DoD Component S&T Executives shall use three mechanisms -- Advanced Technology Demonstrations (ATDs), Advanced Concept Technology Demonstrations (ACTDs), and Joint Warfighting Experiments (JWEs). The specific plans and processes for these transition mechanisms are described in the Joint Warfighting S&T Plan. S&T activities shall be conducted in a way that facilitiates or at least does not preclude the availability of competition for future acquisition programs.

1. ATDs shall be used to demonstrate the maturity and potential of advanced technologies for enhanced military operational capability or cost effectiveness.
2. ACTDs shall be used to determine military utility of proven technology and to develop the concept of operations that will optimize effectiveness.
3. JWEs shall be used to develop and assess concept-based hypotheses to identify and recommend the best value-added solutions for changes to doctrine, organizational structure, training and education, materiel, leadership, and people required to achieve significant advances in future joint operational capabilities.

2.1.3 Analyze Alternatives and Develop Concepts and Technologies

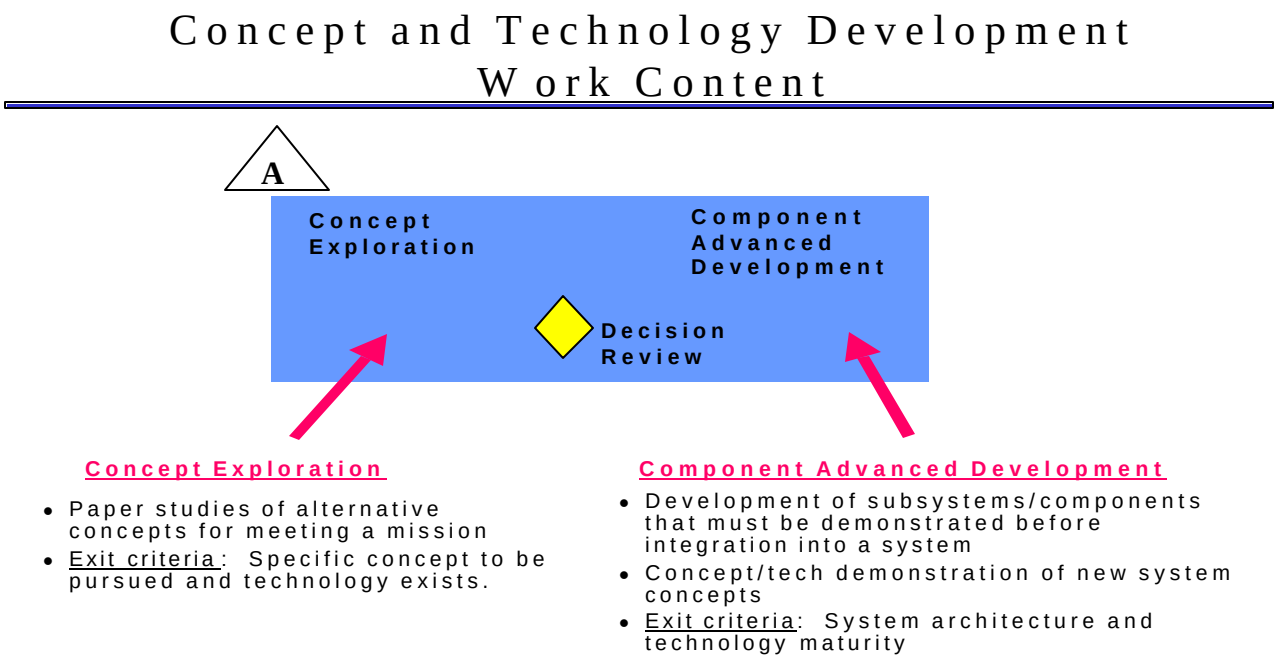

Figure 2

One path into systems acquisition begins with examining alternative concepts to meet a stated mission need. This path begins with a decision to enter Concept and Technology Development at Milestone A. The phase ends with a selection of a system architecture and the completion of entrance criteria into Milestone B and System Development and Demonstration Phase.

2.1.3.1 Milestone A

After the requirements authority validates and approves a MNS, the MDA (through the IPT process) will review the MNS, consider possible technology issues (e.g., technologies demonstrated in ATDs), and identify possible materiel alternatives before making a Milestone A decision.

A favorable Milestone A decision does not yet mean that a new acquisition program has been initiated.

At Milestone A, the MDA shall approve the initiation of concept studies, designation of a lead Component, Concept Exploration exit criteria, and the Acquisition Decision Memorandum. The leader of the concept development team, working with the integrated test team, shall develop an evaluation strategy that describes how the capabilities in the MNS will be evaluated once the system is developed. That evaluation strategy shall be approved by the DOT&E and the cognizant OIPT leader 180 days after Milestone A approval.

The tables in Appendix 1 identify all statutory and regulatory requirements applicable to Milestone A.

2.1.3.2 Concept Exploration

Concept Exploration typically consists of competitive, parallel short-term concept studies. The focus of these efforts is to define and evaluate the feasibility of alternative concepts and to provide a basis for assessing the relative merits (i. e. advantages and disadvantages, degree of risk, etc.) of these concepts. Analyses of alternatives shall be used to facilitate comparisons of alternative concepts.

Alternative system design concepts will be solicited from a broad base of qualified firms. In order to achieve the most preferred system solution, emphasis will be placed on innovation and competition. To this end, participation by a diversified range of businesses (small, new, domestic, international) should be encouraged. Concepts will be primarily solicited from private industry and, where appropriate, from organic activities, international technology and equipment firms, federal laboratories, federally funded research and development centers, educational institutions, and other not-for-profit organizations.

The work in this phase normally shall be funded only for completion of concept studies. The work shall be guided by the MNS.

The most promising system concepts shall be defined in terms of initial, broad objectives for cost, schedule, and performance; identification of interoperability, security, supportability, and infrastructure requirements within a system-or family-of-systems; opportunities for tradeoffs, and an overall acquisition strategy and test and evaluation strategy (including Development Test and Evaluation (DT&E), Operational Test and Evaluation (OT&E), and Live Fire Test and Evaluation (LFT&E)).

This phase ends with a selection by the MDA of a preferred concept or concepts to be pursed.

2.1.3.3 Decision Review

The purpose of this Decision Review is to determine whether or not the concept is ready to be pursued in System Development and Demonstration (i.e., the proposed program meets the entrance criteria for Milestone B), low-rate production (i.e., the proposed program meets the entrance criteria for Milestone C), or component advanced development (i.e., the concept is based on technologies that have not yet been demonstrated in a relevant environment), further concept studies need to be done, or further work should be terminated. There are no information requirements for this Review, other than those specifically requested by the MDA. If the PM recommends that

the concept be pursued in systems acquisition, the appropriate milestone shall be held in place of this Review.

2.1.3.4 Component Advanced Development

The project shall enter Component Advanced Development when the Program Manager has a concept for the needed capability, but does not yet know the system content. Unless otherwise determined by the MDA, the component technology to be developed shall have been proven in concept. The project shall exit Component Advanced Development when a system architecture has been developed and the component technology has been demonstrated in the relevant environment or the MDA decides to end this effort. This effort is intended to reduce risk on components and subsystems that have only been demonstrated in a laboratory environment and to determine the appropriate set of subsystems to be integrated into a full system. This work effort normally will be funded only for the advanced development work. The work effort will be guided by the validated MNS, but during this activity, an ORD shall be developed. This effort is followed by entry into System Development and Demonstration after a successful Milestone B decision by the MDA.

2.2 Systems Acquisition

Systems acquisition is the process of developing concepts into producible and deployable products that provide capability to the warfighter. The concept(s) to exploit in systems acquisition are based on an analysis of alternative ways to meet the military need (done either in Concept Exploration or technological opportunities development), including commercial and non-developmental technologies and products and services determined through market analysis. The DoD Component (or appropriate principal staff office for MAIS programs) responsible for the mission area in which a deficiency or opportunity has been identified, but not the PM, shall normally prepare the analysis of alternatives (although the PM or PM's representative may participate in the analysis).

Priority consideration shall always be given to the best overall value solution over the system's life-cycle that meets the warfighter's operational requirements. Generally, use or modification of systems or equipment that the DoD Components already own is more cost and schedule-effective than acquiring new materiel. If existing U.S. military systems or other on-hand materiel cannot be economically used or modified to meet the operational requirement, an acquisition program may be justified and acquisition decision-makers shall follow the following hierarchy of alternatives: (1) the procurement (including modification) of commercially available domestic or international technologies, systems or equipment, or the additional production (including modification) of previously-developed U.S. military systems or equipment, or Allied systems or equipment; (2) cooperative development program with one or more Allied nations; (3) new joint Component or Government Agency development program; and (4) a new Component-unique development program. Important in this evaluation process for new or modified systems are considerations for compatibility, interoperability, and integration with existing and future components or systems.

DoD acquisition and procurement of weapon systems shall be consistent with all applicable treaties, customary international law, and the law of armed conflict (also known as the laws and customs of war). The Head of each DoD Component shall ensure that all Component activities that could reasonably generate questions

concerning compliance with obligations under arms control agreements to which the United States is a party shall have clearance from the USD(AT&L), in coordination with the OSD General Counsel and the Under Secretary of Defense (Policy), before such activity is undertaken. The Head of each DoD Component shall ensure that the Component's General Counsel or Judge Advocate General, as appropriate, conducts a legal review of the intended acquisition of a potential weapon system to determine that it is consistent with U.S. obligations. The review shall be conducted before the award of the system demonstration contract and before the award of the initial production contract. Files shall be kept permanently. Additionally, legal reviews of new, advanced or emerging technologies which may lead to development of weapon systems are encouraged.

2.2.1 Begin Development and Develop and Demonstrate Systems

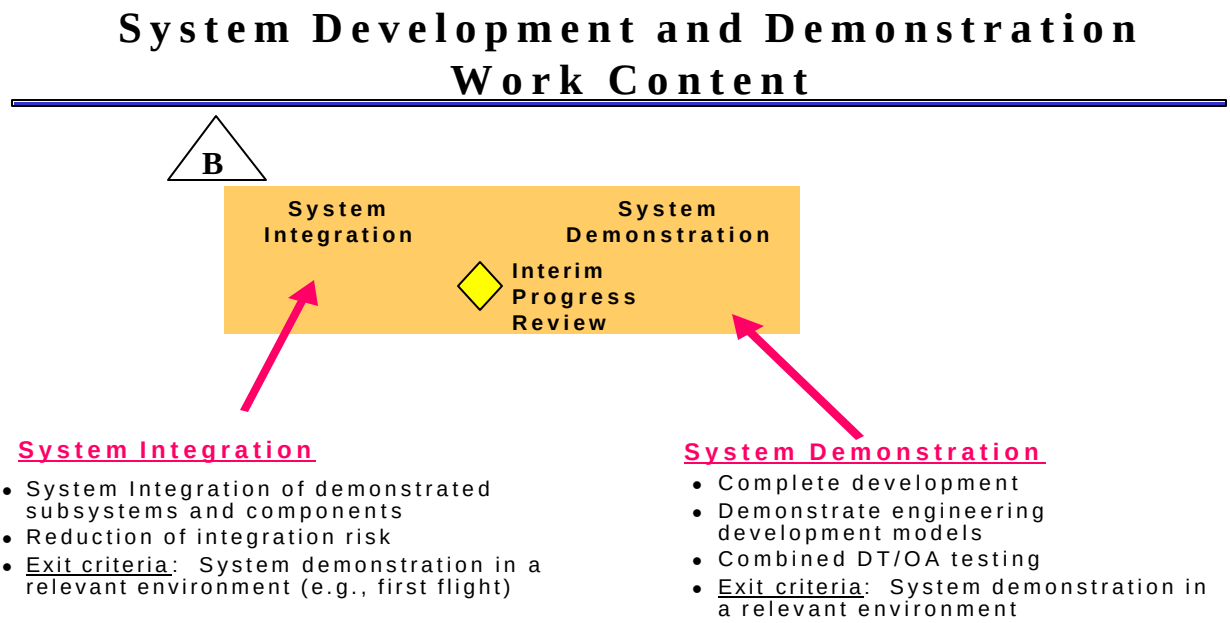

Figure 3

The purpose of the System Development and Demonstration phase is to complete the discovery process, develop a system, reduce program risk, ensure system supportability, design for producibility, assure affordability, and demonstrate system integration and utility. Discovery and development are aided by the use of simulation-based acquisition and test and evaluation and guided by a system acquisition strategy and test and evaluation master plan (TEMP). All modeling, simulation, test, and evaluation activities shall be integrated into an efficient continuum planned and executed by an integrated test and evaluation product team (T&E IPT). This continuum shall feature coordinated test events, access to all test data by all involved agencies, and independent evaluation of test results by involved agencies. Modeling, simulation, and development test shall be under the direct responsibility of the PM or a designated test agency. All results of early operational assessment and operational assessment shall

be reported to the Service Chief by the appropriate operational test activity and used by the MDA in support of decisions. The independent planning, execution, and evaluation of dedicated initial operational test and evaluation (IOT&E), as required by law, and follow-on test and evaluation (FOT&E), if required, shall be the responsibility of DOT&E or the appropriate operational test activity.

This phase can be entered either directly out of technology opportunity and user need activities or from Concept Exploration. The actual entry point depends on the maturity of the technologies, validated requirements (including urgency of need), and affordability. The MDA shall determine the appropriate entrance point, which shall be Milestone B. There shall be only one Milestone B per program, or evolutionary block.

Each DoD Component should maintain a transition fund in the out-years of the FYDP to allow rapid transition of projects from technology opportunity and user needs activities to System Development and Demonstration or Commitment to Low-Rate Production. Each DoD Component shall determine the size of its transition fund. The transition fund for the first year of the program must be distributed to individual budget lines prior to submission of the Budget Estimate Submission for that year.

2.2.1.1 Entrance Criteria

Entrance into System Development and Demonstration is dependent on three things: technology (including software) maturity, validated requirements, and funding. Unless some other factor is overriding in its impact, the maturity of the technology will determine the path to be followed.

Technology is developed in the S&T program or procured from industry. Technology must have been demonstrated in a relevant environment (see DoD 5000.2-R, appendix 6 for a discussion of technology maturity) or, preferably, in an operational environment (using the transition mechanisms) to be considered mature enough to use for product development in systems integration. If technology is not mature, the DoD Component shall use alternative technology that is mature and that can meet the user's needs. The initial determination of technology maturity is made by the DoD Component. The DDR&E shall provide an independent technology assessment to the MDA. To promote increased consideration of technological issues early in the development process, the MDA shall, at each acquisition program decision, consider any position paper prepared by a Defense research facility on a technological issue relating to the major weapon system being reviewed; and any technological assessment made by a Defense research facility (see 10 U.S.C.§2364[xvi]). A defense research facility is a DoD facility which performs or contracts for the performance of basic research; or applied research known as exploratory development.

Prior to entering System Development and Demonstration, there shall be an ORD validated by the requirements authority. The ORD contains operational performance requirements and addressing cost for a proposed concept or system. Time-phased ORDs must be validated by the requirements authority prior to program approval. If a mature technology, non-developmental item, or commercial item is being considered for transition to an acquisition program at Milestone B or C, it must have a validated ORD prior to being approved as an acquisition program.

The affordability determination is made in the process of addressing cost as a military requirement in the requirements process and included in each ORD, beginning with the acquisition cost but using life-cycle cost or total ownership cost where available and approved. Transition into System Development and Demonstration also requires full-funding, which shall be programmed when a system concept and design have been selected, a PM has been assigned, and ORD has been approved, and system-level development is ready to begin. In the case of a replacement platform or when the timing of the PPBS cycle dictates, the full funding decision may be made prior to entry into System Development and Demonstration. In no case shall full funding be done later than Milestone B.

2.2.1.2 Milestone B

Milestone B is the initiation of an acquisition program. The purpose of Milestone B is to authorize entry into System Development and Demonstration.

Before proposing a new acquisition program, DoD Components shall affirmatively answer the following questions (CCA[xvii]:

1. Will the acquisition support core/priority mission functions that need to be performed by the Federal Government?
2. Does the acquisition need to be undertaken by the DoD Component because no alternative private sector or governmental source can better support the function?
3. Will the acquisition support work processes that have been simplified or otherwise redesigned to reduce costs, improve effectiveness, and make maximum use of commercial off-the-shelf technology?

2.2.1.2.1 Milestone Approval Considerations

Prior to approving entry into System Development and Demonstration at Milestone B, the MDA shall consider the validated ORD, system threat assessment, independent technology assessment and any technology issues identified by DoD research facilities, any early operational assessments or test and evaluation results, analysis of alternatives including compliance with DoD's strategic plan (based on the Government Performance and Results Act (GPRA)[xviii]), the independent cost estimate, manpower estimate (if applicable), whether an application for frequency allocation has been made (if the system will require utilization of the electromagnetic spectrum), system affordability and funding, consideration the proposed acquisition strategy, and infrastructure and support requirements.

At Milestone B the MDA shall approve the acquisition strategy, the acquisition program baseline, low-rate initial production quantities (where applicable), and System Development and Demonstration exit criteria (and exit criteria for interim progress review, if necessary).

The DOT&E and the cognizant Overarching Integrated Product Team (see paragraph 4.3) Leader shall approve the Test and Evaluation Master Plan (TEMP) (including the LFT&E strategy, if applicable) for all OSD test and evaluation oversight programs. If full-up, system-level LFT&E is unreasonably expensive and impractical, a waiver shall be approved by the USD(AT&L), for programs where he or she is the MDA,

or by the CAE, for programs where he or she is the MDA, and an alternative LFT&E plan shall be approved by the DOT&E before entry into System Development and Demonstration[xix].

A successful milestone decision shall be the occasion for submission of a revised Selected Acquisition Report (see DoD 5000.2-R, section 7.12.4).

The tables in Appendix 1 identify the statutory and regulatory requirements that must be met at this milestone. Note that these requirements must be met at this milestone and cannot be deferred to a follow-on interim progress review or future milestone.

2.2.1.2.2 AIS Specific Considerations

For MAISs, the MDA shall not grant a Milestone B approval until the Component Head or designee certifies to the DoD CIO that the system is being developed in accordance with the CCA. The DoD CIO shall issue guidance describing minimum criteria for CCA compliance, but at a minimum, the Component Head or designee shall certify that:

1. There is a validated and approved requirement;
2. The program is adequately funded;
3. There is an approved acquisition program baseline;
4. Business process reengineering has been conducted;
5. An analysis of alternatives has been conducted;
6. Measurable performance measures have been established to track progress in achieving predetermined goals;
7. Mission-related, outcome-based performance measures have been established; and
8. The program has an information assurance strategy that is consistent with the DoD C4ISR&S Architecture Framework.

The ASD(C3I) shall require a similar certification before granting subsequent milestone approvals. The ASD(C3I) shall notify Congress of such certifications in a timely manner. Such certifications must include the program funding baseline, milestone schedule, and confirmation that the above requirements have been satisfied.[xx]

2.2.1.2.3 Acquisition Strategy Considerations

The acquisition strategy shall define not only the approach to be followed in System Development and Demonstration, but also the approach to be followed in subsequent phases (i.e., if more than one block), and production. There are two such approaches, evolutionary and single step to full capability. An evolutionary strategy is preferred. Evolutionary acquisition is a strategy that fields an operationally useful and supportable capability in as short a time as possible. This approach is particularly useful for software and software-intensive programs because of the spiral nature of software development. Evolutionary acquisition delivers an initial capability with the explicit intent of delivering improved or updated capability in the future.

The approach to be followed depends on the availability of time-phased requirements in the ORD, the maturity of technologies, the cost versus benefit of each block of capability, including consideration of how best to support each block when

fielded (e.g., whether to retrofit earlier blocks, the cost of multiple configurations, how best to conduct new equipment training, etc.). The rationale for choosing a single step to full capability, when given an ORD with time-phased requirements, shall be addressed in the acquisition strategy. Similarly, the rationale for choosing an evolutionary approach, when given an ORD with no time-phased requirements, shall be addressed in the acquisition strategy.

In an evolutionary approach, the ultimate capability delivered to the user is divided into two or more blocks. Deliveries for each block may extend over months or years. Block 1 provides the initial deployment capability (an increment of capability called for in the ORD). There are two approaches to treatment of subsequent blocks:

1. The ORD includes a firm definition of full capability, as well as a firm definition of requirements to be satisfied by each block, including an IOC date for each block. In this case, each block shall be baselined and the acquisition strategy shall define each block of capability and how it will be funded, developed, tested, produced, and supported.

2. The ORD includes a firm definition of the first block, but does not allocate to specific subsequent blocks the remaining requirements that must be met to achieve full capability. In an spiral acquisition, the specific requirements for Block 2 are defined in the ORD lead-time-away from beginning work on Block 2, and so on, until full capability is achieved. In this case, the first block and each subsequent block is baselined in conjunction with the MDA authorizing work to proceed on that block; and the acquisition strategy shall define the first block of capability, and how it will be funded, developed, tested, produced, and supported; the full capability the evolutionary acquisition is intended to satisfy, and the funding and schedule, in budgetary terms, planned to achieve the full capability; and the management approach to be used to define the requirements for each subsequent block and the acquisition strategy applicable to each block, including whether end items delivered under earlier blocks will be retrofitted with later block improvements.

In a single step to full capability approach, the full system capability is developed and demonstrated prior to Milestone C. Under this approach, any modification that is of sufficient cost and complexity that it could itself qualify as an MDAP or MAIS shall be considered for management purposes as a separate acquisition effort. Modifications that do not cross the MDAP or MAIS threshold shall be considered part of the program being modified, unless the program is no longer in production. In that case, the modification shall be considered a separate acquisition effort. Modifications may cause a program baseline deviation. Deviations shall be reported using the criteria and procedures in DoD 5000.2-R.

2.2.1.2.4 Entry into System Development and Demonstration

Milestone B approval can lead to System Integration or System Demonstration. Regardless of the approach recommended, PMs and other acquisition managers shall continually assess program risks. Risks must be well understood, and risk management approaches developed, before decision authorities can authorize a program to proceed into the next phase of the acquisition process. Risk management is an organized method of identifying and measuring risk and developing, selecting, and managing options for handling these risks. The types of risk include, but are not limited to, schedule, cost, technical feasibility, risk of technical obsolescence, dependencies

between a new program and other programs (e.g., closed architectures), and risk of creating a monopoly for future procurements.

The nature of software-intensive system development, characterized by a build-test-fix-deploy strategy, may lend itself to a combined system integration and system demonstration, rather than serial efforts more typical of hardware-intensive systems.

2.2.1.3 System Integration

The program shall enter System Integration when the PM has an architecture for the system, but has not yet integrated the subsystems into a complete system. The program shall exit System Integration when the integration of the system has been demonstrated in prototypes (e.g., first flight, interoperable data flow across systems), the MDA determines a factor other than technology justifies forward progress, or the MDA decides to end this effort.

This effort is intended to integrate the subsystems and reduce system-level risk. The work effort will be guided by a validated ORD. The work effort will be followed by System Demonstration after a successful Interim Progress Review by the MDA (or the person designated by the MDA).

2.2.1.4 Interim Progress Review

The purpose of this interim progress review is to allow the MDA (or a person designated by the MDA) to confirm that the program is progressing within the phase and is ready to move into system demonstration. There is no required information necessary for this Review other than the information specifically requested by the decisionmaker. This review shall not cause a suspension in contracted work, unless specifically directed by the MDA.

2.2.1.5 System Demonstration

The program shall enter System Demonstration when the PM has demonstrated the system in prototype articles. This effort is intended to demonstrate the ability of the system to operate in a useful way consistent with the validated ORD.

This phase ends with a system demonstrated in a relevant environment (e.g., using engineering development models), meets validated requirements, industrial capabilities are reasonably available, and the system that meets or exceeds exit criteria and Milestone C entrance requirements. The completion of this phase is dependent on a successful decision by the MDA to commit to the program at Milestone C or a decision to end this effort.

2.2.2 Commitment to Low-Rate Production and Produce and Deploy Systems

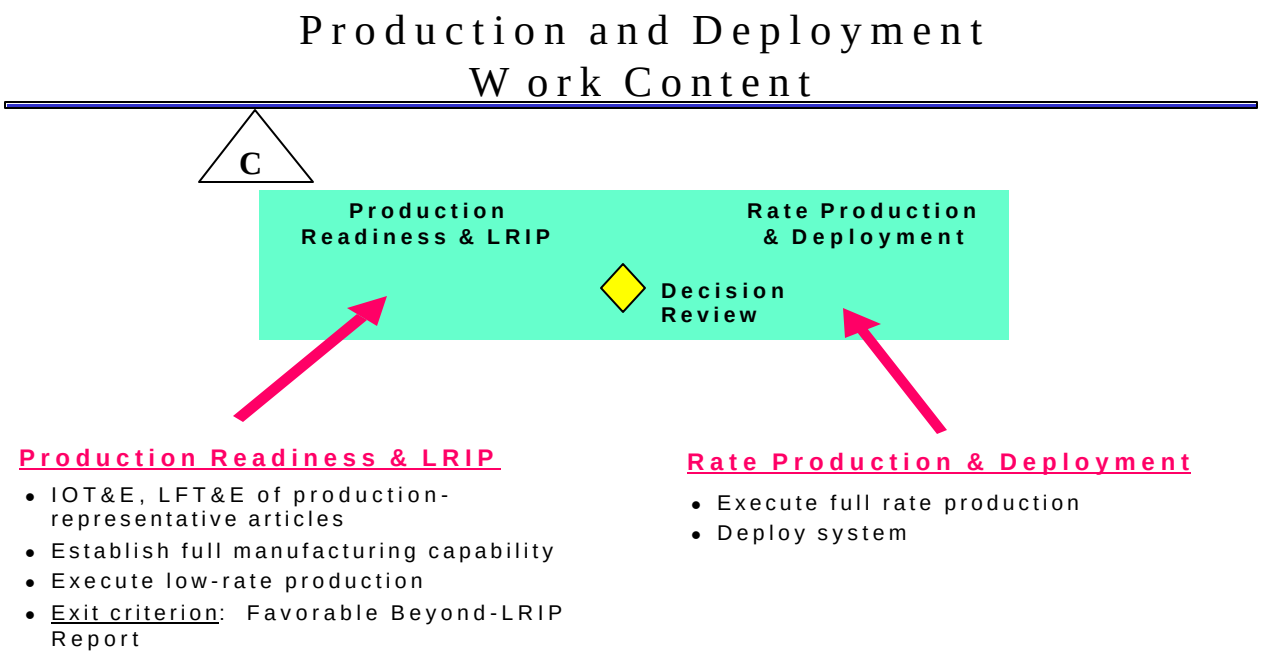

Figure 4

A system must be demonstrated before DoD will commit to production (or procurement) and deployment. For DOT&E oversight programs, a system can not be produced at full-rate until a Beyond Low-Rate Initial Production Report has been completed and sent to Congress. The MDA shall make the commitment decision at Milestone C. Milestone C can by reached directly from pre-systems acquisition (e.g., a commercial product) or from System Development and Demonstration phase.

The objectives of the Production and Deployment phase are to achieve an operational capability that satisfies mission needs. The production requirement of this phase does not apply to MAISs or software-intensive systems with no developmental hardware components. However, software has to prove its maturity level prior to deploying to the operational environment. Once maturity has been proven, it is baselined and a methodical and synchronized deployment plan is implemented to all applicable locations.

2.2.2.1 Entrance Criteria

Regardless of the entry point, successful approval at Milestone C is dependent the following criteria being met (or a decision by the MDA to proceed):

1. Technology maturity (with an independent technology readiness assessment), mature software capability, demonstrated system integration or demonstrated commercial products in a relevant environment, and no significant manufacturing risks,
2. An approved ORD,
3. Assured interoperability,

4. Assured supportability,
5. Compliance with the DoD Strategic Plan[xxi],
6. Demonstration that the system is affordable throughout the life-cycle, optimally funded, and properly phased for rapid acquisition.

2.2.2.2 Milestone C

The purpose of this milestone is to authorize entry into low-rate initial production (for MDAPs and major systems) or into production or procurement (for non-major systems that do not require low-rate production).

Prior to making the milestone decision, the MDA shall consider the independent cost estimate, the manpower estimate, compliance with the CCA[xxii], whether an application for frequency allocation has been approved (for systems that require utilization of the electromagnetic spectrum), system threat assessment, and an established completion schedule for National Environmental Policy Act (NEPA)[xxiii] compliance covering testing, training, basing, and operational support.

At this milestone, the MDA shall approve the acquisition strategy, an acquisition program baseline, exit criteria for low-rate initial production (if needed), and the acquisition decision memorandum.

The DOT&E and cognizant OIPT Leader shall approve the TEMP for all OSD test and evaluation oversight programs. All mission-essential and mission-critical IT systems must be registered with the DoD CIO. A successful milestone decision shall be the occasion for submission of a revised Selected Acquisition Report (see DoD 5000.2-R, section 7.12.4).

The tables in Appendix 1 identify the statutory and regulatory requirements that must be met at this decision point.

2.2.2.3 Low-Rate Initial Production (LRIP)

This work effort is intended to result in completion of manufacturing development in order to ensure adequate and efficient manufacturing capability and to produce the minimum quantity necessary to provide production configured or representative articles for initial operational test and evaluation (IOT&E), establish an initial production base for the system; and permit an orderly increase in the production rate for the system, sufficient to lead to full-rate production upon successful completion of operational (and live-fire, where applicable) testing. The work shall be guided by the ORD.

A favorable Milestone C decision authorizes the PM to commence LRIP only. The PM is only authorized to commence full-rate production with further approval of the MDA. There shall be normally no more than one decision (i.e. either low-rate or full-rate) at the DAE-level for MDAPs.

LRIP quantities shall be minimized. The MDA shall determine the LRIP quantity for MDAPs and major systems at Milestone B. The LRIP quantity (with rationale for quantities exceeding 10% of the total production quantity documented in the acquisition strategy) shall be included in the first Selected Acquisition Report (see DoD 5000.2-R, section 7.12.4) after its determination. Any increase in quantity after the initial

determination shall be approved by the MDA. The LRIP quantity shall not be less than one unit. When approved LRIP quantities are expected to be exceeded because the program has not yet demonstrated readiness to proceed to full-rate production, the MDA shall assess the cost and benefits of a break in production versus continuing annual buys.

DOT&E is the decision authority for the number of LRIP articles required for IOT&E of an MDAP and for LFT&E. For a new system that is not an MDAP, the Operational Test and Evaluation Agency is the decision authority. Deficiencies encountered in testing prior to Milestone C shall be resolved prior to proceeding beyond LRIP and any fixes verified in follow-on testing. Operational test plans shall be provided to the DOT&E for oversight programs in advance of the start of operational test and evaluation.

LRIP is not applicable to AISs or software intensive systems with no developmental hardware; however, a limited deployment phase may be applicable.

LRIP for ships and satellites is production of items at the minimum quantity and rate that is feasible and that preserves the mobilization production base for that system (10 U.S.C. §2400).[xxiv]

LRIP may be funded by either research, development, test and evaluation appropriation (RDT&E) or by procurement appropriations, depending on the intended usage of the LRIP assets. The DoD Financial Management Regulation[xxv] provides specific guidance for determining whether LRIP should be budgeted in RDT&E or in procurement appropriations.

2.2.2.4 Full-Rate Production and Deployment Decision Review

Following IOT&E, the submission of the Beyond LRIP and LFT&E Reports (where applicable) to Congress, and the completion of a Full Rate Decision Review by the MDA (or by the person designated by the MDA), the program shall enter Full-Rate Production (or procurement) and Deployment.

Before making the full rate production decision, the MDA shall consider the independent cost estimate, the manpower estimate (if applicable), the results of operational and live fire test and evaluation (if applicable), CCA compliance[xxvi], and interoperability certification.

The MDA shall approve the acquisition strategy, the acquisition program baseline, provisions for evaluation of post-deployment performance (in accordance with GPRA[xxvii], CCA[xxviii], and the Paperwork Reduction Act[xxix]), and the acquisition decision memorandum.

A successful full rate production decision shall be the occasion for an update of the Selected Acquisition Report (see DoD 5000.2-R, section 7.12.4).

2.3 Sustainment and Disposal

The objectives of this activity are the execution of a program of support that meets support performance requirements and sustainment of systems in the most cost-effective manner for the life-cycle of the system.

2.3.1 Sustain Systems

The sustainment program includes all elements necessary to maintain the readiness and operational capability of weapon and other materiel systems. The scope of support varies among programs but generally includes supply, maintenance, transportation, sustaining engineering, data management, configuration management, manpower, personnel, training, safety, occupational health, C4I, and environmental management functions. This activity also includes the execution of operational support plans.

A follow-on operational test and evaluation program that evaluates operational effectiveness, survivability, suitability, and interoperability, and that identifies deficiencies shall be conducted, as appropriate (see DoD 5000.2-R, Part 3).

2.3.2 Dispose of Systems

At the end of its useful life, a system must be demilitarized and disposed. The PM shall address in the acquisition strategy demilitarization and disposal requirements. During demilitarization and disposal, the Defense Reutilization and Management Office shall ensure materiel determined to require demilitarization is controlled and shall ensure disposal is carried out in a way that minimizes DoD's liability due to environmental, safety, security, and occupational health issues.

SECTION 3

Acquisition Categories and Milestone Decision Authority

A technology project or acquisition program shall be categorized based on its location in the acquisition process, dollar value, and complexity.

3.1 Pre-ACAT Technology Projects

Advanced Technology Demonstrations, Joint Warfighting Experiments, Advanced Concept and Technology Demonstrations, Concept Exploration projects, and Component Advanced Development projects are efforts that occur prior to acquisition program initiation. The USD(AT&L) shall be the MDA for those projects that, if successful, will likely result in an MDAP. The ASD(C3I) shall be the MDA for those projects that, if successful, will result in a MAIS.

3.2 ACAT I

ACAT I programs are those programs that are MDAPs or that are designated ACAT I by the MDA as a result of the MDA's special interest.

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).

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 DoD Component Head who may redelegate to the CAE.

If the USD(AT&L) redesignates a formerly ACAT ID program as an ACAT IC program, the following direction shall apply:

1. Exit criteria established by the USD(AT&L) prior to the delegation of decision authority shall be maintained in effect unless the USD(AT&L) concurs with any changes;
2. The CAE shall approve Acquisition Program Baseline (APB) changes, including updates for threshold breaches, and provide a copy of the new APB to USD(AT&L);
3. Acquisition strategies, including CAIV objectives and LRIP quantities, established by the USD(AT&L) prior to the delegation of decision authority shall be maintained in effect during the phase for which approval was given, unless the USD(AT&L) concurs with any changes. When the next milestone approaches and an updated acquisition strategy is prepared for the next phase of the ACAT IC program, it shall not be subject to USD(AT&L) approval;
4. The OSD Cost Analysis Improvement Group (CAIG) shall not conduct Independent Cost Estimates for ACAT IC programs unless specifically requested by USD(AT&L). This request usually accompanies the designation of the program as ACAT IC. If the

CAIG does not conduct an independent cost estimate, the Component cost analysis office shall provide a component cost analysis to the CAE for consideration at the appropriate decision point.

3.3 ACAT IA

ACAT IA programs are those programs that are MAISs or that are designated as ACAT IA by the MDA as a result of the MDA's special interest.

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.

If the ASD(C3I) redesignates a formerly ACAT IAM program as an ACAT IAC program, the following direction shall apply:

1. Exit criteria established by the ASD(C3I) prior to the delegation of decision authority shall be maintained in effect unless the ASD(C3I) concurs with any changes;
2. The CAE or Component CIO shall approve Acquisition Program Baseline (APB) changes, including updates for threshold breaches, and provide a copy of the new APB to ASD(C3I);
3. Acquisition strategies, including CAIV objectives, established prior to the delegation of decision authority shall be maintained in effect during the phase for which approval was given, unless the ASD(C3I) concurs with any changes. When the next milestone approaches and an updated acquisition strategy is prepared for the next phase of the ACAT IAC program, it shall not be subject toASD(C3I) approval;
4. A Component Cost Analysis is not required for ACAT IAC programs unless specifically requested by ASD(C3I). This request usually accompanies the designation of the program as ACAT IAC.

3.4 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 the MDA's special interest. Because of the dollar values of MAISs, no AIS programs are ACAT II. The MDA is the CAE.

3.5 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 AISs.

3.4 Changes in ACAT Level

The DoD Component is responsible for notifying the USD(AT&L) or ASD(C3I) when cost growth or a change in acquisition strategy results in reclassifying a formerly lower ACAT program as an ACAT I or IA program. ACAT level changes will be reported as soon as the Component suspects, within reasonable confidence, that the program is within 10% encroachment of the next ACAT level. ACAT level reclassification will occur upon designation of the USD(AT&L) or the ASD(C3I).

SECTION 4

Program Management and Assessment

Acquisition programs require dedicated management. This part describes assignment of Program Managers, assignment of Program Executive Officers, and the use of Integrated Product Teams.

4.1 Assignment of Program Managers

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 DAWIA.[xxx] 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.

4.2 Assignment of Program Executive Responsibility

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 PEO shall be dedicated to executive management and shall not have other command responsibilities. The CAE shall make this assignment no later than program initiation; or within three months of estimated 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 or block of capability shall, at a minimum, have passed Initial Operating Capability (IOC), have achieved full-rate production, be certified as interoperable, and be supportable as planned.

4.3 Integrated Product Teams in the Oversight and Review Process

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 DoD Components shall participate in IPTs to the maximum extent practical and useful.

4.4 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.

4.5 Mission Capability Reviews

Historically, the management and oversight of investments has been on a system-by-system basis. Under the portfolio management concept, investments are grouped by mission–related or business processes to establish portfolios. Trade-offs among investments are made to maximize benefit to the mission, and benefits are measured and evaluated in the context of the overall strategy for the mission. At any given point, existing capabilities support the mission, new capabilities are under development, and future capabilities are being explored. A balance is maintained between sustainment, modernization, and research. Factors such as mission effectiveness, productivity, growth, and cost are weighed to select the best mix of investments to accomplish defense objectives.

To assess our overall mission performance, the USD(AT&L) and ASD(C3I) shall conduct annual portfolio reviews following submission of DoD Component POMs. They will be supported by integrated stakeholder teams organized and lead by cognizant OIPT leaders who will assess performance and progress in each mission area and make recommendations for corrective action.

The portfolio management process establishes guidance for the management and oversight of portfolio activities that: (1) analyze the mission area to identify operational and business needs; (2) select the best mix of investments to achieve mission outcomes; (3) control both the portfolio and individual IT investments as they are developed and tested, and (4) evaluate the actual capability in the field to feed back lessons-learned and identify unmet requirements. Further guidance is contained in DoD 5000.2-R, section 7.5.7.

APPENDIX 1

Statutory and Regulatory Information

Tables 1 and 2 below show the information requirements for all milestones, both statutory and regulatory.

STATUTORY INFORMATION REQUIREMENTS[1]

INFORMATION REQUIRED	APPLICABLE STATUTE	WHEN REQUIRED
Consideration of Technology Issues	10 U.S.C.§ 2364[xxxi]	Milestone (MS) A MS B MS C
Market Research	10 U.S.C. §2377[xxxii]	Technology Opportunities User Needs MS A MS B
Acquisition Program Baseline (APB)	10 U.S.C.§2435[xxxiii]	MS B MS C Full Rate Decision Review (DR)
Compliance with Strategic Plan (as part of the analysis of alternatives, whenever practical)	5 U.SC §306[xxxiv]	MS B MS C
Selected Acquisition Report (SAR) (MDAPs only) Unit Cost Report (UCR) (MDAPs only)	10 U.S.C.§2432[xxxv] 10 U.S.C.§2433[xxxvi]	MS B MS C Full Rate DR
Live Fire Waiver & alternate LFT&E Plan (Covered Systems only)	10 U.S.C.§2366[xxxvii]	MS B
Industrial Capabilities (part of acquisition strategy) (N/A for AISs)	10 U.S.C.§2440[xxxviii]	MS B MS C
LRIP Quantities (N/A for AISs)	10 U.S.C.§2400[xxxix]	MS B
Independent Cost Estimate and Manpower Estimate (N/A for AISs)	10 U.S.C.§2434[xl]	MS B MS C (updated, as needed) Full Rate DR
Operational Test Plan (MDAPs only)	10 U.S.C. §2399[xli]	Prior to start of operational test and evaluation
Cooperative Opportunities (part of acquisition strategy)	10 U.S.C. §2350a[xlii]	MS B MS C
Post-Deployment Performance Review	5 U.S.C.§306[xliii] 40 U.S.C.§1401et. seq.[xliv]	Full Rate DR

[1] For AIS programs, the information in this table is regulatory, not statutory, unless otherwise stated or the AIS is a MDAP.

Beyond-LRIP Report (OSD oversight programs only)	10 U.S.C.§2399[xlv]	Full Rate DR
LFT&E Report (OSD covered programs only)	10 U.S.C.§2366[xlvi]	Full Rate DR
Clinger-Cohen Act (CCA) Compliance (All IT – including NSS)	40 U.S.C.§1401 et. seq.[xlvii]	MS B MS C Full Rate DR
IT Certification (requirement for certification prior to milestone approval for MAISs only, FY00 only)	Pub.L. 106-79, Section 8121(b)[xlviii]	MS B MS C Full Rate DR
Application for Frequency Allocation (DD Form 1494) (applicable to all systems/equipment which require utilization of the electromagnetic spectrum)	47 U.S.C. §305[xlix] Pub. L. 102-538, §104[l] 47 U.S.C. §901-904[li]	MS B or C
National Environmental Policy Act Analysis	42 U.S.C.§4321[lii]	At the appropriate milestone, usually B or C
Make or Buy Analysis (part of acquisition strategy)	10 U.S.C. §4532[liii]	MS B or C
Core Logistics Analysis/ Source of Repair Analysis (part of acquisition strategy)	10 U.S.C. §2464[liv] 10 U.S.C. §2460[lv]	MS B or C
Competition Analysis ($3M rule) (part of acquisition strategy)	10.U.S.C. §2469[lvi]	MS B or C
Partnering Analysis (part of acquisition strategy)	10 U.S.C. §2464[lvii] 10 U.S.C. §2208(j)[lviii]	MS B

Table 1

REGULATORY INFORMATION REQUIREMENTS[2]

INFORMATION REQUIRED	WHEN REQUIRED
Validated Mission Need Statement (MNS)	MS A (source: CJCSI 3170.01A, ref a)
Validated Operational Requirements Document (ORD)	MS B MS C (source: CJCSI 3170.01A, ref a)
Acquisition Strategy	MS B MS C
Analysis of Alternatives (AoA)	MS A MS B or C (if no B)
System Threat Assessment	MS B MS C
Independent Technology Assessment	MS B MS C

[2] All requirements are from this Instruction or DoD 5000.2-R, unless otherwise noted.

C4ISP (addressed in the acquisition strategy)	MS B (based on validated critical Information Exchange Requirements in the ORD) MS C
Interoperability Certification	Full Rate DR (source: CJCSI 6212.01)[lix]
Affordability Assessment	MS B MS C
Component Cost Analysis (as requested by CAE)	MS B Full Rate DR
Test and Evaluation Master Plan (TEMP)	MS A (evaluation strategy only) MS B Full Rate DR
Operational Test Activity Report of Operational Test and Evaluation Results	MS B MS C Full Rate DR
Component Live Fire Test and Evaluation Report	Completion of Live Fire Test and Evaluation
Program Protection Plan (addressed in the acquisition strategy)	MS B (based on validated requirements in ORD) MS C (source: DoD 5200.1-M)[lx]
Exit Criteria	MS A MS B MS C Each DR/IPR
ADM	MS A MS B MS C Each DR/IPR

Table 2

APPENDIX 2

References

[i] Supplement to OMB Circular A-11, Part 3, "Planning, Budgeting, and Acquisition of Capital Assets," July 22, 1997
[ii] DoD Directive 5025.1, "DoD Directives System," June 24, 1994
[iii] 40 U.S.C. §1401 et.seq. "Clinger-Cohen Act of 1996"
[iv] 10 U.S.C. §2430, Major defense acquisition program defined. Note: The dollar requirements are established in statute in FY 1990 dollars. The dollar amounts have been updated in accordance with procedures identified in the statute.
[v] 10 U.S.C. §2302d, Major system: definitional threshold amounts. Note: The dollar requirements are established in statute in FY 1990 dollars. The dollar amounts have been updated in accordance with procedures identified in the statute.
[vi] 10 U.S.C. §1701 et.seq., "Defense Acquisition Workforce"
[vii] 10 U.S.C. §1701 et.seq., "Defense Acquisition Workforce"
[viii] USD(AT&L), ASD(C3I), and DOT&E, "Defense Acquisition Policy Steering Group and Defense Acquisition Policy Working Group Charter," August 5, 1999.
[ix] DoD 7000.14-R, "DoD Financial Management Regulation," Volumes 2A and 2B, "Budget Presentation and Formation," July 1998
[x] 40 U.S.C. §1401 et.seq. "Clinger-Cohen Act of 1996"
[xi] DoD Directive 8000.1, "Defense Information Management (IM) Program," October 27, 1992
[xii] DoD Directive 8320.1, "DoD Data Administration," September 26, 1991
[xiii] Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6212.01B, "Compatibility, Interoperability, and Integration of Command, Control, Communications, Computers, and Intelligence Systems," XXX
[xiv] CJCSI 6212.01B, "Compatibility, Interoperability, and Integration of Command, Control, Communications, Computers, and Intelligence Systems," XXX
[xv] CJCSI 6212.01B, "Compatibility, Interoperability, and Integration of Command, Control, Communications, Computers, and Intelligence Systems," XXX
[xvi] 10 U.S.C. §2364, Coordination and communication of defense research activities
[xvii] 40 U.S.C. §1401 et.seq. "Clinger-Cohen Act of 1996"
[xviii] Pub.L. 103-62, Government Performance and Results Act
[xix] 10 U.S.C.§2366, Major systems and munitions programs: survivability and lethality testing required before full-scale production
[xx] Pub. L. 106-79, Fiscal Year 2000 Defense Appropriation Act, Section 8121(b)
[xxi] 5 U.S.C. §306, Strategic plans (part of the Government Performance and Results Act)
[xxii] 40 U.S.C. §1401 et.seq. "Clinger-Cohen Act of 1996"
[xxiii] 42 U.S.C. 4321 et.seq., National Environmental Protection Act
[xxiv] 10 U.S.C. §2400, Low-rate initial production of new systems
[xxv] DoD 7000.14-R, " DoD Financial Management Regulation," Volume 2A, "Budget Presentation and Formation," Chapter 1 "General Information," Section 010212, "Research, Development, Test, and Evaluation –Selection and Criteria"
[xxvi] 40 U.S.C. §1401 et.seq. "Clinger-Cohen Act of 1996"
[xxvii] Pub.L. 103-62, Government Performance and Results Act
[xxviii] 40 U.S.C. §1401 et.seq. "Clinger-Cohen Act of 1996"
[xxix] 44 U.S.C.§3501 et.seq., Paperwork Reduction Act of 1980
[xxx] 10 U.S.C. §1734(b), Career development.
[xxxi] 10 U.S.C. §2364, Coordination and communication of defense research activities
[xxxii] 10 U.S.C. §2377, Preference for acquisition of commercial items

[xxxiii] 10 U.S.C. §2435, Baseline Descriptions
[xxxiv] 5 U.S.C. §306, Strategic plans (part of the Government Performance and Results Act)
[xxxv] 10 U.S.C. §2432, Selected Acquisition Reports
[xxxvi] 10 U.S.C. §2433, Unit cost reports
[xxxvii] 10 U.S.C.§2366, Major systems and munitions programs: survivability and lethality testing required before full-scale production
[xxxviii] 10 U.S.C. §2440, Technology and Industrial Base Plans
[xxxix] 10 U.S.C. §2400, Low-rate initial production of new systems
[xl] 10 U.S.C. §2434, Independent cost estimates; operational manpower requirements
[xli] 10 U.S.C. §2399, Operational test and evaluation of defense acquisition programs
[xlii] 10 U.S.C. §2350a, Cooperative research and development programs: allied countries
[xliii] 5 U.S.C. §306, Strategic plans (part of the Government Performance and Results Act)
[xliv] 40 U.S.C. §1401 et.seq. "Clinger-Cohen Act of 1996"
[xlv] 10 U.S.C. §2399, Operational test and evaluation of defense acquisition programs
[xlvi] 10 U.S.C.§2366, Major systems and munitions programs: survivability and lethality testing required before full-scale production
[xlvii] 40 U.S.C. §1401 et.seq. "Clinger-Cohen Act of 1996"
[xlviii] Pub. L. 106-79, Fiscal Year 2000 DoD Appropriations Act, Section 8121(b).
[xlix] 47 U.S.C. §305, Government owned stations
[l] Pub.L. 102-538, "National Telecommunications and Information Organization Act," Section 104, "Spectrum Management Activities"
[li] 47 U.S.C. §901, Definitions; §902, Establishment: Assigned Functions; §903, Spectrum Management Activities; and §904, General Administrative Provisions
[lii] 42 U.S.C. 4321 et.seq., National Environmental Protection Act
[liii] 10 U.S.C. §4532, Factories and arsenals: manufacture at; abolition of
[liv] 10 U.S.C. §2464, Core logistics functions
[lv] 10 U.S.C. §2460, Definition of depot-level maintenance and repair
[lvi] 10 U.S.C. §2469, Contracts to perform workloads previously performed by depot-level activities of the Department of Defense: requirement of competition
[lvii] 10 U.S.C. §2464, Core logistics functions
[lviii] 10 U.S.C. §2208, Working capital funds
[lix] CJCSI 6212.01B, "Compatibility, Interoperability, and Integration of Command, Control, Communications, Computers, and Intelligence Systems," XXX
[lx] DoD 5200.1-M, "Acquisition System Program Protection," March 16, 1994